1974年国际海上人命安全公约

目 录  
  
附    则  
第一章  总则  
    第一节  适用范围、定义等  
    第二节  检验与证书  
    第三节  事故  
第二章甲  构造（分舱与稳性、机电设备）  
    第一节  通则  
    第二节  分舱与稳性  
    第三节  机电设备  
第二章乙  构造（防火、探火和灭火）  
    第一节  通则  
    第二节  载客超过36人客船的消防措施  
    第三节  载客不超过36人客船的消防措施  
    第四节  货船的消防措施  
    第五节  油船的消防措施  
    第六节  现有客船的特殊消防措施  
第三章  救生设备等  
    第一节  通则  
    第二节  限客船适用  
    第三节  仅适用于货船  
第四章  无线电报与无线电话  
    第一节  适用范围与定义  
    第二节  值班  
    第三节  技术要求  
    第四节  无线电日志  
第五章  航行安全  
第六章  谷物装运  
    第一节  通则  
    第二节  假定倾侧力矩的计算  
    第三节  谷物装置及其固定  
第七章  危险货物装运  
第八章  核能船舶  
       
     附录 证书格式   
  
     各缔约国政府，   
  
     愿共同制订统一原则和有关规则，以增进海上人命安全，   
  
     考虑到1960年国际海上人命安全公约缔结以来的发展情况，缔结一个公约，以代替该公约，可以最好地达到这一目的，   
  
     特议定下列各条：   
  
     第一条 公约的一般义务   
  
     一、各缔约国政府承担义务实施本公约及其附则的各项规定，该附则应构成本公约的组成部分。凡引用本公约时，同时也就是引用该附则。   
  
     二、各缔约国政府承担义务颁布一切必要的法律、法令、命令和规则并采取一切必要的其他措施，使本公约充分和完全生效，以便从人命安全的观点出发，保证船舶适合其预定的用途。   
  
     第二条 适 用 范 围   
  
     本公约适用于经授权悬挂缔约国政府国旗的船舶。   
  
     第三条 法律、规则   
  
     各缔约国政府承担义务将下列各项文件送交政府间海事协商组织（以下简称海协组织）秘书长保存：   
  
     一、受权代表缔约国政府管理海上人命安全措施的非政府机构的名单，以便分送各缔约国政府，供其官员参考；   
  
     二、就本公约范围内各种事项所颁布的法律、法令、命令和规则的文本；   
  
     三、根据本公约规定所颁发证书的足够数量的样本，以便分送各缔约国政府，供其官员参考。   
  
     第四条 不可抗力情况   
  
     一、在出航时不受本公约规定约束的船舶，并不因天气恶劣或任何其他不可抗力的原因偏离原定航线而受本公约规定的约束。   
  
     二、由于不可抗力或因船长负有搭载失事船舶人员或其他人员的义务而登上船的人员，在确定本公约的任何规定适用于该船时，都不应计算在内。   
  
     第五条 紧急情况下载运人员   
  
     一、为了避免对人命安全的威胁而撤离人员时，缔约国政府可准许它的船舶载运多于本公约其他规定所允许的人数。   
  
     二、上述许可并不剥夺其他缔约国政府根据本公约享有的对到达其港口的这种船舶的任何监督权。   
  
     三、给予此项许可的缔约国政府，应将任何这种许可的通知连同当时情况的说明送交海协组织秘书长。   
  
     第六条 以前的条约和公约   
  
     一、在缔约国政府之间，本公约代替并废除1960年6月17日在伦敦签订的国际海上人命安全公约。   
  
     二、本公约缔约国政府之间目前继续有效的有关海上人命安全或其有关事项的所有其他条约、公约和协定，在其有效期间，对下列事项仍应继续充分和完全有效：   
  
     （一）不适用本公约的船舶；   
  
     （二）适用本公约的船舶，但本公约未予明文规定的事项。   
  
     三、至于上述条约、公约或协定与本公约的规定有抵触时，应以本公约的规定为准。   
  
     四、本公约未予明文规定的一切事项，仍受缔约国政府的法律管辖。   
  
     第七条 经协议订立的特殊规则   
  
     所有或某些缔约国政府之间，通过协议而按照本公约订立特殊规则时，应将这种规则通知海协组织秘书长，以便分发给所有缔约国政府。   
  
     第八条 修 正   
  
     一、本公约可按下列各款所述的任一程序进行修正。   
  
     二、海协组织内审议后的修正：   
  
     （一）缔约国政府提议的任何修正案应提交给海协组织秘书长，随后由其将该修正案在海协组织审议前至少6个月分发给海协组织所有会员和所有缔约国政府。   
  
     （二）按上述所提议的和分发的任何修正案，应交付海协组织海上安全委员会审议。   
  
     （三）缔约国政府不论是否是海协组织的会员，均有权参加海上安全委员会对修正案进行审议和通过的会议。   
  
     （四）修正案应在按照本款（三）项所规定的扩大的海上安全委员会（以下称海上安全委员会扩大会议）上，经到会并投票的缔约国政府的三分之二多数通过，但在表决时至少应有三分之一的缔约国政府出席。   
  
     （五）经按照本款（四）项通过的修正案应由海协组织秘书长通知所有缔约国政府，以供接受。   
  
     （六）1．对本公约条款或附则第一章的修正案，在其被三分之二的缔约国政府接受之日，应认为已被接受；   
  
     2．对附则的修正案，除第一章外，在下列情况下，应认为已被接受：   
  
     （1）从通知缔约国政府供其接受之日起的两年期限届满时；   
  
     （2）在海上安全委员会扩大会议上，由到会并投票的缔约国政府的三分之二多数通过时所确定的不短于一年的不同期限届满时。   
  
     但如果在上述期间内，三分之一以上的缔约国政府或商船合计吨数不少于世界商船总吨数百分之五十的缔约国政府，通知海协组织秘书长反对该修正案，那么应认为该修正案未被接受。   
  
     （七）1．关于对公约条款或附则第一章的修正案，就那些业已接受该修正案的缔约国政府而言，应在其被认为接受之日后经过6个月生效；就该修正案被认为接受之日以后接受的各个缔约国政府而言，应在其被接受之日后经过6个月生效。   
  
     2．关于对附则的修正案，除第一章外，就所有缔约国政府而言，应在其被认为接受之日后经过6个月生效，但按照本款（六）项2目的规定对该修正案表示过反对，并且未曾撤销这种反对的缔约国政府除外。然而，在该修正案生效日之前，任何缔约国政府可通知海协组织秘书长，在该修正案生效之日算起不长于1年的期间内，或者在海上安全委员会扩大会议通过修正案时，经到会并投票的缔约国政府的三分之二多数可能确定的更为长的期间内，免于实行该修正案。   
  
     三、会议修正   
  
     （一）应缔约国政府的请求，并经至少有三分之一缔约国政府的同意，海协组织应召开缔约国政府会议，审议对本公约的修正案。   
  
     （二）经此种会议由到会并投票的缔约国政府的三分之二多数通过的每一项修正案，应由海协组织秘书长通知所有缔约国政府，以供接受。   
  
     （三）除会议另有决定外，该修正案分别根据本条二款（六）项和（七）项所规定的程序应认为已被接受和应予生效；但在这些条款中凡提到海上安全委员会扩大会议这一名称时，应认为就是指缔约国政府会议。   
  
     四、（一）业经接受一项已生效的附则修正案的缔约国政府没有义务将本公约在所签发证书方面的利益给予经授权悬挂某一缔约国政府国旗的船舶，这一政府系按本条二款（六）项2目的规定对该修正案表示过反对，并且未曾撤销这种反对者；但这仅限于该修正案所涉及的与证书有关的事项。   
  
     （二）业经接受一项已生效的附则修正案的缔约国政府应将本公约在所签发证书方面的利益给予经授权悬挂某一缔约国政府国旗的船舶，这一政府系按本条二款（七）项2目的规定，已通知海协组织秘书长，免于实行该修正案者。   
  
     五、除另有明文规定外，按本条规定对本公约所作的任何修正案，涉及到船舶结构者，应仅适用于在该修正案生效之日或以后安放龙骨或处于相应建造阶段的船舶。   
  
     六、按照本条二款（七）项2目的规定对某项修正案的接受或反对的任何声明，或任何通知，应以书面提交给海协组织秘书长，并由其将此种文件和收到日期通知所有缔约国政府。   
  
     七、海协组织秘书长应将按照本条规定生效的任何修正案，连同每项这种修正案的生效日期，通知所有缔约国政府。   
  
     第九条 签字、批准、接受、认可和加入   
  
     一、本公约自1974年11月1日起至1975年7月1日止在海协组织总部开放签字，以后仍可加入。各国政府可按下列方式参加本公约：   
  
     （一）签字并对批准、接受或认可无保留；   
  
     （二）签字而有待批准、接受或认可，随后再予批准、接受或认可；   
  
     （三）加入。   
  
     二、批准、接受、核准或加入应向海协组织秘书长交存一份相应的文件。   
  
     三、海协组织秘书长应将任何签字，或者关于批准、接受、认可或加入的任何文件的交存以及交存日期，通知本公约所有签字国政府或加入本公约的各国政府。   
  
     第十条 生 效   
  
     一、本公约应在至少有25个国家，其商船合计吨数不少于世界商船总吨数百分之五十，按第九条规定参加本公约之日后经过12个月生效。   
  
     二、在本公约生效日以后交存的关于批准、接受、认可或加入的任何文件，应自交存文件之日后经过3个月生效。   
  
     三、对本公约的修正案在其按第八条规定被认为接受之日以后，交存的关于批准、接受、认可或加入的任何文件应适用于修正后的公约。   
  
     第十一条 退 出   
  
     一、任何缔约国政府，在本公约对该政府生效满5年后，可随时退出本公约。   
  
     二、退出本公约应向海协组织秘书长交存一份退出文件，秘书长应将收到的退出本公约的任何文件和收到日期以及退出生效日期通知所有其他缔约国政府。   
  
     三、退出本公约，应在海协组织秘书长收到退出文件1年后，或在该文件中所载较此为长的期限届满后生效。   
  
     第十二条 保存和登记   
  
     一、本公约应由海协组织秘书长保存，海协组织秘书长应将本公约核证无误的副本分发给本公约所有签字国政府或加入本公约的各国政府。   
  
     二、本公约一经生效，海协组织秘书长应按照联合国宪章一百○二条的规定将本公约文本送交联合国秘书长，以供登记和公布。   
  
     第十三条 文 字   
  
     本公约正本一份用中文、英文、法文、俄文和西班牙文写成，各种文本具有同等效力。阿拉伯文、德文和意大利文的官方译本应译就，并与签署的原本一起保存。   
  
     具名于下的经各自政府正式授权的代表特签署本公约，以昭信守。   
  
     本公约于1974年11月1日订于伦敦。   
  
     附 则   
  
       
  
     第一章 总 则   
  
       
  
     第一节 适用范围、定义等   
  
     第一条 适 用 范 围   
  
     一、除另有明文规定外，本规则仅适用于从事国际航行的船舶。   
  
     二、本规则各章适用于何种船舶与适用的范围，在各章中详加规定。   
  
     第二条 定 义   
  
     除另有明文规定外，在本规则范围内各词的定义如下：   
  
     一、“规则”系指本公约附则所包含的规则。   
  
     二、“主管机关”系指船旗国政府。   
  
     三、“认可”系指经主管机关认可的。   
  
     四、“国际航行”系指由适用本公约的一国驶往该国以外港口或与此相反的航行。   
  
     五、除下列人员外，皆为旅客：   
  
     （一）船长和船员，或在船上以任何职位从事或参加该船业务的其他人员；   
  
     （二）一周岁以下的儿童。   
  
     六、“客船”系指载客超过12人的船舶。   
  
     七、“货船”系指非客船的任何船舶。   
  
     八、“油船”系指建造成或改建成适合于运输散装易燃液体货物的货船。   
  
     九、“渔船”系指用于捕捞鱼类、鲸鱼、海豹、海象或其他海洋生物资源的船舶。   
  
     十、“核能船舶”系指设有核动力装置的船舶。   
  
     十一、“新船”系指在本公约生效之日或以后安放龙骨或处于相应建造阶段的船舶。   
  
     十二、“现有船舶”系指非新船。   
  
     十三、1海里为1852米或6080英尺。   
  
     第三条 例 外   
  
     一、除另有明文规定外，本规则不适用于下列船舶：   
  
     （一）军用舰艇和运兵船。   
  
     （二）总吨位小于500总吨的货船。   
  
     （三）非机动船。   
  
     （四）制造简陋的木船。   
  
     （五）非营业的游艇。   
  
     （六）渔船。   
  
     二、除在第五章内另有明文规定外，本规则不适用于专门航行于北美洲五大湖和航行于圣劳伦斯河东至罗歇尔角与安提科斯提岛西点间所绘的直线以及在安提科斯提岛北面水域东至西经63°线的船舶   
  
     第四条 免 除   
  
     一、对于通常不从事国际航行的船舶，在特殊情况下，需要进行一次国际航行时，主管机关可予免除本规则中的任何要求，但该船应符合主管机关认为适合于其所担任航次的安全要求。   
  
     二、对于具有新颖特征的任何船舶，如应用本规则第二章甲、第二章乙、第三章和第四章的任何规定会严重妨碍对发展这种特征的研究和在从事国际航行的船舶上对这些特征的采用时，主管机关可予免除这些要求。然而，任何此种船舶应符合该主管机关认为适于其预定的用途，并能保证船舶的全面安全，同时又为该船所要驶往的国家政府所接受的各项安全要求。允许任何这种免除的主管机关应把此次免除的细节和理由通知海协组织，海协组织应将其转知各缔约国政府，以供参考。   
  
     第五条 等 效   
  
     一、凡本规则要求船上所应装设或配备的专门装置、材料、设备或器具，或其型式，或本规则要求应设置的任何专门设施，主管机关可准许该船上装设或配备任何其他的装置、材料、设备或器具，或其型式，或设置任何其他的设施；但须通过试验或其他方法经主管机关认定这些代替的装置、材料、设备或器具，或其型式，或其他的设施，至少与本规则所要求者具有同等效能。   
  
     二、准许采用这种代替装置、材料、设备或器具，或其型式，或其他设施的任何主管机关，应将其细节连同所作的任何试验报告送交海协组织；海协组织应将各该细节转知其他缔约国政府，以供其官员参考。   
  
     第二节 检验与证书   
  
     第六条 检查与检验   
  
     为执行及为准于免除本规则的规定而对船舶进行的检查和检验，应由船舶登记国政府官员进行，但各国政府可将这种检查或检验工作委托该国所指定的验船师或该国所认可的组织办理。无论采取何种方式办理，有关政府都应充分保证此项检查和检验的全面和有效。   
  
     第七条 客船的检验   
  
     一、客船应接受下列检验：   
  
     （一）船舶营运前的检验；   
  
     （二）每12个月一次的定期检验；   
  
     （三）必要时的额外检验。   
  
     二、上述检验应按下述规定办理：   
  
     （一）船舶营运前的检验，应包括船舶结构、机器和设备，并包括船底外部以及锅炉内外部在内的全面检查。此项检验应保证船舶的布置、材料、结构用材尺寸、锅炉和其他受压容器及其附件、主辅机、电气设备、无线电设备、机动救生艇的无线电报设备、救生艇筏的手提式无线电设备、救生设备、防火探火及灭火设备、雷达、回声测深仪、电罗经、引航员软梯、引航员机械升降器以及其他设备，完全符合本公约和主管机关为实施本公约而颁布的从事预定用途船舶的各项法律、法令、命令和规则的各项要求。此项检验还应保证船舶各部分及其设备的制造工艺在任何方面均为合格，而且该船确已按本公约和现行国际海上避碰规则的规定备有号灯、号型、以及发出音响信号和遇险信号的设备。   
  
     （二）定期检验，应包括结构、锅炉及其他受压容器、机器及设备，并包括船底外部在内的检查。此项检验应保证船舶在结构、锅炉或其他受压容器及其附件、主辅机、电气设备、无线电设备、机动救生艇的无线电报设备、救生艇筏的手提式无线电设备、救生设备、防火探火与灭火设备、雷达、回声测深仪、电罗经、引航员软梯、引航员机械升降器以及其他设备，均处于合格状况且适合其预定的用途；此外，尚应保证该船符合本公约和主管机关为实施本公约而颁布的法律、法令、命令和规则的各项要求。船舶所配备的号灯、号型、以及发出音响信号和遇险信号的设备也应接受上述检验，以保证其符合本公约和现行国际海上避碰规则的各项要求。   
  
     （三）全面或局部检验，为船舶每经发生事故，或发现影响船舶安全，或救生设备或其他装备的效用或完整性的缺陷，或已进行任何重要的修理或换新时，都应根据情况需要进行的检验。此项检验应保证这些必要修理或换新确已切实完成，其材料与工艺在任何方面均为合格，并应保证该船在各方面均符合本公约和现行国际海上避碰规则以及主管机关为实施本公约而颁布的法律、法令、命令和规则的规定。   
  
     三、（一）本条二款所指的法律、法令、命令和规则，应在各方面都能从人命安全的观点出发，保证船舶适合其预定的用途。   
  
     （二）在上述法律、法令、命令和规则中，尤应特别规定主辅锅炉、接合部件、蒸汽管、高压容器以及内燃机的燃料舱柜要进行的初次及以后的水压试验，或其他可以接受的代替试验所必须遵照的各项要求，包括必须遵照的试验程序和连续的两次试验之间的间隔期限。   
  
     第八条 货船救生设备和其他设备的检验   
  
     除机动救生艇的无线电报设备或救生艇筏的手提式无线电设备外，第二章甲、第二章乙、第三章与第五章关于货船的救生设备、回声测深仪、电罗经和灭火设备均应依照本章第七条关于客船的初次和以后检验的规定办理，唯该条一款（二）项规定的12个月改为24个月。新船的防火控制图与新船和现有船舶所配备的引航员软梯、引航员机械升降器、号灯、号型以及发出音响信号的设备亦应包括在检验范围之内，以保证它们完全符合本公约和现行国际海上避碰规则可适用部分的要求。   
  
     第九条 货船无线电设备和雷达设备的检验   
  
     适用于第四章和第五章规定的关于货船的无线电设备和雷达设备及按第三章的要求配备的机动救生艇的任何无线电报设备或救生艇筏的手提式无线电设备，均应按本章第七条对客船规定的初次和以后的检验办理。   
  
     第十条 货船船体、机器和设备的检验   
  
     货船的船体、机器与设备（货船设备安全证书、货船无线电报安全证书或货船无线电话安全证书所包括的项目除外），应在建造竣工时和嗣后按主管机关认为必要的方式和间隔期限进行检验，以保证它们在各方面都处于合格状况。此项检验应保证船舶的布置、材料、结构用材尺寸、锅炉和其他受压容器及其附件、主辅机、电力设备及其他设备在各方面都适合该船预定的用途。   
  
     第十一条 检验后状况的维持   
  
     在本章第七、八、九、十条所规定的对船舶的任何检验完成以后，凡是经过检验的结构布置、机器、设备等，非经主管机关许可，概不得变动。   
  
     第十二条 证书的签发   
  
     一、（一）客船经过检查和检验，符合第二章甲、第二章乙、第三章、第四章的要求及本规则任何其他有关要求者，应发给客船安全证书。   
  
     （二）货船经过检验，满足本章第十条关于货船检验的要求，并除有关灭火设备和防火控制图的要求外符合第二章甲和第二章乙中可适用的要求者，应发给货船构造安全证书。   
  
     （三）货船经过检查，符合第二章甲、第二章乙和第三章的有关要求及本规则任何其他有关要求者，应发给货船设备安全证书。   
  
     （四）装有无线电报设备的货船，经过检查，符合第四章的要求及本规则任何其他有关要求者，应发给货船无线电报安全证书。   
  
     （五）装有无线电话设备的货船，经过检查，符合第四章的要求及本规则任何其他有关要求者，应发给货船无线电话安全证书。   
  
     （六）对于根据和按照本规则的规定受到某项免除的船舶，除发给本款所指证书以外，尚应发给免除证书。   
  
     （七）客船安全证书、货船构造安全证书、货船设备安全证书、货船无线电报安全证书、货船无线电话安全证书和免除证书，均应由主管机关或主管机关正式授权的任何个人或组织签发。但无论由谁签发，主管机关都应对证书完全负责。   
  
     二、不论本公约中载有任何其他规定，根据和按照1960年国际海上人命安全公约签发的任何证书，如在本公约对签发该证书的主管机关生效时尚在通用中，则该证书仍继续有效，直至根据该公约第一章第十四条所规定的有效期限届满时为止。   
  
     三、在缔约国政府对本公约的接受生效之日以后，不得再根据和按照1960年、1948年或1929年国际海上人命安全公约的规定签发证书。   
  
     第十三条 他国政府代发证书   
  
     缔约国政府可应主管机关请求对船舶进行检验；如认为该船符合本规则的要求，应按照本规则规定发给证书。如此签发的任何证书务必载明是受船舶登记国政府或船舶将登记的国家政府的委托而签发的。此项证书与根据本章第十二条所发的证书具有同等效力，并受同样的承认。   
  
     第十四条 证书有效期限   
  
     一、除货船构造安全证书、货船设备安全证书和免除证书外，各种证书的有效期限不得超过12个月，货船设备安全证书的有效期限不得超过24个月。免除证书的有效期限不得超过与该证书相关的证书的有效期限。   
  
     二、对300总吨和300总吨以上但小于500总吨的货船所发的无线电报安全证书或无线电话安全证书，如在原发证书有效期限届满前两个月以内进行检验，可将此项证书收回，并签发新证书，至上述有效期限届满后12个月内有效。   
  
     三、证书期满时，如船舶不在登记国港口，主管机关可将该证书展期，但此项展期仅以能使该船完成其驶抵登记国或预定检验国家的航次为限；而且仅在正当和合理的情况下才能如此办理。   
  
     四、证书展期的期限概不得超过5个月，经过这样展期的船舶，在抵达登记国或预定检验的港口之后，不得因获得上述展期而在未领到新证书前驶离该港或该国。   
  
     五、未经根据本条前述各款加以展期的证书，主管机关可自该证书所载日期届满之日起，给予为期至多1个月的宽限期。   
  
     第十五条 证 书 格 式   
  
     一、所有证书都应以签发国家的一种官方文字或数种官方文字写成。   
  
     二、证书格式应以本规则所附范本为准。签发的证书或其该证无误副本的印刷部分的排列应按范本正确复制；签发的证书或其核证无误副本内所列的项目应以罗马字和阿拉伯数字填写。   
  
     第十六条 证书的贴示   
  
     根据本规则签发的各项证书或其核证无误的副本都应贴示在船上显明易到的地方。   
  
     第十七条 证书的承认   
  
     缔约国政府根据其职权所签发的证书在本公约规定范围内使用时，其他缔约国政府应予承认；各缔约国政府应承认这种证书与由其本国政府所发的同样有效。   
  
     第十八条 证 书 附 件   
  
     一、如船舶在某一特定航次中所载人数少于客船安全证书中所载的总数，从而按照本规则规定可备置少于证书中所载的救生艇和其他救生设备，本章第十二条或第十三条所指的政府、个人或组织，可以发给证书附件。   
  
     二、在此项附件上应载明在当时情况下并无违反本规则规定之处。上述附件应附于证书之后，并仅在救生设备方面代替该证书。这种附件仅对该特定航次有效。   
  
     第十九条 监 督   
  
     持有根据本章第十二条或第十三条所发证书的每艘船舶，在其他缔约国港口时，应受该国政府正式授权的官员监督，这种监督的目的，仅在于查明船上是否备有有效的证书。除有明显的理由使人相信该船或其设备的情况实质上与证书所载情况不符外，此项证书应被承认。如果发生上述与证书不符的情况，执行监督的官员应采取措施，以保证该船在符合出海时对旅客或船员都无危险的条件前不开航。如因这种监督而引起任何干涉，执行监督的官员应将认为必需进行干涉的一切情况，立即以书面通知船舶登记国领事，并将实情报告海协组织。   
  
     第二十条 特 权   
  
     任何船舶除持有相应的有效证书外，不得要求本公约所赋予的各项特权。   
  
     第三节 事 故   
  
     第二十一条 事 故   
  
     一、各主管机关对其所属的受本公约规定约束的任何船舶所发生的任何事故，当其认为调查该项事故有助于确定本规则可能需要的何种修改时，即应承担义务进行调查。   
  
     二、各缔约国政府有义务将有关此项调查所获得的适当资料提供给海协组织。该组织根据此项资料所作的报告或建议，一律不得泄露有关船舶的辨认特征或国籍，或以任何方式确定或暗示任何船舶或个人承担的责任。   
  
     第二章甲 构造（分舱与稳性、机电设备）   
  
       
  
     第一节 通 则   
  
     第一条 适 用 范 围   
  
     一、（一）除另有明文规定外，本章适用于新船。   
  
     （二）现有客船和货船应符合下列规定：   
  
     1．在1960年国际海上人命安全公约生效之日或以后安放龙骨或处于相应建造阶段的船舶，主管机关应保证使其符合该公约第二章定义所指新船所适用的各项要求；   
  
     2．在1948年国际海上人命安全公约生效之日或以后，但在1960年国际海上人命安全公约生效之日以前安放龙骨或处于相应建造阶段的船舶，主管机关应保证使其符合1948年国际海上人命安全公约第二章定义所指新船所适用的各项要求；   
  
     3．在1948年国际海上人命安全公约生效之日以前安放龙骨或处于相应建造阶段的船舶，主管机关应使其符合该公约第二章定义所指现有船舶所适用的各项要求；   
  
     4．至于本公约第二章甲中的要求而在1960年和1948年公约第二章中所未包括者，主管机关应决定那些要求适用于本公约定义所指的现有船舶。   
  
     （三）船舶在进行修理、改装、改建以及与之有关的舾装时，至少应继续符合该船原先适用的要求。在这种情况下，现有船舶一般不得低于它原已符合的对新船的要求。重大的修理、改装、改建以及与之有关的舾装，在主管机关认为合理和可行的范围内，应满足对新船的要求。   
  
     二、为了明确本章的内容：   
  
     （一）新客船是指在本公约生效之日或以后安放龙骨或处于相应建造阶段的客船，或在本公约生效之日或以后由货船改建的客船，所有其他客船均称为现有客船。   
  
     （二）新货船是指本公约生效之日或以后安放龙骨或处于相应建造阶段的货船。   
  
     三、主管机关如考虑到航程的遮蔽性及其条件，认为引用本章的某些特殊要求为不合理或不必要时，可对其本国所属的在航程中距最近陆地不超过20海里的个别船舶或某类船舶免除这些要求。   
  
     四、根据第三章第二十七条三款准予搭载人数超过其所备救生艇容量的客船，应符合本章第五条五款所载的分舱特种标准以及本章第四条四款的有关渗透率的特种规定。但主管机关就航程的自然条件及情况认为该船仅需符合本章其他各条及第二章乙的规定时，可作例外。   
  
     五、客船用于特种业务，例如朝山进香，载运大量特种业务旅客者，主管机关如认为实施本章要求为不切实际时，可对其本国所属的此类船舶免除这些要求，但此类船舶应完全符合下列规定：   
  
     （一）1971年特种业务客船协定所附的规则；   
  
     （二）1973年特种业务客船舱室要求议定书所附的规则（当生效时）。   
  
     第二条 定 义   
  
     除另有明文规定外，本章内各词的定义如下：   
  
     一、（一）“分舱载重线”系指用以决定船舶分舱的水线；   
  
     （二）“最深分舱载重线”系指相当于适用的分舱要求所允许的最大吃水线。   
  
     二、“船长”系指在最深分舱载重线两端的垂线间量得的长度。   
  
     三、“船宽”系指在最深分舱载重线处或其下，由一舷肋骨外缘至另一舷肋骨外缘间的最大宽度。   
  
     四、“吃水”系指在船长的中点由船型基线至有关分舱载重线间的垂直距离。   
  
     五、“舱壁甲板”系指横向水密舱壁所到达的最高一层甲板。   
  
     六、“限界线”系指在船侧由舱壁甲板上表面以下至少76毫米（3英寸）处所绘的线。   
  
     七、某一处所的“渗透率”系指该处所能被水浸占的百分比。   
  
     某一处所体积伸展至限界线以上时，仅应量至该线高度为止。   
  
     八、“机器处所”系指由船型基线至限界线并介于两端主横向水密舱壁间供安置主辅推进机械及推进所需的锅炉和一切固定煤舱的处所。   
  
     对于特殊布置的船舶，机器处所的范围可由主管机关确定之。   
  
     九、“旅客处所”系指供旅客起居和使用的处所，但不包括行李室、储藏室、食品库及邮件舱。   
  
     就本章第四条、第五条而言，在限界线以下供船员起居和使用的处所，亦应认作旅客处所。   
  
     十、在一切情况下，容积与面积均应计至船型线为止。   
  
     第二节 分舱与稳性①  
  
①海协组织海大265（Ⅷ届）决议通过的作为1960年安全公约第二章第二节  
的等效规则的客船分舱规则，如引用时，可全部用来代替本节的要求。   
     （本节仅适用于客船，但第十九条也适用于货船。）   
  
     第三条 可 浸 长 度   
  
     一、船长中任何一点的可浸长度，应由计及该船船型、吃水及其他特征的一种计算方法来确定。   
  
     二、对有连续舱壁甲板的船舶，在船长中某一点的可浸长度，是以该点为中心的最大限度的一段船长，在按本章第四条限定的假设条件下浸水时，船舶不致淹过限界线。   
  
     三、（一）对无连续舱壁甲板的船舶，船长中任何一点的可浸长度，可按假定的连续限界线来确定；此线的任何点均须在该甲板上表面（船侧）以下至少76毫米（3英寸），而通至该甲板的有关舱壁及船体均须为水密。   
  
     （二）当假定的限界线有一部分低于舱壁所通达的甲板相当距离时，则对该舱壁在高出限界线而直接位于较高层甲板以下的部分，主管机关可有限度地放宽其水密程度。   
  
     第四条 渗 透 率   
  
     一、本章第三条所述的限定的假设条件，是指限界线以下处所的渗透率。   
  
     在决定可浸长度时，对限界线以下的船舶下列各部分的整个长度范围内，应使用同一平均渗透率：   
  
     （一）本章第二条定义所指的机器处所；   
  
     （二）机器处所以前的部分；   
  
     （三）机器处所以后的部分。   
  
     二、（一）整个机器处所内的同一平均渗透率应按下列公式确定：  
  
                              ａ－ｃ  
                85＋10（－－－－－）  
                                ｖ  
式中：ａ——在限界线以下位于机器处所范围内按本章第二条定  
            义所指旅客处所的容积；  
      ｃ——在限界线以下位于机器处所范围内专供货物、煤或  
            物料储藏用的甲板间处所的容积；  
      ｖ——限界线以下机器处所的总容积。  
       
     （二）如用详细计算法求得的平均渗透率小于上列公式所得的数值，而主管机关认为满意时，则可采用详细计算求得的数值。在此种计算中，按本章第二条定义所指的旅客处所的渗透率应为95；一切货物、煤及物料储藏处所应为60；双层底、燃油舱柜及其他舱柜应分别根据情况采用认可的数值。   
  
     三、除本条四款的规定外，位于机器处所以前（或以后）的整个部分的同一平均渗透率，应按下列公式确定：  
  
                            ａ  
                63＋35－－－  
                            ｖ  
式中：ａ——在限界线以下位于机器处所以前（或以后）按本章  
            第二条定义所指旅客处所的容积；  
      ｖ——限界线以下位于机器处所以前（或以后）部分的总  
            容积。  
       
     四、若船舶根据第三章第二十七条三款准予搭载超过其所备救生艇容量的人数，并按本章第一条四款要求符合特种规定者，其位于机器处所以前（或以后）的整个部分的同一平均渗透率应按下列公式确定：  
  
                            ｂ  
                95－35－－－  
                            ｖ  
式中：ｂ——位于机器处所以前（或以后）限界线以下以及按个  
            别情况如肋板顶部、内底或尖舱以上，专供作装货  
            处所、煤或燃油舱、物料储藏室、行李室及邮件舱、  
            锚链舱及淡水舱柜的容积；  
      ｖ——限界线以下位于机器处所以前（或以后）部分的总  
            容积。  
       
     如按照船舶业务，其货舱通常并不装载任何相当数量的货物，则在计算“ｂ”时，装货处所的任何部分均不包括在内。   
  
     五、对特殊布置的船舶，主管机关可允许或要求对位于机器处所以前或以后部分的平均渗透率作详细的计算。在作此项计算时，按本章第二条定义所指旅客处所的渗透率应为95；装置机器处所为85；一切货物、煤及物料储藏处所为60；双层底、燃油舱柜及其他舱柜的渗透率应分别根据情况采用认可的数值。   
  
     六、在两水密横舱壁间的甲板间舱内设有任何旅客或船员处所时，除完全包围于固定钢质舱壁内并专作其他用途的处所外，整个甲板间舱应视作旅客处所。若所述旅客或船员处所完全包围在固定的钢质舱壁以内，则仅需将被包围部分视作旅客处所。   
  
     第五条 许 可 舱 长   
  
     一、船舶应按其预定的用途尽可能作有效的分舱，分舱的程度应视船舶的长度与业务而定；即船长最大而以载客为主的船舶的分舱程度为最高。   
  
     二、分舱因数——以船长中任何点为中心的最大许可舱长是以适当的因数乘其可浸长度求得之，此因数称为“分舱因数”。   
  
     分舱因数随船舶的长度而定，在一定长度下，又视船舶预定的用途而变化。此因数按下列情况顺次连续递减：   
  
     （一）当船长增加时；   
  
     （二）从适用于运货为主的船舶的因数Ａ至适用于载客为主的船舶的因数Ｂ。   
  
     因数Ａ与Ｂ应按下列公式（1）与（2）确定，其中Ｌ即本章第二条定义所指的船长：   
  
     Ｌ以米计：  
  
          58．2  
    Ａ＝－－－－－＋0．18（Ｌ＝131及131以上）  
          Ｌ－60  
    Ｌ以英尺计：                                      ｝……（1）  
          190  
    Ａ＝－－－－－＋0．18（Ｌ＝430及430以上）  
        Ｌ－198  
    Ｌ以米计：  
        30．3  
    Ｂ＝－－－－－＋0．18（Ｌ＝79及79以上）  
        Ｌ－42  
    Ｌ以英尺计：                                      ｝……（2）  
          100  
    Ｂ＝－－－－－＋0．18（Ｌ＝260及260以上）  
        Ｌ－138  
       
     三、业务的衡准——一定长度的船舶，其适用的分舱因数，应由下列公式（3）及（4）所求得的业务衡准数（以下简称衡准数）来确定，其中：   
  
     Ｃｓ——衡准数；   
  
     Ｌ——本章第二条定义所指的船长；   
  
     Ｍ——本章第二条定义所指机器处所的容积，加上位于内底   
  
     以上机器处所以前或以后的任何固定燃油舱的容积；   
  
     Ｐ——本章第二条定义所指的限界线以下旅客处所的总容积；   
  
     Ｖ——限界线以下的船舶总容积；   
  
     Ｐ1 ＝ＫＮ，其中：   
  
     Ｎ——核准该船搭载的旅客数；   
  
     Ｋ——为下列数值：   
  
     长度以米计，容积以立方米计Ｋ＝0．056Ｌ   
  
     长度以英尺计，容积以立方英尺计Ｋ＝0．6Ｌ   
  
     如ＫＮ之数值大于Ｐ与限界线以上的实际旅客处所总容积  
  
                              2  
的和，则Ｐ1 应采用上述的和数或－ＫＮ，视何者为大而定。  
                              3  
    当Ｐ1 大于Ｐ时：  
                    Ｍ＋2Ｐ1  
          Ｃｓ＝72－－－－－－                    （3）  
                    Ｖ＋Ｐ1 －Ｐ  
    在其他情况时：  
                      Ｍ＋2Ｐ  
          Ｃｓ＝72－－－－－－                        （4）  
                        Ｖ  
       
     对无连续舱壁甲板的船舶，各容积应计算到决定可浸长度时所用的实际限界线。   
  
     四、本条五款所述以外的船舶分舱规则   
  
     （一）前尖舱以后的分舱：长度在131米（430英尺）及131米以上的船舶，如衡准数为23或23以下者，分舱因数取Ａ值，由公式（1）求得；如衡准数为123或123以上者，分舱因数取Ｂ值，由公式（2）求得；如衡准数在23与123之间，分舱因数为Ｆ，按下列公式在因数Ａ与Ｂ之间用直线内插法求得：  
  
                        （Ａ－Ｂ）（Ｃｓ－23）  
                Ｆ＝Ａ－－－－－－－－－－－－－      （5）  
                                100  
       
     但衡准数如等于或大于45，同时用公式（5）求得的分舱因数等于或小于0．65而大于0．5时，则前尖舱以后的分舱因数应取0．5。   
  
     如求得的因数Ｆ小于0．4，并经主管机关同意，此数值不能在该船机舱内适用，则此舱的分舱，可取较大的因数，但该因数不应超过0．4。   
  
     （二）前尖舱以后的分舱：长度小于131米（430英尺），但不小于79米（260英尺）的船舶，当其衡准数等于Ｓ时，分舱因数应取1，其中：  
  
              3574－25Ｌ                9382－20Ｌ  
          Ｓ＝－－－－－－－－－（Ｌ以米计）＝－－－－－－－－－  
                  13                              34  
        （Ｌ以英尺计）  
       
     如衡准数为123或123以上者，分舱因数取Ｂ值，由公式（2）求得；如衡准数在Ｓ和123之间时，则分舱因数为Ｆ，按下列公式在1与因数Ｂ之间用直线内插法求得：  
  
                  （1－Ｂ）（Ｃｓ－Ｓ）  
          Ｆ＝1－－－－－－－－－－－－            （6）  
                      123－Ｓ  
       
     （三）前尖舱以后的分舱：长度在131米（430英尺）以下但不小于79米（260英尺），且其衡准数小于Ｓ的船舶，以及一切长度小于79米（260英尺）的船舶分舱因数均取1；但在上述任一情况中，如主管机关同意此因数在该船的任何部分不实用时，则主管机关在考虑了一切情况后，可给予适当的放宽。   
  
     （四）本款（三）项的规定，亦适用于任何长度的船舶，如其核准搭载的乘客数额在12人以上，但不超过：  
  
        2                  2  
      Ｌ                  Ｌ  
    －－－（Ｌ以米计）＝－－－－（Ｌ以英尺计）或50人，视何者  
    650              7000  
为小而定。  
       
     五、根据第三章第二十七条三款准予搭载人数超过其所备救生艇容量和按本章第一条四款应符合特种规定的船舶的分舱特种标准：   
  
     （一）1 以载客为主的船舶，其前尖舱以后的分舱因数应取0．5；如照本条三款及四款计算所得的因数小于0．5时，则用计算所得的数值。   
  
     2．当此种船舶的长度小于91．5米（300英尺）时，如经主管机关同意，认为对某一舱采用上述因数为不实用时，可允许对该舱的长度采用较大的分舱因数，但所用因数应是在此情况下实际可行和合理的最小数值。   
  
     （二）不论船长是否小于91．5米（300英尺），如因需要装载相当数量的货物致使前尖舱以后的分舱不可能采用0．5以下的因数时，则该船所采用的分舱标准应照下列1至5目的规定选取，但如主管机关同意，认为从任何方面强求严格遵守均属不合理时，可准其对水密舱壁作变通的布置，然而此种布置就其功能来说应为不减低整个分舱效用者为限。   
  
     1．本条三款关于衡准数的规定仍然适用，但计算Ｐ1值时，对有铺位的旅客，Ｋ应取本条三款所确定的数值或取3．55立方米（125立方英尺），视何者为大而定；对无铺位的旅客，Ｋ值应取3．55立方米（125立方英尺）。   
  
     2．本条二款内的因数Ｂ应以按下列公式计算求得的因数ＢＢ代替：  
  
        Ｌ以米计：  
                17．6  
        ＢＢ＝－－－－－＋0．20（Ｌ＝55及55以上）  
                Ｌ－33  
        Ｌ以英尺计：  
                57．6  
        ＢＢ＝－－－－－－＋0．20（Ｌ＝180及180以上）  
                Ｌ－108  
       
     3．前尖舱以后的分舱：长度在131米（430英尺）及131米以上的船舶，如衡准数为23或23以下者，分舱因数取Ａ值，由本条二款公式（1）求得；如衡准数为123或123以上者，则分舱因数取ＢＢ值，由本款（二）项2目的公式求得；如衡准数在23与123之间，则分舱因数为Ｆ，按下列公式在Ａ与ＢＢ之间用直线内插法求得：  
  
                    （Ａ－ＢＢ）（Ｃｓ－23）  
        Ｆ＝Ａ－  －－－－－－－－－－－－－－－  
                            100  
       
     但如求得的因数Ｆ小于0．5时，则分舱因数应取0．5或按本条四款（一）项规定求得的因数，视何者为小而定。   
  
     4．前尖舱以后的分舱：长度在131米（430英尺）以下但不小于55米（180英尺）的船舶，当衡准数等于Ｓ1 时，分舱因数取1，其中：  
  
              3712－25Ｌ  
        Ｓ1 ＝－－－－－－－－－          （Ｌ以米计）  
                    19  
              1950－4Ｌ  
        Ｓ1 ＝－－－－－－－－            （Ｌ以英尺计）  
                    10  
       
     如衡准数为123或123以上者，则分舱因数取ＢＢ值，由本款（二）项2目的公式求得；如衡准数在Ｓ1 与123之间，则分舱因数为Ｆ，按下列公式在1与ＢＢ之间用直线内插法求得：  
  
                    （1－ＢＢ）（Ｃｓ－Ｓ1 ）  
          Ｆ＝1－－－－－－－－－－－－－－－－  
                          123－Ｓ1  
       
     但在上述后两种情况中的任何一种，如求得的因数小于0．5时，可采用一个不超过0．5的分舱因数。   
  
     5．前尖舱以后的分舱：长度在131米（430英尺）以下，但不小于55米（180英尺），且其衡准数小于Ｓ1 的船舶，以及一切长度在55米（180英尺）以下的船舶，其分舱因数均取1；但若主管机关同意，认为此项分舱因数对某些个别舱为不实用时，则主管机关在考虑了一切情况后可对这些舱给予适当的放宽，但尾部最后一个舱与尽可能多的前部各舱（在前尖舱与机器处所后端舱壁之间者）的长度，均不得大于可浸长度。   
  
     第六条 关于分舱的特殊规则   
  
     一、在船舶的一部分或数部分，如其水密舱壁比其他部分通至较高的一层甲板，而在计算可浸长度时又要利用这种舱壁的升高部分时，则各该部分可采用分别的限界线，但需符合下列规定：   
  
     （一）整个船长内两侧船壳板均延伸至相当于较高限界线的甲板，且在整个船长内，此甲板下的船壳开口均应按本章第十四条作为限界线以下的开口；   
  
     （二）舱壁甲板成阶层处的相邻两舱，应各不超过其相应限界线的许可长度，且相邻两舱的总长不超过以较低限界线为基础的许可长度的两倍。   
  
     二、（一）某舱的长度可以超过按本章第五条规则所求得的许可舱长，但该舱与其相邻的前舱或后舱加在一起的总长均不应超过许可舱长的两倍或可浸长度，视何者为小而定。   
  
     （二）如果相邻两舱之一位于机器处所内，而另一舱在机器处所以外，且后者所在部分的平均渗透率与机器处所的不同，则此相邻两舱的总长，应予调整，使其适应两舱所在部分平均渗透率的平均值。   
  
     （三）如相邻两舱的分舱因数不同时，此两舱的总长应按比例来确定。   
  
     三、长度为100米（330英尺）及100米以上的船舶，其前尖舱以后的主横舱壁之一应设置在距首垂线不大于许可舱长之处。   
  
     四、主横舱壁可以凹折，但整个凹折部分应处于在船内距外壳板为1／5船宽的两侧垂直面之间，船宽为本章第二条定义所指的船舶宽度，1／5船宽的距离应在最深分舱载重线的水平面上自船侧向垂直于纵中剖面的方向量取。   
  
     位于上述范围以外的任何凹折部分，应按照本条五款作为阶层处理。   
  
     五、主横舱壁可作阶层状，但应符合下列条件之一：   
  
     （一）此舱壁所分隔的两舱总长度不超过可浸长度的90％或许可舱长的两倍，但如船舶的分舱因数大于0．9者，此两舱的总长度不应超过其许可舱长；   
  
     （二）在阶层处另加分舱设置，以保持与用平面舱壁时有同等的安全程度；   
  
     （三）上面有阶层延伸的舱，其长度不超过相当于在此阶层下面76毫米（3英寸）所作限界线的许可舱长。   
  
     六、主横舱壁有凹折或阶层者，应采用一等效的平面舱壁来确定其分舱。   
  
     七、若相邻两主横舱壁间的距离，或其等效平面舱壁间的距离，或通过相邻两主横舱壁的最近阶层部分的横向平面间的距离，小于3．05米（10英尺）加船长的3％或10．67米（35英尺）时，视何者为小而定，则只应将上述舱壁之一视为是按照本章第五条规定形成船舶分舱的部分。   
  
     八、如在一个主横水密舱内包含有局部分舱，而在任何假定的船侧破损长度达3．05米（10英尺）加船长的3％或10．67米（35英尺）时，视何者为小而定，此时主水密舱的全部容积并未被水浸满，则经主管机关同意，可对此船按通常所要求的许可舱长，按比例予以放长。在此情况下，对未破损一侧所假定的有效浮力容积，不得大于对破损一侧所假定的数值。   
  
     九、如所要求的分舱因数为0．5或0．5以下者，任何相邻两舱的总长不应超过可浸长度。   
  
     第七条 破 舱 稳 性   
  
     一、在所有营运状态下，船舶应具有足够的完整稳性，以能支持其任一不超过可浸长度的主舱浸水至最后阶段。   
  
     如相邻两主舱由按本章第六条五款（一）项条件的阶层舱壁所分隔，则船舶的完整稳性应足以支持此相邻两主舱的浸水。   
  
     如所要求的分舱因数为0．5或0．5以下但大于0．33者，其完整稳性应足以支持任意相邻两主舱的浸水。   
  
     如所要求的分舱因数为0．33或0．33以下者，其完整稳性应足以支持任意相邻三主舱的浸水。   
  
     二、（一）本条一款的要求，应按照本条三、四及六款并顾及船舶的尺度比例与设计特性以及受损舱的布置与形状以计算决定之。作此项计算时，应假定船舶的稳性处于最恶劣的预计营运状态。   
  
     （二）凡拟装设足够严密的甲板、内壳板或纵舱壁以严格限制水的流动者，在计算中对此类限制所作的适当考虑，应经主管机关同意。   
  
     （三）如主管机关对破损情况下的稳性有怀疑时，可以要求对其进行核查。   
  
     三、为了便于计算破舱稳性，容积和表面渗透率一般应按以下规定：  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                                      ｜  
          处                所        ｜      渗    透    率  
                                      ｜  
－－－－－－－－－－－－－－－－－－－｜－－－－－－－－－－－－－  
    货物、煤或物料储藏专用处所        ｜            60  
    起居设备占用处所                  ｜            95  
    机器占用处所                      ｜            85  
    供装载液体的处所                  ｜          0或95①  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
①视何者造成较严重的后果而定。  
       
     对处于破损水面附近并未包容相当数量的起居设备或机器的处所，以及经常并未被相当数量的货物或物料占用的处所，均应假定较高的表面渗透率。   
  
     四、假定的破损范围应如下：   
  
     （一）纵向范围：3．05米（10英尺）加船长的3％，或10．67米（35英尺）视何者为小而定，如所要求的分舱因数为0．33或0．33以下，则假定的纵向破损范围应按需要增加，以使其包括任何两个依次排列的主横水密舱壁；   
  
     （二）横向范围（在船内于最深分舱载重线水平面上自船侧向垂直于纵中剖面的方向量计）：为本章第二条定义所指船宽的1／5距离；   
  
     （三）竖向范围：自基线向上不作限制；   
  
     （四）如任何小于本款（一）、（二）及（三）项所指的破损，会使倾斜或初稳性高度的损失更为严重，则在计算中应对此种破损情况作出假定。   
  
     五、应作有效布置使不对称浸水降至最小程度。如必须校正大倾斜角时，所采用的方法，应尽可能是自动的；但在任何情况下当横贯浸水装置设有控制设备时，此项设备应能在舱壁甲板以上操作。这种装置及其控制设备连同平衡前的最大倾角，均应为主管机关所接受的。如需设有横贯浸水装置时，其平衡时间应不超过15分钟。有关使用横贯浸水装置的相应资料应提供给该船船长。①  
  
①参阅海协组织通过的海大266（Ⅷ届）决议“关于为适应客船横贯浸水装置的  
要求而制定的标准方法的建议案”。   
     六、船舶破损后以及不对称浸水情况下经采取平衡措施后，其最终状态应如下：   
  
     （一）在对称浸水情况下，当采用固定排水量法计算时，应至少有50毫米（2英寸）的正值剩余稳性高度；   
  
     （二）在不对称浸水情况下，其总横倾角不得超过7°，但在特殊情况下，主管机关可允许放宽由于不对称力矩而产生的较大横倾角，可是在任何情况下其最终横倾角不应超过15°。   
  
     （三）在任何情况下，船舶浸水的终了阶段不得淹没限界线。如认为在浸水的某一中间阶段可能淹没限界线时，主管机关可要求作船舶安全所必需的研究与布置。   
  
     七、应将各种营运状态下为保持船舶具有足够的完整稳性以经受得住危害性破损所需的资料提供给船长。对需用横贯浸水装置的船舶，其倾斜计算所依据的稳性情况应通知船长，并警告船长若该船在不利情况下受损时，可能发生过度的倾斜。   
  
     八、（一）除证明在任何营运状态下，为满足上述要求所需的完整稳性高度超过计划营运状态的要求者外，主管机关不得考虑放宽对破舱稳性的要求。   
  
     （二）只是在特殊情况下，经主管机关同意，认为船舶的尺度比例、布置及其他性能对破舱后的稳性最为有利，而在该特殊情况下采用这种破舱范围是合理和可行时，方准放宽对破舱稳性的要求。   
  
     第八条 压 载   
  
     当需要用水压载时，压载水一般不得装于计划载燃油的舱内。对实际上不能避免将水装入燃油舱的船舶，则应设置经主管机关同意的油水分离装置，或为主管机关所接受的处理带油压载水的其他设施。   
  
     第九条 尖舱及机器处所的舱壁、轴隧等   
  
     一、（一）船舶须设有水密的高达舱壁甲板的前尖舱舱壁或防撞舱壁。此舱壁须装设于距首垂线不少于船长的5％而不大于3．05米（10英尺）加船长的5％的处所。   
  
     （二）如船舶设有长的前部上层建筑，则前尖舱舱壁应水密地延伸至舱壁甲板的上一层甲板。此延伸部分不必直接设于下面舱壁之上，但其离首垂线至少应为船长的5％，且形成阶层部分的舱壁甲板应有效地作成风雨密。   
  
     二、后尖舱舱壁，以及本章第二条定义所指机器处所与前后客货处所隔开的舱壁，均应水密地装设至舱壁甲板。但若不致减低船舶分舱的安全程度时，则后尖舱舱壁可在舱壁甲板下方作成阶层状。   
  
     三、在一切情况下，尾轴管均应封闭于具有适度容积的水密处所内。尾轴填料函压盖须装于水密尾轴隧内或与尾轴管室分开的其他水密处所内，而该处所的容积，在尾轴填料函压盖渗漏而浸水时，将不致淹没限界线。   
  
     第十条 双 层 底   
  
     一、双层底的设置应在适合于船舶设计及船舶正常作业要求的情况下尽量自前尖舱舱壁延伸至后尖舱舱壁。   
  
     （一）长度在50米（165英尺）至61米（200英尺）以下的船舶，至少应自机器处所至前尖舱舱壁或尽可能接近该处之间设置双层底。   
  
     （二）长度在61米（200英尺）至76米（249英尺）以下的船舶，至少应在机器处所以外设置双层底，并应延伸至前、后尖舱舱壁，或尽可能接近该处。   
  
     （三）长度在76米（249英尺）及76米以上的船舶，应在船中部设置双层底，并应延伸至前、后尖舱舱壁，或尽可能接近该处。   
  
     二、凡需设置双层底时，其高度应经主管机关的同意，其内底应延伸至船的两侧，以保护船底至舭部弯曲处。此项保护如能使内底边板的外缘与舭部壳板的交线，在任何部分都不低于通过一个在基线上距中线为型宽一半处与基线成25°角的横斜线与在船中处的肋骨线相交之点的水平面，即认为满意。   
  
     三、设于双层底内与货舱等排水装置有关的小阱，不应向下延伸至超过所需的深度。此阱的深度，在任何情况下不得大于中线处双层底高度减457毫米（18英寸），也不得延伸至本条二款所述的水平面以下。但在螺旋桨船上，准许其轴隧后端的污水阱延伸至外底。其他的阱（如主机下的润滑油阱）如其布置与符合本条的双层底具有同等的保护作用时，经主管机关同意亦可设置。   
  
     四、专供装载液体而大小适度的水密舱，如主管机关认为当该舱的船底或船侧破损时不致因此妨碍船舶的安全者，可不设双层底。   
  
     五、适用本章第一条四款规定并在第三章第二条所指的短程国际航行范围以内的班轮，如因在其分舱因数不超过0．50的任一部分设置双层底将对该船的设计与船舶正常作业不相适应时，主管机关可准予在该部分免设双层底。   
  
     第十一条 分舱载重线的勘定、勘划与记载   
  
     一、为了保持所要求的分舱程度，应在船舶两舷勘定并勘划相当于所核准的分舱吃水载重线。若船内有专供交替载客和载货的处所者，如经船舶所有人请求，可勘定和勘划一个或数个相当于主管机关核准的交替营运状态的分舱吃水的附加载重线。   
  
     二、所勘定和勘划的分舱载重线应载入客船安全证书，并以Ｃ·1表示主要载客情况，Ｃ·2、Ｃ·3等分别表示交替载客和载货情况。   
  
     三、相应于每一载重线的干舷，应与按现行国际船舶载重线公约确定的干舷在同一位置上并从同一甲板线进行测量。   
  
     四、相应于每一所认可的分舱载重线的干舷以及对其所核准的营运条件，均应清楚载明于客船安全证书内。   
  
     五、在任何情况下，任何分舱载重线均不得勘划于按船舶强度及（或）现行国际船舶载重线公约所确定的海水中最深载重线以上。   
  
     六、无论分舱载重线标志的位置如何，船舶装载概不得使按现行国际船舶载重线公约所确定的适合于所在季节和区域的载重线标志淹没于水中。   
  
     七、船舶的装载，当其在海水中时，概不得将适合于该航次及营运状态的分舱载重线淹没于水中。   
  
     第十二条 水密舱壁等的构造与初次试验   
  
     一、无论横向或纵向的每一水密分舱舱壁，其构造应能以适当的抗强裕度支持船舶在破损时可能遭受的最大水头的压力，但至少须能支持高达限界线的水头压力，此等舱壁的构造应经主管机关同意。   
  
     二、（一）舱壁上的阶层及壁凹均应水密，并与其所在处所的舱壁具有同等强度。   
  
     （二）如肋骨或横梁穿过水密甲板或舱壁时，此甲板或舱壁应在不用木材或水泥的情况下做成结构上的水密。   
  
     三、并不强制对各主要舱室进行灌水试验。但如不进行该项灌水试验，则必须进行冲水试验，此试验应在船舶进行舾装的最后阶段进行。在任何情况下，都应对水密舱壁进行全面的检查。   
  
     四、前尖舱、双层底（包括箱形龙骨）及内侧壳板均应以相当于本条一款要求的水头作试验。   
  
     五、供装载液体并形成船舶分舱部分的舱柜，应以高达最深分舱载重线或相当于该舱所在处由龙骨上面至限界线高度2／3的水头，视何者为大而定，试验其密性；但在任何情况下，试验水头不得低于该舱顶以上0．92米（3英尺）。   
  
     六、本条四及五款所述的试验，其目的在于确保分舱结构布置的水密，并非作为该舱用作装载燃油或其他特殊用途的适应性试验；对此项适应性试验，可按照液体进入舱内或其连接部分的高度，要求作较严格的试验。   
  
     第十三条 水密舱壁上的开口   
  
     一、水密舱壁上的开口，应在适合船舶设计及船舶正常作业的情况下减至最少数量；此等开口均应备有认可的关闭设备。   
  
     二、（一）凡管子、流水口、电缆等通过水密分舱舱壁时，应设有保证该舱壁水密完整性的装置。   
  
     （二）非构成管系的一个组成部分的阀及旋塞不准设于水密分舱舱壁上。   
  
     （三）铅及其他易熔材料，不得用于穿过水密分舱舱壁的管系上，该处在发生火灾时此等管系的损坏将会损害舱壁的水密完整性。   
  
     三、（一）下列各处不准设门、人孔或出入口：   
  
     1．限界线以下的防撞舱壁；   
  
     2．分隔相邻货舱之间，或货舱与固定或备用煤舱之间的水密横舱壁，但本条十二款规定者除外。   
  
     （二）除本款（三）项所规定者外，在限界线以下的防撞舱壁上仅可通过一根管子，以处理前尖舱内的液体，但该管应装有能在舱壁甲板以上操作的截止阀，其阀箱应设于前尖舱内并装在防撞舱壁上。   
  
     （三）如前尖舱加以分隔以装载两种不同的液体，经主管机关同意除装设第二根管子外无其他切实办法可以代替，且考虑在前尖舱内增加分隔仍保持船舶安全时，则主管机关可允许在限界线以下的防撞舱壁上穿过二根管子；每根管子均应按本款（二）项的要求进行装设。   
  
     四、（一）装于固定和备用煤舱之间的舱壁上的水密门，应是随时可以通达的，但本条十一款（二）项所规定的甲板间煤舱门除外。   
  
     （二）应以屏隔或其他措施作成适当的布置，以防煤炭阻碍煤舱水密门的关闭。   
  
     五、在主辅推进机械包括推进所需的锅炉及一切固定煤舱的处所内，其每一主横舱壁上，除通往煤舱及轴隧的门外，不得设置多于一扇的门。如装有2根或更多的轴，其轴隧之间应设有一个互通的连接过道。若装设2根轴者，在机器处所与轴隧间仅准设一扇门；如装设2根以上轴者，则仅准设2扇门。所有此种门均须为滑动式，且应装置于使其门槛尽可能高之处。由舱壁甲板以上用于操作这些门的手动装置，如能妥善布置其必要的传动系统时，应设于机器处所以外。   
  
     六、（一）水密门应为滑动门或铰链门或其他等效型式的门。仅以螺栓紧固的平板门及需借坠落或重物坠落作用关闭的门都不应使用。   
  
     （二）滑动门可为单一手动式的，或动力和手动式的。   
  
     （三）因此，许可的水密门可分为三级：一级——铰链门；二级——手动式滑动门；三级——动力和手动式滑动门。   
  
     （四）任何水密门的操作方法，无论是否动力操作，均须于船舶向左或向右倾斜至15°时能将门关闭。   
  
     （五）对各级水密门，在看不见各该门的所有操作站处，均应设有显示该门处于开启或关闭位置的指示器。不能由总控制站关闭的任何水密门，不论其属于哪一级，应备有机械的、电动的、电话的或其他适宜的直接通信装置，使值班驾驶员能根据事先的命令与负责关闭各该水密门的人员迅速联系。   
  
     七、铰链门（一级）应装有能由舱壁两侧都能操作的速闭装置，诸如搭扣之类。   
  
     八、手动式滑动门（二级）可为横动式或竖动式。此门应能在门所在处的两侧操作其机构，此外，并能在舱壁甲板以上可到达之处用全周旋转动作或其他同样安全可靠并经认可的动作方式来进行操作。如因空间的限制，不可能从两侧操作时，则此项要求可予放宽。当船舶在正浮位置时，用手动装置将门完全关闭所需时间应不超过90秒。   
  
     九、（一）动力式滑动门（三级）可为横动式或竖动式。如要求由总控制站以动力操作的门，其传动装置的布置也应能在门所在处的两侧用动力操作。此装置应使该门于总控制站加以关闭后，如由就地控制装置开启，仍能自动关闭；也应使任一门能由就地控制系统保持关闭，以防止被上方的控制系统开启。在舱壁的两侧应设置与动力控制装置相连的就地控制手柄。其布置应使经过此门的人，能把持两侧的手柄，置于开启位置，以免关闭机械突然动作。动力式滑动门应备有可在门的两侧操作的手动装置并须在舱壁甲板以上可到达之处用全周旋转动作或其他同样安全可靠并经认可的动作方式来进行操作。应设有音响信号装置，在此门开始关闭、继续移动直至完全关闭为止的期间发出警报。门的关闭应有充分时间以保证安全。   
  
     （二）至少应有两组独立的动力源以开关所有由其控制的门，每一动力源应能同时对各门进行操作。此两动力源应由驾驶室的总控制站进行控制，并应备有用以校验每一动力源能圆满工作的一切必要的指示器。   
  
     （三）如用液压操作时，每一动力源应包括一个能在60秒钟以内关闭所有各门的泵。此外，用于整个装置的液体贮存器，应有足够操作所有各门至少3次（即关闭——开启——关闭）的容量。所用的液体应在船舶营运中可能遭遇的任何温度下不致冻结。   
  
     十、（一）旅客、船员及工作处所的铰链水密门（一级），仅准设置于下述甲板以上，即此甲板的底面在船侧的最低点，至少应高出最深分舱载重线2．13米（7英尺）。   
  
     （二）凡水密门的门槛在最深载重线以上但在前项规定的线以下者，应为滑动式，并可为手动式的（二级）；但对于分舱因数小于0．50的从事短程国际航行的船舶，此种门应为动力式。连通冷藏货物及通风或强制通风管道的围壁通道，当穿过多于一主水密分舱舱壁时，舱壁上开口的门应为动力式。   
  
     十一、（一）有时需在航海中开启的水密门，且其门槛在最深分舱载重线以下者：应为滑动式，并应符合下列规定：   
  
     1．当此类门的数量（轴隧入口处的门不计）超过5扇时，所有这些门及轴隧入口处或通风或强制通风管道的门，应为动力式的（三级），并应能由驾驶室的总控制站同时予以关闭；   
  
     2．当此类门的数量（轴隧入口处的门不计）多于1扇，但不得超过5扇：   
  
     （1）在舱壁甲板以下未设旅客处所的船舶，所有上述的门可为手动式的（二级）；   
  
     （2）在舱壁甲板以下设有旅客处所的船舶，所有上述的门应为动力式的（三级），并应能由驾驶室的总控制站同时予以关闭。   
  
     3．如船舶上仅有两扇此类水密门，且是通往或位于机器处所内，则主管机关可准许此两门仅为手动式的（二级）。   
  
     （二）装于舱壁甲板以下甲板间内煤舱之间的滑动水密门，有时因整理燃煤须在航海中开启者，此门应由动力操作。此类门的开启及关闭应记入主管机关所规定的航海日志中。   
  
     十二、（一）如主管机关认为是必需的，则在甲板间内分隔货舱的水密舱壁上可装设适当构造的水密门。此类门可为铰链式、滚动式或滑动式，但不应为遥控的。此类门应装在最高处并尽可能远离船壳板，在任何情况下其垂直外边概不得位于距船壳板少于本章第二条定义所指船宽1／5的距离，此距离在最深分舱载重线水平面上向垂直于纵中剖面的方向量计。   
  
     （二）此类门应于开航前关妥，并应在航行中保持关闭；此类门在港内开启及船舶离港前关闭的时间应记入航海日志内。此类门如在航程中是可以到达的，应装有防止任意开启的装置。在提出设置此类门时，其数量及布置均应经主管机关特殊考虑。   
  
     十三、可移式板门不应用于舱壁上，但在机器处所内除外。此种板门应在船舶离港前装在原位，在航行中除紧急情况外不得取下。装复此种板门时必须审慎，以确保其接缝水密。   
  
     十四、所有水密门均应在航行中保持关闭，因船舶的操作而必需开启者除外，但应作好能随时关闭的准备。   
  
     十五、（一）凡由船员舱室通至锅炉舱、用作装设管子及任何其他用途的围壁通道或隧道，如穿过主横水密舱壁者，应为水密，并应符合本章第十六条的要求。在航行中用作通路的每一围壁通道或隧道，至少其一端的出入口须通过一围壁通道并保持水密到充分高度，使能由限界线以上处所出入。围壁通道或隧道的另一端出入口，可经过一水密门，其型式按其所在位置决定。此类围壁通道或隧道不得通过在防撞舱壁之后的第一个分舱舱壁。   
  
     （二）如提出需装设穿过主横水密舱壁的强制通风隧道或围壁通道时，应经主管机关特殊考虑。   
  
     第十四条 限界线以下船壳板上的开口   
  
     一、船壳板上的开口数量应在适合船舶设计及船舶正常作业的情况下，减至最少限度。   
  
     二、任何船壳板开口的关闭设备的布置及效用，应与其拟定的用途及装设的位置相适应，一般应经主管机关同意。   
  
     三、（一）平行于舱壁甲板边线绘一线，其最低点在最深分舱载重线以上2．5％船宽处，如甲板间内任何舷窗的窗槛低于此平行线时，则此甲板间内的一切舷窗应为永闭式。   
  
     （二）除依本款（一）项要求为永闭式者以外，凡舷窗窗槛在限界线以下者，其构造应能有效地防止任何人未经船长许可而予开启。   
  
     （三）1．平行于舱壁甲板边线绘一线，其最低点在船舶离开任何港口时的水面以上1．37米（4．5英尺）加2．5％船宽，当甲板间内按本款（二）项所述的任何舷窗的窗槛低于此线时，则此甲板间的所有舷窗在船舶离港前应关闭水密并加锁，此等舷窗在船舶到达下一个港口前不得开启。在引用本项时，如适用，则可计入适量的淡水宽限。   
  
     2．此类舷窗在港内开启的时间及船舶离港前将其关闭和加锁的时间，均应记入主管机关规定的航海日志中。   
  
     3．如某船浮于其最深分舱载重线，而有一或数个舷窗位置适用本项1目要求时，主管机关可指明其限制平均吃水。在此吃水时若此等舷窗窗槛将高出平行于舱壁甲板边线所绘的一线，其最低点在此限制平均吃水的相应水线以上1．37米（4．5英尺）加2．5％船宽，则可在此限制吃水的情况下，准许该船离港而不必事先将这类舷窗关闭和加锁，而在开往下一港口的航程中，若在海上开启该窗由船长负责。在现行国际船舶载重线公约所规定的热带地区内，此限制吃水可增加0．305米（1英尺）。   
  
     四、所有舷窗均应装设有效的内部铰链舷窗盖，其布置应能便利和有效地关闭及紧固成水密；但在距首垂线1／8船长以后，且在平行于舱壁甲板边线，而其最低点在最深分舱载重线以上3．66米（12英尺）加2．5％船宽所绘的线以上者，则除统舱外的旅客舱室的舷窗盖可为可移式的，但按现行国际船舶载重线公约要求永久附着于其应在位置者除外。此类可移式舷窗盖应存放于其所属的舷窗附近。   
  
     五、如舷窗及其舷窗盖位于航行时不能到达的处所，则应在离港前关闭并扣牢。   
  
     六、（一）凡专供载货或装煤的处所不得装设舷窗。   
  
     （二）供交替载货或载客的处所，可装设舷窗，但其构造须能有效地防止任何人未经船长许可而开启舷窗或舷窗盖。   
  
     （三）如在此类处所装货时，其舷窗盖应在装货前关闭水密和加锁，而此项关闭和加锁应记入主管机关所规定的航海日志中。   
  
     七、除经主管机关特准外，不应在限界线下的船壳板上装设自动通风舷窗。   
  
     八、船壳板上的流水口、卫生排泄孔及其他同类开口，应减至最少数量，或采取每个排水口供尽可能众多的卫生水管及其他管道共用，或采用其他适当的办法。   
  
     九、（一）船壳板上的所有进水孔及排水孔，均应装设防止海水意外进入船内的有效并可到达的装置。铅或其他易熔材料不得用作舷外进水或排水阀的管子或用于任何其他在发生火灾时此类管子的损坏将会造成浸水危险的处所。   
  
     （二）1．除本款（三）项规定者外，凡限界线以下处所穿过壳板的每一独立排水孔，应设有一个自动止回阀，此阀应具有由舱壁甲板以上将其关闭的可靠装置，或者代以两个无此项关闭装置的自动止回阀，其较高者应设于最深分舱载重线以上，以便在营运状态下能随时到达查验，此阀并应为经常关闭的型式。   
  
     2．如设置具有可靠关闭装置的阀，其在舱壁甲板以上的操作位置应是随时易于到达的，并应备有表明阀门开启或关闭的指示装置。   
  
     （三）与机器连通的主、辅海水进水孔及排水孔，应在管系与船壳板间或管系与附着于船壳板的组合箱之间装设易于接近的旋塞或阀门。   
  
     十、（一）设于限界线以下的舷门、装货门及装煤门，均应具有足够的强度，此类门须于船舶离港以前切实关闭和紧固成水密，并应在航行中保持关闭。   
  
     （二）此类门的最低点概不得低于最深分舱载重线。   
  
     十一、（一）每一出灰管、垃圾管等的船内开口，均应装以有效的盖子。   
  
     （二）如船内开口位于限界线以下，此盖应为水密的；并应在最深分舱载重线以上易于到达的处所，在管内增设自动止回阀。当此管不使用时，其盖及阀门均应保持关闭并扣紧。   
  
     第十五条 水密门、舷窗等的构造和初次试验   
  
     一、（一）本规则所述的一切水密门、舷窗、舷门、装货门、装煤门、阀门、管子、出灰管及垃圾管的设计、材料及构造，均应经主管机关同意。   
  
     （二）竖动式水密门的门框，其底部不得有可能积聚污秽的槽，以免妨碍门的正常关闭。   
  
     （三）舱壁甲板以下海水进水孔及排水孔的所有旋塞与阀门及其舷外装置，均须用钢、青铜或其他认可的延性材料制造，不得使用普通铸铁或类似的材料。   
  
     二、每个水密门应作水头高达舱壁甲板的水压试验。此试验应在船舶投入营运以前，于该门安装前或装妥后进行。   
  
     第十六条 水密甲板、围壁通道等的构造和初次试验   
  
     一、水密甲板、围壁通道、隧道、箱形龙骨及通风管道，均应与在同一高度的水密舱壁具有同等的强度。作成水密的措施以及关闭其开口所用的装置，须经主管机关同意。水密通风管道及围壁通道应至少向上延伸至舱壁甲板。   
  
     二、在完工以后，水密甲板应作冲水或灌水试验，而水密围壁通道、隧道及通风管道则作冲水试验。   
  
     第十七条 限界线以上的水密完整性   
  
     一、主管机关可要求采取一切合理和可行的措施，以限制海水在舱壁甲板以上浸入及漫流。此类措施可包括装设局部舱壁或桁材。当局部水密舱壁或桁材装于主分舱舱壁上方的或紧靠其附近的舱壁甲板上时，应与舱壁甲板及船壳板水密连接，以使在船舶破损倾斜的情况下限制海水沿甲板漫流。如局部水密舱壁与其下方的舱壁错开，则两者间的舱壁甲板应作成有效的水密。   
  
     二、舱壁甲板或其上一层甲板应为风雨密，意即在普通海况下不致有水透向下方。露天甲板上的所有开口，应设有足够高度和强度的围板，并须设有能迅速关闭成风雨密的有效设备。应按需要，装设排水口、栏杆及（或）流水口，以便在任何天气情况下能迅速排除露天甲板上的积水。   
  
     三、在限界线以上船壳板上的舷窗、舷门、装货门和装煤门以及关闭开口的其他装置，应就其所装设的处所及其相对于最深分舱载重线的位置，作有效的设计与构造，并应具有足够的强度。   
  
     四、在舱壁甲板以上第一层甲板以下处所内所有舷窗，应备有有效的内侧舷窗盖，其布置须能易于有效地关闭，并紧固成水密。   
  
     第十八条 客船的舱底排水设备   
  
     一、船舶均应备有有效的舱底排水装置，在海事后所有实际可能的情况下，无论船舶正浮或倾斜，须能抽除及排干任一个既非固定油舱又非固定水舱的水密舱。为此，通常应在船的两侧各设吸水管，但在船舶两端的狭窄隔舱内如设一根吸水管已足够时除外。对形状特殊的舱可要求增设吸水管。舱内布置应使水能流至吸水管。对于某些个别舱，主管机关认为不一定需要设置排水设备时，如按照本章第七条二款所示的条件计算证明无损于船舶安全者，得免予设置。冷藏舱应设置有效的排水装置。   
  
     二、（一）每船至少应有3台动力泵与舱底总管连接，其中1台可为推进机器带动的。如其衡准数为30或30以上，则应增设1台独立动力泵。   
  
     （二）此项要求列于下表：  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                                ｜                  ｜  
        衡    准    数          ｜    小于30者    ｜    30及30以上  
                                ｜                  ｜  
－－－－－－－－－－－－－－－－｜－－－－－－－－－｜－－－－－－－－－－  
        主机带动泵              ｜        1        ｜          1  
    （可用1台独立泵来代替）    ｜                  ｜  
        独立泵                  ｜        2        ｜          3  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
       
     （三）卫生泵、压载泵及通用泵，如与舱底排水系统设有必要的连接者，均可作为独立的动力舱底泵。   
  
     三、如实际可行时，各动力舱底泵应置于分开的水密舱内，其布置或位置应不致使一处破损而造成各舱均易于浸水。如机器及锅炉装于两个或两个以上的水密舱内，则用作舱底排水的各泵应尽可能远隔地分布于这些舱内。   
  
     四、长度为91．5米（300英尺）或91．5米以上的船舶或其衡准数为30或30以上者，当船舶在海上可能浸水的一切通常情况下其抽水布置应至少有1台动力泵可供使用。如按下列布置即可满足要求：   
  
     （一）所需各泵中的1台是可靠的可潜式应急泵，其动力源位于舱壁甲板以上；或   
  
     （二）各泵及其动力源要在整个船长内分布，在该船所要求经受的任何浸水情况下，于未破损的一舱内至少有1台泵可供使用。   
  
     五、除仅供尖舱专用的附加泵外，所需的每一舱底泵的布置应能由本条一款所要求的任何处所抽水。   
  
     六、（一）每一动力舱底泵应能使流经所需的排水总管的水流速度不小于122米／分（400英尺／分）。位于机器处所内的独立动力舱底泵应有自各该处所的直接吸水管，但此种吸水管在任一处所内应不要求多于2根，如设有2根或2根以上的此种吸水管，则至少应有1根设在左舷，另1根设在右舷。主管机关可要求在其他处所内的各独立动力舱底泵备有单独的直接吸水管。各直接吸水管应适宜地布置，而在机器处所内的直接吸水管的直径，不应小于对舱底排水总管的要求。   
  
     （二）对燃煤的船舶，除本条所要求的其他吸水管外，应在锅炉舱内加设1根适当直径及足够长度并能连接于1台独立动力泵吸水端的吸水软管。   
  
     七、（一）除直接舱底吸水管或本条六款要求的吸水管外，在机器处所内应增设1根自主循环水泵引至机器处所排水水准面的直接吸水管，此管应装有止回阀。此直接吸水管的直径对蒸汽机船至少应为循环水泵进口直径的2／3，对柴油机船则与循环水泵进口的直径相等。   
  
     （二）如主管机关认为主循环水泵作此用途为不适宜时，则应自最大可用的独立动力泵引一根直接应急舱底吸水管至机器处所排水水准面；此管的直径应与所用泵的主进水管口相同。如此连接的泵的排量应超过所要求舱底泵的排量，其超过量应经主管机关同意。   
  
     （三）海水进水阀及直接吸水管阀的阀杆，应延伸至机舱平台以上相当高度处。   
  
     （四）如燃料为煤或可能为煤，而机舱与锅炉舱之间又无水密舱壁时，则应由本款（一）项所用的任一循环水泵装1根直接通往船外的排水管，或在循环水泵排水管上装一旁通管。   
  
     八、（一）从泵接出的供货舱或机器处所排水用的一切管子，应与可供装卸水舱或油轮的管子完全加以区别。   
  
     （二）所有用于煤舱或燃油贮存舱柜内及在其下方处所，或用锅炉舱或机器处所内包括设置于澄油柜或燃油泵所在处所内的舱底水管，应为钢质或其他认可的材料。   
  
     九、舱底水总管的直径应按下列公式计算，而其实际内径可采用主管机关所接受的最接近的标准尺寸：  
  
                            －－－－－－－－－－  
              ｄ＝1．68√Ｌ（Ｂ＋Ｄ）＋25  
式中：ｄ——舱底总管内径（毫米）；  
  Ｌ、Ｂ——按本章第二条定义所指的船长和船宽（米）；  
      Ｄ——至舱壁甲板的型深（米）；  
                         －－－－－－－－－  
    或              ｄ＝√Ｌ（Ｂ＋Ｄ）  
                          －－－－－－－＋1  
                              2500  
式中：ｄ——舱底总管内径（英寸）；  
Ｌ、Ｂ——按本章第二条定义所指的船长和船宽（英尺）；   
     Ｄ——至舱壁甲板的型深（英尺）。   
  
     舱底支管的直径应按主管机关制订的规范确定。   
  
     十、舱底及压载管系的布置，应能防止水自海上或自压载水舱进入货舱及机器处所，或自一舱进入另一舱的可能性。对于连接舱底排水管及压载管的任何深舱，应设有特别设施，以防在装有货物时不慎灌入海水，或在装有压载水时由舱底排水管抽出压载水。   
  
     十一、应设有设施以防装有任何舱底吸水管的舱室因管子被截断时或因碰撞或搁浅而使任何其他舱室内管子受损时，使此舱浸水。因此，凡此水管的任何部分位于距船侧不足1／5船宽（在最深分舱载重线水平面上向垂直于纵中剖面的方向量计）或在箱形龙骨内者，应在其开口端所在舱室内管子上装有止回阀。   
  
     十二、所有与舱底排水设备有关的分配箱、旋塞及阀门，应设在通常情况下随时可以到达之处。其布置应使浸水时，舱底水泵之一能用于任何舱室；此外，在距船侧1／5船宽所绘一线以外的舱底泵或其与舱底水总管连接的管子损坏时，不应使舱底水系统丧失作用。如仅有一组管子为各泵共用时，则控制舱底吸水管所需的旋塞或阀门，必须能自舱壁甲板以上操作。若除主舱底排水系统外并设有应急舱底排水系统，则该应急系统应独立于主系统，其布置应在浸水时有一泵能用于任一舱室；在此情况下，只有操作应急系统所需的旋塞及阀门，需要能在舱壁甲板以上操作。   
  
     十三、本条十二款所述的能自舱壁甲板以上操作的一切旋塞及阀门的控制器，应在其操作处所加以明显标志，并备有指示其开或关的装置。   
  
     第十九条 客船与货船的稳性资料①  
  
①参阅海协组织通过的海大167（特Ⅳ届）决议“关于船长不足100米的客船与货  
       
     船完整稳性的建议案”以及海协组织通过的对此项建议案的修正案的海大206   
  
     （Ⅶ届）决议。   
  
     一、每艘客船及货船在完工时应作倾斜试验，并确定其稳性要素。应按需要将这类可靠的资料供给船长，使其在各种营运状态下能以迅速而简便的方法获得有关船舶稳性的正确指导，此外，并应将副本一份提供给主管机关。   
  
     二、如船舶作某种改建以致对供给船长的稳性资料有实质性影响时，应提供修正的稳性资料。必要时，船舶应再作倾斜试验。   
  
     三、主管机关得准许某一船舶免作倾斜试验，但须具有由其姐妹船作倾斜试验所得的基本稳性数据，且经主管机关同意认为可由此基本数据求得所免除船舶的可靠稳性资料。   
  
     四、如参考类似船舶的已有数据，能明显表示由于该船的尺度比例及布置，在一切可能的装载情况下具有超过足够的初稳心高度时，主管机关也可准许某一船舶或某一类船舶免作倾斜试验，特别是专门设计用来载运液体货或散装矿石的船舶。   
  
     第二十条 海损控制示意图   
  
     船上须固定标示表明各层甲板及货舱的水密舱室界限、界限上的开口及其关闭方法与控制位置，以及用于校正浸水倾斜的装置的示意图，以供负责的高级船员参考。此外，应供给船上高级船员以载有上述资料的小册子。   
  
     第二十一条 水密门等的标志、定期操作及检查   
  
     一、本条适用于新船及现有船舶。   
  
     二、水密门、舷窗、阀门以及流水口、出灰管与垃圾管的关闭机械的操作演习，应每周举行1次。对航期超过一周的船舶，在离港前应举行1次全面演习，此后在航行中至少每周举行1次。所有船舶在主横舱壁上的一切动力水密门及铰链门需在航行中使用者，应每天进行操作。   
  
     三、（一）水密门及与其连接的所有机械与指示器、为使舱室水密所必需关闭的一切阀门及为海损控制横贯连通所必需操作的一切阀门，应在航行中定期检查每周至少1次。   
  
     （二）这类阀门、门及机械，应作适当的标志，以保证其正确使用而策最大安全。   
  
     第二十二条 航海日志的记载   
  
     一、本条适用于新船及现有船舶。   
  
     二、按照本章各条要求在航行中应保持关闭的铰链门、可移式板门、舷窗、舷门、装货门、装煤门及其他开口，均应在船舶离港前关闭。关闭的时间及开启的时间（如为本章各条所准许者），应记入主管机关所规定的航海日志中。   
  
     三、本章第二十一条所要求的所有演习及检查的记录，均应记入航海日志中，并明确记载所发现的任何缺点。   
  
     第三节 机 电 设 备①  
  
①参看海协组织通过的海大211（Ⅶ届）决议“关于对货船上周期无人照管机器  
处所的安全措施，以补充对有人照管机器处所通常认为必需的安全措施的建议案”。   
     （本节适用于客船与货船）   
  
     第二十三条 通 则   
  
     一、客船上的电气设备应是：   
  
     （一）在各种紧急情况下，能保持对安全所必需的用途供电。   
  
     （二）能确保旅客、船员及船舶的安全，免受电气事故的危害。   
  
     二、货船应符合本章第二十六、二十七、二十八、二十九、三十及三十二条的规定。   
  
     第二十四条 客船上的主电源   
  
     一、每艘客船，其推进和安全所必需的辅机如系仅用电力者，至少应备有两套主发电机组。这些发电机组的功率，应是当其中任一机组停止供电时，仍能确保本章第二十三条一款（一）项所述用途的功能。   
  
     二、在仅有1个主发电站的客船上，其主配电板应设于同一主防火区内。如有1个以上的主发电站时，可允许只用1个主配电板。   
  
     第二十五条 客船上的应急电源   
  
     一、在舱壁甲板以上，机舱棚以外，应备有1个独立的应急电源。其与主电源的相对位置应经主管机关同意，以确保本章第二条八款定义所指的机器处所发生火灾或其他灾难时，不致妨碍应急电源的供电和配电。应急电源不应置于防撞舱壁的前面。   
  
     二、应急电源的可用功率应足够向主管机关认为在紧急时保证旅客和船员安全所必需的用途供电，并适当考虑到这些用途可能被同时使用。对于各登艇处的甲板和舷边、所有通道、梯道及出口、机器处所及按第二章乙第三条十八款定义所指的控制站内的应急照明，对洒水泵、航行灯以及白昼信号灯（如由主电源供电者），均应予以特别考虑。此电源应能足够36小时之用，但对经常从事短程航行的船舶，如主管机关认为能达到同等的安全程度，可以同意较少的供电时间。   
  
     三、应急电源可为：   
  
     （一）由适当原动机驱动的发电机，该原动机具有独立供油和认可的启动装置，其所用燃油闪点不低于43℃（110°Ｆ）；或   
  
     （二）能负担应急负荷而无需再充电或不致产生过分的电压降的蓄电池组。   
  
     四、（一）如应急电源为发电机，尚应备有由蓄电池组组成的临时应急电源，其能量应足够：   
  
     1．连续供给应急照明半小时之用；   
  
     2．关闭各水密门（如系电力操作者），但不必同时关闭所有的门；   
  
     3．供应用以表示动力式水密门是否开启或关闭的指示器（如系电力操作者）；   
  
     4．供应用以预告动力式水密门即将关闭的音响信号（如系电力操作者）。   
  
     此项装置应是在主电源失效时，临时应急电源即自动地接入工作。   
  
     （二）如应急电源为蓄电池组，其布置应能在主照明供电失效时保证应急照明自动地接入工作。   
  
     五、在机器处所内，最好在主配电板上装1个指示器，用以指示按照本条规定装设的任一蓄电池组正在放电。   
  
     六、（一）应急配电板应尽可能装设在靠近应急电源之处。   
  
     （二）当应急电源为发电机时，应急配电板应与应急电源装在同一处所，但于该处会妨碍应急配电板操作者例外。   
  
     （三）按本条规定装备的蓄电池组不得与应急配电板装在同一处所。   
  
     （四）主管机关可准许在正常工作时应急配电板由主配电板供电。   
  
     七、整个应急电源的布置，应是在船舶横倾22．5°和（或）纵倾10°时仍起作用。   
  
     八、应作出规定对应急电源及临时应急电源（如设有时）进行定期试验，并应包括自动装置的试验。   
  
     第二十六条 货船上的应急电源   
  
     一、5000总吨及5000总吨以上的货船   
  
     （一）凡5000总吨及5000总吨以上的货船，应有独立的应急电源，装于经主管机关同意的最高上层连续甲板以上和机舱棚以外的处所，使其当发生火灾或其他灾难致使主电源装置失效时，能确保起作用。   
  
     （二）其可用功率应足够向主管机关认为在紧急时保证全船人员安全所必需的用途供电，并适当考虑到这些用途可能被同时使用。应特别考虑下列各项：   
  
     1．各登艇处的甲板和舷边、所有通道、梯道及出口、主机处所及主发电机组处所、驾驶室及海图室内的应急照明；   
  
     2．通用警报器；   
  
     3．仅用电力的航行灯与白昼信号灯（如由主电源供电者）。   
  
     此电源应足够6小时之用。   
  
     （三）应急电源可为：   
  
     1．能负担应急负荷而无需再充电或不致产生过分的电压降的蓄电池组；   
  
     2．由适当原动机驱动的发电机，该原动机具有独立供油和经主管机关认可的启动装置，其所用燃油闪点不低于43℃（110°Ｆ）。   
  
     （四）整个应急电源的布置，应是在船舶横倾22．5°和（或）纵倾10°时仍起作用。   
  
     （五）应作出规定对全部应急电源装置进行定期试验。   
  
     二、小于5000总吨的货船   
  
     （一）凡小于5000总吨的货船，应有独立的应急电源，装于主管机关同意的处所，其电源须能供给在第三章第十九条一款（二）项、二款（二）及（三）项中所规定的降落地点及救生艇筏存放处所的照明；此外，在适当考虑到第三章第三十八条情况下尚应供应主管机关可能要求的其他用途。   
  
     （二）可用功率至少应足够3小时使用。   
  
     （三）本条一款的（三）、（四）、（五）项亦适用于此种船舶。   
  
     第二十七条 触电、电气失火及其他电气灾害的预防措施   
  
     一、客船与货船   
  
     （一）1．电机或电器设备的一切裸露金属部分，其原来不拟通电但在漏电情况下易于变为通电者，应加以接地（接于船体）；一切电器设备的构造与安装，应使在正常使用时不致发生伤害的危险。   
  
     2．作为船舶属具供应的一切手提式电灯、工具及类似器具，其额定电压超过主管机关规定的安全电压者，其金属架应通过适当的导线接地（接于船体），但如有等效设备例如具有双层绝缘或隔离变压器者除外。主管机关可要求对用于潮湿处所的电灯、工具或类似器具采取额外的特殊预防措施。   
  
     （二）主配电板及应急配电板的布置，应使其前面和后面均易于到达，且对工作人员无危险。配电板的侧面、后面和前面（如有必要），均应作适当的防护。如为必需，应在其前后铺设不导电的地毯或格板。裸露带电部分的对地（船体）电压超过主管机关规定的电压者，不应装在任何配电板或控制板的板面上。   
  
     （三）1．当利用船体作为配电回路系统时，应采取主管机关同意的特殊预防措施。   
  
     2．船体回路不得用于油船。   
  
     （四）1．电缆的所有金属护套和铠装，应为连续导电并应接地（接于船体）。   
  
     2．如电缆既无护套又无铠装并可能因漏电而发生火灾危险时，则主管机关应要求采取预防措施。   
  
     （五）照明装置的布置，应能防止其温度升高而损害线路，并能防止其周围的物料发生过热。   
  
     （六）线路的敷设方法，应能避免擦伤或其他损害。   
  
     （七）每一独立电路应有短路保护。每一独立电路也应有过载保护，但按照本章第三十条的规定或主管机关准许免除者除外。每一电路的载流量应连同其适当的过载保护装置的额定值或整定值一起作永久性的标示。   
  
     （八）蓄电池组应作适当的保护，主要用作蓄电池组的舱室应有适当的构造和足够的通风。   
  
     二、仅适用于客船   
  
     （一）配电系统的布置，应使任何主防火区内失火时不致妨碍对其他任何主防火区内必需的用途供电。如主馈电线路及应急馈电线路通过任何防火区时，其垂直和水平间的布置为尽可能地远离者，即可认为满足此项要求。   
  
     （二）电缆应是主管机关认可的滞燃式，主管机关为了防火或防爆，可对船舶某些特殊处所的电缆要求额外的安全防护。   
  
     （三）在易燃混合物易于聚集的处所，概不得装设电气设备，但如属于不致点燃该混合物的一种型式例如防焰（防爆）型的设备除外。   
  
     （四）在煤舱或货舱内的照明电路，应在其舱外设置切断开关。   
  
     （五）一切导线中的接头，除低压通信电路外，均应在接线盒或输出盒内进行连接。所有此种盒或接线用器的构造均应为能阻止火灾自该盒或该器内向外蔓延者。如使用插接，则仅准用认可的能保持电缆原机械性能和电气性能的方法。   
  
     （六）为了安全和应急报警系统所必需的内部通信的电缆系统应避免布置于厨房、机器处所以及其他有高度失火危险的围蔽处所，但在那些处所内需要提供通信和警报者除外。如果船舶由于结构和船小而不能符合这些要求时，应采取主管机关认为满意的措施，以保证通过厨房、机器处所以及其他有高度失火危险的围蔽处所的电缆系统具备有效的保护。   
  
     三、仅适用于货船   
  
     易生电弧的装置，不应设在指定为主要供蓄电池组用的舱室内，但此项装置为防焰（防爆）型者除外。   
  
     第二十八条 后 退 措 施   
  
     一、客船与货船   
  
     船舶应有足够的后退动力，以确保在一切正常情况下能适当控制船舶。   
  
     二、仅适用于客船   
  
     在正常操纵情况下，使推进器于一定时间内换向，并使船舶自最大营运前进航速直至停止的机器能力，应在初次检验时作试验。   
  
     第二十九条 操 舵 装 置①  
  
①参阅海协组织通过的海大210（Ⅶ届）决议“关于大船操舵装置的建议案”。  
       
     一、客船与货船   
  
     （一）船舶应备有主管机关认为满意的主操舵装置和辅助操舵装置。   
  
     （二）此主操舵装置应具有足够强度并足以在最大营运航速时操纵船舶。   
  
     主操舵装置及舵杆的设计，应在最大后退速度时不致损坏。   
  
     （三）辅助操舵装置应具有足够强度和足以在可驾驶的航速下操纵船舶，并能于紧急时迅速投入工作。   
  
     （四）如为动力操作的舵，则应在主操舵站显示其正确位置。   
  
     二、仅适用于客船   
  
     （一）主操舵装置应能使船舶在以最大营运航速前进时，将舵自一舷的35°转至另一舷的35°。舵应能于最大营运航速中在28秒钟内自任一舷的35°转至另一舷的30°。   
  
     （二）主管机关在任何情况下如要求舵柄处的舵杆直径超过228．6毫米（9英寸），则其辅助操舵装置应以动力操作。   
  
     （三）如主操舵装置的动力设备及其连接装置是主管机关认为满意的双套装配，且每一动力设备能使操舵装置符合本款（一）项的要求，则可不设辅助操舵装置。   
  
     （四）主管机关如要求在舵柄处的舵杆直径超过228．6毫米（9英寸），则应在主管机关同意的处所另备一操舵站。主操舵站及另一操舵站的遥控操舵系统的布置，应经主管机关同意，使任一系统失效时，能运用另一系统来操纵船舶。   
  
     （五）应备有主管机关认为满意的由驾驶室传达命令至另一操舵站的设施。   
  
     三、仅适用于货船   
  
     （一）主管机关在任何情况下如要求在舵柄处的舵杆超过355．6毫米（14英寸），则其辅助操舵装置应以动力操作。   
  
     （二）如动力操舵装置及其连接装置是主管机关认为满意的双套装配，且每一装置符合本条一款（三）项的要求，而此双套动力装置和连接装置一起操作时能符合本条一款（二）项的要求，则可不设辅助操舵装置。   
  
     第三十条 电动与电动液压操舵装置①  
  
①参阅海协组织通过的海大210（Ⅶ届）决议“关于大船操舵装置的建议案”。  
       
     一、客船与货船   
  
     用以指示电动和电动液压操舵装置的电动机的动转指示器，应设置于主管机关所同意的适当处所。   
  
     二、一切客船（任何吨位）和5000总吨及5000总吨以上的货船   
  
     （一）电动与电动液压操舵装置应自主配电板两路供电，其中一路可经应急配电板（如装有时）。每一电路须有足够容量能向与其正常连接的同时动作的所有电动机供电。如在舵机室内备有电路转换装置，能使任一电路供给任一电动机或几部电动机联合工作，则任一电路的容量应足供在最大负荷情况下使用。此两电路应在其全长内尽可能地远离。   
  
     （二）这些电路和电动机仅须备有短路保护装置。   
  
     三、小于5000总吨的货船   
  
     （一）以电力为唯一动力源供主、辅操舵装置的船舶，应符合本条二款（一）和（二）项的规定。如辅助操舵装置为主要供其他用途的电动机所驱动，则当主管机关对其预防措施认为满意时，可免除对二款（二）项的要求。   
  
     （二）仅须对电动或电动液压主操舵装置的电动机和电力线路备置短路保护装置。   
  
     第三十一条 客船上应急装置的位置   
  
     在客船上的应急电源、应急消防泵、应急舱底泵及用于灭火的成组二氧化碳瓶与其他为船舶安全所必需的应急装置，不应设于防撞舱壁之前。   
  
     第三十二条 驾驶室与机舱之间的通信   
  
     船上应备有两种自驾驶室传达命令至机舱的装置，其中一种应为机舱车钟。   
  
     第二章乙 构造（防火、探火和灭火）   
  
       
  
     第一节 通 则①  
  
①参看海协组织通过的海大211（Ⅶ届）决议“关于对货船上周期无人照管机器  
处所的安全措施，以补充对有人照管机器处所通常认为必需的安全措施的建议案”。   
     第一条 适 用 范 围   
  
     一、在本章范围内：   
  
     （一）新客船是指在本公约生效之日或以后安放龙骨或处于相应建造阶段的客船，或在该日及以后由货船改建成的客船，所有其他客船均应视为现有船舶。   
  
     （二）新货船是指在本公约生效之日或以后安放龙骨或处于相应建造阶段的货船。   
  
     （三）船舶在进行修理、改装、改建以及与之有关的舾装时，至少应继续符合该船原先适用的要求。在这种情况下，现有船舶一般不得低于它原已符合的对新船的要求。重大的修理、改装、改建以及与之有关的舾装在主管机关认为合理和可行的范围内，应满足对新船的要求。   
  
     二、除另有明文规定外：   
  
     （一）本章第一节第四条至第十六条适用于新船。   
  
     （二）本章第二节适用于载客超过36人的新客船。   
  
     （三）本章第三节适用于载客不超过36人的新客船。   
  
     （四）本章第四节适用于新货船。   
  
     （五）本章第五节适用于新油船。   
  
     三、（一）本章第六节适用于载客超过36人的现有客船。   
  
     （二）载客不超过36人的现有客船和现有货船应符合下列规定：   
  
     1．在1960年国际海上人命安全公约生效之日或以后安放龙骨或处于相应建造阶段的船舶，主管机关应保证使之符合该公约第二章中定义为新船所适用的各项要求；   
  
     2．在1948年国际海上人命安全公约生效之日或以后，但在1960年国际海上人命安全公约生效之日以前安放龙骨或处于相应建造阶段的船舶，主管机关应保证使之符合1948年公约第二章中定义为新船所适用的各项要求。   
  
     3．在1948年国际海上人命安全公约生效之日以前安放龙骨或处于相应建造阶段的船舶，主管机关应保证使之符合该公约第二章中定义为现有船舶所适用的各项要求。   
  
     四、对于本章内的要求而为1948年和1960年公约第二章所未包含者，除了应用本条三款（一）项的要求外，其中何者适用于本公约定义所指的现有船舶应由主管机关确定。   
  
     五、主管机关如考虑到航程的遮蔽性及其条件，认为引用本章的某些特殊要求为不合理或不必要时，可对其本国所属的在航程中距最近陆地不超过20海里的个别船舶或某类船舶免除这些要求。   
  
     六、客船用于特种业务，例如朝山进香载运大量特种业务旅客者，主管机关如认为实施本章要求为不切实际时，可对其本国所属的此类船舶免除这些要求，但此类船舶应完全符合下列规定：   
  
     （一）1971年特种业务客船协定所附的规则，   
  
     （二）1973年特种业务客船舱室要求议定书所附的规则（当生效时）。   
  
     第二条 基 本 原 则   
  
     本章的目的是要求船舶的防火、探火和灭火达到最充分可行的程度。考虑到船舶的类型和所涉及潜在火灾的危险，下列基本原则是本章各条款的基础，并体现在相应的条文中：   
  
     一、用耐热与结构性限界面，将船舶划分为若干主竖区；   
  
     二、用耐热与结构性限界面将起居处所与船舶其他处所隔开；   
  
     三、限制使用可燃材料；   
  
     四、探知火源区域内的任何火灾；   
  
     五、抑制和扑灭火源处所内的任何火灾；   
  
     六、保护脱险通道或灭火出入口；   
  
     七、灭火设备的即刻可用性；   
  
     八、易燃货物蒸发气体着火的可能性减至最低限度。   
  
     第三条 定 义   
  
     除另有明文规定外，在本章范围内：   
  
     一、“不燃材料”，系指某种材料加热至约750℃（1382°Ｆ）时，既不燃烧，亦不发出足量的造成自燃的易燃蒸发气体；此系通过既定的试验程序确定，并取得主管机关的同意。除此以外的任何其他材料，皆为“可燃材料”。①  
  
①参看海协组织通过的海大270（Ⅷ届）决议“关于鉴定船用结构材料为不燃性  
的试验方法的建议案”。   
     二、“标准耐火试验”系指将需要试验的舱壁或甲板的试样置于试验炉内，加温到大致相当于下列标准时间－温度曲线的一种试验，试样暴露表面面积应不少于4．65平方米（50平方英尺），其高度（或甲板长度）应不少于2．44米（8英尺），试样应尽可能与所设计的构件近似，并在相当位置包括至少一个接头。标准时间－温度曲线应是连接下列各点的一条光滑曲线：   
  
     自开始至满5分钟时—538℃（1000°Ｆ）   
  
     自开始至满10分钟时—704℃（1300°Ｆ）   
  
     自开始至满30分钟时—843℃（1550°Ｆ）   
  
     自开始至满60分钟时—927℃（1700°Ｆ）   
  
     三、“甲级分隔”是由符合下列要求的舱壁与甲板所组成的分隔：   
  
     （一）它们应以钢或其他等效的材料制造；   
  
     （二）它们应为适当的防挠加强；   
  
     （三）它们的构造，应在一小时的标准耐火试验至结束时能防止烟及火焰通过；   
  
     （四）它们应用认可的不燃材料隔热，使在下列时间内，其背火一面的平均温度，较原温度增高不超过139℃（250°Ｆ），且在任何一点包括任何接头在内的温度较原温度增高不超过180℃（325°Ｆ）：  
  
        “甲—60”级        60分钟  
        “甲—30”级        30分钟  
        “甲—15”级        15分钟  
        “甲—0”  级          0分钟  
       
     （五）主管机关可以要求将原型的舱壁或甲板进行一次试验，以保证满足上述完整性及温升的要求。①  
  
①参看海协组织通过的海大163（特Ⅳ届）及海大215（Ⅶ届）决议“关于‘  
甲’级和‘乙’级分隔耐火试验程序的建议案”。   
     四、“乙级分隔”是由符合下列要求的舱壁、甲板、天花板或衬板所组成的分隔：   
  
     （一）它们的构造应在最初半小时的标准耐火试验至结束时，能防止火焰通过；   
  
     （二）它们应具有这样的隔热值，使在下列时间内，其背火一面的平均温度，较原温度增高不超过139℃（250°Ｆ），且在包括任何接头在内的任何一点的温度，较原温度增高不超过225℃（405°Ｆ）：  
  
        “乙—15”级        15分钟  
        “乙—0”级            0分钟  
       
     （三）它们应以认可的不燃材料制成，“乙级分隔”的结构和装配所用的一切材料应为不燃材料，但是，按本章第三节和第四节的有关规定，并不排除可燃材料的使用，在此情况下，该项可燃材料在标准耐火试验最初半小时结束时应符合本款（二）项中规定的温升限度。   
  
     （四）主管机关可要求将原型分隔进行一次试验，以保证满足上述完整性和温升的要求。①  
  
①参看海协组织通过的海大163（特Ⅳ届）及海大215（Ⅶ届）决议“关于‘  
甲’级和‘乙’级分隔耐火试验程序的建议案”。   
     五、“丙级分隔”应以认可的不燃材料制成，它们不需要满足有关防止烟和火焰通过以及限制温升的要求。   
  
     六、“连续乙级天花板或衬板”系指“乙”级天花板或衬板只在一个“甲或乙级分隔”终止者。   
  
     七、“钢或其他等效材料”，凡遇有“钢或其他等效材料”的字样，“等效材料”系指任何材料本身或由于所设隔热物，当经过标准耐火试验的相应曝火时间后，在结构性和完整性上与钢具有同等的性能（例如设有适当隔热材料的铝合金）。   
  
     八、“低播焰性”系指所述表面能有效地限制火焰的蔓延，此系通过既定的试验程序确定，并取得主管机关的同意。   
  
     九、“主竖区”系指船体、上层建筑和甲板室以“甲级分隔”分成的各段，它在任何一层甲板上的平均长度一般不超过40米（131英尺）。   
  
     十、“起居处所”系指用作公共处所、走廊、盥洗室、住室、办公室、船员室、理发室、单独的配膳室与橱柜，以及类似的处所。   
  
     十一、“公共处所”系指起居处所中用作大厅、餐室、休息室以及类似的固定围蔽处所的部分。   
  
     十二、“服务处所”系指用作厨房、主配膳室、储藏室（单独的配膳室与橱柜除外）、邮件舱及贵重物品室、组成机器处所的部分以外的车间，以及类似处所和通往这些处所的围壁通道。   
  
     十三、“装货处所”系指一切用作装载货物的处所（包括货油舱）以及通往这些处所的围壁通道。   
  
     十四、“特种处所”系指在舱壁甲板以上或以下用作装载在油箱内备有自用燃油的机动车辆的围蔽处所，此处所能让上述车辆驾驶进出，并有旅客进入的通路。   
  
     十五、“甲类机器处所”系指具有下列设施的一切处所：   
  
     （一）用作主推进的内燃机或作其他用途的合计总输出功率不小于373千瓦的内燃机；   
  
     （二）任何燃油锅炉或燃油装置以及通往这些处所的围壁通道。   
  
     十六、“机器处所”系指一切甲类机器处所和一切其他包括推进机械、锅炉、燃油装置、蒸汽机和内燃机，发电机和主要电动机、加油站、冷藏机、防摇装置、通风机和空气调节机械的处所，以及类似处所；连同通往这些处所的围壁通道。   
  
     十七、“燃油装置”系指准备为燃油锅炉输送燃油的设备或准备为内燃机输送加热燃油的设备，并包括用于处理表压力超过1．8  
  
          2              2  
公斤／厘米  （25磅／英寸  ）油类的任何压力油泵过滤器和加热器。  
       
     十八、“控制站”系指船舶无线电设备、主要航行设备或应急电源所在的处所，或者是指火警指示器或失火控制设备集中的处所。   
  
     十九、“设有限制失火危险的家具和设备的房间”，在本章第二十条内，设有限制失火危险的家具和装备的房间（无论住室、公共处所、办公室或其他类型的起居处所），应为：   
  
     （一）一切框架式家具，如书桌、衣橱、梳妆台、书柜、餐具柜，除其使用表面可用不超过2毫米（1／12英寸）的可燃镶片外，完全由认可的不燃材料制成；   
  
     （二）一切可移动的家具，如椅子、沙发、桌子，其骨架由不燃材料制成；   
  
     （三）一切帷幔、窗帘及其他悬挂的纺织品材料，其阻止火焰蔓延的性能应不差于每平方米重0．8公斤（每平方码重24盎斯）的毛织品，并取得主管机关的同意；   
  
     （四）一切地板覆盖物，其阻止火焰蔓延的性能应不差于用于同一目的的等效的毛料，并取得主管机关的同意；   
  
     （五）一切舱壁、衬板及天花板的外露表面，应具有低播焰性。   
  
     二十、“舱壁甲板”是横向水密舱壁所到达的最高一层甲板。   
  
     二十一、“载重量”系指船舶在比重为1．025的海水中，相应于所勘划的夏季载重线的排水量与该船空船排水量之差，以吨计。   
  
     二十二、“空船排水量”系指船舶在舱内没有货物、燃油、润滑油、压载水、淡水、给水和易耗物料，且无旅客、船员及其行李时的排水量，以吨计。   
  
     二十三、“油类／散货两用船”系指设计用来装油，并能交替装载散装固体货物的油船。   
  
     第四条 防火控制图   
  
     在所有新船和现有船舶上应有固定展示的总布置图供船员参考。图上应清楚地标明：每层甲板的各控制站，“甲级分隔”围闭的各防火区域，“乙级分隔”（如设有时）围闭的各区域，连同失火报警和探火系统、喷水器装置（如设有时）、灭火设备、各舱室和甲板等出入通道设施的细目，以及通风系统，包括风机控制位置、挡火闸位置和服务于每一区域通风机识别号码的细目。或经主管机关决定，上述细目可记入一小册子，每一高级船员一本，并应有一份放于船上易于到达的地方可随时取用。控制图和小册子应保持为最新编制的，如有改动，应尽可能立即加以更正。控制图和小册子的说明应为本国文字，如该文字既不是英文也不是法文，则应译成其中一种的文字。此外，船上灭火和抑制火灾用的所有设备和装置的保养和操作说明，应保存在一个封套内，并放在易于到达的地方，以便随时取用。   
  
     第五条 消防泵、消防总管、消火栓和消防水带   
  
     一、消防泵的总排量   
  
     （一）在客船上所需的全部消防泵，应能按以下所述的适当压力供给消防用水，其出水量应不少于指定供舱底抽输的全部舱底泵所需出水量的2／3。   
  
     （二）在货船上，除应急泵（如设有时）外，所需的各消防泵应能按所述的适当压力供给消防用水，其出水量应不少于按第二章甲第十八条关于同样大小的客船指定供舱底抽输的每一独立舱底水泵所需出水量的4／3，但货船所需各消防泵总排量不需超过180立方米／小时。   
  
     二、消防泵   
  
     （一）所有消防泵应为独立驱动。卫生泵、压载泵、舱底泵或通用泵，如非经常用来抽输油类者，均可作为消防泵；如它们偶尔用于移注燃油，则要装设适宜的转换装置。   
  
     （二）1．载客超过36人以上的客船所需的每一消防泵的排量应不少于所需总排量的80％除以所需的最少消防泵数，且在任何情况下，每一个这样的消防泵至少应能维持两股所需的水柱。这些消防泵应能按所需的条件向消防总管系统供水。   
  
     如设置泵数多于所需的最低数量，则这些增加的泵的排量应取得主管机关的同意。   
  
     2．所有其他类型的船舶，所需的每一消防泵（按本章第五十二条所需的任何应急泵除外）的排量应不小于所需总排量的80％除以所需的消防泵数，且在任何情况下，每一消防泵应能按所需的条件向消防总管系统供水。   
  
     如设置泵数多于所需的数量，其排量应取得主管机关的同意。   
  
     3．如消防泵的压力可能超过消防水管、消火栓和消防水带的设计压力，则应在全部消防泵装设溢流阀。这些阀应怡当分布和调节，以防止消防总管系统内任何部分发生超压。   
  
     三、消防总管的压力   
  
     （一）消防总管和消防水管的直径应足够有效地从两个同时工作的消防泵传输所需的最大出水量；但货船例外，其消防总管的直径仅需足以出水140立方米／小时。   
  
     （二）在两泵同时工作并通过本条七款规定的水枪从任何相邻的消火栓传输本款（一）项所确定的水量时，在一切消火栓上应维持下述最低压力：   
  
     客船：  
  
                                                            2  
          4000总吨及4000总吨以上……3．2公斤／厘米  （45磅／  
              2  
          英寸  ）  
          1000总吨及1000总吨以上但  
                                                        2  
          小于4000总吨…………………2．8公斤／厘米  （40磅  
              2  
          英寸  ）  
          1000总吨以下…………………应取得主管机关的同意  
    货船：  
                                                            2  
          6000总吨及6000总吨以上……2．8公斤／厘米  （40磅／  
              2  
          英寸  ）  
          1000总吨及1000总吨以上但  
                                                        2  
          小于6000总吨…………………2．6公斤／厘米  （37磅／  
              2  
          英寸  ）  
          1000总吨以下…………………应取得主管机关的同  
          意。  
       
     四、消火栓的数目和位置   
  
     消火栓的数目和位置，应至少能将两股不是由同一消火栓发出的水柱，射至船舶在航行时旅客或船员经常到达的任何部分，而其中一股应仅用1根消防水带。   
  
     五、管子及消火栓   
  
     （一）在热力作用下易于失效的材料，除非有充分的保护，不得用作消防总管和消火栓。管子及消火栓的位置应使消防水带易于与之连接。在可能装运甲板货物的船上，消火栓的地位应随时易于到达，消防管的布置应尽可能避免被此项货物所损坏。各消防水带接头与各水枪应能完全互换使用，除非船上对每一消火栓备有1根消防水带和1支水枪。   
  
     （二）应设有一旋塞或阀门供每一消防水带使用，在消防泵工作时可以拆卸任何消防水带。   
  
     六、消防水带   
  
     消防水带应为主管机关认可的材料，并具备足够的长度射出一股水柱至可能需要使用的任一处所。其最大长度应取得主管机关的同意。每一根消防水带应配有一支水枪和必需的接头。按本章指定为“消防水带”的水带应与其必要的配件及工具，存放于供水消火栓或接头附近显著的部位，以备随时取用。此外，在载客超过36人客船的各内部处所，消防水带应一直保持与消火栓相连接。   
  
     七、水枪   
  
     （一）在本章范围内，标准水枪的尺寸应为12毫米（1／2英寸）、16毫米（5／8英寸）和19毫米（3／4英寸），或尽可能与之相近。如经主管机关同意，可准许使用较大直径的水枪。   
  
     （二）在起居和服务处所内，不必使用大于12毫米（1／2英寸）的水枪。   
  
     （三）在机器处所和各外部处所，水枪的尺寸应能从最小的泵在本条三款所述的压力下，从两股水柱上获得最大限度的出水量，但不必使用大于19毫米（3／4英寸）的水枪。   
  
     （四）在机器处所或类似此种处所内存在着油类溢出的危险时，其水枪应适宜于向油上喷射水雾或为两用的型式。   
  
     八、国际通岸接头   
  
     本章所要求安装在船上用于国际通岸接头的法兰的标准尺寸，应符合下表所列要求：  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                  ｜  
    名        称  ｜          尺                      寸  
                  ｜  
－－－－－－－－－｜－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                  ｜  
    外        径  ｜178毫米（7英寸）  
                  ｜            1  
    内        径  ｜64毫米（2－英寸）  
                  ｜            2  
                  ｜              1  
    螺栓圈直径    ｜132毫米（5－英寸）  
                  ｜              4  
                  ｜                3  
    法兰槽口      ｜直径为19毫米（－英寸）的螺栓孔4个，等距离布置于上述直径的  
                  ｜                4  
                  ｜螺栓圈上，并开槽至法兰边缘  
                  ｜                      9  
    法兰厚度      ｜最少为14．5毫米（－－－英寸）  
                  ｜                    16  
                  ｜                        5  
    螺栓及螺母    ｜4副，每只直径16毫米（－英寸），长度50毫米（2英寸）  
                  ｜                        8  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                                            2                2  
    国际通岸接头应用能承受10．5公斤／厘米  （150磅／英寸  ）工  
作压力的材料制成，其一端应为平面法兰，另一端应有永久附连于其上的，适合船上消火栓或消防水带的接头。国际通岸接头应  
                          2                2  
与能承受10．5公斤／厘米  （150磅／英寸  ）工作压力的任何材料的  
垫片1只，及长度为50毫米（2英寸）、直径为16毫米（5／8英寸）螺栓4只和垫圈8只，一同保存于船上。   
     第六条 杂 项   
  
     一、如使用电力取暖器，应于装设位置加以固定，其构造应能使失火危险减至最低程度。凡取暖器的电热丝暴露到可能因其热度而将衣服、帷幔或其他类似的物件烧焦或着火者，概不得设置。   
  
     二、硝酸纤维素基胶片不得用于电影设备。   
  
     第七条 灭 火 机   
  
     一、所有灭火机应为认可的型式和设计。   
  
     （一）所需手提式液体灭火机的容量应不大于13．5升（3加仑），且不少于9升（2加仑）。其他灭火机应不超过13．5升（3加仑）液体灭火机的等同可携性，并应不低于9升（2加仑）液体灭火机的等同灭火性能。   
  
     （二）主管机关应确定灭火机的等同物。   
  
     二、应按照主管机关规定的要求配足备用药剂。   
  
     三、灭火机所盛的灭火剂，倘主管机关认为其本身或在预期使用条件下，将发出一定数量的毒气足以危害人身者，不准使用。   
  
     四、可携式泡沫器装置应包括一只能以消防水带连接于消防  
  
                                                    1  
总管的吸入式空气泡沫枪，连同一只至少能盛装20升（4－加仑）发  
                                                    2  
泡液的可携式容器和一只备用容器。泡沫枪应能每分钟至少产生  
1．5立方米（53立方英尺）适合于扑灭油类火灾的有效泡沫。  
       
     五、灭火机应定期进行检验，并按主管机关的要求进行试验。   
  
     六、用于任何处所的手提灭火机，其中应有一只存放在该处所的入口附近。   
  
     第八条 固定式气体灭火系统   
  
     一、所采用的灭火剂，主管机关认为其本身或在预期使用条件下，将发出一定数量有毒气体足以危害人身者，不准使用。   
  
     二、如采用喷射气体灭火时，输送气体的管子应设有控制阀或旋塞，并应清楚地标明这些管子通往的舱室。应有适当的措施以防止气体因疏忽而注入任何舱室。设有这种灭火系统的货舱如用作旅客处所时，在运客期间，气体的管子接头应予以封闭。   
  
     三、管系的布置应使灭火气体能作有效的分配。   
  
     四、（一）使用二氧化碳作为装货处所的灭火剂时，所备此种气体的数量应足以发出体积至少等于该船能密封的最大货舱总容积30％的自由气体。   
  
     （二）使用二氧化碳作为甲类机器处所的灭火剂时，所携此种气体的数量应足以发出至少等于下列两者中较大值的自由气体：   
  
     1．最大处所总容积的40％；此容积算至机舱棚的一个水平面为止，在这个水平面上，机舱棚的水平面积等于或小于从双层底顶至机舱棚最低部分的中点处水平面积的40％；   
  
     2．最大处所包括机舱棚在内的全部容积的35％；   
  
     但在小于2000总吨的货船上，上述各百分数可分别减为35％与30％；再者，两个或两个以上的甲类机器处所未完全隔开者，应作为一个舱室看待。   
  
     （三）在任何甲类机器处所中，空气瓶内含有的自由空气量如因失火而在该处所内施放时，会严重影响固定灭火装置的有效性者，主管机关应要求额外增加二氧化碳的数量。   
  
     （四）如甲类机器处所和装货处所均使用二氧化碳作为灭火剂时，二氧化碳气体的数量不必多于最大一个货舱的需要量或机器处所的需要量中的较大值。   
  
     （五）本款内所指的二氧化碳的容积应以每公斤相当于0．56立方米（每磅相当于9立方英尺）计算。   
  
     （六）如甲类机器处所使用二氧化碳作为灭火剂时，其固定管系应能使85％的气体在两分钟内注入该处所。   
  
     （七）二氧化碳瓶存放室，应位于安全和随时可到达的地方，并应有经主管机关满意的有效通风。这种存放室的任何进口最好应开向开敞甲板，且在任何情况下应与被保护处所分开。出入口的门应是气密的，构成这种存放室限界面的舱壁和甲板应是气密和适当隔热的。   
  
     五、（一）除二氧化碳或本条六款许可的蒸汽外，如在船上生产的气体作为灭火剂时，它应是燃油燃烧的气态产物，在此产物中氧气含量、一氧化碳含量、腐蚀元素以及任何固体可燃元素均需降低到容许的最少量。   
  
     （二）如在固定式灭火系统中使用这种气体作为灭火剂来保护甲类机器处所时，它应与固定式二氧化碳系统具有等效的保护作用。   
  
     （三）如在固定式灭火系统中使用这种气体作为灭火剂来保护装货处所时，应备有足够的数量，使每小时能供给自由气体的容积至少等于最大一个被保护舱室总容积的25％，并可连续供给72小时。   
  
     六、一般情况下，在新船的固定式灭火系统中，主管机关应不准使用蒸汽作为灭火剂。如主管机关允许使用蒸汽，则应仅用在一些限定的区域作为所需灭火剂的额外灭火剂，其条件是供给蒸汽的一个或数个锅炉的蒸发量，应对该船用蒸汽保护的最大处所的总容积每0．75立方米每小时能提供至少应为1公斤的蒸汽（每12立方英尺每小时为1磅）。除了符合上面所提到的要求之外，该系统在其他各方面应由主管机关确定和同意。   
  
     七、向任何经常有人员出入的处所施放灭火气体时，应有自动声响警报的设施。此项警报应在气体施放前报警一段适当的时间。   
  
     八、任何这种固定式气体灭火系统的控制设施，应能易于到达和操作简便，且应成组地分装于尽可能少的处所；其所在位置应不致为被保护处所的火灾所切断。   
  
     第九条 机器处所的固定式泡沫灭火系统   
  
     一、机器处所所需的任何固定式泡沫灭火系统应能使在不超过五分钟的时间内通过固定的喷射口喷出的泡沫量足以覆盖燃油所能散布的最大单个面积达150毫米（6英寸）厚度。该系统所产生的泡沫应能适宜于扑灭油类火灾。应设有通过固定管系和控制阀或旋塞有效地分配泡沫至适当喷射口的设施。并应设有用固定式喷射器将泡沫有效地射到被保护处所内其他主要火灾危险处的设施。泡沫膨胀率应不超过12：1。   
  
     二、任何这种系统的控制设施应易于到达和操作简便，且应成组地分装于尽可能少的处所，其所在位置应不致为被保护处所的火灾所切断。   
  
     第十条 机器处所的固定式高膨胀泡沫灭火系统   
  
     一、（一）机器处所所需的任何固定式高膨胀泡沫系统应能使通过固定喷射口迅速喷出的泡沫量足以按每分钟至少1米（3．3英尺）的厚度注入最大一个被保护处所。所备发泡液的数量，应足够产生5倍于最大一个被保护处所容积的泡沫容积。泡沫膨胀率应不超过1000：1。   
  
     （二）主管机关可以允许变更设备及喷出速度，但应获得等效的保护效果。   
  
     二、输送泡沫的供给管道，泡沫发生器的空气进口以及泡沫产生装置的数量，应根据主管机关的意见，使之有效地生产和分配泡沫。   
  
     三、泡沫发生器输送管道的布置，在被保护处所发生火灾时，应使泡沫发生设备不受影响。   
  
     四、泡沫发生器、发生器的动力源、发泡液以及控制这个系统的设施，应易于到达和操作简便，且应成组地设在尽可能少的处所，其所在位置，应不致为被保护处所的火灾所切断。   
  
     第十一条 机器处所的固定式压力水雾灭火系统   
  
     一、机器处所所需的任何固定式压力水雾灭火系统应备有认可型的水雾喷嘴。   
  
     二、喷嘴的数目和布置应取得主管机关的同意，并应保证使水按每分钟每一平方米至少5升（每平方英尺0．1加仑）的水量在其被保护的处所作有效而平均的分布。如认为需要增加出水率时，应取得主管机关的同意。在污水沟、舱柜顶部和燃油易于流布的其他处所，以及在机器处所内其他具有特殊失火危险处的上方，都应设置喷嘴。   
  
     三、该系统可以分成若干区域，其分配阀应能从被保护处所以外易于到达的部位进行操作，且不致因失火而被立即切断。   
  
     四、该系统应以必要的压力保持充水，并应于该系统内压力降低时，供水泵即自动向系统供水。   
  
     五、水泵应能同时向任一被保护舱室内该系统的所有区域以必要的压力供水。水泵及其控制设备应装于被保护处所以外。水泵应不致因水雾系统所保护处所失火而使该系统失去作用。   
  
     六、水泵可以为独立内燃机驱动；但如由符合本公约第二章甲第二十五条或第二十六条规定的应急发电机供给动力，则该发电机的布置应在主动力损坏时，能自动起动，以使本条五款所要求的水泵立刻获得动力。如水泵由独立内燃机驱动，其所在位置应在被保护舱室失火时，不会影响对该机器的空气供应。   
  
     七、应采取措施以防止喷嘴被水中的杂质或管系、喷嘴、阀门和水泵的锈蚀所阻塞。   
  
     第十二条 自动喷水器、失火报警和探火系统   
  
     一、（一）任何所需的自动喷水器、失火报警和探火系统应能在任何时间立即进入工作，而不需依靠船员的操作。该系统应为湿管式，但对少量暴露管段可采用干管式，如主管机关认为这是一项必要的预防措施。该系统的任何部位，如在使用中可能承受冰冻温度时，应有适宜的防冻措施。该系统应以必要的压力保持充水，且应按本条要求具有连续供水的设施。   
  
     （二）每一喷水器分区应有声、光信号报警设施，当任一喷水器动作时，能在一个或数个指示装置中自动发出信号。这种装置应显示出该系统所服务的任一处所发生的任何火灾征兆及其位置，并应集中于驾驶室或主消防控制站内，该处应配备一定的人员或设备，以保证该系统发出的任何警报可立刻被负责船员收到。这种报警系统的构造应能显示出该系统本身发生的任何故障。   
  
     二、（一）喷水器应分组成为若干分区，每一分区的喷水器不应多于200只，任一喷水器分区所服务的处所不得多于两层甲板，且只能布置在一个主竖区范围内，但如主管机关认为不致因此而降低船舶的防火性能者，可以允许一个喷水器分区所服务的处所多于两层甲板或其布置范围超过一个主竖区。   
  
     （二）每一喷水器分区只能用一个截止阀加以分隔。每一喷水器分区的这种停止阀应易于到达，其位置应有清楚的固定标志，并应有防止任何未经许可的人员操作这种停止阀的措施。   
  
     （三）在每一个分区的截止阀处和中心站内，均应设有指示此系统中压力的仪表。   
  
     （四）喷水器应为耐海上大气腐蚀的。在起居和服务处所中，喷水器应在68℃（155°Ｆ）至79℃（175°Ｆ）的温度范围内进入工作，但在例如干燥室等可能发生较高环境温度的处所除外，在这些处所内，喷水器的工作温度可以增加至不大于甲板顶最高温度加30℃（54°Ｆ）。   
  
     （五）在每一指示装置处应设有图或表，表示该装置所涉及的处所和有关每一分区的区段位置，并应有试验和保养的适当说明。   
  
     三、喷水器应设于顶部位置，并间隔成合适的图式，使喷水器所保护的标称面积，保持每分钟每平方米不少于5升（每平方英尺0．1加仑）的平均出水量。作为另一种方法，主管机关也可以准许使用能提供作适当散布的其他出水量的喷水器，其出水量业经使主管机关满意，表明其效能并不较上述为低。   
  
     四、（一）应设有压力柜，其容积至少等于本款所述的充注水量的两倍。压力柜贮存的常备充注淡水量应等于本条五款（二）项所述水泵的一分钟排量，并应设有保持柜内空气压力的设备，当柜内常备充注淡水量被使用时，能保证柜内压力不低于喷水器的工作压力加上从柜底量至系统中最高位置喷水器的水头压力。应有在压力下补充空气和补充柜内充注淡水的适当设施。压力柜应设有显示柜内正确水位的玻璃水位表。   
  
     （二）应有防止海水进入柜内的设施。   
  
     五、（一）应设有1台专供喷水器自动连续喷水的独立动力泵。此泵应在压力柜内常备淡水完全排干之前，由于系统中压力降低而能自动进入工作。   
  
     （二）泵和管系应能维持在最高位置的喷水器所必需的压力，以保证按本条三款规定的出水量连续喷水，并足以同时覆盖280平方米（3000平方英尺）的最小面积。   
  
     （三）泵的输出端，应装有1只试验阀连同1根开口的排水短管。该阀和管子的有效截面积，应在系统内保持本条四款（一）项所规定的压力时，足以放出该泵所要求的出水量。   
  
     （四）泵的海水进口，应尽可能位于该泵所在处所，其布置应在船舶漂浮时，除检查或修理水泵外，不需因任何目的而切断水泵的海水供给。   
  
     六、喷水器泵和压力柜应位于远离任何甲类机器处所的位置，且不应位于需要由这种喷水器系统保护的任何处所内。   
  
     七、海水泵及自动失火报警和探火系统应有不少于两套的动力源。若泵的动力源为电力时，则应一为主发电机，另一为应急电源。泵的供电，应通过专设的单独馈电线，一路来自主配电板，另一路来自应急配电板。   
  
     馈电线应避免布置在厨房、机器处所和有高度失火危险的其他围闭处所，但为了通达相应的配电板而必需者除外；该线路应接通至设在喷水器泵附近的一只自动转换开关。在正常供电情况下，此开关应一直由主配电板供电，并应设计成当此路供电发生故障时，即能自动转换至由应急配电板供电。主配电板和应急配电板的开关均应有清楚的标记，并在正常情况下保持闭合状态。上述馈电线上不允许设有其他开关。报警和探火系统动力源中的一路应是应急电源。如果泵的动力源之一是内燃机时，则除应符合本条六款规定外，该机所在位置应在任何被保护处所失火时不影响对机器的空气供给。   
  
     八、喷水器系统和船上消防总管间应有连接，在连接处应设1只可锁制的截止止回阀，以防止水从喷水器系统中倒流至消防总管。   
  
     九、（一）每一喷水器分区应设有试验阀，用以放出相当于一只喷水器工作时的排水进行自动报警的试验；每一分区的试验阀应装在该分区的停止阀附近。   
  
     （二）应设有降低系统中压力来试验水泵自动工作的设施。   
  
     （三）在本条一款（二）项所述的指示装置位置之一，应设有能试验每一喷水器分区的报警和指示器的开关。   
  
     十、每一喷水器分区应备有备用喷水器头，其数量应取得主管机关的同意。   
  
     第十三条 自动失火报警和探火系统   
  
     对载客超过36人的客船的要求：   
  
     一、（一）任何所需的自动失火报警和探火系统应在任何时候和不需船员操作的情况下，能立即动作。   
  
     （二）每一探测器分区，应备有在任一探测器动作时，立即能在一个或数个指示装置中自动发出声、光警报信号的设施。上述装置应显示出该系统所服务的任一处所的任何火灾征兆及其位置，并应集中于驾驶室或主防火控制站内，该处应配备一定的人员或设备，以保证该系统发出的任何警报可立刻被负责船员收到。这种报警系统的构造应能显示出该系统本身发生的任何故障。   
  
     二、探测器应分组成为若干分区，在每一分区中由一系统所服务的房间不应多于50间，所装有的探测器不应多于100只。一个探测器分区所服务的处所不得同时包括船舶的左右两舷，不得多于一层甲板，也不得超过一个主竖区；但如主管机关认为不致因此而降低船舶防火性能者，则可以准许一个探测器分区同时服务于船舶左右两舷和多于一层甲板。   
  
     三、该系统应能为任一被保护处所的不正常空气温度、不正常烟气浓度或显示初期火灾的其他因素所启动。对于测温式系统，当温度以每分钟不大于1℃（1．8°Ｆ）的速率向下述温度界限升高，在空气温度低于57℃（135°Ｆ）时不应动作，而在空气温度不超过74℃（165°Ｆ）时即应进行动作。对于干燥室和类似的通常高温处所，根据主管机关的判断，其动作的许可温度可以较该类处所的甲板顶最高温度增加30℃（54°Ｆ）。对于测烟式系统，当透过的光束强度降低时应即动作，其降低量由主管机关决定；经主管机关同意，亦可允许采用其他同等有效的动作方法。探火系统不得用于探火以外的任何其他目的。   
  
     四、探测器可以采用脱开或闭合触点或其他适当的方法来操纵报警。探测器应装在顶部位置，并应予以适当保护以防止撞击或自然损伤。探测器应适合在海上大气中使用。探测器应装在开敞的位置，离开可能妨碍热气或烟气流向敏感元件的梁和其他部件。用闭合触点方法动作的探测器应为密闭接触型，其电路应在连续监视下以便发现故障情况。   
  
     五、要求设置探火设施的每一处所最少需装1只探测器，并且每37平方米（400平方英尺）的甲板面积应有不少于1只探测器。在宽敞的处所，探测器应安排成有规则的图式，使任一探测器与另一探测器的间距不大于9米（30英尺），或与舱壁的间距不大于4．5米（15英尺）。   
  
     六、用于失火报警和探火系统的电气设备，至少应有两个动力源，其中之一应为应急电源。其动力应由专用的独立馈电线供给。该馈电线应接通至设在探火系统控制站中的转换开关。线路系统应避免布置在厨房、机器处所和具有高度失火危险的其他围闭处所，但为了该处所的探火或为了通达相应的配电板而必需者除外。   
  
     七、（一）在每一指示装置附近应贴示图或表，表明该装置所涉及的处所和有关每一分区的区段位置。并应有试验和保养的适当说明。   
  
     （二）应有用热气或烟气在探测器处试验探测器和指示装置是否正确动作的设施。   
  
     八、每一探测器分区应备有备用探测器头，其数量应取得主管机关的同意。   
  
     对一切其他类型船舶的要求：   
  
     九、所需的一切探火系统，应能自动指示火灾的发生、征兆及其部位，指示器应集中于驾驶室或与驾驶室有直接联系的其他控制站内。主管机关可以准许将指示器分置于几个站室内。   
  
     十、客船所需的探火系统的电气设备，应有两个独立的动力源，其中之一应为应急电源。   
  
     十一、失火报警系统应能在本条第九款所指的主要站室内同时发出音响和可见的信号。货舱的探火系统不需具有音响警报。   
  
     第十四条 消防员装备   
  
     消防员装备的组成：   
  
     一、个人配备包括：   
  
     （一）防护服，其材料应能保护皮肤不受火焰的热幅射，并不受蒸汽的灼伤和烫伤。衣服的外表应是防水的。   
  
     （二）长统靴和手套，由橡胶或其他绝缘材料制成。   
  
     （三）一顶能对撞击提供有效防护的硬头盔。   
  
     （四）一盏认可型的电安全灯（手提灯），其照明时间至少为3小时。   
  
     （五）一把主管机关同意的太平斧。   
  
     二、一具认可型的呼吸器，其型式可为下列之一：   
  
     （一）一具装有适宜空气泵和一段空气管的防烟盔或防烟罩，其空气管的长度应足够从开敞甲板到达货舱或机器处所的任一部分，且不受舱口或门口的妨碍。为符合本款要求，如空气管所需的长度超过36米（120英尺）时，应按主管机关的决定用储压式呼吸器代替防烟盔或防烟罩或增设储压式呼吸器1具。   
  
     （二）一具储压式呼吸器，其可供使用的时限由主管机关决定。   
  
     每一呼吸器应有足够长度与强度的耐火救生绳1根，此绳应能用弹条卡钩系在呼吸器的背带上，或系在一条独立的腰带上，使在拉曳救生绳时防止呼吸器脱开。   
  
     第十五条 灭火设备的即刻可用   
  
     在一切新船和现有船舶中，灭火设备应保持良好状况，并在船舶整个航程期间能立刻使用。   
  
     第十六条 代用品的采用   
  
     本章内对任何新船和现有船舶所规定的任何特定型式的设备、用具、灭火剂或装置，如主管机关认为在不降低效能的情况下，可允许用其他型式的设备来代替。   
  
     第二节 载客超过36人客船的消防措施   
  
     第十七条 结 构   
  
     船体、上层建筑、结构性舱壁、甲板及甲板室应以钢材或其他等效材料建造。为运用本章第三条七款所指的钢或其他等效材料的定义，“相应曝火时间”应按本章第二十条表列的完整性及隔热性标准来确定。例如当各种分隔诸如甲板或甲板室的两侧和两端，允许为“乙－0”级耐火完整性时，则“相应曝火时间”应为半小时。   
  
     如结构的任何部分为铝合金时，则应符合下列要求：   
  
     一、“甲或乙级分隔”的铝合金部件，除由主管机关认为是无负荷的结构外，在标准耐火试验的任何相应曝火时间内，其隔热层应能使结构心材的温度升高不超过其环境温度200℃（360°Ｆ）。   
  
     二、应特别注意用于支承救生艇、筏的存放、降落和登乘区域以及支承“甲和乙级分隔”的铝合金圆柱、支柱和其他结构部件的隔热要求，以保证：   
  
     （一）对用于支承救生艇、筏区域以及“甲级分隔”的部件，在标准耐火试验的一小时之末，应适用本条一款规定的温升限度。   
  
     （二）对用于支承“乙级分隔”的部件，在标准耐火试验的半小时之末，应适用本条一款规定的温升限度。   
  
     三、甲类机器处所的顶盖及舱棚，应为足够隔热的钢结构；其上的任何开口（如有时），均应适当布置和保护，以防止火灾蔓延。   
  
     第十八条 主竖区和水平区   
  
     一、船体、上层建筑及甲板室应以“甲级分隔”分为若干主竖区。阶层和壁凹应减至最少量，但如属必需者，则亦应为“甲级分隔”。此分隔的隔热值，应符合本章第二十条中相应的表列规定。   
  
     二、舱壁甲板以上的形成主竖区限界面舱壁，只要实际可行应与直接在舱壁甲板以下的水密分舱舱壁位于同一直线上。   
  
     三、这种舱壁应由甲板延伸至甲板，并延伸至船壳或其他限界面。   
  
     四、如某一主竖区内以水平“甲级分隔”再分为水平区，用以对船上喷水器系统区域与非喷水器系统区域之间提供一适当的屏障时，此项水平分隔应延伸至相邻的两个主竖区舱壁，并延伸至该船的船壳或外部限界面，并应按本章第二十条表3所列的耐火隔热性和完整性的数值予以隔热。   
  
     五、为特殊用途而设计的船舶，例如汽车或铁路车辆渡船，如设置主竖区舱壁将影响船舶所预定的用途时，应以能控制和限制火灾的等效设施代替，并应由主管机关特殊认可。   
  
     倘若船上有特种类别的处所，则任何这种处所应符合本章第三十条的相应规定，且此规定与本章本节的其他要求有矛盾时应以第三十条的要求为准。   
  
     第十九条 主竖区内的舱壁   
  
     一、不要求为“甲级分隔”的一切舱壁，应至少为本章第二十条表列的“乙级或丙级分隔”。一切这种分隔可按本章第二十七条的规定，在其表面覆以可燃材料的贴面板。   
  
     二、一切走廊舱壁，当不要求为“甲”级分隔时，应为从甲板延伸至甲板的“乙”级分隔，但下列者除外：   
  
     （一）当在舱壁的两侧设置连续“乙”级天花板及（或）衬板时，连续天花板或衬板后面的舱壁部分，其所用材料应为“乙级分隔”结构所允许的厚度和成分，但在主管机关认为合理和可行的范围内，这种舱壁部分只需满足“乙”级完整性标准的要求；   
  
     （二）在具有符合本章第十二条规定的自动喷水器系统所保护的船舶上，以“乙”级材料建造的走廊舱壁可在走廊内天花板处终止，但此项天花板应为“乙级分隔”结构所允许的厚度和成分。尽管有本章第二十条的要求，在主管机关认为合理和可行的范围内，上述舱壁和天花板只需满足“乙”级完整性标准的要求。上述舱壁上的一切门和门框，应为不燃材料，其构造和安装应能提供可靠的耐火性能，并取得主管机关的同意。   
  
     三、除走廊舱壁外，一切要求为“乙级分隔”的舱壁，应由甲板延伸至甲板，并延伸至船壳或其他限界面；但如在舱壁的两侧均设有连续“乙”级天花板和（或）衬板时，此舱壁可终止于连续的天花板和衬板。   
  
     第二十条 舱壁及甲板的耐火完整性   
  
     一、除应符合本节其他条文关于舱壁及甲板耐火完整性的明确规定外，一切舱壁及甲板的最低耐火完整性应按本条表1至表4办理。如因船舶的任何特殊结构布置，致使任何分隔的最低耐火完整性数值难于从这些表中确定时，则该数值的确定应取得主管机关的同意。   
  
     二、下列要求应作为运用各表的指导原则：  
  
    （一）表1  适用于作为主竖区或水平区限界面的舱壁。  
          表2  适用于不作为主竖区或水平区限界面的舱壁。  
          表3  适用于在主竖区内形成阶层的甲板或作为水平  
                区限界面的甲板。  
          表4  适用于在主竖区内不形成阶层的甲板也不作为  
                水平区限界面的甲板。  
       
     （二）为了确定应用于相邻处所之间的限界面相应的耐火完整性标准，这些处所应按其失火危险程度分为下列①到（14）类。如因某一处所的内容和用途。在按本条规定进行分类存在疑问时，则此处所应按具有最严格的限界面要求的有关类别中的某一处所来处理。每类的名称只是举例，而不是限制。每类前面圈号内的数字是指表内相应的“列”或“行”数。   
  
     ①控制站   
  
     设有应急电源和应急照明源的处所。   
  
     操舵室和海图室。   
  
     设有船舶无线电设备的处所。   
  
     失火控制和记录站。   
  
     位于推进机械处所外面的推进机械控制室。   
  
     设有集中失火报警设备的处所。   
  
     设有集中应急广播系统站和设备的处所。   
  
     ②梯道   
  
     旅客和船员用的内部梯道、升降机、自动扶梯（完全设在机器处所内者除外）以及通往上述梯道等的环围。   
  
     至于仅环围于一层甲板的梯道，应作为未被防火门隔开的处所的一部分。   
  
     ③走廊   
  
     旅客及船员的走廊。   
  
     ④救生艇与救生筏的操作及登乘地点   
  
     作为救生艇、筏登乘与降落地点的开敞甲板处所和围蔽散步甲板处所。   
  
     ⑤开敞甲板处所   
  
     救生艇、筏登乘与降落地点以外的开敞甲板处所和围蔽散步甲板处所。   
  
     露天处所（上层建筑及甲板室外面的处所）。   
  
     ⑥较小失火危险的起居处所   
  
     设有限制失火危险的家具和装备的住室。   
  
     设有限制失火危险的家具和装备的公共处所。   
  
     设有限制失火危险的家具和装备的公共处所，且其甲板面积少于50平方米（540平方英尺）者。   
  
     设有限制失火危险的家具和装备的办公室及诊疗室。   
  
     ⑦中等失火危险的起居处所   
  
     与上述⑥同，但设有非限制失火危险的家具和装备。   
  
     设有限制失火危险的家具及装备的公共处所，但甲板面积等于或大于50平方米（540平方英尺）者。   
  
     起居处所内单独的橱柜及小储物间。   
  
     小卖部。   
  
     电影放映室及影片储藏室。   
  
     食物厨房（没有明火者）。   
  
     清洁用具橱柜（柜内不放可燃液体）。   
  
     实验室（室内不放可燃液体）。   
  
     药房。   
  
     小干燥间，且其甲板面积等于或少于4平方米（43平方英尺）者。   
  
     贵重物品保管室。   
  
     ⑧较大失火危险的起居处所   
  
     设有非限制失火危险的家具和装备的公共处所，且其甲板面积等于或大于50平方米（540平方英尺）者。   
  
     理发室及美容室。   
  
     ⑨盥洗室及类似处所   
  
     公共盥洗设施、淋浴室、洗澡室、厕所等。   
  
     小洗衣间。   
  
     室内游泳池场所。   
  
     手术室。   
  
     起居处所内单独的服务配膳室。   
  
     个人盥洗设施应作为其所在处所的一部分。   
  
     ⑩极少失火危险的舱（柜）、空室及辅机处所   
  
     构成船体结构部分的水舱。   
  
     空室及隔离空舱。   
  
     不设置具有压力润滑系统的机器的辅机处所，且在该处所内禁止储藏可燃物体，例如：   
  
     通风机及空气调节机间、锚机室、舵机室、减摇装置机室、电力推进电动机间、分区配电板间及浸油式电力变压器（10千伏安以上）以外的纯电气设备间、轴隧及管隧、泵及冷藏机（不抽送或使用易燃液体）的处所。   
  
     为上述处所服务的封闭围壁通道。   
  
     其他封闭围壁通道，例如管子及电缆的围壁通道。   
  
     （11）具有中等失火危险的辅机处所、装货处所、特种处所、货油舱与其他油舱（柜），以及其他类似处所   
  
     货油舱。   
  
     货舱、围壁通道及舱口。   
  
     冷藏舱。   
  
     燃油舱（柜），如其设在没有机器的单独处所内者。   
  
     允许储藏可燃物体的轴隧及管隧。   
  
     在⑩类中所述的辅机处所，且在该处所内允许设置压力润滑系统的机器或储藏可燃物体者。   
  
     燃油加油站。   
  
     设有浸油式电力变压器（10千伏安以上）的处所。   
  
     设有由汽轮机及往复式蒸汽机驱动的辅发电机处所，以及功率为112千瓦和112千瓦以下小内燃机驱动的应急发电机、喷水器、洒水器或消防泵、舱底泵等。   
  
     特种处所（仅表1及表3所适用者）。   
  
     为用于上述处所的封闭围壁通道。   
  
     （12）机器处所及主厨房   
  
     主推进机械舱（电力推进电动机舱除外）及锅炉舱。   
  
     除前述⑩及（11）类的辅机处所处，设有内燃机或其他燃油、加热或泵装置的辅机处所。   
  
     主厨房及其附属设施。   
  
     上述处所的围壁通道及舱棚。   
  
     （13）储藏室、车间、配膳室等   
  
     不附属于厨房的主配膳室。   
  
     主洗衣间。   
  
     大干燥间，其甲板面积大于4平方米（43平方英尺）者。   
  
     杂物间。   
  
     邮件舱及行李室。   
  
     垃圾间。   
  
     车间（不属于机器处所、厨房等的一部分者）。   
  
     （14）贮藏易燃液体的其他处所   
  
     灯间。   
  
     油漆间。   
  
     内装易燃液体的储藏室（包括储藏染料、药品等）。   
  
     实验室（室内放置易燃液体）。   
  
     （三）如果以一个数值表明两个处所之间的限界面的耐火完整性时，则此数值应适用于各种情况。   
  
     （四）凡未设有符合本章第十二条规定的自动喷水器系统的某一主竖区或水平区内的两个处所之间，或两个均未被此种自动喷水器系统保护的主竖区或水平区之间的限界面，在确定其所适用的耐火完整性标准时，应采用表列两个数值中的较高值。   
  
     （五）凡设有符合本章第十二条规定的自动喷水器系统的某一主竖区或水平区内的两个处所之间，或两个均由此种自动喷水器系统保护的主竖区或水平区之间的限界面，在确定其所适用的耐火完整性标准时，应采用表列两个数值中的较低值。当一个喷水器系统区域和一个非喷水器系统区域在起居处所及服务处所内相遇时，此两区域之间的分隔应采用表列两个数值中的较高值。   
  
     （六）当相邻处所属于同一类别且在表中角注为“1”者，如主管机关认为不必要时，则上述处所之间可不必设置舱壁或甲板。例如在（12）类内厨房及其附属的配膳间之间，如果配膳室的舱壁和甲板能保持厨房限界面的完整性，则不需要求设置舱壁。但无论如何，厨房及机器处所之间应设置舱壁，即使这两个处所都属于（12）类。   
  
     作为主竖区或水平区限界面的舱壁  
  
                                                                          表1  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                                ｜          ｜          ｜          ｜          ｜  
    处                    所    ｜    ①    ｜    ②    ｜    ③    ｜    ④    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
控制站                      ①  ｜甲－60  ｜甲－30  ｜甲－30  ｜甲－0    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
梯  道                      ②  ｜          ｜甲－0    ｜甲－0    ｜甲－0    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
走  廊                      ③  ｜          ｜          ｜甲－0    ｜甲－0    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
救生艇与救生筏操作及            ｜          ｜          ｜          ｜          ｜  
                            ④  ｜          ｜          ｜          ｜    —    ｜  
登乘地点                        ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
开敞甲板处所                ⑤  ｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
较小失火危险的起居处所      ⑥  ｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
中等失火危险的起居处所      ⑦  ｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
较大失火危险的起居处所      ⑧  ｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
盥洗室及类似处所            ⑨  ｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
极少失火危险的舱（柜）、        ｜          ｜          ｜          ｜          ｜  
                            ⑩  ｜          ｜          ｜          ｜          ｜  
空室及辅机处所                  ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
具有中等失火危险的辅机处        ｜          ｜          ｜          ｜          ｜  
所、装货处所、特种处所、货      ｜          ｜          ｜          ｜          ｜  
油舱与其他油舱（柜），以        ｜          ｜          ｜          ｜          ｜  
及其他类似处所          （11）｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
机器处所及主厨房        （12）｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
储藏室、车间、配膳间等  （13）｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
贮藏易燃液体的其他处所  （14）｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
          ｜          ｜          ｜          ｜          ｜          ｜  
    ⑤    ｜    ⑥    ｜    ⑦    ｜    ⑧    ｜    ⑨    ｜    ⑩    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
甲－0    ｜甲－60  ｜甲－60  ｜甲－60  ｜甲－0    ｜  甲－0  ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜甲－15  ｜甲－30  ｜甲－60  ｜          ｜          ｜  
甲－0    ｜          ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜甲－0    ｜甲－0    ｜甲－15  ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜甲－30  ｜甲－30  ｜          ｜          ｜  
甲－0    ｜甲－0    ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜          ｜甲－0    ｜甲－0    ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
    —    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
    —    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜甲－15  ｜甲－30  ｜甲－30  ｜          ｜          ｜  
          ｜          ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜甲－0    ｜甲－0    ｜甲－0    ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜甲－30  ｜甲－60  ｜          ｜          ｜  
          ｜          ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜          ｜甲－0    ｜甲－15  ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜甲－60  ｜          ｜          ｜  
          ｜          ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜甲－15  ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
－－－－－－－－－－－－－－－－－－－－－－－－  
          ｜          ｜          ｜  
  （11）｜  （12）｜  （13）｜  （14）  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－60  ｜甲－60  ｜甲－60  ｜甲－60  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜甲－15  ｜  
甲－30  ｜甲－60  ｜          ｜甲－60  
          ｜          ｜甲－0    ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜甲－15  ｜  
甲－30  ｜甲－60  ｜          ｜甲－60  
          ｜          ｜甲－0    ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－60  ｜甲－0    ｜甲－60  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
甲－15  ｜          ｜甲－15  ｜  
          ｜甲－30  ｜          ｜甲－30  
甲－0    ｜          ｜甲－0    ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
甲－30  ｜          ｜甲－30  ｜  
          ｜甲－60  ｜          ｜甲－60  
甲－0    ｜          ｜甲－0    ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
甲－60  ｜          ｜甲－30  ｜  
          ｜甲－60  ｜          ｜甲－60  
甲－15  ｜          ｜甲－0    ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－60  ｜甲－0    ｜甲－60  
          ｜          ｜          ｜  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜        2｜  
          ｜甲－60  ｜甲－30  ｜甲－60  
          ｜          ｜甲－15  ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
          ｜          ｜甲－0    ｜甲－30  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
          ｜          ｜          ｜甲－60  
          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－－－－－－－－－  
       
     不作为主竖区或水平区限界面的舱壁  
  
                                                                          表2  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                                ｜          ｜          ｜          ｜          ｜  
    处                    所    ｜    ①    ｜    ②    ｜    ③    ｜    ④    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜      1  ｜          ｜          ｜          ｜  
控制站                      ①  ｜乙－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜      1  ｜          ｜          ｜  
梯  道                      ②  ｜          ｜甲－0    ｜甲－0    ｜甲－0    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
走  廊                      ③  ｜          ｜          ｜    丙    ｜甲－0    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
救生艇与救生筏操作及            ｜          ｜          ｜          ｜          ｜  
                            ④  ｜          ｜          ｜          ｜    —    ｜  
登乘地点                        ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
开敞甲板处所                ⑤  ｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
较少失火危险的起居处所      ⑥  ｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
中等失火危险的起居处所      ⑦  ｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
较大失火危险的起居处所      ⑧  ｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
盥洗室及类似处所            ⑨  ｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
极少失火危险的舱（柜）、        ｜          ｜          ｜          ｜          ｜  
                            ⑩  ｜          ｜          ｜          ｜          ｜  
空室及辅机处所                  ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
具有中等失火危险的辅机处        ｜          ｜          ｜          ｜          ｜  
所、装货处所、特种处所、        ｜          ｜          ｜          ｜          ｜  
货油舱与其他油舱（柜），        ｜          ｜          ｜          ｜          ｜  
以及其他类似处所        （11）｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
机器处所及主厨房        （12）｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
储藏室、车间、配膳间等  （13）｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
贮藏易燃液体的其他处所  （14）｜          ｜          ｜          ｜          ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
          ｜          ｜          ｜          ｜          ｜          ｜  
    ⑤    ｜    ⑥    ｜    ⑦    ｜    ⑧    ｜    ⑨    ｜    ⑩    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
甲－0    ｜          ｜          ｜          ｜          ｜          ｜  
          ｜甲－60  ｜甲－60  ｜甲－60  ｜甲－0    ｜甲－0    ｜  
乙－0    ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜甲－15  ｜甲－30  ｜          ｜          ｜  
甲－0    ｜甲－0    ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜          ｜甲－0    ｜甲－0    ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
甲－0    ｜          ｜乙－15  ｜乙－15  ｜          ｜          ｜  
          ｜乙－0    ｜          ｜          ｜乙－0    ｜甲－0    ｜  
乙－0    ｜          ｜乙－0    ｜乙－0    ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
    —    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜          ｜  
    —    ｜          ｜          ｜          ｜          ｜甲－0    ｜  
          ｜乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜乙－0    ｜乙－15  ｜乙－15  ｜乙－0    ｜          ｜  
          ｜          ｜          ｜          ｜          ｜甲－0    ｜  
          ｜  丙      ｜  丙      ｜    丙    ｜    丙    ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜乙－15  ｜乙－15  ｜乙－0    ｜          ｜  
          ｜          ｜          ｜          ｜          ｜甲－0    ｜  
          ｜          ｜  丙      ｜    丙    ｜    丙    ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜乙－15  ｜乙－0    ｜          ｜  
          ｜          ｜          ｜          ｜          ｜甲－0    ｜  
          ｜          ｜          ｜    丙    ｜  丙      ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜  丙      ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜      1  ｜  
          ｜          ｜          ｜          ｜          ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
－－－－－－－－－－－－－－－－－－－－－－－－  
          ｜          ｜          ｜  
  （11）｜  （12）｜  （13）｜（14）  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－60  ｜甲－60  ｜甲－60  ｜甲－60  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜甲－15  ｜  
甲－15  ｜甲－30  ｜          ｜甲－30  
          ｜          ｜甲－0    ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜甲－30  
甲－15  ｜甲－30  ｜甲－0    ｜  
          ｜          ｜          ｜甲－0  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜甲－15  
甲－0    ｜甲－15  ｜甲－0    ｜  
          ｜          ｜          ｜甲－0  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜甲－0    ｜甲－0  
甲－0    ｜甲－0    ｜          ｜  
          ｜          ｜乙－0    ｜乙－0  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
甲－15  ｜          ｜          ｜甲－30  
          ｜甲－30  ｜甲－0    ｜  
甲－0    ｜          ｜          ｜甲－0  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
甲－15  ｜          ｜甲－15  ｜甲－60  
          ｜甲－60  ｜          ｜  
甲－0    ｜          ｜甲－0    ｜甲－15  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
甲－30  ｜          ｜甲－15  ｜甲－60  
          ｜甲－60  ｜          ｜  
甲－0    ｜          ｜甲－0    ｜甲－15  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
      1  ｜          ｜          ｜        2  
甲－0    ｜甲－0    ｜甲－0    ｜甲－30  
          ｜          ｜          ｜  
          ｜          ｜          ｜甲－15  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
          ｜甲－0    ｜甲－0    ｜甲－60  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜      1  ｜  
          ｜          ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜        2  
          ｜          ｜          ｜甲－30  
          ｜          ｜          ｜甲－15  
－－－－－－－－－－－－－－－－－－－－－－－－  
       
     在主竖区内形成阶层的甲板或作为水平区限界面的甲板  
  
                                                                          表3  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                  甲板上处所    ｜          ｜          ｜          ｜          ｜  
                                ｜    ①    ｜    ②    ｜    ③    ｜    ④    ｜  
 甲板下处所                     ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
控制站                      ①  ｜甲－60  ｜甲－60  ｜甲－30  ｜甲－0    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
梯  道                      ②  ｜甲－15  ｜甲－0    ｜甲－0    ｜甲－0    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
走  廊                      ③  ｜甲－30  ｜甲－0    ｜甲－0    ｜甲－0    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
救生艇与救生筏操作及            ｜          ｜          ｜          ｜          ｜  
                            ④  ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
登乘地点                        ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
开敞甲板处所                ⑤  ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜甲－30  ｜甲－15  ｜          ｜  
较小失火危险的起居处所      ⑥  ｜甲－60  ｜          ｜          ｜甲－0    ｜  
                                ｜          ｜甲－0    ｜甲－0    ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜甲－60  ｜甲－30  ｜甲－15  ｜  
中等失火危险的起居处所      ⑦  ｜甲－60  ｜          ｜          ｜          ｜  
                                ｜          ｜甲－15  ｜甲－0    ｜甲－0    ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜甲－60  ｜甲－60  ｜甲－60  ｜  
较大失火危险的起居处所      ⑧  ｜甲－60  ｜          ｜          ｜          ｜  
                                ｜          ｜甲－15  ｜甲－15  ｜甲－15  ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
盥洗室及类似处所            ⑨  ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
极少失火危险的舱（柜）、        ｜          ｜          ｜          ｜          ｜  
                            ⑩  ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
空室及辅机处所                  ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
具有中等失火危险的辅机处        ｜          ｜          ｜          ｜          ｜  
所、装货处所、特种处所、        ｜甲－60  ｜甲－60  ｜甲－60  ｜甲－60  ｜  
货油舱与其他油舱（柜），        ｜          ｜          ｜          ｜          ｜  
以及其他类似处所        （11）｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
机器处所及主厨房        （12）｜甲－60  ｜甲－60  ｜甲－60  ｜甲－60  ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜甲－60  ｜甲－30  ｜          ｜  
储藏室、车间、配膳间等  （13）｜甲－60  ｜          ｜          ｜甲－15  ｜  
                                ｜          ｜甲－15  ｜甲－0    ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
贮藏易燃液体的其他处所  （14）｜甲－60  ｜甲－60  ｜甲－60  ｜甲－60  ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
          ｜          ｜          ｜          ｜          ｜          ｜  
    ⑤    ｜    ⑥    ｜    ⑦    ｜    ⑧    ｜    ⑨    ｜    ⑩    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
甲－0    ｜甲－15  ｜甲－30  ｜甲－60  ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜甲－15  ｜甲－15  ｜          ｜          ｜  
甲－0    ｜甲－0    ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜          ｜甲－0    ｜甲－0    ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜甲－15  ｜甲－15  ｜          ｜          ｜  
甲－0    ｜甲－0    ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜          ｜甲－0    ｜甲－0    ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜甲－15  ｜甲－30  ｜          ｜          ｜  
甲－0    ｜甲－0    ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜          ｜甲－0    ｜甲－0    ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜甲－15  ｜甲－30  ｜甲－60  ｜          ｜          ｜  
甲－0    ｜          ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜甲－0    ｜甲－0    ｜甲－15  ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜甲－30  ｜甲－60  ｜甲－60  ｜          ｜          ｜  
甲－0    ｜          ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜甲－0    ｜甲－15  ｜甲－15  ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜甲－30  ｜甲－60  ｜甲－60  ｜          ｜          ｜  
甲－0    ｜          ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜甲－0    ｜甲－15  ｜甲－15  ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
甲－0    ｜甲－60  ｜甲－60  ｜甲－60  ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜甲－15  ｜甲－30  ｜甲－60  ｜          ｜          ｜  
甲－0    ｜          ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜甲－0    ｜甲－0    ｜甲－15  ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
甲－0    ｜甲－60  ｜甲－60  ｜甲－60  ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
－－－－－－－－－－－－－－－－－－－－－－－－  
          ｜          ｜          ｜  
  （11）｜  （12）｜  （13）｜（14）  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－30  ｜甲－60  ｜甲－15  ｜甲－60  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－60  ｜甲－0    ｜甲－60  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－60  ｜甲－0    ｜甲－60  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
甲－15  ｜          ｜          ｜  
          ｜甲－15  ｜甲－0    ｜甲－15  
甲－0    ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
甲－30  ｜          ｜          ｜  
          ｜甲－30  ｜甲－0    ｜甲－30  
甲－0    ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
甲－30  ｜          ｜甲－15  ｜  
          ｜甲－60  ｜          ｜甲－60  
甲－0    ｜          ｜甲－0    ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜        2｜  
甲－0    ｜甲－30  ｜甲－30  ｜甲－30  
          ｜          ｜          ｜  
          ｜          ｜甲－0    ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－60  ｜甲－60  ｜甲－60  ｜甲－60  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－30  ｜甲－0    ｜甲－30  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－60  ｜甲－60  ｜甲－60  ｜甲－60  
          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－－－－－－－－－  
       
     在主竖区内不形成阶层的甲板也不作为水平区限界面的甲板  
  
                                                                          表4  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                 甲板上处所     ｜          ｜          ｜          ｜          ｜  
                                ｜    ①    ｜    ②    ｜    ③    ｜    ④    ｜  
甲板下处所                      ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜甲－30  ｜甲－30  ｜甲－15  ｜          ｜  
控制站                      ①  ｜          ｜          ｜          ｜甲－0    ｜  
                                ｜甲－0    ｜甲－0    ｜甲－0    ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
梯  道                      ②  ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜甲－15  ｜          ｜      1  ｜          ｜  
走  廊                      ③  ｜          ｜甲－0    ｜甲－0    ｜甲－0    ｜  
                                ｜甲－0    ｜          ｜      1  ｜          ｜  
                                ｜          ｜          ｜乙－0    ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
救生艇与救生筏操作及            ｜          ｜          ｜          ｜          ｜  
                            ④  ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
登乘地点                        ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜甲－0    ｜          ｜  
开敞甲板处所                ⑤  ｜甲－0    ｜甲－0    ｜          ｜甲－0    ｜  
                                ｜          ｜          ｜乙－0    ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜甲－15  ｜          ｜          ｜  
较小失火危险的起居处所      ⑥  ｜甲－60  ｜          ｜甲－0    ｜甲－0    ｜  
                                ｜          ｜甲－0    ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜甲－30  ｜甲－15  ｜甲－15  ｜  
中等失火危险的起居处所      ⑦  ｜甲－60  ｜          ｜          ｜          ｜  
                                ｜          ｜甲－0    ｜甲－0    ｜甲－0    ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜甲－60  ｜甲－60  ｜甲－30  ｜  
较大失火危险的起居处所      ⑧  ｜甲－60  ｜          ｜          ｜          ｜  
                                ｜          ｜甲－15  ｜甲－0    ｜甲－0    ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜甲－0    ｜          ｜  
盥洗室及类似处所            ⑨  ｜甲－0    ｜甲－0    ｜          ｜甲－0    ｜  
                                ｜          ｜          ｜乙－0    ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
极少失火危险的舱（柜）、        ｜          ｜          ｜          ｜          ｜  
                            ⑩  ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
空室及辅机处所                  ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
具有中等失火危险的辅机处        ｜          ｜          ｜          ｜          ｜  
所、装货处所、特种处所、货      ｜甲－60  ｜甲－60  ｜甲－60  ｜甲－30  ｜  
油舱与其他油舱（柜），以及      ｜          ｜甲－15  ｜甲－15  ｜甲－0    ｜  
其他类似处所            （11）｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜          ｜          ｜          ｜  
机器处所及主厨房        （12）｜甲－60  ｜甲－60  ｜甲－60  ｜甲－60  ｜  
                                ｜          ｜          ｜          ｜          ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜甲－30  ｜甲－15  ｜甲－15  ｜  
储藏室、车间、配膳间等  （13）｜甲－60  ｜          ｜          ｜          ｜  
                                ｜          ｜甲－0    ｜甲－0    ｜甲－0    ｜  
－－－－－－－－－－－－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
                                ｜          ｜甲－60  ｜甲－60  ｜          ｜  
贮藏易燃液体的其他处所  （14）｜甲－60  ｜          ｜          ｜甲－60  ｜  
                                ｜          ｜甲－30  ｜甲－30  ｜          ｜  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
          ｜          ｜          ｜          ｜          ｜          ｜  
    ⑤    ｜    ⑥    ｜    ⑦    ｜    ⑧    ｜    ⑨    ｜    ⑩    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
甲－0    ｜          ｜甲－15  ｜甲－30  ｜          ｜          ｜  
          ｜甲－0    ｜          ｜          ｜甲－0    ｜甲－0    ｜  
乙－0    ｜          ｜甲－0    ｜甲－0    ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
甲－0    ｜          ｜          ｜          ｜          ｜          ｜  
          ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
乙－0    ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
甲－0    ｜甲－0    ｜甲－15  ｜甲－15  ｜甲－0    ｜          ｜  
          ｜          ｜          ｜          ｜          ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜          ｜  
    —    ｜          ｜          ｜          ｜          ｜甲－0    ｜  
          ｜乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜          ｜  
    —    ｜          ｜          ｜          ｜          ｜甲－0    ｜  
          ｜乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜          ｜  
          ｜          ｜          ｜          ｜          ｜甲－0    ｜  
乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
甲－0    ｜甲－0    ｜甲－15  ｜甲－30  ｜甲－0    ｜          ｜  
          ｜          ｜          ｜          ｜          ｜甲－0    ｜  
乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
甲－0    ｜甲－15  ｜甲－30  ｜甲－60  ｜甲－0    ｜          ｜  
          ｜          ｜          ｜          ｜          ｜甲－0    ｜  
乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜          ｜  
          ｜          ｜          ｜          ｜          ｜甲－0    ｜  
乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜乙－0    ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜      1  ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－15  ｜甲－30  ｜甲－0    ｜甲－0    ｜  
          ｜          ｜甲－0    ｜甲－0    ｜          ｜          ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
甲－0    ｜甲－60  ｜甲－60  ｜甲－60  ｜甲－0    ｜甲－0    ｜  
          ｜          ｜          ｜          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
甲－0    ｜甲－15  ｜甲－30  ｜甲－30  ｜甲－0    ｜          ｜  
          ｜          ｜          ｜          ｜          ｜甲－0    ｜  
乙－0    ｜甲－0    ｜甲－0    ｜甲－0    ｜乙－0    ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜－－－－－｜  
          ｜甲－30  ｜甲－60  ｜甲－60  ｜          ｜          ｜  
甲－0    ｜          ｜          ｜          ｜甲－0    ｜甲－0    ｜  
          ｜甲－0    ｜甲－15  ｜甲－15  ｜          ｜          ｜  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
－－－－－－－－－－－－－－－－－－－－－－－－  
          ｜          ｜          ｜  
  （11）｜  （12）｜  （13）｜（14）  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜甲－60  
甲－0    ｜甲－60  ｜甲－0    ｜  
          ｜          ｜          ｜甲－15  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜甲－30  
甲－0    ｜甲－30  ｜甲－0    ｜  
          ｜          ｜          ｜甲－0  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜甲－30  
甲－0    ｜甲－30  ｜甲－0    ｜  
          ｜          ｜          ｜  
          ｜          ｜          ｜甲－0  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜甲－0    ｜  
甲－0    ｜甲－0    ｜          ｜甲－0  
          ｜          ｜乙－0    ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜甲－15  ｜          ｜甲－15  
甲－0    ｜          ｜甲－0    ｜  
          ｜甲－0    ｜          ｜甲－0  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
甲－15  ｜甲－30  ｜          ｜甲－30  
          ｜          ｜甲－0    ｜  
甲－0    ｜甲－0    ｜          ｜甲－0  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
甲－30  ｜甲－30  ｜          ｜甲－30  
          ｜          ｜甲－0    ｜  
甲－0    ｜甲－0    ｜          ｜甲－0  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜  
甲－0    ｜甲－0    ｜甲－0    ｜甲－0  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
      1  ｜          ｜          ｜        2  
甲－0    ｜甲－0    ｜甲－0    ｜甲－30  
          ｜          ｜          ｜甲－15  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜        1｜          ｜  
甲－30  ｜甲－30  ｜甲－0    ｜甲－60  
          ｜          ｜          ｜  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
          ｜          ｜          ｜        2  
甲－0    ｜甲－0    ｜甲－0    ｜甲－15  
          ｜          ｜          ｜甲－0  
－－－－－｜－－－－－｜－－－－－｜－－－－－－  
        2｜        2｜          ｜        2  
甲－30  ｜甲－30  ｜甲－0    ｜甲－30  
甲－0    ｜甲－0    ｜          ｜甲－0  
－－－－－－－－－－－－－－－－－－－－－－－－  
       
     （七）在表中角注为“2”者，只在至少相邻处所之一是由符合本章第十二条规定的自动喷水器系统所保护时，可以允许使用较低的隔热值。   
  
     （八）尽管本章第十九条有所规定，当在表中只标有一长划时，则对限界面的材料或完整性不作特殊要求。   
  
     （九）关于⑤类处所，主管机关应确定表1还是表2中的隔热值适用于甲板室及上层建筑的末端，以及表3还是表4中的隔热值适用于露天甲板。如主管机关认为不必环围时，表1至表4的⑤类处所就不一定要求环围。   
  
     三、连续“乙”级天花板或衬板连同其甲板或舱壁可以认为全部或部分地起到分隔所要求的隔热性和完整性的作用。   
  
     四、在批准结构的防火细节时，主管机关应考虑所要求的隔热层在交接点和终止点导热的危险。   
  
     第二十一条 脱 险 通 道   
  
     一、除机器处所外，一切旅客及船员出入处所以及在船员经常使用的处所内，应布置有梯道与梯子，以提供到达救生艇、筏登乘甲板的方便的脱险通道，特别应符合下列规定：   
  
     （一）在舱壁甲板以下，从每一水密舱或类似限界的处所或处所群，应有两个脱险通道，其中至少一个不得利用水密门。但主管机关对有关处所的性质和部位以及对经常居住或使用这些处所的人数经过恰当的考虑后，可以免除其中一个脱险通道。   
  
     （二）在舱壁甲板以上，从每一主竖区或类似限定的处所或处所群，至少应有两个脱险通道，其中至少应有一个能通达形成垂直脱险的梯道。   
  
     （三）按照本条一款（一）及（二）项要求的脱险通道应至少有一个是利用易于到达的环围的梯道，此梯道应提供连续的防火遮蔽，自其起点的一层起到达适当的救生艇、筏的登乘甲板，或到达此梯道所至的最高层，以何者为高而定。如果主管机关根据本条一款（一）项的规定允准免除时，则仅有的一个脱险通道应能提供为主管机关满意的安全通路。梯道的宽度、数目及连续性应取得主管机关的同意。   
  
     （四）自梯道环围至救生艇、筏登乘区域的出入口保护，应取得主管机关的同意。   
  
     （五）升降机不得视为构成所要求的脱险通道之一。   
  
     （六）仅用于一个处所及此处所内阳台的梯道，不得视为构成所要求的脱险通道之一。   
  
     （七）如无线电台没有通往露天甲板的直接通道，则此电台应设有两个脱险通道。   
  
     （八）不允许设置长度超过13米（43英尺）的一端不通的走廊。   
  
     二、（一）在特种处所内，舱壁甲板以上或以下的脱险通道的数目及布置应取得主管机关的同意，其到达登乘甲板的通道的安全性一般应至少等效于本条一款（一）、（二）、（三）、（四）及（五）项的规定。   
  
     （二）船员经常使用的机器处所的脱险通道之一应避免直接进入任何特种处所。   
  
     三、每一机器处所应设置两个脱险通道。特别应符合下列规定：   
  
     （一）位于舱壁甲板以下的处所，其两个脱险通道应由下列情况之一所组成：   
  
     1．尽可能远离的两部钢质梯子引向该处所上部同样远离的门，并从该门设有通道通往适当的救生艇、筏的登乘甲板。其中一部梯子从该处所的下部起至该处所外面的一个安全地点，应能提供连续的防火遮蔽；   
  
     2．一部钢质梯子引向该处所上部的一扇门，并从该门可以进到登乘甲板；以及一扇能由每一面开关的钢质门，并从该门设有通往登乘甲板的安全脱险通道。   
  
     （二）如该处所系位于舱壁甲板以上，则应设有尽可能远离的两个脱险通道，而上述通道的门应位于从该处所能通往适当的救生艇、筏登乘甲板的地方。这些通道如需要使用梯子时，应为钢质梯。   
  
     但是，对不满1000总吨的船舶，主管机关经考虑了每一处所上部的宽度及布置后，可免除其中的一个脱险通道；而对1000总吨或以上的船舶，若任一处所有一扇门或一部钢梯即可提供抵达登乘甲板的安全通道，则主管机关经考虑了这一处所的性质、位置以及该处所是否经常有人使用后，可免除其中的一个脱险通道。   
  
     第二十二条 起居处所与服务处所内梯道与升降机的保护   
  
     一、除主管机关特准使用其他等效材料者外，一切梯道应为钢质结构，并应环围在“甲级分隔”之内，还应在一切开口处具有有效的关闭装置，但下列者除外：   
  
     （一）仅连接两层甲板的梯道，若在一个甲板间具有适当的舱壁或门以保持甲板的完整性者，则不需环围。当梯道在一个甲板间被封闭时，其梯道环围应按照本章第二十条表列对甲板的要求加以保护。   
  
     （二）完全位于公共处所内的梯道，可装于该处所的开敞部位。   
  
     二、梯道环围应直接通至走廊，并考虑到紧急时可能使用该处的人数而应具有足够的面积，以免拥挤。如属可行，梯道环围不得直接通往住室、生活用橱（柜）或其他存有可燃物品可能起火的环围处所。   
  
     三、升降机围壁通道的装设，应能防止烟及火焰从一个甲板间通至另一个甲板间，并应设置关闭装置以控制气流及烟气的流通。   
  
     第二十三条 “甲级分隔”上的开口   
  
     一、凡电缆、管子、围壁通道、导管等，以及桁材、横梁或其他结构穿过“甲级分隔”之处，应采取措施以保证分隔的耐火性不受损害，并应遵守本条七款的规定。   
  
     二、凡必需穿过主竖区舱壁的通风导管，应在舱壁邻近装设保安型的自动关闭挡火闸，此种挡火闸还应能从舱壁的每一面都可用手关闭。其操纵位置应易于到达，并用能反光的红色标志之。舱壁与挡火闸之间的导管应为钢质或其他等效材料，必要时并应符合本条一款的隔热标准。挡火闸应至少在舱壁的一侧装设可见的指示器，以表示挡火闸是否处于开启位置。   
  
     三、除装货处所之间、特种处所之间、储藏室之间与行李室之间的舱口以及这些处所与露天甲板之间的舱口外，一切开口应设有永久附连于其上的关闭装置，其耐火效能至少应与其所在的分隔相等。   
  
     四、“甲级分隔”上的所有门、门框及其在关闭时的制牢装置，其构造应尽实际可行提供等效于其所在舱壁的耐火性以及阻止烟和火焰穿过的效能，这些门及门框应由钢材或其他等效材料建造。水密门则不需隔热。   
  
     五、每个门应能在舱壁的每一面，仅需一人即能将其开启及关闭。   
  
     六、主竖区舱壁及梯道围壁上的防火门，除动力操纵的水密  
  
                                                  1  
门及经常锁闭的水密门外，应为在向关闭方向反向倾斜3－°时仍  
                                                  2  
能将门关闭的自闭式门。门的关闭速度，需要时应能控制，以防止  
对人身发生不应有的危险。所有这种自闭式防火门，除经常关闭者外，应能同时地或成组地将门由控制站予以脱开，也应能个别地在门的位置处就地脱开。脱开机构的设计，应在控制系统万一损坏时，此门能自动关闭；但如采用认可的动力操纵水密门，可以认为达到这一目的。不能由控制站脱开的门背钩。不允许使用。当允许使用双摆动门时，它们应具有受防火门脱开系统控制的自动插上的插销装置。   
     七、如某一处所由符合本章第十二条规定的自动喷水器系统保护或设有连续的“乙”级天花板，则在主竖区内未形成阶层亦不作为水平区限界面的甲板上的开口应能适度地紧密关闭，并且在主管机关认为合理和实际可行的范围内，这类甲板应满足“甲”级完整性的要求。   
  
     八、对船舶外部限界面的“甲”级完整性的要求不适用于玻璃隔板、窗及舷窗。同样，对“甲”级完整性的要求也不适用于上层建筑及甲板室的外门。   
  
     第二十四条 “乙级分隔”上的开口   
  
     一、凡为了通过电缆、管子、围壁通道、导管等或为了安装通风导管端头、照明装置及类似装置而穿过“乙级分隔”之处，应采取措施以保证分隔的耐火性不受损害。   
  
     二、“乙级分隔”的门及门框以及它们的制牢装置，除在这些门的下部可以允许设置通风开口外，应提供尽可能等效于此分隔耐火性能的关闭方法。如果这种通风开口系开在门上或在门以下时，则一个或几个这种开口的总净面积不得超过0．05平方米（78平方英寸）。如这种开口系开在门上，则此开口应设有不燃材料制成的栅格。这些门应是不燃性的。   
  
     三、对船舶外部限界面的“乙”级完整性的要求不适用于玻璃隔板、窗及舷窗。同样，对“乙”级完整性的要求也不适用于上层建筑及甲板室的外门。   
  
     四、当设有符合本章第十二条规定的自动喷水器系统时：   
  
     （一）在主竖区内未形成阶层亦不作为水平区限界面的甲板上开口应能适度地紧密关闭，并且在主管机关认为合理和实际可行的范围内，这类甲板应满足“乙”级完整性的要求。   
  
     （二）“乙”级材料的走廊舱壁上的开口，应按本章第十九条的规定加以保护。   
  
     第二十五条 通 风 系 统   
  
     一、通风机的分布，一般应使通往各处的通风导管保持在同一主竖区内。   
  
     二、通风系统穿过甲板时，除应按照本章第二十三条有关甲板耐火完整性要求外，还应采取预防措施以减少烟及炽热气体通过该系统从一甲板间处所至另一甲板间处所的可能性。除按本条中的隔热要求外，在必要时，垂直导管应按本章第二十条相应各表的要求予以隔热。   
  
     三、一切通风系统的主要进风口及出风口应能在被通风处所的外部加以关闭。   
  
     四、除装货处所外，通风导管应用下列材料建造：   
  
     （一）截面面积不小于0．075平方米（116平方英寸）的导管以及用于超过一个甲板间处所的所有垂直导管，应用钢材或其他等效材料建造。   
  
     （二）截面面积小于0．075平方米（116平方英寸）的导管应用不燃材料建造。如这些导管穿过“甲级或乙级分隔”之处，应适当考虑保证该分隔的耐火完整性。   
  
     （三）截面面积一般不超过0．02平方米（31平方英寸），长度又不大于2米（79英寸）的短节导管，倘若满足下列所有条件，则不需使用不燃材料：   
  
     1．此导管是用经主管机关同意的限制失火危险的材料建造；   
  
     2．此导管只用作通风系统的末端；   
  
     3．此导管的位置，不是位于沿其长度量至穿过“甲或乙级分隔”处，包括“乙”级连续天花板在内，为0．6米（24英寸）的范围内。   
  
     五、如梯道环围设有通风时，其导管或若干导管（如设有时），应单独从通风机室引出，而与通风系统的其他导管分开，并且不得用于其他任何处所。   
  
     六、除机器和装货处所的通风以及根据本条八款可能要求的任何交替供气的系统外，一切动力通风应设有控制装置，将其集中在能从两个尽可能远离的地点中的任何一个地点将所有的通风机停止。用于机器处所的动力通风的控制装置，也应集中而能从两个地点加以控制，其中一个应设在机器处所的外面。用于装货处所动力通风系统的风机，应能在该处所外面的一个安全地点将其停止。   
  
     七、厨房炉灶的排气管道，在其通过起居处所或内含可燃材料的处所的地方，应按“甲级分隔”建造。每一排气管道应设有：   
  
     （一）一个易于拆下的集油器，以便于清洁；   
  
     （二）一只挡火闸，位于导管的下端；   
  
     （三）能在厨房内操纵的关闭抽风机的装置；   
  
     （四）在管道内进行灭火用的固定设施。   
  
     八、对机器处所外面的控制站，应采取实际可行的措施来保证使通风、能见度和烟气排除得以保持，以便在失火时，位于其中的机械和设备可以受到监管并继续有效地运转。应设有交替的和分开的供气设施；两个供气源的空气吸口，其分布应使两个吸口同时吸进烟气的危险性减至最小。主管机关可决定上述要求不必适用于位在开敞甲板和开口通向开敞甲板的控制站，或在具有同等效用的局部关闭装置的处所。   
  
     九、用于甲类机器处所通风的导管，一般不应通过起居处所、服务处所或控制站，但主管机关可以允许放宽此项要求，如果：   
  
     （一）导管用钢材建造，并且隔热至“甲－60”级标准；或   
  
     （二）导管用钢材建造，且在靠近穿过限界面处设有一自动挡火闸，并且从机器处所到挡火闸以外至少5米（16英尺）处隔热至“甲－60”级标准。   
  
     十、用于起居处所、服务处所或控制站的通风导管，一般不得通过甲类机器处所；但如这些导管用钢材建造并在靠近穿过限界面处设有自动挡火闸者，则主管机关可以允许放宽此项要求。   
  
     第二十六条 窗 与 舷 窗   
  
     一、除适用本章第二十三条八款及二十四条三款的规定者外，起居处所、服务处所及控制站内各舱壁上的一切窗及舷窗，其构造应能保持其所在该型舱壁的完整性要求。   
  
     二、尽管有本章第二十条各表的要求，但是：   
  
     （一）起居处所、服务处所及控制站与露天隔开的舱壁上的一切窗及舷窗应有钢材或其他适宜材料建造的框架。玻璃应用金属镶边或镶角加以固定。   
  
     （二）应特别注意面向露天的或环围的救生艇和救生筏登乘区域的窗的耐火完整性；并特别注意上述区域下面的窗，当这些窗的位置因失火而受损时，将会阻碍救生艇或筏的放下或人员登入者。   
  
     第二十七条 可燃材料的限制使用   
  
     一、除装货处所、邮件舱、行李室或服务处所的冷藏室外，一切衬板、地板、天花板及隔热物应为不燃材料。为了实用或美术处理而用作某一处所内部分隔的局部舱壁或甲板，也应为不燃材料。   
  
     二、用于冷却设备系统的与隔热物连用的防潮层和粘合剂以及管系装置的隔热物，不需要为不燃材料，但应保持在实际可行的最低数量，并且它们的外露表面应具有经主管机关满意的限制火焰蔓延的性质。   
  
     三、一切起居处所及服务处所内的舱壁、衬板及天花板，可以装有可燃的镶片，但此项镶片的厚度不得超过2毫米（1／12英寸）；但走廊，梯道环围及控制站内的镶片除外，在这些处所内，镶片的厚度不得超过1．5毫米（1／17英寸）。   
  
     四、任何起居处所及服务处所内的可燃面板、嵌条、饰片及镶片的总体积，不得超过相当于各围壁及天花板的联合面积上厚2．5毫米（1／10英寸）镶片的体积。如船舶设有符合本章第十二条规定的自动喷水器系统，则上述体积可以包含一些用于建立“丙级分隔”的可燃材料。   
  
     五、走廊或梯道环围内的所有外露表面，以及起居处所、服务处所和控制站内隐蔽或不能到达处的表面，均应具有低播焰性。①  
  
①参看海协组织通过的海大166（特Ⅳ届）决议“关于评定材料的防火性能的准  
       
     则”。   
  
     六、过道及梯道环围内的家具应保持为最低数量。   
  
     七、用于外露的内部表面上的油漆、清漆及其他表面涂料，其性质应经主管机关判断不会造成过分的失火危险，并应不致产生过量的烟或其他毒性。   
  
     八、在起居处所、服务处所及控制站内使用的甲板基层敷料（如涂敷时）应为在高温时不易着火或不会发生毒性或爆炸性危险的认可材料。②  
  
②参看海协组织通过的海大214（Ⅶ届）决议“关于甲板基层敷料试验程序改进  
       
     的暂行准则”。   
  
     九、废纸箱应用不燃材料制造，其边和底部应为实心。   
  
     第二十八条 杂 项   
  
     适用于船舶所有部分的要求   
  
     一、穿过“甲级或乙级分隔”的管子，应为主管机关经考虑该分隔所需经受的温度而认可的材料。输送油类或可燃液体的管子，应为主管机关经考虑失火危险而认可的材料。在热力作用下易于失效的材料，不应用作舷边流水管、污水排泄管及其他靠近水线和因失火时该材料失效后将会造成浸水危险的部位的出水口。   
  
     适用于起居和服务处所、控制站、走廊和梯道的要求   
  
     二、（一）封闭在天花板、镶板或衬板后面的空隙应以紧密安装的且间距不超过14米（46英尺）的挡风条作适宜的分隔。   
  
     （二）上述空隙，包括梯道、围壁通道等衬板后面的空隙，在垂直方向上，应在每层甲板处加以封堵。   
  
     三、天花板及舱壁的构造应在不减损其防火效能的情况下，使消防巡逻人员能探知隐蔽和不易到达处所的烟源，但主管机关认为该处所不致产生失火危险者可以除外。   
  
     第二十九条 自动喷水器、失火报警和探火系统或自动失火报警和探火系统   
  
     凡适用本节所规定的任何船舶，除实质上没有失火危险的处所（例如空室、盥洗室等）外，在所有起居处所和服务处所内的不论是垂直的或水平的每一独立分隔区内，以及主管机关认为必要时在控制站内，均应普遍设置下列两者之一：   
  
     一、符合本章第十二条规定的一种认可型式的自动喷水器以及失火报警和探火系统，其设置和布置足以保护上述处所；   
  
     二、符合本章第十三条规定的一种认可型式的自动失火报警和探火系统，其设置和布置足以探知上述处所内火灾的发生。   
  
     第三十条 特种处所的保护   
  
     适用于不论舱壁甲板以上或以下特种处所的规定   
  
     一、通则   
  
     （一）构成本条规定的基本原则，是在特种处所内按通常的主竖区进行划分可能不切实际，但在这些处所内必须以水平区的概念和设置有效的固定灭火系统作为基础来获得等效的保护。根据这一概念，在本条范围内，倘若水平区的总高度不超过10米（33英尺），则一个水平区可以包括多于一层甲板的若干特种处所。   
  
     （二）本章第二十三条及二十五条内所规定的为保持主竖区完整性的一切要求，应同样适用于形成分隔各水平区之间以及分隔水平区与船舶其他部分之间的限界面的各甲板和舱壁。   
  
     二、结构性保护   
  
     （一）特种处所的限界面舱壁应按本章第二十条表1（11）类处所的要求予以隔热，同时水平限界面应按该条表3（11）类处所的要求予以隔热。   
  
     （二）驾驶室应设有指示器，当进出特种处所的任一防火门关闭时，这些指示器应能显示出来。   
  
     三、固定式灭火系统①  
  
①参看海协组织通过的海大123（Ⅴ届）决议“关于特种处所设置固定灭火系统  
       
     的建议案”。   
  
     每一特种处所，应设有人力操纵的经认可的固定式压力水雾灭火系统，此系统应能保护该处所内任何甲板与车辆平台（如设有时）的所有部分，但是主管机关可以允许使用任何其他类型的固定式灭火系统，如此项系统系经在某一特种处所内作模拟的流动汽油火灾条件的全面试验，证明其对控制上述处所内可能发生火灾的效果并不低于压力水雾灭火系统。   
  
     四、巡逻与探火   
  
     （一）在特种处所内应保持有效的巡逻制度。在整个航行期间，如果任何上述处所未保持连续的消防值班，则在该处所内应装设认可型的自动探火系统。   
  
     （二）整个特种处所应设有必要的手动报警器，并应在这些处所的每一出口处附近设置1个。   
  
     五、灭火设备   
  
     每一特种处所内应设有：   
  
     （一）若干附有消防水带和认可型两用水枪的消火栓，其布置应能使至少两股水柱射到该处所的任何部分，而每股水柱是由不连接于同一消火栓的单根消防水带供水；   
  
     （二）至少3具水雾器；   
  
     （三）1具符合本章第七条四款规定的可携式泡沫器装置，但船上须备有供特种处所使用的这种装置至少2具；   
  
     （四）主管机关认为足够数量的认可型手提式灭火机。   
  
     六、通风系统   
  
     （一）特种处所应设有有效的动力通风系统，每小时至少能足以更换空气10次。这些处所的动力通风系统应与其他通风系统完全分开，并且当这些处所内载有车辆时，应一直在运转。在装卸车辆期间，主管机关可以要求增加更换空气的次数。   
  
     （二）此项通风应能防止空气层化和形成空气囊。   
  
     （三）驾驶室应设有指示装置，以显示出所需通风量的任何损失或减少。   
  
     仅适用于舱壁甲板以上特种处所的补充规定。   
  
     七、流水口   
  
     鉴于使用固定式压力水雾灭火系统的结果，使甲板上大量积水，因而可能导致严重的稳性损失，流水口的安设，应能保证上述积水迅速地直接排出舷外。   
  
     八、防止易燃气体着火的措施   
  
     （一）可以形成易燃气体着火源的设备，特别是电气设备与线路，应安装在甲板以上至少为450毫米（18英寸），但是，如果为了船舶安全操作的需要，经主管机关同意上述电气设备与线路的安设低于此高度时，则此电气设备与线路应为经认可在汽油与空气爆炸性混合物中适用的一种型式。设在甲板以上超过450毫米（18英寸）的电气设备应是封闭的并有保护的型式，以防止火花逸出。凡援引甲板以上450毫米（18英寸）的高度面时应理解为在每层甲板上均载有车辆，并且可能积聚爆炸气体。   
  
     （二）电气设备及线路如果安装在排气通风导管内，则应为经认可在汽油与空气爆炸性混合物中适用的一种型式，并且任何排气导管的出口，经参虑其他可能的着火源，应设在一个安全的地点。   
  
     仅适用于舱壁甲板以下特种处所的补充规定   
  
     九、舱底抽水及排水   
  
     鉴于使用固定式压力水雾灭火系统的结果，使甲板上或双层底舱顶上大量积水，因而可能导致严重的稳性损失，主管机关可以在本公约第二章甲第十八条各项规定之外，要求增设舱底抽水与排水设施。   
  
     十、防止易燃气体着火的措施   
  
     （一）如装有电气设备及线路，它们应为在汽油与空气爆炸性混合物中适用的型式，其他可以构成易燃气体着火源的设备，不得使用。   
  
     （二）电气设备及线路，如果安装在排气通风导管内，则应为经认可在汽油与空气爆炸性混合物中适用的一种型式，并且任何排气导管的出口，经考虑其他可能的着火源，应设在一个安全的地点。   
  
     第三十一条 除特种处所外用于载运油箱中备有自用燃料的   
  
     机动车辆的装货处所的保护   
  
     在任何装货处所内（特种处所除外），载有在油箱中备有自用燃料的机动车辆时，应符合以下的规定：   
  
     一、探火   
  
     应设有一个认可的探火与失火报警系统。   
  
     二、灭火装置   
  
     （一）应设有符合本章第八条规定的固定式气体灭火系统，其布置应保证气体迅速有效地注入该处所。但如果设置的是二氧化碳系统，则其所提供的自由气体的容积应至少等于此种最大的能够密封的装货处所总容积的百分之四十五。也可以设置任何能提供等效保护能力的其他固定式气体灭火系统或固定式高膨胀泡沫灭火系统。   
  
     （二）应设有供任何这种处所使用的经主管机关认为足够数量的认可型手提式灭火机。   
  
     三、通风系统   
  
     （一）在任何上述装货处所内，应设有有效的动力通风系统，每小时至少足以更换空气10次。供此种装货处所的这一通风系统应与其他通风系统完全分开，并且当这些处所内载有车辆时，应一直在运转。   
  
     （二）此项通风应能防止空气层化和形成空气囊。   
  
     （三）驾驶室应设有指示器，以显示出所需通风量的任何损失或减少。   
  
     四、防止易燃气体着火的措施   
  
     （一）如装有电气设备及线路，它们应为在汽油与空气爆炸性混合物中适用的一种型式，其他可以构成易燃气体着火源的设备，不得使用。   
  
     （二）电气设备及线路，如果安装在排气通风导管内，则应为经认可在汽油与空气爆炸性混合物中适用的一种型式，并且任何排气导管的出口，经考虑其他可能的着火源，应设在一个安全的地点。   
  
     第三十二条 消防巡逻等的保持和灭火设备的规定   
  
     一、消防巡逻和探火、失火报警和广播系统   
  
     （一）应保持有效的巡逻制度以便迅速探知任何火灾的发生。   
  
     每一消防巡逻员必须受到训练，以熟悉船上布置以及可能指定他使用的任何设备的所在地点和操作方法。   
  
     （二）起居处所和服务处所应遍设手动失火报警器，以便消防巡逻人员能立即向驾驶室或主消防控制站报警。   
  
     （三）在主管机关认为巡逻制所不能到达的任何装货处所内应设有认可型的失火报警或探火系统，该系统应能在一个或数个适当地点或站自动显示火灾的发生或征兆及其位置，但经主管机关认为某船航程短暂，应用此项要求将属不合理者除外。   
  
     （四）船舶在海上或港口的所有时间内（非营运时除外）应配置足够的船员或设备，以保证负责船员能立即接到任何初始的失火警报。   
  
     （五）应设置由驾驶室或控制站操纵的召集船员的专用报警器。此种报警器可以是船上通用报警系统的一部分，但是它应能与旅客处所的报警系统分开而单独施放。   
  
     （六）起居处所、服务处所以及控制站应普遍设有广播系统或其他有效的通信设施。   
  
     二、消防泵和消防总管系统   
  
     船舶应设有符合本章第五条规定的消防泵、消防总管系统、消火栓和消防水带，并应符合下列要求：   
  
     （一）4000总吨及4000总吨以上的船舶，至少应设3台独立驱动的消防泵；小于4000总吨的船舶至少应设2台这种消防泵。   
  
     （二）1000总吨及1000总吨以上的船舶，其通海阀、消防泵及其动力源的布置，应保证当任一舱室失火时不致使全部消防泵失去效用。   
  
     （三）1000总吨及1000总吨以上的船舶，其消防泵、消防总管和消火栓的布置，应能立即从任一位于内部的消火栓处，获得至少一股按照本章第五条三款所规定的有效水柱。同时还应采取这样的措施，通过1台所需的消防泵的自动启动来保证连续供水。   
  
     （四）1000总吨以下的船舶，其布置应取得主管机关的同意。   
  
     三、消火栓、消防水带和水枪   
  
     （一）船舶应备有消防水带，其数量和直径应取得主管机关的同意。按本章第五条四款所要求的每一消火栓至少应备有1根消防水带，这些水带只准用于救火或在消防演习和检验时用以试验灭火设备。   
  
     （二）在起居处所、服务处所和机器处所内，消火栓的数量和位置，应在所有水密门和主竖区舱壁上所有的门皆关闭的情况下，尚可符合本章第五条四款的要求。   
  
     （三）此项布置应使至少两股水柱能射至任何装货处所在空舱时的任何部位。   
  
     （四）机器处所内所需的全部消火栓均应配备消防水带，此项水带在配有本章第五条七款所要求的水枪之外尚应配备适宜于向油上喷洒水雾的水枪，或两用水枪。此外，每一甲类机器处所至少应设有两只适宣的水雾器。①  
  
①水雾器可为一“Ｌ”形金属管组成，其长肢长约2米（6英尺）能与消防水带连  
       
     接，其短肢长约250毫米（10英寸）。其上装有固定喷雾水枪或能接上一只喷   
  
     雾水枪。   
  
     （五）除机器处所外的船舶各部所需水带数至少四分之一应配备喷雾水枪或两用水枪。   
  
     （六）对每一副呼吸器应配备一只水雾器，并存放于各呼吸器附近。   
  
     （七）在任何甲类机器处所内，如在其下部设有通向相邻轴隧的出入口时，应在机器处所外面接近该出入口处，设置两只配有两用水枪和水带的消火栓。若此项出入口并非通向轴隧，而是通向其他一个或数个处所，则须在该处所之一接近甲类机器处所的出入口处，设置两只配有两用水枪和水带的消火栓。倘若轴隧或相邻处所不是作为应急通道的组成部分时，则不必按此规定办理。   
  
     四、国际通岸接头   
  
     （一）1000总吨及1000总吨以上的船舶，至少应设有1只符合本章第五条八款规定的国际通岸接头。   
  
     （二）应备有使此项接头能用于船的任何一舷的设施。   
  
     五、起居处所、服务处所和控制站内的手提式灭火机   
  
     船舶应在其起居处所、服务处所和控制站内配备经主管机关认为合适和足量的认可型手提式灭火机。   
  
     六、装货处所内的固定式灭火装置   
  
     （一）1000总吨及1000总吨以上船舶的装货处所，应由符合本章第八条规定的固定式气体灭火系统保护或由能提供等效作用的固定式高膨胀泡沫灭火系统保护。   
  
     （二）如经主管机关认为某船的航程短暂，致使运用本款（一）项的要求将属不合理者，以及1000总吨以下的船舶，其装货处所的灭火装置应取得主管机关的同意。   
  
     七、锅炉舱等的灭火设备   
  
     设有燃油锅炉或燃油装置的处所应设有下列装置：   
  
     （一）应有下列固定式灭火系统的任何一种：   
  
     1．符合本章第十一条规定的压力式水雾系统；   
  
     2．符合本章第八条规定的气体系统；   
  
     3．符合本章第九条规定的泡沫系统；   
  
     4．符合本章第十条规定的高膨胀泡沫系统。   
  
     在每一情况下，如机舱和锅炉舱没有完全分隔，或燃油能从锅炉舱流入机舱，则机舱和锅炉舱应作为一个舱室看待。   
  
     （二）每一锅炉舱内至少应设一套符合本章第七条四款规定的可携式空气泡沫装置。   
  
     （三）在每一锅炉舱的每一生火处所和燃油装置的某一部分所在的每一处所，至少应设置能喷出泡沫或其等效物的认可型手提式灭火机两具。在每一锅炉舱内应设置容量至少为136升（30加仑）的认可的泡沫型或与之等效的灭火机一具。此项灭火机应备有绕在卷筒上的足以到达锅炉舱的任何部位的软管。   
  
     （四）每一生火处所应有按主管机关所要求容量的容器1具，内装砂子、浸透苏打的锯木屑或其他认可的干燥物。此项设备亦可由1具认可型的手提式灭火机代替之。   
  
     八、内燃机型机器所在处所的灭火设备   
  
     设有内燃机的处所，不论此项机器用于主推进或用于其他目的，如其总输出功率不少于373千瓦应设有下列装置：   
  
     （一）应有本条七款一项所要求的各灭火系统中的一种。   
  
     （二）应有符合本章第七条四款规定的可携式空气泡沫设备至少1套。   
  
     （三）在每一此种处所内，应设有每只容量至少为45升（10加仑）的认可的泡沫型灭火机或等效设备，其数目足以使泡沫或等效物能射到燃油和滑油压力系统、传动装置和其他有失火危险的任何部分。此外，还应设有足够数量的手提式泡沫灭火机或等效设备，其布置应使该处所内任何一点到达一具灭火器的步行距离不大于10米（33英尺），但每一此种处所内应至少设有此种手提式泡沫灭火机两具。   
  
     九、汽轮机或闭式蒸汽机所在处所的灭火设备   
  
     设有汽轮机或闭式蒸汽机的处所，不论此项机器用于主推进或用于其他目的，如其总输出功率不少于373千瓦者；   
  
     （一）应设有每只容量至少为45升（10加仑）的泡沫灭火机或等效设备，其数目足以使泡沫（或等效物）能射到压力滑油系统的任何部分，射到汽轮机、蒸汽机或附属传动装置的压力润滑部分的封闭罩壳以及其他有失火危险的任何部分。此种处所，如果设有符合本条七款（一）项的固定式灭火系统，并具有至少等效于本项的保护，则不再要求设置此项灭火机；   
  
     （二）应设有足够数量的手提式泡沫灭火机或等效设备，其布置应使该处所内任何一点到达一具灭火器的步行距离不大于10米（33英尺），但每一此种处所内应至少设有此种手提式泡沫灭火机两具；唯在符合本条八款（三）项所规定之数外，不要求再增设此项灭火机。   
  
     十、其他机器所在处所的灭火设备   
  
     如主管机关认为有失火危险的任何机器处所，其灭火设备在本条七、八和九款无明确规定者，应在该处所内或其相邻处设置主管机关认为足够数量的认可型手提式灭火机或其他灭火设备。   
  
     十一、本节未作要求的固定式灭火设备   
  
     若装设本章本节未作要求的固定式灭火系统时，则该系统应取得主管机关同意。   
  
     十二、对机器处所的特殊要求   
  
     （一）任何甲类机器处所，如其下部与相邻轴隧设有出入口时，则除水密门外，尚应在该门的非机器处所的一侧，增设一轻型钢质挡火网门，此门应能从每一面均可操纵。   
  
     （二）在任何机器处所内如已核准设置自动和遥控系统及设备以代替船员连续值班，当主管机关考虑需要特殊预防措施时，则应装设自动探火和失火报警系统。   
  
     十三、消防员装备和个人配备   
  
     （一）符合本章第十四条的消防员装备的最低数额和由该条一款（一）、（二）及（三）项规定所组成的额外个人配备的最低套数如下：   
  
     1．两套消防员装备；并增设   
  
     2．在设有旅客处所和服务处所的甲板上，或如这种甲板多于一层时，则在这些处所最长的一层甲板上，按这些处所长度的每80米（262英尺）或其零数设置两套消防员装备和两套由本章第十四条一款（一）、（二）及（三）项规定所组成的个人配备。   
  
     （二）每套消防员装备包括本章第十四条二款所规定的储压式呼吸器在内，应按主管机关认可的比例配备备用氧气瓶。   
  
     （三）消防员装备及个人配备应贮放在相互远离的若干位置，以备使用。在任一位置，应至少设有两套消防员装备与一套个人配备。   
  
     第三十三条 燃油、滑油和其他易燃油类的布置   
  
     一、燃油的布置   
  
     使用燃油的船舶，其燃油的贮藏、分配和使用的布置应能保证船舶和船上人员的安全，并应至少符合下列规定：   
  
     （一）凡燃油的闪点经认可的闪点仪测定（闭杯试验）低于60℃（140°Ｆ）者，概不得用作燃料，但应急发电机的燃油除外，其闪点应不低于43℃（110°Ｆ）。   
  
     但是，主管机关可以允许普遍使用闪点不低于43℃（110°Ｆ）的燃油，唯应采取其认为必要的附加措施，并应符合下述条件，即此类燃油的贮藏或使用处所的温度不允许升高至低于该燃油闪点的10℃（18°Ｆ）之内。  
  
                                                      2  
    （二）在燃油系统中凡包含表压力超过1．8公斤／厘米  
              2  
（25磅／英寸  ）的加热燃油的任何部分，应尽实际可能不被隐蔽，  
以免不易观察其缺陷和泄漏。在机器处所内燃油系统的此种部分应有足够的照明。   
     （三）在所有正常情况下，机器处所应有足够的通风，以防止油气聚集。   
  
     （四）1．燃油舱（柜）应尽实际可能是船体结构的一部分，并位于甲类机器处所之外。除双层底柜外，其他燃油舱（柜）如必须位于邻接甲类机器处所时，最好与双层底柜具有共同的限界面，而使与机器处所的共同限界面的面积减至最小程度。一般应避免使用孤立架设的燃油柜，但如使用这种油柜时，则不应位于甲类机器处所之内。   
  
     2．从燃油舱（柜）溢出或渗漏的燃油可能落于热表面而构成危险的地方，不得设燃油舱（柜）。应采取预防措施，防止任何油在压力下可能从油泵、滤器或加热器溢出而与热表面相接触。   
  
     （五）每一燃油管如其损坏后会使燃油从设在双层底上方的贮油柜、澄油柜和日用油柜溢出，则应在这些油柜上装设当油柜所在处所失火时，能在此处所之外的安全地点加以关闭的旋塞或阀门。如在深油舱位于任何轴隧、管隧内或类似处所内的特殊情况下，这些深油舱上应装设阀门，但可在隧道或类似处所之外的管路上加装阀门，以便在失火时加以控制。   
  
     （六）应设有安全和有效的设施，以确定任何油舱（柜）内的存油量。可以允许使用上端引至安全地点且具有适当关闭设施的测量管。其他确定任何燃油舱（柜）存油量的设施，如它们不需在柜顶以下穿孔，且在其损坏或舱（柜）注油过量时不致因此而溢出燃油者，可允许采用。   
  
     （七）任一油舱（柜）或燃油系统的任一部分，包括注入管在内，应有防止超压的设施。任何溢流阀，以及空气管或溢流管，应引至主管机关认为安全的处所。   
  
     （八）燃油管须用钢材或其他认可材料建造，但主管机关认为确是必要的地方，可允许有限制地使用挠性管。这种挠性管及其端部附件应为具有足够强度的认可的耐火材料，且其结构应取得主管机关的同意。   
  
     二、滑油的布置   
  
     用于压力润滑系统的滑油的贮藏、分配和使用，其布置应保证船舶和船上人员的安全。在甲类机器处所以及每当实际可行时在其他机器处所，此项布置应至少符合本条一款（二）项、（四）项2目、（五）项、（六）项及（七）项的规定。   
  
     三、其他易燃油类的布置   
  
     在压力下使用于动力传动系统、控制和驱动系统以及加热系统中的其他易燃油类、其贮藏、分配和使用的布置应保证船舶和船上人员的安全。在含有点火设施的处所，此项布置至少须符合本条一款（四）项2目和一款（六）项的规定，以及符合本条一款（八）项有关强度和结构的规定。   
  
     第三十四条 机器处所内的特别布置   
  
     一、本条规定适用于甲类机器处所以及主管机关认为需要的其他机器处所。   
  
     二、（一）天窗、门、通风筒、供排气通风的烟囱开口以及机器处所的其他开口，其数量应减低到符合船舶通风以及正常、安全运行所需要的最少量。   
  
     （二）所设置的上述天窗，其盖应为钢质。应采取适当的措施，以便在发生火灾时使烟气能从被保护处所释放。   
  
     （三）除动力操纵的水密门外，所设置的上述门的布置应能在所在处所失火时，由动力操纵的关闭装置，或由设置在向关闭  
  
              1  
方向反向倾斜3－°时能关闭的自闭式门来保证其确实关闭，该门  
              2  
具有由遥控操纵脱开装置操作的保安型的门背钩装置。  
       
     三、机舱棚上不应设窗。   
  
     四、下列各项应装有控制设施：   
  
     （一）天窗的开启和关闭、正常供排气通风的烟囱开口的关闭及通风筒挡火闸的关闭；   
  
     （二）释放烟气；   
  
     （三）动力操纵门的关闭或门的脱开机构，但动力操纵水密门除外；   
  
     （四）停止通风机；   
  
     （五）停止强力送风和抽风机，停止燃油驳运泵、燃油装置泵及其他类似的燃油泵。   
  
     五、通风机所需的控制应符合本章第二十五条六款的规定。任何所需的固定式灭火系统的控制，以及本条四款（一）、（二）、（三）、（五）项和本章第三十三条一款（五）项所要求的控制，应设在一个控制地点或者集中设在经主管机关同意的尽量少的地点。此项地点，应位于当它们服务的处所失火时不致被切断的位置，并应有通往开敞甲板的安全通道。   
  
     第三节 载客不超过36人客船的消防措施   
  
     第三十五条 结 构   
  
     一、船体、上层建筑、结构性舱壁、甲板及甲板室应以钢材或其他等效材料建造。   
  
     二、如采用按本章第四十条二款规定的防火措施时，上层建筑可用诸如铝合金之类的材料建造，但应做到：   
  
     （一）当进行标准耐火试验时，对于“甲级分隔”金属心材的温升，要适当考虑到该材料的机械性能；   
  
     （二）用于船上有关部分的可燃材料的数量要适当地减至主管机关认为满意的程度；天花板（即甲板顶部的衬板）要为不燃材料；   
  
     （三）要采取适当的措施，以保证在发生火灾时，救生艇筏的存放、降落和登乘装置，如同用钢材建造的上层建筑同样有效；   
  
     （四）锅炉与机器处所的顶盖与舱棚均为用足够隔热的钢材建造；且其上的开口（如设有时）要作适当的布置和保护，以防止火灾蔓延。   
  
     第三十六条 主 竖 区   
  
     一、船体、上层建筑和甲板室应分为若干主竖区，阶层和壁凹应减至最少量，但如属必要时，则应为“甲级分隔”。   
  
     二、舱壁甲板以上形成主竖区限界面的舱壁，只要实际可行，应与直接在舱壁甲板以下的水密分舱舱壁位于同一直线上。   
  
     三、这种舱壁应由甲板延伸至甲板，并延伸至船壳板或其他限界面。   
  
     四、为特殊用途而设计的船舶，例如汽车或铁路车辆渡船，如设置这种舱壁将影响船舶所预定的用途时，应以能控制和限制火灾的等效设施代替，并应由主管机关特殊认可。   
  
     第三十七条 “甲级分隔”上的开口   
  
     一、凡电缆、管子、围壁通道、导管等以及桁材、横梁或其他结构穿过“甲级分隔”之处，应采取措施以保证分隔的耐火性不受损害。   
  
     二、凡必需穿过主竖区舱壁的导管，应在舱壁附近装设保安型的自动关闭挡火闸。此挡火闸还应能从舱壁的两面都可用手关闭。其操纵位置应易于到达，并用反光的红色加以标志。在舱壁与挡火闸之间的导管应为钢质或其他等效材料，必要时并应符合本条一款的隔热标准。挡火闸应至少在舱壁的一侧装设可见的指示器，以表示挡火闸是否处于开启位置。   
  
     三、除装货处所之间、贮藏室之间和行李室之间的舱口以及这些处所与露天甲板之间的舱口以外，一切开口应设有永久附连于其上的关闭装置，其耐火效能至少应与其所在的分隔相等。   
  
     四、“甲级分隔”上所有的门、门框及其在关闭时的制牢装置，其构造应就实际可行提供等效于其所在舱壁的耐火性以及阻止烟和火焰穿过的效能。水密门则不需隔热。   
  
     五、每个门应能在舱壁的任何一面，仅需一人即能将其开启。   
  
     六、主竖区舱壁及梯道围壁上的防火门，除动力操纵的水密  
  
                                                  1  
门和经常锁闭的水密门外，应为在向关闭方向反向倾斜3－°时仍  
                                                  2  
能将门关闭的自闭式门。所有这种防火门，除经常关闭者外，应能  
同时地或成组地由控制站予以脱开，也应能个别地在门的位置处就地脱开。脱开机构的设计，应于控制系统万一损坏时，此门能自动关闭；但如采用认可的动力操纵水密门，可以认为达到这一目的。不能由控制站脱开的门背钩，不允许使用。当允许使用双摆动门时，它们应具有受防火门脱开系统所控制的自动插上的插销装置。   
     第三十八条 “甲级分隔”的耐火完整性   
  
     在本节要求的“甲级分隔”处，主管机关在决定所需要的隔热值时，应遵循本章第二节的规定，但可以接受低于该节所规定的隔热值。   
  
     第三十九条 起居处所加机器、装货及服务处所的分隔   
  
     分隔起居处所与机器、装货及服务处所的限界面舱壁和甲板，应以“甲级分隔”建造，这些舱壁和甲板应具有经主管机关考虑到相邻处所的性质而认为满意的隔热值。   
  
     第四十条 起居和服务处所的保护   
  
     起居和服务处所应按本条一或二款的规定予以保护。   
  
     一、（一）在起居处所内，所有围蔽舱壁除要求为“甲级分隔”者外，应由不燃材料的“乙级分隔”建造，但其表面可根据本款（三）项贴以可燃材料。   
  
     （二）所有走廊舱壁应由甲板延伸至甲板。“乙”级舱壁上的门可允许有通风开口，最好设在门的下部。所有其他围蔽舱壁应垂直地由甲板延伸至甲板，并横向通至船壳或其他限界面，但设置能保证防火完整性的不燃材料天花板或衬板除外，在这种情况下，舱壁可延伸至天花板或衬板为止。   
  
     （三）除装货处所、邮件舱、行李室或服务处所的冷藏室外，一切衬板、地板、天花板和隔热物应为不燃材料。任何起居处所或公共处所的可燃板面、嵌条、饰片及镶片的总体积不得超过相  
  
                                              1  
当于各围壁及天花板联合面积上厚2．54毫米（－－－英寸）镶片的体  
                                            10  
积。走廊或梯道环围和隐蔽或不能到达处的所有外露表面，均应  
具有低播焰性。①  
①参看海协组织通过的海大166（特Ⅳ届）决议“评定材料的防火性能的准则”。  
       
     二、（一）起居处所内的所有走廊舱壁应为钢质或由“乙”级隔板建造。   
  
     （二）应装设认可型的探火系统，其布置应能探知一切适宜于供旅客或船员使用或服务的围蔽处所内火灾的发生（实际上无失火危险的处所除外），并将火灾的发生或征兆以及失火地点在船员最易观察到的一处（站）或数处（站）自动显示出来。   
  
     第四十一条 甲 板 敷 料②  
  
②参看海协组织通过的海大214（Ⅶ届）决议“关于甲板基层敷料试验程序改进  
       
     的暂行准则”。   
  
     起居处所、控制站、梯道及走廊内的甲板基层敷料，应为认可的不易着火的材料。   
  
     第四十二条 起居处所与服务处所内梯道与升降机的保护   
  
     一、在起居和服务处所内的一切梯道和脱险设施应为钢质或其他适宜的材料。   
  
     二、供旅客及服务用的升降机围壁通道以及旅客处所采光及通风用的垂直围壁通道等，应为“甲级分隔”。各门应为钢质或其他等效材料，当其关闭时，应至少提供与其所在围壁通道相等的耐火效能。   
  
     第四十三条 控制站和储藏室的保护   
  
     一、控制站应与该船其他部分以“甲”级舱壁及甲板隔开。   
  
     二、行李室、邮件舱、储藏室、油漆间与灯间、厨房及类似处所的限界面舱壁应为“甲级分隔”。储存高度易燃物品的处所应位于火灾时对旅客及船员危害最小的地方。   
  
     第四十四条 窗 与 舷 窗   
  
     一、起居处所与露天隔开的舱壁上的一切窗及舷窗应具有由钢材或其他适宜材料建造的框架。玻璃应以金属镶边加以固定。   
  
     二、起居处所内舱壁上的一切窗及舷窗，其构造应能保持其所在该型舱壁的完整性要求。   
  
     第四十五条 通 风 系 统   
  
     机器处所的动力通风应能从机器处所以外易于到达的地点予以停止。   
  
     第四十六条 构 造 细 节   
  
     一、船上任何部分不得使用以硝酸纤维素或其他高度易燃物为基体的油漆、清漆或其类似配制品。   
  
     二、穿过“甲级或乙级分隔”的管子，应为主管机关经考虑各该分隔所需经受的温度而认可的材料。输送油类或可燃液体的管子，应为主管机关经考虑失火危险而认可的材料。在热力作用下易于失效的材料，不应用作舷边流水管、污水排泄管及其他靠近水线和因失火时该材料失效后将会造成浸水危险的部位的出水口。   
  
     三、凡内设主推进机械、燃油锅炉或总输出功率为746千瓦或746千瓦以上的辅助内燃机的处所，应采取以下的措施：   
  
     （一）天窗应能从该处所的外部加以关闭。   
  
     （二）玻璃天窗应设置永久附连于其上的钢质或其他等效材料的外盖。   
  
     （三）此项处所的舱棚上如主管机关许可设置窗户，应是不能开启式的，并应设置永久附连于其上的钢质或其他等效材料的外盖。   
  
     （四）本款（一）、（二）及（三）项所指的窗或天窗应使用金属丝增强的玻璃。   
  
     第四十七条 探火系统和灭火设备   
  
     一、巡逻和探火   
  
     （一）所有船舶应保持有效的巡逻制度，以便迅速探知任何火灾的发生。在旅客和船员起居处所内应遍设手动失火报警器，以便消防巡逻人员能立即向驾驶室或消防控制站报警。   
  
     （二）在主管机关认为巡逻制度不能包括的任何部位，应设有认可型的失火报警或探火系统，该系统应能在一个或数个适当的地点或站自动显示火灾的发生或征兆及其位置；但经主管机关认为该船航程短暂，运用此项要求将属不合理者除外。   
  
     （三）无论新船或现有船舶，在海上或在港口的所有时间内（非营运时除外），应配备足够的船员或设备，以保证负责船员能立即接到任何初始的失火警报。   
  
     二、消防泵与消防总管系统   
  
     船舶应设有符合本章第五条规定的消防泵、消防总管系统、消火栓和消防水带，并应符合下列要求：   
  
     （一）4000总吨及4000总吨以上的船舶，至少应设3台独立驱动的消防泵，小于4000总吨的船舶至少应设2台这种消防泵。   
  
     （二）1000总吨及1000总吨以上的船舶，其通海阀、消防泵及其动力源的布置，应保证当任何一舱失火时不致使全部消防泵失去效用。   
  
     （三）1000总吨以下的船舶，其布置应取得主管机关的同意。   
  
     三、消火栓、水带与水枪   
  
     （一）船舶应备有主管机关认为足够数目的消防水带。按本章第五条四款所要求的每一消火栓至少应备有1根消防水带，这些水带只准用于救火或在消防演习和检验时用以试验灭火设备。   
  
     （二）在起居处所、服务处所和机器处所内，消火栓的数目和位置，应在所有水密门和主竖区舱壁上所有的门皆关闭的情况下，尚可符合本章第五条四款的要求。   
  
     （三）此项布置应使至少两股水柱能射至任何装货处所在空舱时的任何部位。   
  
     （四）设有燃油锅炉或内燃机型推进机器的船舶上，其机器处所内的一切所需的消火栓均应配有水带，该水带附有按本章第五条七款所要求的水枪。   
  
     四、国际通岸接头   
  
     （一）1000总吨及1000总吨以上的船舶，至少应设有1只符合本章第五条八款规定的国际通岸接头。   
  
     （二）应备有使此项接头能用于船的任何一舷的设施。   
  
     五、起居处所及服务处所内的手提式灭火机   
  
     船舶应在其起居处所及服务处所内设置经主管机关认为合适和足量的认可型手提式灭火机。   
  
     六、装货处所内的固定式灭火装置   
  
     （一）1000总吨及1000总吨以上船舶的装货处所，应由符合本章第八条规定的固定式气体灭火系统保护。   
  
     （二）如主管机关认为某船的航程短暂，致使运用本款（一）项的要求为不合理者，以及1000总吨以下的船舶，其装货处所的灭火装置应取得主管机关的同意。   
  
     七、锅炉舱等的灭火设备   
  
     在设有燃油主、辅锅炉的处所或设有燃油装置或澄油柜的处所内，应设有下列装置：   
  
     （一）应有下列固定式灭火装置的任何一种：   
  
     1．符合本章第十一条规定的压力式水雾系统；   
  
     2．符合本章第八条规定的气体灭火装置；   
  
     3．符合本章第九条规定的固定式泡沫装置（为扑救花铁板以上的火灾，主管机关可要求设置固定的或可移动的压力水雾或泡沫喷射装置）。   
  
     在每一情况下，如机舱与锅炉舱没有完全分隔，或燃油能从锅炉舱流入机舱污水沟者，则机舱与锅炉舱应作为一个舱室看待。   
  
     （二）在每一锅炉舱的每一生火处所和燃油装置的某一部分所在的每一处所，应至少设置能喷出适于扑灭油火的泡沫或其他认可的灭火剂的认可型手提式灭火机两具。在每一锅炉舱内应设容量至少为136升（30加仑）的认可的泡沫型灭火机1具或等效设备。此项灭火机应备有绕在卷筒上足以到达锅炉舱的任何部位和燃油装置任何部分所在的处所的软管。   
  
     （三）每一生火处所内应有按主管机关所要求的容量的容器1具，内装砂子、浸苏打的锯木屑或其他认可的干燥物。此项设备亦可由1具认可型手提式灭火机代替之。   
  
     八、内燃机型机器所在处所的灭火设备   
  
     船舶采用内燃机型的机器，不论该机器用于主推进或用于辅助用途，如其总输出功率不少于746千瓦，则应设有下列装置：   
  
     （一）应有本条七款（一）项所要求的固定式装置中的一种。   
  
     （二）在每一机器处所内应设置容量至少为45升（10加仑）的认可的泡沫型灭火机1具或等效设备，并就机器输出功率每746千瓦或其零数设认可的手提式泡沫型灭火机1具，但所设手提式泡沫型灭火机的总数不得少于2具，亦不必超过6具。   
  
     九、在汽轮机及不需任何固定式装置处所的灭火设备   
  
     主管机关对于由水密舱壁与锅炉舱隔开的汽轮机所在处所内的灭火设备，应加以特殊考虑。   
  
     十、消防员装备与个人配备   
  
     （一）符合本章第十四条的消防员装备的最低数额和由该条一款（一）、（二）及（三）项的规定所组成的额外个人配备的最低套数如下：   
  
     1．两套消防员装备；并增设   
  
     2．在设有旅客处所和服务处所的甲板上，或如这种甲板多于一层时，则在这些处所最长的一层甲板上，按这些处所长度的每80米（262英尺）或其零数设置两套消防员装备和两套由本章第十四条一款（一）、（二）及（三）项的规定所组成的个人配备。   
  
     （二）包括本章第十四条二款所规定的储压式呼吸器在内的每套消防员装备，应按主管机关认可的比例，配备备用氧气瓶。   
  
     （三）消防员装备及个人配备应贮放在相互远离的若干位置，以备使用。在任一位置，应至少设有两套消防员装备与一套个人配备。   
  
     第四十八条 脱 险 通 道   
  
     一、除机器处所外，一切旅客和船员出入处所以及船员经常使用的处所内，应布置有梯道与梯子，以提供到达救生艇登艇甲板的方便脱险通道。特别应符合下列规定：   
  
     （一）在舱壁甲板以下，从每一水密舱或类似限定的处所或处所群，应有两个脱险通道，其中至少1个不得利用水密门。但主管机关对有关处所的性质和部位以及对经常居住或使用这些处所的人数经过恰当的考虑后，可以免除其中一个脱险通道。   
  
     （二）在舱壁甲板以上，从每一主竖区或类似限定的处所或处所群，至少应有两个实用的脱险通道，其中至少应有一个能通达形成垂直脱险的梯道。   
  
     （三）至少有一个脱险通道应为利用易于到达的环围的梯道，此梯道应自其起点的一层至救生艇登艇甲板之间设有尽可能连续的防火遮蔽。梯道的宽度、数目及连续性应取得主管机关的同意。   
  
     二、在机器处所内，从每一机舱、轴隧和锅炉舱应设有两个脱险通道，其中一个可为水密门。在未设水密门的机器处所内，该两个脱险通道应为两具尽可能远离的钢梯，通至舱棚上同样远离的门，从该处至登艇甲板应设有通路。不足2000总吨的船舶，主管机关经考虑到舱棚的宽度及布置，可免除此项要求。   
  
     第四十九条 用于内燃机的燃油   
  
     供船上任何固定装置用的内燃机，其所用燃油经认可的闪点仪测定的闪点（闭杯试验），概不得等于或低于43℃（110°Ｆ）。   
  
     第五十条 机器处所的特殊布置   
  
     一、应有设施以停止用于机器处所及装货处所的通风机和关闭通达各该处所的一切门道、通风筒、烟囱周围的环状空间，或这些处所的其他开口。此项设施，在失火时应能从各该处所的外部操纵。   
  
     二、强力送风机或抽风机、燃油驳运泵和燃油装置泵以及其他类似的燃油泵的驱动机械，应于有关处所的外部装设遥控装置，以便于在风机或泵所在处所失火时，可将其停止。   
  
     三、设在双层底上方的储油柜、澄油柜或日用油柜的每一吸油管上，应装设当该油柜所在处所失火时能从有关处所的外部加以关闭的旋塞或阀。如在深油舱位于任何轴隧或管隧内的特殊情况下，这些深油舱上应装设阀门，但可在隧道外的管路上加装一阀门，以便在失火时加以控制。   
  
     第四节 货船的消防措施①  
  
①参看海协组织通过的海大211（Ⅶ届）决议“关于对货船上周期无人照管机器处  
       
     所的安全措施，以补充对有人照管机器处所通常认为必需的安全措施的建议案。”   
  
     第五十一条 除本章第五节所包括的油船以外的4000总吨及4000总吨以上的货船的一般要求   
  
     一、船体、上层建筑、结构性舱壁、甲板及甲板室应以钢材建造，但在特殊情况下，如主管机关经考虑了失火危险后，可以核准采用其他适宜的材料。   
  
     二、在起居处所内，走廊舱壁应为钢质或以“乙”级镶板建造。   
  
     三、在起居处所范围内构成机器处所和装货处所顶盖的甲板上，其甲板敷料应为不易着火者。②  
  
②参看海协组织通过的海大214（Ⅶ届）决议“关于甲板基层敷料试验程序改进的  
       
     暂行准则”。   
  
     四、露天甲板以下的内部梯道应为钢质或其他适宜材料。起居处所范围内供船员用的升降机围壁通道应为钢质或等效材料。   
  
     五、厨房、油漆间、灯具间及舱面物料间的舱壁，如毗邻于起居处所或应急发电机室（如设有时），应为钢质或等效材料。   
  
     六、在起居处所及机器处所内，不得使用以硝酸纤维素或其他高度易燃物为基体的油漆、清漆及类似的配制品。   
  
     七、输送油类或可燃液体的管子，应为主管机关经考虑失火危险而认可的材料。在热力作用下易于失效的材料，不应用作舷边流水管、污水排泄管及其他靠近水线和因失火时该材料失效后将造成浸水危险的部位的出水口。   
  
     八、机器处所的动力通风应能从机器处所以外易于到达的地点予以停止。   
  
     第五十二条 灭火系统和设备   
  
     一、适用范围   
  
     凡总吨小于本条所提及的船舶，按本条所列项目设置消防设备时，应取得主管机关的同意。   
  
     二、消防泵和消防总管系统   
  
     船舶应设置符合本章第五条规定的消防泵、消防总管系统、消火栓和消防水带，并应符合下列要求：   
  
     （一）1000总吨及1000总吨以上的船舶应设置2台独立驱动的消防泵；   
  
     （二）在1000总吨及1000总吨以上的船舶上，如任何一舱失火会使所有的泵失去其效用时，则应有供应消防用水的另一种设施。在2000总吨及2000总吨以上的船舶上，此项另一种设施应为独立驱动的固定应急泵。此项应急泵应能供应两股水柱至主管机关认为满意的程度。   
  
     三、消火栓、水带和水枪   
  
     （一）在1000总吨及1000总吨以上的船舶上，所需设置的每根配齐接头和水枪的消防水带数目，应按船长每30米（100英尺）配备1根及备用1根；但总数决不应少于5根。该数目不包括任何机舱或锅炉舱所需的水带。主管机关可就该船类型和业务性质增加所需的水带数目，以保证具有足够的数量供随时随地取用；   
  
     （二）在起居处所、服务处所和机器处所内，消火栓的数目和布置应符合本章第五条四款的要求；   
  
     （三）船上此项布置应使至少两股水柱能射至任何装货处所在空舱时的任何部位；   
  
     （四）设有燃油锅炉或内燃机型推进机械的船舶上，其机器处所内的一切消火栓均应配有水带，该水带附有按本章第五条七款所要求的水枪。   
  
     四、国际通岸接头   
  
     （一）1000总吨及1000总吨以上的船舶，至少应设有1只符合本章第五条八款规定的国际通岸接头。   
  
     （二）应备有使此项接头能用于船的任何一舷的设施。   
  
     五、起居处所与服务处所内的手提式灭火机   
  
     船舶应在其起居处所与服务处所内设置经主管机关认为合适及足量的认可型手提式灭火机，在任何情况下，1000总吨及1000总吨以上的船舶，其数目不得少于5只。   
  
     六、装货处所内的固定式灭火装置   
  
     （一）2000总吨及2000总吨以上船舶的装货处所，应由符合本章第八条规定的固定式灭火系统保护。   
  
     （二）如为下述情况之一，主管机关可准许任何船舶的货舱（油船的货油舱除外）免除本款（一）项的要求：   
  
     1．货舱设有钢质舱口盖，且一切通风筒及通往货舱的其他开口具有有效的关闭装置；   
  
     2．该船是专门建造用以运送矿砂、煤或谷类等货物者；   
  
     3．经主管机关认为该船的航程短暂，实施此项要求为不合理者。   
  
     （三）每艘船舶，当装载按其性质和数量根据本公约第七章第七条规定为客船所不允许装载的爆炸品时，除应符合本条要求外，尚应符合以下要求：   
  
     1．任何载有爆炸品的舱室不得使用蒸汽。在本项范围内，“舱室”一词是指位于两个相邻固定舱壁之间的所有处所，包括下层货舱以及位于其上的一切装货处所；   
  
     2．此外，在每一载有爆炸品的舱室及其相邻的装货舱室内的每一装货处所应设有探烟或探火系统。   
  
     七、锅炉舱等的灭火设备   
  
     1000总吨及1000总吨以上的船舶，凡设有燃油主、辅锅炉的处所或在设有燃油装置或澄油柜的处所内，应设有下列装置：   
  
     （一）应有下列固定式灭火装置的任何一种：   
  
     1．符合本章第十一条规定的压力水雾系统；   
  
     2．符合本章第八条规定的灭火装置；   
  
     3．符合本章第九条规定的固定式泡沫装置（为扑救花铁板以上的火灾，主管机关可要求设置固定的或可移动的压力水雾或泡沫喷射装置）。   
  
     在每一情况下，如机舱与锅炉舱没有完全分隔或燃油能从锅炉舱流入机舱污水沟者，则机舱与锅炉舱应作为一个舱看待。   
  
     （二）在每一锅炉舱的每一生火处所和燃油装置的某一部分所在的每一处所，应至少设置能排出适于扑灭油火的泡沫（或其他认可的灭火剂）的认可型手提式灭火机两具。此外，对锅炉的每一喷油嘴至少应设置容量为9升（2加仑）的上述灭火机1具，但对每一锅炉舱增设之灭火机总容量不必超过45升（10加仑）；   
  
     （三）每一生火处所应有按主管机关所要求的容量的容器1具，内装砂子、浸苏打的锯木屑或其他认可的干燥物。此项设备亦可由1具认可型手提式灭火机代替。   
  
     八、内燃机型机器所在处所的灭火设备   
  
     1000总吨及1000总吨以上的船舶，如采用内燃机型机器，不论此项机器用于主推进或用于辅助用途，如其总输出功率不少于746千瓦者，应设有下列装置：   
  
     （一）应有本条七款（一）项所要求的固定装置中的一种。   
  
     （二）在每一机器处所内，应设置容量不少于45升（10加仑）的认可的泡沫型的灭火机1具或等效设备，并就机器输出功率每746千瓦或其零数设认可的手提式泡沫型灭火机1具，但所设手提式泡沫型灭火机的总数不得少于2具，亦不必超过6具。   
  
     九、在汽轮机及不需任何固定式装置处所内的灭火设备   
  
     主管机关对于由水密舱壁与锅炉舱隔开的汽轮机所在处所内的灭火设备，应加以特殊考虑。   
  
     十、消防员装备及个人配备   
  
     （一）无论是新船或现有船舶，最少应配备符合本章第十四条要求的两套消防员装备。此外，主管机关可以要求在大型船舶上增加若干套个人配备，以及在油船及诸如工厂船等特殊船舶上增加若干套消防员装备。   
  
     （二）每套消防员装备包括本章第十四条二款所规定的储压式呼吸器在内，应按主管机关认可的比例，配备备用氧气瓶。   
  
     （三）消防员装备及个人配备应贮放在易于到达的地点，以备使用；如消防员装备及个人配备多于一套时，应贮放在相互远离的若干位置。   
  
     第五十三条 脱 险 通 道   
  
     一、除机器处所外，一切船员和旅客出入处所以及船员经常使用的处所内，应布置有梯道与梯子，以提供到达救生艇登艇甲板的方便脱险通道。   
  
     二、在机器处所内，从每一机舱、轴隧和锅炉舱应设有两个脱险通道，其中一个可为水密门。在未设水密门的机器处所内，该两个脱险通道应为两具尽可能远离的钢梯，通至舱棚上同样远离的门，从该处至登艇甲板应设有通路。不足2000总吨的船舶，主管机关经考虑到舱棚的宽度及布置，可免除此项要求。   
  
     第五十四条 机器处所的特殊布置   
  
     一、应有设施以停止用于机器处所及装货处所的通风机和关闭通达各该处所的一切门道、通风筒、烟囱周围的环状空间，或这些处所的其他开口。此项设施，在失火时应能从各该处所的外部操纵。   
  
     二、强力送风机或抽风机、燃油驳运泵和燃油装置泵以及其他类似的燃油泵的驱动机械，应在有关处所的外部装设遥控装置，以便于在风机或泵所在处所失火时，可将其停止。   
  
     三、设在双层底上方的储油柜、澄油柜或日用油柜的每一吸油管上，应装设当该油柜所在处所失火时能从有关处所的外部加以关闭的旋塞或阀。如在深油舱位于任何轴隧或管隧内的特殊情况下，这些深油舱上应装设阀门，但可在隧道外的管路上加装一阀门，以便在失火时加以控制。   
  
     第五节 油船的消防措施   
  
     第五十五条 适 用 范 围   
  
     一、本节适用于载运具有经认可的闪点仪测定（闭杯试验），其闪点不超过60℃（140°Ｆ）同时其雷特蒸汽压低于大气压的原油和石油产品，以及载运具有同样失火危险的液体产品的所有新油船。   
  
     二、此外，本节所包括的所有船舶应符合本章第五十二、五十三、五十四条的要求，但第五十二条六款不必运用于已符合本章第六十条要求的油船。   
  
     三、除本条一款所指货物外，如需装载带有额外失火危险的其他货物时，应采取经主管机关同意的额外安全措施。   
  
     四、除非所有货舱已排空无油和已排除了油气，或除非在每种情况下主管机关对所采取的安排认为满意，否则油类／散货两用船不得装载固体货物。   
  
     第五十六条 处所的位置和分隔   
  
     一、甲类机器处所应位于货油舱和含油污水舱的后方，并须用隔离空舱、货油泵舱或燃油舱与之隔开；这类机器处所还应位于货油泵舱和隔离空舱的后方，但不必位于燃油舱的后方。然而，货油泵舱的下部可以凹入上述机器处所，以便安置货油泵，其条件是凹入部分的顶板高度一般不超过龙骨上面型深的1／3；但载重量不超过25000吨的船舶除外，在这种船舶上，如能证明为便于进入壁凹部分和便于妥善布置管系的需要，上述深度是不切实际的，则主管机关可以准许凹入部分超过上述高度，但不得超过龙骨上面型深的一半。   
  
     二、起居处所、货油主控制站、控制站及服务处所均应位于所有货油舱、含油污水舱、货油泵舱和用以隔开货油舱、含油污水舱与甲类机器处所的隔离空舱后方。分隔货油泵舱（包括货油泵舱的入口）与起居处所、服务处所和控制站的任何公共舱壁，其构造应为“甲－60”级。如认为必要时，起居处所、控制站、甲类以外的机器处所以及服务处所可以允许位于所有货油舱、含油污水舱、货油泵舱和隔离空舱的前方，但须具备经主管机关认为等效的安全标准及适用的灭火装置。   
  
     三、如经证明有必要把驾驶处所布置在货油舱区域的上方，则此处所只能是用于驾驶目的，并且必须用一个高度至少为2米的开敞处所使之与货油舱甲板隔开。此外，这种驾驶处所的防火还应符合第五十七条一款及二款所指明的对控制处所的要求，以及本节中可适用的其他规定。   
  
     四、应设有使甲板上溢油与起居和服务区域隔开的设施。这个设施可以是安装一个具有适当高度延伸到两舷的连续的固定挡板。对于具有尾部装油设施的船舶，此项挡油布置应予特别考虑。   
  
     五、环围起居处所和服务处所的上层建筑和甲板室的外部限界面，包括支承这些起居处所的悬架甲板，其面向货油舱的全部限界面及该限界面之后3米之内，应隔热至“甲－60”级。对于这种上层建筑和甲板室的两侧，此项隔热标准应通达主管机关认为必要的高度。   
  
     六、设有起居处所和服务处所的上层建筑和甲板室，其面向货舱的限界面应符合下列规定：   
  
     （一）此种限界面上不允许设门，但如门所通向的那些处所不与起居处所和服务处所相通，例如货油控制站、粮食库和储藏室，则主管机关可以允许设门。如设置此类门时，该处所的限界面应隔热至“甲－60”级。在此种限界面上可以设置供搬移机器用的由螺栓固紧的板门。   
  
     （二）在这种限界面上的舷窗应为永闭型的（不能开启的）。驾驶室的窗可以是非永闭型的（能开启的）。   
  
     （三）主甲板上第一层建筑内的舷窗，应装有钢质或等效材料的内盖。   
  
     本款的各项要求，除通向驾驶室处所的出入口外，如属可行，也应适用于上层建筑和甲板室自其前端向后纵向量至5米距离的限界面上。   
  
     第五十七条 构 造   
  
     一、（一）船体、上层建筑、结构性舱壁、甲板及甲板室应以钢材或其它等效材料建造。   
  
     （二）包括围壁通道的各个货油泵舱与甲类机器处所之间的舱壁应为“甲”级，且不得有低于“甲－0”级或者在各方面与其等效的贯穿装置，但货油泵轴压盖及类似压盖的贯穿装置除外。   
  
     （三）形成把甲类机器处所和包括围壁通道的货油泵舱分别与起居处所和服务处所分隔的舱壁和甲板，应为“甲－60”级。这种舱壁和甲板以及甲类机器处所和货油泵舱的任何限界面上，不得开设窗和舷窗。   
  
     （四）本款（二）及（三）项的要求，并不排除为货油泵舱照明而安装的认可型固定气密照明围罩，只要这种围罩具有足够的强度，并能保持“甲”级舱壁的完整性和气密性。此外，对完全位于机器处所之内的控制室，并不排除其使用窗户。   
  
     （五）控制站应与邻接的围蔽处所用“甲”级舱壁和甲板予以分隔。这种控制站限界面的隔热标准，须经主管机关考虑其邻接处所的失火危险性后而认为满意者。   
  
     （六）甲类机器处所舱棚上的门应为自闭式，并应符合本条二款（七）项的有关规定。   
  
     （七）甲类机器处所内部限界面上的隔热表面，应不渗透油和油气。   
  
     （八）甲板基层敷料，如使用时，应为经认可的不易着火的材料。①  
  
①参看海协组织通过的海大214（Ⅶ届）决议“关于甲板基层敷料试验程序改进的  
       
     暂行准则”。   
  
     （九）内部梯道应为钢质或其他适宜材料。   
  
     （十）邻接起居处所的厨房、油漆间、灯具间及舱面物料间的舱壁，应为钢质或其他等效材料。   
  
     （十一）用于外露的内部表面上的油漆、清漆和其他表面涂料，其性质应经主管机关判断不会造成过分的失火危险，并应不致产生过量的烟或其他毒性。   
  
     （十二）输送油类或可燃液体的管子，应为经主管机关考虑失火危险而认可的材料。在热力作用下易于失效的材料，不应用作舷边流水管、污水排泄管和其他靠近水线和因失火时该材料失效后将会造成浸水危险的部位的出水口。   
  
     （十三）机器处所的动力通风，应能从机器处所以外易于到达的地点予以停止。   
  
     （十四）甲类机器处所和货油泵舱的天窗，应符合本条一款（三）项关于窗和舷窗的规定；此外，天窗的布置应能易于从其所使用处所的外面将其关闭。   
  
     二、在起居处所、服务处所以及控制站内，应符合下列条件：   
  
     （一）走廊的舱壁，包括门，应为“甲或乙级分隔”，从甲板延伸到甲板。如在舱壁的两侧都设有连续“乙”级天花板和（或）衬板时，则该舱壁可终止于连续的天花板或衬板。住室和公共处所内在这种舱壁上的门，可在其下半部装有百叶窗。   
  
     （二）封闭在天花板、镶板或衬板后面的空隙，应以紧密安装的且间距不大于14米（46英尺）的挡风条作分隔。   
  
     （三）天花板、衬板、舱壁及隔热物，除冷藏舱所用的绝缘外，均应为不燃材料。与隔热物一起使用的防潮层和胶合剂，以及用于冷冻系统管路附件的绝缘物，不需用不燃材料，但应尽量保持在最低数量，并且它们的外露表面应具有主管机关满意的抗火焰传播的性能。   
  
     （四）构架包括舱壁的基板和其连接件，以及衬板、天花板及挡风条（如装有时），均应为不燃材料。   
  
     （五）走廊和梯道环围内的所有外露表面，以及隐蔽或不能到达的处所内的表面，均应具有低播焰性。①  
  
①参看海协组织通过的海大166（特Ⅳ届）决议“关于评定材料的防火性能的准  
       
     则”。   
  
     （六）舱壁、衬板及天花板上可以装有可燃的镶片，此镶片的厚度不应超过2毫米；但装在走廊、梯道环围和控制站内的镶片除外，在这些处所内，镶片厚度不得超过1．5毫米。   
  
     （七）只穿过一层甲板的梯道，至少须在一层甲板处用“甲或乙级分隔”和自闭式门加以保护，以限制火焰从一层甲板迅速传播到另一层甲板。船员升降机的围壁应为“甲级分隔”。如梯道和升降机围壁穿过一层以上的甲板，则应在各层甲板处用“甲级分隔”加以包围，并用钢质自闭式门予以保护。自闭式门不应装有门背钩，但若门背钩装置装有保安型的遥控脱开装置，则可以利用。   
  
     三、用于甲类机器处所的通风导管，一般不应通过起居处所、服务处所或控制站，但主管机关可以允许放宽此项要求，如果：   
  
     （一）导管用钢制成，且每个导管隔热至“甲－60”级；   
  
     （二）导管用钢制成，且在靠近穿过限界处设有一自动挡火闸，并从甲类机器处所到挡火闸以外至少5米（16英尺）之处隔热至“甲－60”级。   
  
     四、用于起居处所、服务处所或控制站的通风导管，一般不得通过甲类机器处所，但如导管用钢材建造，并在靠近穿过限界面处装有自动挡火闸者，则主管机关可允许放宽此项要求。   
  
     第五十八条 通 风   
  
     一、凡货油舱甲板上能放出油气的开口，其布置和安装位置应使油气进入含有着火源的围蔽处所或积聚在可能构成着火危险的甲板机械和设备附近的可能性减至最小程度。在每一情况下，油气出口在甲板以上的高度及油气排放的速度，应与任何油气出口离开任何甲板室开口或着火源的距离一并加以考虑。   
  
     二、通风入口与出口，以及甲板室和上层建筑限界面上的其他开口，其布置应与本条一款的规定相配合。尤其是用于机器处所的这种通风孔应位于尽可能靠后的位置。当船舶设有尾部装卸货油设备时，对这个问题必须作适当的考虑。诸如电气设备一类的着火源，其布置应避免发生爆炸的危险。   
  
     三、货油泵舱应用机械通风，其从抽风机排出的油气要引导至露天甲板上的安全地点。这些舱的通风须有足够的能量，使易燃气体积聚的可能性减至最小程度。依据该处所的总容积，每小时换气次数至少需20次。各通风导管的布置应使该处所的全部空间获得有效的通风。此项通风应为吸入式。   
  
     第五十九条 脱 险 设 施   
  
     除本章第五十三条一款的要求外，主管机关还应考虑供人员从每一房舱撤离的应急脱险设施的有效性。   
  
     第六十条 货油舱的保护   
  
     一、对于载重量为100000吨及100000吨以上的油船和载重量为50000吨及50000吨以上的油类／散货两用船，其货油舱甲板区域和货油舱的保护应由按照本节第六十一及第六十二条要求装设的一个固定式甲板泡沫系统和一个固定式惰性气体系统来获得。但主管机关根据公约第一章第五条经考虑该船的布置和设备后，可以同意采用其他能提供等效于上述系统的保护的固定式联合装置来代替上述装置。   
  
     二、凡认为等效而建议用来代替甲板泡沫系统的系统，应为：   
  
     （一）能够熄灭喷出的油火，并能阻止尚未燃烧的溢油着火；   
  
     （二）能够在破裂的货油舱内扑救火焰。   
  
     三、凡认为等效而建议用来代替固定式惰性气体系统的系统，应为：   
  
     （一）在空载正常航行的全航程中以及必要的舱内作业中，能防止爆炸混合物在完整的货油舱内作危险的积聚。   
  
     （二）设计成使该系统本身产生静电而着火的危险减至最小程度。   
  
     四、对于载重量小于100000吨的油船以及载重量小于50000吨的油类／散货两用船，主管机关在执行本章第五十二条六款的要求时，可同意采用能在内部或外部向货油舱喷射泡沫的泡沫系统。此种装置的细节应取得主管机关的同意。   
  
     第六十一条 固定式甲板泡沫系统   
  
     本章第六十条一款述及的固定式甲板泡沫系统，应设计成：   
  
     一、提供泡沫的装置应能把泡沫输送到全部货油舱区域，并且能送入甲板已经破裂的任何货油舱内。   
  
     二、此项系统应能简易而迅速地操作。系统的主控制站应适当布置在货油舱区域以外，靠近居住处所，并在被保护区域万一发生火灾时能易于到达和进行操作的地点。   
  
     三、泡沫溶液的供给速率应不少于下列两项中的较大值：   
  
     （一）按货舱甲板面积每平方米每分钟0．6升，此处货舱甲板面积是指船舶的最大宽度乘以全部货油舱处所的纵向总长；   
  
     （二）按具有最大水平截面面积的单个货油舱，每平方米每分钟6升。   
  
     应供给足量的泡沫浓缩剂，以保证当采用按本款（一）项或（二）项（取其较大者）规定的溶液供给速率时，至少能产生泡沫20分钟。泡沫膨胀率（即所产生的泡沫体积与水和发泡浓缩剂的溶液的体积之比率）一般不应超过12比1。如本来就是产生低膨胀泡沫的系统，但其膨胀率稍为超过12比1者，则所需泡沫溶液的数量仍按膨胀率为12比1的系统计算。如采用中等膨胀率的泡沫时（膨胀率在50比1至150比1之间），泡沫的使用速率及炮式喷射器装置的能量，应取得主管机关同意。   
  
     四、来自固定式泡沫系统的泡沫，须用若干炮式喷射器和泡沫喷枪来供送。每一炮式喷射器应至少供送所需泡沫速率的50％。   
  
     五、（一）炮式喷射器的数目和位置应符合本条一款的要求。任一炮式喷射器的能量，即每分钟使用泡沫混合液的升数，应至少为被该炮式喷射器所保护的甲板面积平方米数的3倍，而这个面积系完全位于该炮式喷射器的前方。   
  
     （二）从炮式喷射器到它前方所保护区域最远端的距离，应不大于该炮式喷射器在平静空气中射程的75％。   
  
     六、在尾楼前端左右两侧或面向贷油舱甲板的起居处所的左右两侧应各装设一具炮式喷射器和用于泡沫喷枪的软管接头。喷枪在灭火操作中应具有动作灵活性，并覆盖由该炮式喷射器所屏护的区域。   
  
     七、在紧接每一炮式喷射器前方的泡沫液总管和消防总管上，应装设阀门，用来切断这些总管路的破损管段。   
  
     八、按所需输出量操作甲板泡沫系统时，须同时能从消防总管按所需压力使用所需最少数目的水柱。   
  
     第六十二条 惰性气体系统   
  
     本章第六十条一款述及的惰性气体系统应能于需要时随即向货油舱供送一种气体或混合气体。这种气体含氧量很少，可使货油舱内的大气呈为惰性，亦即不能传播火焰。   
  
     这种系统应满足下列条件：   
  
     一、在正常操作时应能消除新鲜空气进入货油舱，但人员准备进入货油舱时除外。   
  
     二、空货油舱应能用惰性气体进行清除，以减少卸油后货油舱内的碳氢化合物含量。   
  
     三、洗舱应能在一种惰性化的大气中进行。   
  
     四、当卸油时，该系统应能保证有按本条六款所指体积的气体可供使用。在其他时间，应能保证有符合本条七款的足量气体可供连续使用。   
  
     五、应设有能用新鲜空气同样也能用惰性气体对货油舱进行清除的适宜设施。   
  
     六、该系统应能提供至少为货油泵最大总排量的125％的惰性气体。   
  
     七、在正常运行条件下，当各货油舱正在充填或已经充填惰性气体时，货油舱内应能保持正压力。   
  
     八、供清除用的排气口应适当地设置在开敞的大气中，其一般要求与本章第五十八条一款所述油船上货油舱的透气口相同。   
  
     九、应装有1台洗涤器，用来有效地把气体冷却，并去除固体和硫的燃烧产物。   
  
     十、至少应装有2只鼓风机，当其合并使用时至少能供送本条六款规定的气体量。   
  
     十一、所供给的惰性气体的含氧量，按体积计通常不应超过5％。   
  
     十二、应有防止碳氢化合物气体或油气从各货油舱回到机器处所或烟道内及防止产生过高压力或真空的设施。此外，在洗涤器处或在甲板上要装设有效的水封装置。在每一货油舱的惰性气体支管上须装有截止阀或等效的控制设备。这个系统的设计应使产生静电而着火的危险减至最小程度。   
  
     十三、应装有仪表，以便在供送惰性气体的全部时间内，对位于鼓风机排出端的惰性气体总管内的气体，能连续指示和固定记录其压力和含氧量。这种仪表最好安装在货油控制室内（如设有时），但无论如何要安装在使负责货油操作的船员易于到达的处所。应备有适用于测量氧气和碳氢化合物气体或油气的可携式仪表及必要的货油舱配件，以便监控货油舱内的各种气体含有量。   
  
     十四、应备有指示惰性气体总管内温度与压力的设备。   
  
     十五、应设有报警器以指示：   
  
     （一）惰性气体总管内气体含氧量增高；   
  
     （二）惰性气体总管内气体压力降低；   
  
     （三）供给甲板水封（如设有这种装置时）的压力降低；   
  
     （四）惰性气体总管内气体温度增高；   
  
     （五）送往洗涤器的水压力降低。   
  
     并且，应设有当达到本款（三）、（四）及（五）项的预定限度时使该系统自动关闭的装置。   
  
     十六、凡装有惰性气体系统的任何船舶的船长，应备有一份使用说明书，其中包括有关该系统的操作、安全要求和职业卫生要求。   
  
     第六十三条 货 油 泵 舱   
  
     每一货油泵舱应设有能在泵舱外面易于到达的地点予以操作的固定式灭火系统。该系统应使用水雾或经主管机关认为满意的其他合适的灭火剂。   
  
     第六十四条 消防水带用的水枪   
  
     所有配备的消防水带用的水枪应为一种认可的带有关闭装置的两用型式（即水雾／水柱型）。   
  
     第六节 现有客船的特殊消防措施   
  
     在本章本节的范围内，所有引用（1948）条文之处是指1948年国际海上人命安全公约第二章中的规则条文；除另有说明外，所有引用（1960）条文之处是指1960年国际海上人命安全公约第二章的规则条文）   
  
     第六十五条 适 用 范 围   
  
     任何载客超过36人的客船，至少应符合下列规定：   
  
     一、在1952年11月19日以前安放龙骨的船舶，应符合本节第六十六条至八十五条的规定。   
  
     二、在1952年11月19日及其以后，但在1965年5月26日以前安放龙骨的船舶，应符合1948年国际海上人命安全公约中关于该公约对新船所适用的消防措施的规定；同时，应符合本节第六十八条二和三款、第七十五条、第七十七条二款、第七十八条、第八十条二款、第八十一条二至七款、第八十四条与第八十五条的规定。   
  
     三、在1965年5月26日及其以后，但在本公约生效前安放龙骨的船舶，除非符合本章第一节和第二节的要求，应符合1960年国际海上人命安全公约中关于该公约对新船所适用的消防措施的规定，并应符合本节第六十八条二和三款，第八十条二款、第八十一条二、三和四款及第八十五条的规定。   
  
     第六十六条 构 造   
  
     船体构件应为符合第二十七条（1948）的钢质或其他适当的材料；但是，如果主管机关对结构性的防火措施认为满意时，则一些不包含起居处所的孤立甲板室和露天甲板可为木质。   
  
     第六十七条 主 竖 区   
  
     现有客船应由“甲级分隔”分成符合第二十八条（1948）规定的若干主竖区。经按第二十六条三款（四）项（1948）的规定，考虑了毗邻处所的性质，这种分隔应尽可能具有足够的隔热值。   
  
     第六十八条 主竖区舱壁的开口   
  
     一、现有客船应实质上符合第二十九条（1948）的规定。   
  
     二、防火门应为钢质或等效材料，可带有或不带有不燃的隔热物。   
  
     三、如穿过主竖区分隔的通风围壁和导管的截面面积为0．02平方米（31平方英寸）或以上时，应采用下列补充规定：   
  
     （一）围壁和导管的截面面积在0．02平方米（31平方英寸）与0．075平方米（116平方英寸）之间者，其挡火闸应为保安型的自动关闭式，或者此种围壁和导管在分隔的两侧，应至少都有457毫米（18英寸）的一段应隔热至满足所在舱壁的要求。   
  
     （二）围壁和导管的截面面积超过0．075平方米（116平方英寸）者，其挡火闸应为保安型的自动关闭式。   
  
     第六十九条 起居处所与机器处所、装货处所、服务处所的分隔   
  
     现有客船应符合第三十一条（1948）的规定。   
  
     第七十条 有关Ⅰ、Ⅱ、Ⅲ法的运用   
  
     船上每一起居处所及服务处所，应符合本条一、二、三或四款中某一款所规定的全部要求。   
  
     一、当对某一船舶考虑接受为第Ⅰ法时，应设置在实质上符合第三十条一款（1948）规定的不燃的“乙”级舱壁系统，并依照第三十九条一款（1948）的规定最大限度地使用不燃材料。   
  
     二、当对某一船舶考虑接受为第Ⅱ法时：   
  
     （一）应设置在实质上符合第四十二及四十八条（1948）规定的自动喷水器及失火报警系统。   
  
     （二）各种可燃材料的使用，应尽量减少到合理和可行的程度。   
  
     三、当对某一船舶考虑接受为第Ⅲ法时，应设置在实质上符合第三十条二款（1948）规定的从甲板到甲板的阻火舱壁系统，连同一在实质上符合第四十三条（1948）规定的自动探火系统。可燃及高度易燃材料的使用应按第三十九条二款和第四十条七款（1948）的规定加以限制。如火警巡逻时间间隔不超过20分钟，则可以允许不受第三十九条二款和第四十条七款（1948）要求的限制。   
  
     四、当对某一船舶考虑接受为第Ⅲ法时：   
  
     （一）在起居处所内应设置若干额外的“甲级分隔”，以使这些处所的主竖区平均长度减少到约20米（65．5英尺）；   
  
     （二）应设置在实质上符合第四十三条（1948）规定的自动探火系统；   
  
     （三）在起居处所内，走廊和房间舱壁的所有外露表面及其覆盖层应具有限制火焰蔓延的能力；   
  
     （四）可燃材料的使用应按第三十九条二款（1948）的规定加以限制。如火警巡逻时间间隔不超过20分钟，则可以允许不受第三十九条二款（1948）要求的限制；   
  
     （五）应设置从甲板到甲板的若干额外的不燃烧的“乙级分隔”，以形成阻火舱壁系统，在这些舱壁系统内，除公共处所外，任何舱室的面积一般不超过300平方米（3200平方英尺）。   
  
     第七十一条 垂直梯道的保护   
  
     梯道应符合第三十三条（1948）的规定；但如有特殊困难，主管机关对梯道环围可允许使用不燃的“乙级分隔”及门以代替“甲级分隔”及门。此外，主管机关可以例外地允许保留木制梯道，但该梯道必须由喷水器保护，并被完满地环围。   
  
     第七十二条 升降机（旅客及服务）、采光及通风用垂直围壁通道等的保护   
  
     现有客船应符合第三十四条（1948）的规定。   
  
     第七十三条 控制站的保护   
  
     现有客船应符合第三十五条（1948）的规定；但是，如果由于控制站的分布或结构不能完全符合规定时，例如操舵室用木结构，则主管机关可允许使用孤立架设的不燃的“乙级分隔”，来保护该控制站的限界面。在此种情况下，如紧接控制站下面的处所能构成重大火灾危险，则二者间的甲板应完全按“甲级分隔”隔热。   
  
     第七十四条 储藏室等的保护   
  
     现有客船应符合第三十六条（1948）的规定。   
  
     第七十五条 窗 与 舷 窗   
  
     机舱及锅炉舱的天窗应能从这些处所的外部予以关闭。   
  
     第七十六条 通 风 系 统   
  
     一、除装货处所及机器处所的通风外，所有动力通风应在机器处所之外和易于到达的地方设置若干主控制站，其位置应为不需走达超过3个站就能停止机器及装货处所以外的所有通风机。机器处所的通风应设置1个可在机器处所外面操纵的主控制站。   
  
     二、厨房炉灶的排气导管，在其通过起居处所的管段，应装设有效的隔热物。   
  
     第七十七条 杂 项   
  
     一、现有客船应符合第四十条一款、二款及六款（1948）的规定。但第四十条一款（一）项（1948）中的规定除外，在此情况下，可以20米（65．5英尺）代替13．73米（45英尺）。   
  
     二、燃油泵应装设位于油泵所在处所外部的遥控装置，以便在该油泵所在处所发生火灾时，能将燃油泵停止。   
  
     第七十八条 电 影 胶 片   
  
     船上电影设备不得使用硝酸纤维素基胶片。   
  
     第七十九条 示 意 图   
  
     示意图的设置应符合第四十四条（1948）的规定。   
  
     第八十条 消防泵、消防总管系统、消火栓与消防水带   
  
     一、应符合第四十五条（1948）的规定。   
  
     二、只要实际可行，消防总管应能立即供水，例如采用保持压力的方法或用遥控消防泵的方法，但此种遥控装置应操纵方便并能易于到达。   
  
     第八十一条 探火与灭火的要求   
  
     通则   
  
     一、应符合第五十条一款至十五款（1948）的要求，尚须遵守本条的规定。   
  
     巡逻、探火及通信系统   
  
     二、本节所要求的每一消防巡逻员应受到训练，以熟悉船上布置以及可能指定他使用的任何设备的所在地点和操作方法。   
  
     三、应设置召集船员的专用报警器，此种报警器可以是船上通用报警系统的一部分。   
  
     四、起居处所、公共处所以及服务处所应普遍设有广播系统或其他有效的通信设施。   
  
     机器与锅炉处所   
  
     五、灭火机的数目、类型和分布应符合第六十四条七款（二）项、七款（三）项及八款（二）项（1960）的规定。   
  
     国际通岸接头   
  
     六、应符合第六十四条四款（1960）的规定。   
  
     消防员装备   
  
     七、应符合第六十四条十款（1960）的规定。   
  
     第八十二条 消防设备的即刻获用   
  
     应符合第六十六条（1960）的规定。   
  
     第八十三条 脱 险 通 道   
  
     应符合第五十四条（1948）的规定。   
  
     第八十四条 应 急 电 源   
  
     除应急电源的位置应依照第二十五条一款（1960）的要求外，其余应符合第二十二条一款、二款及三款（1948）的规定。   
  
     第八十五条 应变演习与操练   
  
     在进行1960年国际海上人命安全公约第三章第二十六条所述的消防演习时，应要求每一船员证明他熟悉船上的布置和设施、本身职责以及可能指定他使用的任何设备，在这方面，要求船长熟悉情况并指导船员。   
  
     第三章 救生设备等   
  
     第一条 适 用 范 围   
  
     一、除另有明文规定外，本章适用于从事国际航行的新船，并分为三节如下：   
  
     第一节 客船和货船。   
  
     第二节 客船。   
  
     第三节 货船。   
  
     二、从事国际航行的现有船舶，其龙骨系在1960年国际海上人命安全公约生效之日或以后安放或处于相应的建造阶段者，应适用该公约第三章对该公约定义所指的新船所适用的各项要求。   
  
     三、从事国际航行的现有船舶，其龙骨系在1960年国际海上人命安全公约生效之日以前安放或处于相应的建造阶段者，同时又尚不符合该公约第三章对有关新船的规定，在此种情况下，对每艘船舶的装备，应由主管机关加以考虑，以期在合理和可行的范围内尽早地使该船在实质上符合该公约第三章的要求。本章第二十七条二款（一）项要求中的但书部分，仅在下述情况下可适用于本款所指的现有船舶：   
  
     （一）符合本章第四、八、十四、十八和十九条以及第二十七条一款与二款的规定；   
  
     （二）按第二十七条二款规定所载的救生筏均符合本章第十五条或第十六条，以及第十七条的要求；   
  
     （三）船上总人数不应由于配置救生筏而增加，除非该船完全符合下列规定：   
  
     1．本公约第二章甲第二节的要求；   
  
     2．本公约第二章乙第二十一条一款（三）项和（四）项或第四十八条一款（三）项所适用的要求；   
  
     3．本章第二十九条一、二、五及六款的要求。   
  
     第一节 通 则   
  
     （本节对于客船与货船均适用）   
  
     第二条 定 义   
  
     本章内的定义如下：   
  
     一、“短程国际航行”，系指在该航线中，船舶距离能够安全安置旅客和船员的港口或地点不超过200海里，且自启航国最后停靠港至最终目的港之间不超过600海里的国际间航行。   
  
     二、“救生筏”，系指符合本章第十五条或第十六条的救生筏。   
  
     三、“认可的降落装置”，系指经主管机关认可的能从登筏处所将一载满核定乘员及属具的救生筏降落下水的装置。   
  
     四、“执证救生艇员”，系指执有根据本章第三十二条规定所发给的合格证书的任何船员。   
  
     五、“救生浮具”，系指设计供支持在水中的一定数目的人员并在构造上能保持本身形状及性能的漂浮设备（救生艇、救生筏、救生圈、救生衣除外）。   
  
     第三条 免 除   
  
     一、主管机关如考虑到航程的遮蔽性及其条件，认为实施本章的全部要求为不合理或不必要时，可对在航程中驶距最近陆地不超过20海里的个别船舶或某类船舶免除本章要求中的那些认为不合理或不必要的部分。   
  
     二、客船用于特种业务，例如朝山进香，载运大量特种业务旅客者，主管机关如认为实施本章要求为不切实际时，可对其本国所属的此类船舶免除这些要求，但此类船舶应完全符合下列规则的规定：   
  
     （一）1971年特种业务客船协定的附则；   
  
     （二）1973年特种业务客船舱室要求议定书所附的规则（当生效时）。   
  
     第四条 救生艇、救生筏和救生浮具的即刻可用性   
  
     一、对适用本章船舶的救生艇、救生筏和救生浮具所订规则的总原则是在紧急时这些救生设备应即刻可用。   
  
     二、为求能即刻可用，救生艇、救生筏和救生浮具应符合下列条件：   
  
     （一）即使在不利的纵倾及横倾15°的情况下，它们亦应能安全并迅速地被降落下水；   
  
     （二）应能迅速而秩序良好地登入救生艇或救生筏；   
  
     （三）各救生艇、救生筏或救生浮具的布置，应不妨碍其它救生艇、救生筏和救生浮具的操作。   
  
     三、在船舶离港前及在整个航行时间内，一切救生设备应保持可用状态，并可以随时使用。   
  
     第五条 救生艇的构造   
  
     一、一切救生艇均应建造恰当，其形状及尺度比例应使其在海浪中具有充裕的稳性，并于载足全部乘员及属具时，具有足够的干舷。一切救生艇当载足全部乘员及属具而破漏通海时，仍应能保持正稳性。   
  
     二、（一）一切救生艇应有刚性舷侧和应仅有内部浮力。主管机关可核准具有刚性顶棚的救生艇，但这种顶棚应可在内外两面都能便于开启，且不得妨碍迅速登艇和离艇以及艇的降落和操纵。   
  
     （二）机动救生艇可设置经主管机关同意的防止海水进入首部的装置。   
  
     （三）一切救生艇的长度应不小于7．3米（24英尺），但由于船舶的大小或其它原因，主管机关认为设置这样的救生艇为不合理或不切实际者除外，但在任何情况下，船上救生艇的长度应不小于4．9米（16英尺）。   
  
     三、满载乘员及属具后，其重量超过20300公斤（20英吨）或按本章第七条计算其载乘容量超过150人的救生艇，均不得予以认可。   
  
     四、额定乘员多于60人但不超过100人的一切救生艇，均应为符合本章第九条要求的机动救生艇或符合本章第十条认可的机械推进救生艇。额定乘员超过100人的一切救生艇，均应为符合本章第九条要求的机动救生艇。   
  
     五、一切救生艇应具有足够的强度，使其在载足全部乘员及属具后能安全降落水中。一切救生艇的强度，应使其在经受超载25％的情况下，不致产生剩余变形。   
  
     六、一切救生艇的平均舷弧高度应至少等于该艇长度的4％。舷弧在形状上应近似于抛物线。   
  
     七、额定乘员100人或100人以上的救生艇，其浮力容积应增加至主管机关同意的数值。   
  
     八、一切救生艇均应具有自然浮力，或装设水密空气箱或其他等效的不腐蚀且不受原油或石油产品不利影响的浮力材料，当艇内浸水和破漏通海时，仍足以将艇及其属具浮起。此外，并须至少以相当于艇容积1／10的水密空气箱或其他不腐蚀且不受原油或石油产品不利影响的等效浮力材料作为附加浮力。主管机关可以准许水密空气箱内充填以不腐蚀且不受原油或石油产品不利影响的浮力材料。   
  
     九、一切救生艇的横座板和边座板应尽可能置于艇内低处。   
  
     十、除由木板制造的救生艇外，一切救生艇按本章第六条所确定的立方容量的方形系数应不小于0．64；如救生艇在载足全部乘员及属具后，主管机关对其具有充足的初稳性高度和干舷认为满意，则任一此种救生艇的方形系数可小于0．64。   
  
     第六条 救生艇的立方容量   
  
     一、救生艇的立方容量，应以辛氏（施氏）法则或其他能提供同等准确程度的方法确定。方尾救生艇的容量应当作尖尾救生艇来计算。   
  
     二、例如，借助于辛氏法则计算时，救生艇容量的立方米（或立方英尺）数，可按下述公式求得：  
  
                    Ｌ  
            容积＝－－－（4Ａ＋2Ｂ＋4Ｃ）  
                    12  
       
     Ｌ为救生艇长度，以米（或英尺）计，自首柱处金属或木质艇壳板的内边量至尾柱处艇壳板的内边；方尾救生艇的长度则量至艇尾端板的内边。   
  
     Ａ、Ｂ、Ｃ分别代表将Ｌ均分为四等分时距前端1／4长度处、中点及距后端1／4长度处各横截面的面积（救生艇两末端的横截面积可省略不计）。   
  
     面积Ａ、Ｂ、Ｃ系对三个横截面依次运用下列公式求得的平方米（或平方英尺）数：  
  
                        ｈ  
                面积＝－－－（ａ＋4ｂ＋2ｃ＋4ｄ＋ｅ）  
                        12  
       
     ｈ为深度，以米（或英尺）计，自龙骨处木壳板或金属壳板内边量至舷缘平面，或在某些情况下按照以下规定量至一个较低的平面。   
  
     ａ、ｂ、ｃ、ｄ、ｅ表示在深度的最高和最低两点以及将ｈ四等分的三个点处救生艇的水平宽度，以米（或英尺）计。（ａ和ｅ为ｈ两端处的宽度，ｃ为ｈ的中点处宽度）。   
  
     三、若在位于距救生艇两端1／4长度处的两点量得舷缘的舷弧高度超过艇长的1％时，则计算横截面积Ａ或Ｃ的深度应为艇中点深度加1％艇长。   
  
     四、如救生艇中点的深度超过艇宽的45％，则计算艇中点横截面积Ｂ所用的深度应为艇宽的45％，同时在计算长度1／4处横截面积Ａ与Ｃ的所用的深度应为横截面Ｂ所用的深度加1％艇长，但计算面积Ａ与Ｃ所用的深度无论如何不得超过各该处的实际深度。   
  
     五、如救生艇深度大于1．22米（4英尺）时，则运用本规则所求得的人数应按1．22米与实际深度的比例相应减少，直至救生艇浮于水面载乘该数目的穿着救生衣的人员试验满意为止。   
  
     六、主管机关应以适宜公式对两端甚尖的和体形甚肥的救生艇所准许载乘的人数予以限制。   
  
     七、若用长、宽、深的积乘以0．6所得的容量数显然不大于用上述方法求得者，则主管机关可用此公式勘定木板制造的救生艇的容量。各项尺度应计量如下：   
  
     长度－－自艇壳板的外边与首柱相交处量至尾柱的相应一点   
  
     处，对方尾救生艇则量至艇尾端板的后边。   
  
     宽度－－在艇的最宽处量自艇壳板的外边。   
  
     深度－－在艇中点由龙骨处艇壳板的里边量至舷缘的水平   
  
     面，但计算立方容量时所采用的深度概不得超过宽   
  
     度的45％。   
  
     在一切情况下，船舶所有人有权要求用准确的丈量方法以确定救生艇的立方容量。   
  
     八、机动救生艇或其他机械推进救生艇立方容量的求得，应从总容量中减去发动机及其属件或其他机械推进装置的齿轮箱所占用的容量；在设有无线电报设备和探照灯及其附件时，则也应减去其所占用的容量。   
  
     第七条 救生艇的乘员定额   
  
     救生艇的额定乘员应等于其容量的立方米（立方英尺）除以下列数字所得的最大整数：   
  
     对长度为7．3米（24英尺）   
  
     或7．3米以上的救生艇……0．283（如容量以立方英尺计时为10）；   
  
     对长度为4．9米   
  
     （16英尺）的救生艇……………0．396（如容量以立方英尺计时为14）；   
  
     对长度为4．9米   
  
     （16英尺）或4．9米以   
  
     上但不超过7．3米   
  
     （24英尺）的救生艇………………介于0．396与0．283之间（如容量以立方英尺计时介于14与10之间），以内插法确定之。   
  
     但求得的人数，概不得超过以成年人穿着救生衣可坐下，且在任何方面不致妨碍划桨或其他推进机械设备操作的人数。   
  
     第八条 机动救生艇配备的数目   
  
     一、每艘客船应每舷各配备符合本章第九条要求的机动救生艇至少1艘。   
  
     但如客船的额定乘员连同船员的总数不超过30人时，则仅要求1艘这种救生艇。   
  
     二、除油船、捕鲸工厂船、鱼类加工或制罐头工厂船以及载运捕鲸、鱼类加工或制罐头工业的从业人员的船舶以外，1600总吨及1600总吨以上的每艘货船，应配备符合本章第九条要求的机动救生艇至少1艘。   
  
     三、每艘1600总吨及1600总吨以上的油船，每艘捕鲸工厂船、鱼类加工或制罐头工厂船以及载运捕鲸、鱼类加工或制罐头工业的从业人员的船舶，应于每舷各配备符合本章第九条要求的机动救生艇至少1艘。   
  
     第九条 机动救生艇细则   
  
     一、机动救生艇应符合下述条件：   
  
     （一）应装设一压燃式发动机并保持于随时可用状态；此发动机在任何情况下应能易于启动，并应备足按本条一款（三）项规定的航速供连续24小时运转的燃料。   
  
     （二）发动机及其属件应作适当围蔽，以确保在恶劣天气条件下使用，发动机的罩壳应为耐火的。发动机应设有倒车装置。   
  
     （三）当载足全部乘员和属具时，艇在平静水中前进的航速应为：   
  
     1．客船、油船、捕鲸工厂船、鱼类加工或制罐头工厂船以及载运捕鲸、鱼类加工或制罐头工业的从业人员的船舶，按本章第八条所要求配备的机动救生艇，航速至少为6节。   
  
     2．任何其它船舶的机动救生艇，航速至少为4节。   
  
     二、若机动救生艇用以支持发动机及其属件与探照灯和无线电报设备及其附件（如设有时）的内部浮力装置的容量，超过发动机及其属件与探照灯和无线电报设备及其附件（如设有时）移去后所能载乘乘员按其比率每人以0．0283立方米或1立方英尺计算所需的内部浮力装置的容量，则机动救生艇内部浮力装置的容量应增加上述差数，以高于按本章第五条所要求的容量。   
  
     第十条 除机动救生艇外的其他机械推进救生艇的细则   
  
     除机动救生艇外，其他机械推进救生艇应符合下述条件：   
  
     一、其推进机械应为认可的型式，且应具有足够的功率，以使救生艇在降落下水后能迅速离开船边，并能在不良天气条件下保持航向。如果机械是用人力操作的，则应使未经训练的人员亦能使用，并须在艇内浸水后仍能操作。   
  
     二、应装有在推进机械运转时，舵手能随时使艇倒退的装置。   
  
     三、除机动救生艇外的其他机械推进救生艇的内部浮力容量应予增加，以补偿推进机械的重量。   
  
     第十一条 救生艇的属具   
  
     一、每艘救生艇的正常属具应包括：   
  
     （一）单座可浮桨1套，备用可浮桨2支及可浮舵桨1支；桨架或桨叉1套半，以短绳或链条系于救生艇上；带钩艇篙1支；   
  
     （二）每一艇底孔备艇底塞2枚，以短绳或链条系于救生艇上（备有合格自动阀者，则不要求艇底塞）；水瓢1只；以认可的材料制成的水桶2只；   
  
     （三）装于救生艇上的舵1具，舵柄1根。   
  
     （四）太平斧2把，救生艇每端各1把；   
  
     （五）灯1盏，备有足供12小时点燃的油料；适用的火柴2盒，装于水密容器内；   
  
     （六）桅1支或数支，备齐镀锌钢丝牵索及帆（橙色）；   
  
     （七）涂有发光剂的或具有适当照明装置的有效罗经1具，装于罗经柜内；   
  
     （八）装于救生艇外围的连环状救生把手索1根；   
  
     （九）认可尺度的海锚1只；   
  
     （十）足够长度的艇首缆2根，一根用索环及索眼栓系于救生艇的前端，以便脱开；另一根系固于救生艇首柱上，以备使用；   
  
     （十一）容器1只，内装植物油、鱼油或动物油4．5升（1加仑）。此容器的构造，须能易于将油散布于水面，并设置成能将其连着于海锚上；   
  
     （十二）经主管机关核定的口粮，按救生艇额定乘员每人1份。口粮应保存于气密贮存器中，而贮存器则收藏于水密容器内；   
  
     （十三）水密容器数个，内装供救生艇额定乘员每人3升（6品脱）的淡水；或水密容器数个，内装供每人2升（4品脱）的淡水，并连同能提供每人1升（2品脱）饮水的一种认可型海水除盐器；附有短绳的不锈水勺1个；不锈饮料量杯1个；   
  
     （十四）能于高空发出明亮红光的认可型降落伞信号4支；发出明亮红光的认可型手持火焰信号6支；   
  
     （十五）能产生大量橙黄色烟雾（供白昼用）的认可型漂浮发烟信号2只；   
  
     （十六）当艇翻覆时须有能供人员把附于救生艇上的认可设施，其式样为：舭龙骨或龙骨扶栏，连同经龙骨底系固于两舷缘的把手索或其他认可的装置；   
  
     （十七）装于水密箱内的认可的急救药包1套；   
  
     （十八）适于发摩氏信号的防水手电筒1只，连同备用电池1副及备用灯泡1只，装在同一水密容器内；   
  
     （十九）认可型式的日光信号镜1面；   
  
     （二十）装有开罐头器的折刀1把，以短绳系于救生艇上；   
  
     （二十一）轻质可浮的引缆索2根；   
  
     （二十二）认可型手摇泵1具；   
  
     （二十三）适于贮存细小物件的柜1只；   
  
     （二十四）哨笛或同等的音响号具1只；   
  
     （二十五）钓鱼用具1套；   
  
     （二十六）颜色鲜明易见的认可型篷盖1具，能用以保护艇上乘员免受暴露所引起的伤害；   
  
     （二十七）第五章第十六条提及的救生信号解说图表1份。   
  
     二、如主管机关考虑到船舶所从事航行的时间，认为本条一款（六）、（十二）、（十九）、（二十）及（二十五）项为不必要时，主管机关可准予免除这些项目。   
  
     三、尽管本条一款有所规定，机动救生艇或其他认可型机械推进救生艇不需设桅、帆以及多于半套的桨，但应配备带钩艇篙2支。   
  
     四、一切救生艇应设有供人员由水中攀登救生艇的适宜装置。   
  
     五、每艘机动救生艇应配备能喷射适于扑灭油类火灾的泡沫或其他适宜物质的认可型手提灭火设备。   
  
     第十二条 救生艇属具的制牢   
  
     除带钩艇篙应散置以供撑开救生艇外，一切救生艇属具应适当地系牢于救生艇内。其系缚方法应保证属具的制牢并不致妨碍吊艇钩或阻碍迅速登艇。一切救生艇属具应尽可能小巧轻便，并包扎合适而紧凑。   
  
     第十三条 救生艇筏用的手提式无线电设备   
  
     一、除在每舷都配备1艘机动救生艇而艇上均设有符合本章第十四条及第四章第十三条要求的无线电报设备的船舶外，一切船舶应配备1台供救生艇筏用的符合第四章第十四条要求的认可型手提无线电报设备；所有这种设备应集中保存于海图室或其他适宜处所，以备在紧急情况时立即搬入某艇或其他艇内。但3000总吨及3000总吨以上的油船，其救生艇分置于船中部和尾部时，这种设备应保存于离该船主发报机最远的那些救生艇附近的适宜处所。   
  
     二、如主管机关考虑到船舶从事航行的时间，认为供救生艇筏用的手提无线电报设备为不必要时，可允许免设此项设备。   
  
     第十四条 机动救生艇无线电报设备及探照灯   
  
     一、（一）凡从事非短程国际航行的国际航行客船、捕鲸工厂船、鱼类加工或制罐头工厂船以及载运捕鲸、鱼类加工或制罐头工业的从业人员的船舶，如其船上总人数超过199人但不足1500人，应在根据本章第八条所要求配备的各机动救生艇中，至少有1艘设置符合本条及第四章第十三条要求的无线电报设备。   
  
     （二）如此类船舶上总人数为1500人或1500人以上者，则根据本章第八条所要求配备的每艘机动救生艇上均应设置此项无线电报设备。   
  
     二、此无线电报设备应安装在足以容纳此项设备和使用人员的舱室内。   
  
     三、其布置应使发信机及收信机的有效操作不受运转中发动机的干扰，无论电池是否在充电。   
  
     四、无线电的电池不得用作任何发动机启动马达或点火系统的电源。   
  
     五、机动救生艇的发动机应装设有供无线电电池再充电及作其他用途的发电机。   
  
     六、一切客船上按本章第八条一款所要求配备的每艘机动救生艇，以及一切捕鲸工厂船、鱼类加工或制罐头工厂船以及载运捕鲸、鱼类加工或制罐头工业的从业人员的船舶上按该条三款所要求配备的每艘机动救生艇，均应装设探照灯。   
  
     七、探照灯应包括至少为80瓦的灯泡、有效的反射镜以及电源；该电源可对距离180米（200码）处宽度约18米（60英尺）的浅色物体作有效照明总共达6小时，并至少应能连续使用3小时。   
  
     第十五条 气胀式救生筏的要求   
  
     一、每只气胀式救生筏的构造，当其在充气胀满并在撑足顶篷的情况下漂浮时，在海浪中应当稳定。   
  
     二、救生筏的构造，应使其自18米（60英尺）高处投掷下水时，救生筏及其属具均不致损坏。如救生筏要存放于船上高出水面18米（60英尺）以上的处所时，则该救生筏应为曾从至少等于其存放处所高度进行过满意的投掷试验的型式。   
  
     三、救生筏的构造应设有在充气时能自动撑起的顶篷，此顶篷应能保护乘员免受暴露所引起的伤害，并应备有收集雨水的设备。篷顶应装设有海水电池发光的电灯，筏内也应设有同样的电灯。救生筏顶篷的颜色应鲜明易见。   
  
     四、救生筏应备有首缆，并应沿筏体外围牢固地装设链环状把手索。沿救生筏内侧也应装设把手索。   
  
     五、救生筏若充气时处于翻覆位置，应能由一个人即可扶正。   
  
     六、救生筏的每一开口处，应设置能使落水人员便于攀登入筏的有效设施。   
  
     七、救生筏应装于能在海上各种条件下保持经久耐用的包裹或其他容器内。处于包裹或其他容器内的救生筏应能自然浮起。   
  
     八、救生筏浮力的安排，应以隔壁组成偶数的若干独立隔舱，半数的隔舱应能支持该筏的额定乘员露出水面，或采取其他等效的设施，以确保在救生筏损坏或局部充气失效时仍有合理的富裕浮力。   
  
     九、救生筏与包裹或其他容器，及其属具的总重量，应不超过180公斤（400磅）。   
  
     十、每只气胀式救生筏的额定乘员应等于：   
  
     （一）当充气后，其主浮胎（不包括篷柱以及横座位在内，如设有时）的容量以立方分米计时除以96（以立方英尺计时除以3．4）后所得的最大整数；   
  
     （二）当充气后，其以平方厘米计的筏底面积（可包括横座位在内，如设有时）除以3720（以平方英尺计时除以4）所得的最大整数；   
  
     上述（一）、（二）两项中，取其小者。   
  
     十一、救生筏的筏底应为水密，并应充分隔热以御寒冷。   
  
     十二、救生筏所充气体应对乘员无害，并应使用拉绳或其他同等简单而有效的方法使筏自动充气。应备有设施以使本章第十七条要求的充气泵或风箱可用来维持气压。   
  
     十三、救生筏的材料及其构造应经认可，其构造应使筏在一切海况下能经受暴露漂浮达30天。   
  
     十四、按本条十款计算载乘量少于6人的救生筏，概不得认可。气胀式救生筏按该款计算可载乘的最多人数应由主管机关审定，但无论如何不得多于25人。   
  
     十五、救生筏应能在66℃至－30℃（150°Ｆ至－22°Ｆ）的温度范围内使用。   
  
     十六、（一）救生筏的存放应在紧急时能即刻取用。存放的方式，应使其在船舶万一下沉时，能从其存放处所自由浮起、充气，并能无阻碍地脱离船舶。   
  
     （二）如用绳索绑扎，则应在绑绳上装有经主管机关认可的静水压力的或同等性质的自动脱开装置。   
  
     （三）本章第三十五条三款所要求的救生筏可予栓牢。   
  
     十七、救生筏应装设便于被拖带的装置。   
  
     第十六条 刚性救生筏的要求   
  
     一、每一刚性救生筏的结构应使其自存放位置投掷下水时，无论救生筏或其属具均不致损坏。   
  
     二、救生筏的甲板面积，应位于乘员能在筏内受到保护的部位内。救生筏额定乘员的每一乘员所占此项甲板面积，至少应为3720平方厘米（4平方英尺）。甲板的性质，应能尽量防止海水进入，并应有效地支持乘员浮出水面。   
  
     三、救生筏应装置颜色鲜明易见的顶篷或等效装置，当救生筏以任何一面浮着时，此顶篷或等效装置应能保护乘员免受暴露所引起的伤害。   
  
     四、救生筏属具的存放，应在筏以任何一面浮着时均能便于取用。   
  
     五、客船配备的救生筏及其属具的总重量，应不超过180公斤（400磅）。货船配备者，如其能自船的两舷降落下水或备有以机械放落下水的装置时，则其重量可超过180公斤（400磅）。   
  
     六、当救生筏以任何一面浮着时，不论什么时候都必须有效和稳定。   
  
     七、对救生筏所准许载乘的每一乘员，至少应配置96立方分米（3．4立方英尺）的空气箱或等效的浮力，此项空气箱须尽可能置于接近筏的边缘。   
  
     八、救生筏须备有首缆，并应沿其外围牢固地装设链环状把手索。沿筏的内侧也应装设把手索。   
  
     九、救生筏的每一开口处，应设置能使落水人员攀登入筏的有效设施。   
  
     十、救生筏的构造，应不致受原油及石油产品的影响。   
  
     十一、救生筏应设有一个电池型的浮灯，并用短绳系于救生筏上。   
  
     十二、救生筏应设有便于被拖带的装置。   
  
     十三、救生筏的存放，应在船舶万一下沉时能自由浮起。   
  
     第十七条 气胀式与刚性救生筏的属具   
  
     一、每只救生筏的正常属具应包括：   
  
     （一）系有至少30米（100英尺）长浮索的救生浮环1个；   
  
     （二）额定乘员不多于12人的救生筏应备折刀1把，水瓢1只；对额定乘员为13人或13人以上者应备折刀2把，水瓢2只；   
  
     （三）海绵2块；   
  
     （四）海锚2只，一只固定地系于救生筏上，另一只备用；   
  
     （五）手划桨2支；   
  
     （六）能修理浮力隔舱上穿孔的工具包1套；   
  
     （七）充气泵或充气器1具，但符合本章第十六条的救生筏除外；   
  
     （八）开罐头刀3把；   
  
     （九）认可的急救药包1套，置于水密箱内；   
  
     （十）不锈饮料量杯1个；   
  
     （十一）适于发送摩氏信号的防水手电筒1只，连同备用电池1副及备用灯泡1只，装在同一水密容器内；   
  
     （十二）日光信号镜1面及信号哨笛1个；   
  
     （十三）能于高空发出明亮红光的认可型降落伞遇险信号2支；   
  
     （十四）能发出明亮红光的认可型手持火焰信号6支；   
  
     （十五）钓鱼用具1套；   
  
     （十六）经主管机关核定的口粮，按救生筏的额定乘员每人1份；   
  
     （十七）水密容器数个，内装按救生筏的额定乘员每人1．5升（3品脱）的淡水，其中每人所需的半升（1品脱）可用能生产等量淡水的适当的海水除盐器代替；   
  
     （十八）预防晕船药片，按该救生筏认为适合载乘的人数，每人6片；   
  
     （十九）在救生筏内备救生须知数份；   
  
     （二十）第五章第十六条所指的救生信号解说图表1份。   
  
     二、从事短程国际航行的客船，如主管机关在考虑到其航程的时间认为本条一款所列的全部项目为不必要时，可准许这种船舶所载救生筏中的一只或多只，但不少于该船所载救生筏数量的1／6，配置本条一款（一）项至（七）项、（十一）项和（十九）项所列的属具，以及同款（十三）项和（十四）项所列属具的半数；而该船所载的其余救生筏则配置同款（一）项至（七）项以及（十九）项所列的属具。   
  
     第十八条 救生筏的使用训练   
  
     主管机关应尽量在合理和可行的情况下采取措施，以确保载有救生筏的船舶的船员，受到降落及使用救生筏的训练。   
  
     第十九条 救生艇与救生筏的登乘   
  
     一、应设置供登入救生艇的适当装置，包括：   
  
     （一）每副吊艇架处设梯子1具，以供登入在水面上的救生艇，但除客船、捕鲸工厂船、鱼类加工船或制罐头工厂船以及载运捕鲸、鱼类加工或制罐头工业的从业人员的船舶以外，在船舶每舷设有至少1具梯子的情况下，主管机关可准许以认可的装置来代替这些每副吊艇架处的梯子；   
  
     （二）供救生艇及其降落装置在准备和进行降落过程中用的照明设备，以及供救生艇所降落的水面直至降落过程完成所需的照明设备；   
  
     （三）供警告旅客和船员即将弃船的报警装置；   
  
     （四）防止船舶的任何排水进入救生艇的装置。   
  
     二、也应设有供登入救生筏的适当装置，包括：   
  
     （一）便于登入浮于水面的救生筏的足够数量的梯子，但除客船、捕鲸工厂船、鱼类加工船或制罐头工厂船以及载运捕鲸、鱼类加工或制罐头工业的从业人员的船舶以外，主管机关可准许以认可的装置来代替部分或全部这些梯子；   
  
     （二）如所载救生筏备有认可的降落装置，则应有供救生筏及其降落装置在准备和进行降落过程中用的照明设备，以及供救生筏所降落的水面直至降落过程完成所需的照明设备；   
  
     （三）未备有认可降落装置的救生筏，则在其存放地点应备置照明设备；   
  
     （四）供警告旅客及船员即将弃船的报警装置；   
  
     （五）在救生筏的固定降落地点包括在认可降落装置的下方，均应设有防止船舶的任何排水进入救生筏的装置。   
  
     第二十条 救生艇、救生筏和救生浮具的标记   
  
     一、在救生艇上应以经久的显明字迹标明其尺度和乘员定额。救生艇所从属的船舶名称及船籍港应漆于艇首两侧。   
  
     二、在救生浮具上应以同样方式标明乘员定额。   
  
     三、应以同样方式将乘员定额标明于气胀式救生筏以及其包裹或容器上。每只气胀式救生筏尚须标明出厂号码及制造厂名，以供查明其所有人。   
  
     四、每只刚性救生筏应标明所从属的船舶名称，船籍港以及乘员定额。   
  
     五、救生艇、救生筏或救生浮具，概不得标明超出按本章所述方法核定的乘员人数。   
  
     第二十一条 救生圈的细则   
  
     一、救生圈应满足下列要求：   
  
     （一）应以软木块或其他等效材料制成；   
  
     （二）应能于淡水中支承至少14．5公斤（32磅）的铁块达24小时之久；   
  
     （三）应不受原油或石油产品的不利影响；   
  
     （四）应具有鲜明易见的颜色；   
  
     （五）应以正楷字体标明其所从属的船舶名称和船籍港。   
  
     二、禁止使用灯心草、软木刨片、软木粒或其他任何松散的粒状材料填充的救生圈，或其浮力需要依靠充气空气室的救生圈。   
  
     三、用塑料或其他合成化合物制造的救生圈，当其接触海水或石油产品时，或在大海航行中遇到温度变化或气候变化的情况下，应能保持其浮性及耐久性。   
  
     四、救生圈应装有牢固系住的链环状把手索，船舶每舷至少应有1个救生圈上装有长度不少于27．5米（15英寻）的可浮救生索。   
  
     五、在客船上，不少于总数一半的救生圈，且在任何情况下不少于6个救生圈，以及在货船上至少为总数一半的救生圈，应设以有效的自亮浮灯。   
  
     六、本条五款所要求的自亮浮灯应能不致被水熄灭。该灯应能点亮不少于45分钟的时间，且其光强，在上半球的所有方向，应不少于2支国际烛光单位。此项浮灯应保持在其所从属的救生圈附近，并附有必要的连接装置。油船上采用的自亮浮灯应为认可型的电池式①。  
  
①在给定的大气条件下，预期的灯光能见距离如下：  
－－－－－－－－－－－－－－－－－－－－－－－－－  
                ｜  气象的能见  ｜  灯光的能见  ｜  
  大气传送因素  ｜              ｜              ｜  
                ｜  距离，海里  ｜  距离，海里  ｜  
－－－－－－－－｜－－－－－－－｜－－－－－－－｜  
    0．3      ｜    2．4    ｜    0．96  ｜  
    0．4      ｜    3．3    ｜    1．05  ｜  
    0．5      ｜    4．3    ｜    1．15  ｜  
    0．6      ｜    5．8    ｜    1．24  ｜  
－－－－－－－－－－－－－－－－－－－－－－－－－－－  
｜                ｜  气象的能见  ｜  灯光的能见  
｜  大气传送因素  ｜              ｜  
｜                ｜  距离，海里  ｜  距离，海里  
｜－－－－－－－－｜－－－－－－－｜－－－－－－－－－  
｜    0．7      ｜    8．4    ｜    1．34  
｜    0．8      ｜  13．4    ｜    1．45  
｜    0．9      ｜  28．9    ｜    1．57  
｜                ｜              ｜  
       
     七、一切救生圈应设置在船上人员易于到达之处。按本条五款要求带有自亮浮灯的救生圈中，至少有两个是同时还配备有效的自发烟雾信号的救生圈，此项烟雾信号应能产生颜色鲜明易见的烟雾，持续时间至少为15分钟；此类救生圈应能自驾驶室迅速抛投。   
  
     八、救生圈应能随时迅速取下，不得以任何方式作永久制牢。   
  
     第二十二条 救 生 衣   
  
     一、船舶应载有供船上每个人员一件认可型救生衣；此外，除非这些救生衣能适用于儿童，否则尚应配备足够数量的儿童救生衣。在每件救生衣上应有表明已经主管机关认可的适当标志。   
  
     二、除本条一款所要求的救生衣外，在客船上尚应配备相当于船上总人数5％的救生衣。此项救生衣应存放在甲板上显明易见之处。   
  
     三、认可型救生衣应符合下列要求：   
  
     （一）应以恰当的工艺和材料制成；   
  
     （二）其结构应尽可能消除由于穿着错误而引起的一切危险，但救生衣可反穿者除外；   
  
     （三）应能将在水中筋疲力尽或失去知觉的人的脸部托出水面，并能使其身体从垂直位置向后倾斜而保持脸部高于水面；   
  
     （四）应能将落水人员的身体，从任何位置转动至使其身体由垂直位置向后倾斜的安全漂浮位置；   
  
     （五）应不受原油或石油产品的不利影响；   
  
     （六）应具有鲜明易见的颜色；   
  
     （七）应备有认可型的哨笛，并用细绳牢固系结；   
  
     （八）具备上述性能的救生衣，其浮力应在浸入淡水24小时后不得降低5％以上。   
  
     四、依靠充气作浮力的救生衣，可准许除客船及油船以外的所有船舶的船员使用，但应符合下列条件：   
  
     （一）有两个独立的充气室；   
  
     （二）用器械和口均能充气；   
  
     （三）在任一空气室单独充气时，能符合本条三款的各项要求。   
  
     五、救生衣应存放于容易到达之处，其位置应明显标示。   
  
     第二十三条 抛 绳 设 备   
  
     一、船舶应备有认可型式的抛绳设备。   
  
     二、此设备应能相当准确地将绳抛射不少于230米（250码），并应包括不少于4个抛射体和4根抛射绳。   
  
     第二十四条 船舶遇险信号   
  
     船舶应备有经主管机关同意的能于白天和夜间发出有效的遇险信号的设备，包括至少12支能于高空发出明亮红光的降落伞信号。   
  
     第二十五条 应变部署表与应变部署   
  
     一、应将应变时须承担的专门任务指派给每个船员。   
  
     二、应变部署表应指明所有专门任务，并应特别指明每个船员必须到达的岗位以及必须执行的任务。   
  
     三、每艘客船的应变部署表须为主管机关认可的格式。   
  
     四、应变部署表应在船舶开航以前制订完毕。并应将此表副本张贴在船舶各个部位，尤其是船员住所内。   
  
     五、应变部署表应指明对船员中的不同人员所指定的下列有关任务。   
  
     （一）水密门、阀门的关闭及流水孔、出灰管、防火门的机械装置的关闭；   
  
     （二）装备救生艇（包括救生艇筏用的手提无线电设备）及其他救生设备；   
  
     （三）救生艇的降落；   
  
     （四）其他救生设备的一般准备工作；   
  
     （五）旅客的集合；   
  
     （六）依据船舶防火控制图的灭火任务。   
  
     六、应变部署表应指明在应变时指定给业务部门人员有关旅客的各项任务。这些任务应包括：   
  
     （一）向旅客告警；   
  
     （二）查看旅客是否适当地穿好衣服，以及是否正确地穿好救生衣；   
  
     （三）召集旅客于各集合地点；   
  
     （四）维持通道及梯道上的秩序，并一般地控制旅客走动；   
  
     （五）保证毛毯送到救生艇上。   
  
     七、应变部署表指明的依照本条五款（六）项有关灭火的任务应包括下列细目：   
  
     （一）指定对付火灾的消防队员的配员；   
  
     （二）指定有关操作灭火设备和装置的专门任务。   
  
     八、应变部署表应规定召集全体船员至救生艇、救生筏及消防岗位的明确信号，并应列出这些信号的全部细则。这些信号应由气笛和气雷施放；此外，除短程国际航行的客船及船长小于45．7米（150英尺）的货船外，尚应补充其他电动的信号。所有这些信号均应能由驾驶台操纵。   
  
     第二十六条 应变演习与操练   
  
     一、（一）在客船上，在可行时应每周集合船员作一次救生演习和消防演习。对国际航行而非短程国际航行的客船，应在离开最后出发港后作一次如上的应变演习。   
  
     （二）在货船上，应在间隔不超过一个月的时间集合船员作一次救生演习和消防演习。但若在一港调换船员达25％以上时，则应于离该港后24小时内集合船员，作一次救生演习和消防演习。   
  
     （三）在货船上作月度应变演习的时候，救生艇的属具应经检查，并确保其完整。   
  
     （四）举行应变演习的日期，以及在船上进行任何消防训练和消防操练的细节，应记载于主管机关规定的航海日志内；如某周（对客船）或某月（对货船）未举行应变演习或仅举行部分应变演习时，则应记述其原因和举行的范围，对货船救生艇属具的检查报告应记入航海日志，按本条三款所作的救生艇扬出及降落的时间亦应记入该航海日志。   
  
     二、客船除从事短程国际航行者外，须于离港后24小时内举行旅客应变演习一次。   
  
     三、各组救生艇应在依次的救生演习中轮流使用，而每艘救生艇均应在每4个月内，至少扬出1次以及如属合理和可行时至少降落1次。此项应变演习与检查的安排，务使船员彻底了解和熟练其应执行的任务，包括所载救生筏的操纵与操作的教练。   
  
     四、召集旅客至集合地点的紧急信号，应以气笛或气雷连续发出7个或7个以上的短声继以一长声。此外，在客船上，除从事短程国际航行者外，应补充分布在全船而由驾驶室操纵的其他的电动信号。一切对于旅客所发的信号的意义，连同应变时对旅客行动的简明指示，应以几种相应的文字清晰地写在牌上，张贴在旅客舱室内及其他旅客住所内的明显之处。   
  
     第二节 限客船适用   
  
     第二十七条 救生艇、救生筏与救生浮具   
  
     一、客船应配备两艘附连于吊艇架的救生艇（船舶每舷各1艘）以供紧急时使用。这些艇应为认可的型式，其长度不得超过8．5米（28英尺）。如完全符合本章中对救生艇的要求，则这些艇可计入本条二款及三款所要求的艇数；此外如尚完全符合本章第九条的要求及第十四条的相应要求，则可计入本章第八条所要求的艇数。当船在海上时，这些艇须保持随时可用状态。为满足二十九条八款的规定在船上救生艇两侧所要求装置的设备，对于用以满足本条要求的两艘救生艇，应免于装设。   
  
     二、从事国际航行而非短程国际航行的客船，应配备：   
  
     （一）每舷救生艇总容量应能容纳船上人员总数的一半。   
  
     但是，主管机关得准以同样总容量的救生筏来代替救生艇，但无论如何，每舷应配备足够容纳不少于船上所有人员37．5％的救生艇。   
  
     （二）总容量足够容纳船上人员总数25％的救生筏连同能容纳船上人员总数3％的救生浮具。   
  
     但是，如该船的分舱因数为0．33或0．33以下时，得准许以船上总人数25％的浮具来代替该总人数25％的救生筏和3％的救生浮具。   
  
     三、（一）从事短程国际航行的客船，应按其长度照本章第二十八条表中甲栏所列的副数配备吊艇架。每副吊艇架应附连一艘救生艇，而这些救生艇至少须提供表中丙栏所要求的最小容量，或足够容纳船上所有人员所需的容量（若较前者为小时）。   
  
     但是，如主管机关认为对短程国际航行的某一艘船舶设置第二十八条表中甲栏所要求的吊艇架副数为不切实际或不合理时，主管机关可以特准较少的吊艇架副数，但此数须不少于该表乙栏所规定的最低数量，并且船上救生艇的总容量要至少等于丙栏所要求的最小容量，或足够容纳船上所有人员所需的容量（若较前者为小时）。   
  
     （二）若如此配备的救生艇不足以容纳船上所有人员，则应增加设置于吊艇架下的救生艇或加设救生筏，务使船上救生艇及救生筏的容量足够容纳船上所有人员。   
  
     （三）不管本款（二）项如何规定，任何短程国际航行船上所载的人数，不应超过按本款（一）及（二）项所备救生艇的总容量。但主管机关考虑到旅客运输量的需要，并且仅在符合第二章甲第一条四款的规定时才可例外。   
  
     （四）如按本款（三）项的规定，主管机关业已准许载运超过其救生艇容量的人员，并认为在该船上存放按本款（二）项所要求配备的救生筏为不可行时，可准许减少救生艇的数量。   
  
     但须：   
  
     1．长度为58米（190英尺）及58米以上的船舶，其救生艇的数量不应少于4只，船的每舷应各配2只；长度小于58米（190英尺）的船舶，不应少于2只，船的每舷各1只；   
  
     2．救生艇和救生筏的数量，应经常保持足够容纳船上所有的人员。   
  
     （五）每艘从事短程国际航行的客船，除按本款规定要求配备救生艇及救生筏外，还应增加配备足够容纳该船救生艇所容总人数10％的救生筏。   
  
     （六）每艘从事短程国际航行的客船，还应配备相当于船上人员总数至少5％的救生浮具。   
  
     （七）持有短程国际航行证书的个别船舶或某类船舶，若符合第二章甲第一条四款的规定，且备有供船上人员75％的救生艇以及在其他方面又符合本款的规定时，则主管机关可准其作超过600海里但不超过1200海里的航行。   
  
     第二十八条 短程国际航行船舶的吊艇架数与救生艇容量表   
  
     下表按船舶长度确定：   
  
     （甲）短程国际航行船舶配备的吊艇架最少副数，每副吊艇架按本章第二十七条的规定必须附连救生艇1艘；   
  
     （乙）短程国际航行船舶按本章第二十七条规定可特准的较少吊艇架数；   
  
     短程国际航行船舶的吊艇架数与救生艇容量表  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                                            ｜          ｜          ｜  
        船  舶  登  记  长  度              ｜  （甲）  ｜  （乙）  ｜  
                                            ｜          ｜          ｜  
－－－－－－－－－－－－－－－－－－－－－－｜  最少吊艇｜  特准较小｜  
                      ｜                    ｜          ｜          ｜  
          米          ｜      英    尺      ｜    架数  ｜  吊艇架数｜  
                      ｜                    ｜          ｜          ｜  
－－－－－－－－－－－｜－－－－－－－－－－｜－－－－－｜－－－－－｜  
      31至37以下  ｜  100至120以下｜      2  ｜      2  ｜  
      37至43以下  ｜  120至140以下｜      2  ｜      2  ｜  
      43至49以下  ｜  140至160以下｜      2  ｜      2  ｜  
      49至53以下  ｜  160至175以下｜      3  ｜      3  ｜  
      53至58以下  ｜  175至190以下｜      3  ｜      3  ｜  
      58至63以下  ｜  190至205以下｜      4  ｜      4  ｜  
      63至67以下  ｜  205至220以下｜      4  ｜      4  ｜  
      67至70以下  ｜  220至230以下｜      5  ｜      4  ｜  
      70至75以下  ｜  230至245以下｜      5  ｜      4  ｜  
      75至78以下  ｜  245至255以下｜      6  ｜      5  ｜  
      78至82以下  ｜  255至270以下｜      6  ｜      5  ｜  
      82至87以下  ｜  270至285以下｜      7  ｜      5  ｜  
      87至91以下  ｜  285至300以下｜      7  ｜      5  ｜  
      91至96以下  ｜  300至315以下｜      8  ｜      6  ｜  
    96至101以下  ｜  315至330以下｜      8  ｜      6  ｜  
  101至107以下  ｜  330至350以下｜      9  ｜      7  ｜  
  107至113以下  ｜  350至370以下｜      9  ｜      7  ｜  
  113至119以下  ｜  370至390以下｜    10  ｜      7  ｜  
  119至125以下  ｜  390至410以下｜    10  ｜      7  ｜  
  125至133以下  ｜  410至435以下｜    12  ｜      9  ｜  
  133至140以下  ｜  435至460以下｜    12  ｜      9  ｜  
  140至149以下  ｜  460至490以下｜    14  ｜    10  ｜  
  149至159以下  ｜  490至520以下｜    14  ｜    10  ｜  
  159至168以下  ｜  520至550以下｜    16  ｜    12  ｜  
－－－－－－－－－－－－  
          （丙）  
      救生艇最小容量  
－－－－－－－－－－－－  
          ｜  
  立方米  ｜  立方英尺  
          ｜  
－－－－－｜－－－－－－  
    11  ｜      400  
    18  ｜      650  
    26  ｜      900  
    33  ｜    1150  
    38  ｜    1350  
    44  ｜    1550  
    50  ｜    1750  
    52  ｜    1850  
    61  ｜    2150  
    68  ｜    2400  
    76  ｜    2700  
    85  ｜    3000  
    94  ｜    3300  
  102  ｜    3600  
  110  ｜    3900  
  122  ｜    4300  
  135  ｜    4750  
  146  ｜    5150  
  157  ｜    5550  
  171  ｜    6050  
  185  ｜    6550  
  202  ｜    7150  
  221  ｜    7800  
  238  ｜    8400  
       
     （丙）短程国际航行船舶所需救生艇的最小容量①。  
  
①如船舶长度小于31米（100英尺）或大于168米（550英尺），则最少  
       
     吊艇架副数及救生艇总容量，应由主管机关规定。   
  
     第二十九条 救生艇、救生筏与救生浮具的存放与操作   
  
     一、救生艇及救生筏的存放，应按下述条件并得到主管机关的同意：   
  
     （一）须能于最短可能的时间内，且不超过30分钟，全部降落水中；   
  
     （二）不得以任何方式妨碍任一其他救生艇、救生筏或救生浮具的迅速操作，或妨碍船上人员在降放地点的集合或登入艇筏；   
  
     （三）救生艇与要求备有认可降落装置的救生筏，在载乘全部人员及属具后，即使在不利的纵倾情况下并在向任何一舷横倾15°时，应能被降落水中；   
  
     （四）不要求备有认可降落装置的救生筏以及救生浮具，即使在不利的纵倾情况下并在向任何一舷横倾15°时，应能被降落水中。   
  
     二、每艘救生艇应附连于一副独立的吊艇架。   
  
     三、救生艇可存放在多于一层的甲板上，但仅以能采取正确措施防止存放于下层甲板的救生艇被存放于上一层甲板的救生艇所纠缠者为限。   
  
     四、救生艇及要求备有认可降落装置的救生筏，不得置于首部。艇与筏的存放位置，应特别注意距推进器及船体后部陡斜悬空部分的距离，以确保安全降落。   
  
     五、吊艇架须为认可的设计型式，并应安置于主管机关认为满意的适宜地位。吊艇架安排于一层或多层甲板时，应使存放于下层的救生艇能安全降落，不致受任何其他吊艇架操作的妨碍。   
  
     六、吊艇架应为：   
  
     （一）所操作的救生艇在转出状态下的重量不超过2300公斤（2．25英吨）时用摇出式或重力式；   
  
     （二）所操作的救生艇在转出状态下的重量超过2300公斤（2．25英吨）时用重力式。   
  
     七、吊艇架、吊艇索、滑车及一切其他装置的强度，应在救生艇载有放艇船员时能被转出舷外，然后在载足全部人员及属具后，在船舶向任何一舷横倾15°及纵倾10°的情况下能被安全降落。   
  
     八、为了在船舶横倾15°时便于救生艇的降落，应设置滑橇或其他适当装置。   
  
     九、应设置将救生艇贴靠并系留在船舷的装置，以便乘员安全登艇。   
  
     十、救生艇以及本章第二十七条所要求的应急艇，均须使用钢丝吊艇索连同认可型式的绞车；用于应急艇的绞车，须能迅速收回该艇。如主管机关认为使用白棕绳吊艇索或其他认可材料的吊艇索为合适时，可特准采用与绞车连用或不与绞车连用的白棕绳吊艇索或其他认可材料的吊艇索（但应急艇应由能迅速收回该艇的绞车来操作）。   
  
     十一、在吊艇架横张索上至少应设置救生索2条，吊艇索及救生索的长度，应能于船舶在最小航海吃水并向任何一舷横倾15°时足以达到水面。吊艇索的下滑车应装以适当的链环或长链环，以供连接吊艇钩，但装有认可型的联动脱钩装置者例外。   
  
     十二、如设有机动装置用以收回救生艇者，仍应配备有效的手动装置。若吊艇架系通过吊艇索的动作而复原时，则应设有安全装置，在吊艇架回到原位限制器前能自动切断动力，以防止钢丝吊艇索或吊艇架受到过度应力。   
  
     十三、附连于吊艇架的救生艇，其吊艇索须随时可用，并应设有将救生艇与吊艇索迅速但不必同时脱开的装置。吊艇索与救生艇的连接点高于艇舷边的高度，应确保救生艇在降落中的稳定。   
  
     十四、（一）从事国际航行而非短程国际航行的客船按本章第二十七条二款（一）项配备救生艇及救生筏者，应按主管机关意见配备足够的认可降落装置，使按上述二款（一）项要求供容纳船上一切人员的那些救生筏连同救生艇，载乘其额定乘员，在平静的环境下，能于30分钟内降落水中。为此配备的认可降落装置应尽可能平均分配在船的两舷，且每舷决不少于1具。但是，本章第二十七条二款（二）项所要求供船上全部人员25％的附加救生筏，则不必备置此项降落装置；唯船上如备有认可降落装置时，则按照上述二款（二）项所配备的救生筏，应为能用此装置降落水中的型式。   
  
     （二）从事短程国际航行的客船所需备置的认可降落装置的数量，应由主管机关决定。分配给每个这种装置的救生筏数量，不应多于主管机关认为该装置在平静的环境下，能于30分钟内将满载准许容纳的人员降落水中的筏数。   
  
     第三十条 甲板、救生艇与救生筏等的照明   
  
     一、在客船的不同部位，应配备电力的或等效系统的足供一切安全需要的照明，特别是在存放救生艇与救生筏的甲板上。第二章甲第二十五条所要求的自给应急电源，应能在必要的处所供电给本照明系统，以及本章第十九条第一款（二）项、二款（二）项和（三）项所要求的照明。   
  
     二、旅客或船员所在的每一主舱室的出口，须以应急灯作经常不断的照明。此项应急灯电源的布置，须能于主发电机失效时由本条一款所述的应急电源供电。   
  
     第三十一条 救生艇与救生筏的配员   
  
     一、每艘救生艇应由一名驾驶员或执证救生艇员负责指挥，并应指派1名副的负责人。负责人员应有该救生艇的艇员名单，并应注意在其指挥下的人员是否熟悉他们的各项任务。   
  
     二、每艘机动救生艇应指派1名能操作发动机的人员。   
  
     三、备有无线电及探照灯装置的每艘救生艇，应指派1名能使用该项设备的人员。   
  
     四、所配备的每只救生筏，应指派1名能熟练地操纵及运用它的人员，但从事短程国际航行的船舶，主管机关认为不切实际时可以例外。   
  
     第三十二条 执证救生艇员   
  
     一、在客船上，为符合本章规定而配备的每艘救生艇，其执证救生艇员的人数至少应如下表所规定：  
  
          救生艇额定乘员        执证救生艇员最少人数  
            41人以下                  2  
            41至61人                3  
            62至85人                4  
            85人以上                  5  
       
     二、对各救生艇分配执证救生艇员的事项，由船长自行决定。   
  
     三、合格证书应由主管机关授权颁发。为了取得此项证书，申请人须证明其曾受过救生艇和其他救生设备降落下水以及使用划桨和推进机械的一切操作训练，须证明其熟悉救生艇及其他救生属具等的实际操作。还须证明其能理解和回答关于各种救生设备的口令。   
  
     第三十三条 救 生 浮 具   
  
     一、各型救生浮具除满足下列条件者外，不得予以认可：   
  
     （一）其尺度及强度，应能自其存放处所投入水中而不受损伤；   
  
     （二）其重量应不超过180公斤（400磅），但备有主管机关认为满意的适当装置，能使其下水而无需用手抬起者除外；   
  
     （三）应为认可的材料及构造；   
  
     （四）当任何一面向上浮起时，均应有效和稳定；   
  
     （五）其空气箱或等效浮力设备应尽可能安放在浮具的边缘，且此浮力不得依靠充气；   
  
     （六）须装有首缆，并应沿其外围牢固地装设链环状把手索。   
  
     二、对救生浮具所核定的人数应等于：   
  
     （一）以14．5除其于淡水中能支持的铁块的公斤数（或以32除磅数）；   
  
     （二）以305除其周长的毫米数（或等于其周长的英尺数）。   
  
     视何者为小而定。   
  
     第三十四条 应配备的救生圈数量   
  
     客船所配备的最少救生圈数量应按下表规定：  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                船              长              ｜  
－－－－－－－－－－－－－－－－－－－－－－－－｜    最  少  救  生  圈  数  
            米          ｜      英      尺      ｜  
－－－－－－－－－－－－｜－－－－－－－－－－－｜－－－－－－－－－－－－－－－  
          61以下      ｜    200以下        ｜            8  
        61至122以下｜    200至400以下｜          12  
      122至183以下｜    400至600以下｜          18  
      183至244以下｜    600至800以下｜          24  
      244及244以上｜    800及800以上｜          30  
       
     第三节 仅适用于货船   
  
     第三十五条 救生艇与救生筏的数量与容量   
  
     一、（一）除捕鲸工厂船、鱼类加工或制罐头工厂船以及运载捕鲸、鱼类加工或制罐头工业的从业人员的船舶外，每艘货船均应在每舷配备总容量足以容纳船上所有人员的救生艇，此外尚应配备足以容纳船上人员总数一半的救生筏。   
  
     但是，若此类货船从事于邻近国家间的国际航线，主管机关如认为在该航线条件下，强制配备救生筏为不合理或不必要时，可以对该范围内个别船舶或某类船舶免除此项要求。   
  
     （二）1．除应遵照本款（二）项2目规定外，每艘3000总吨及3000总吨以上的油轮应配备不少于4艘救生艇，2艘置于尾部，2艘置于中部，如中部没有上层建筑，则全部救生艇均应置于尾部。   
  
     2．中部没有上层建筑的3000总吨及3000总吨以上的油轮，如果符合下列条件，主管机关可准许仅配备2艘救生艇：   
  
     （1）船舶尾部的每一舷配备救生艇1艘；   
  
     （2）每艘救生艇的长度不得超过8．5米（28英尺）；   
  
     （3）每艘救生艇应尽实际可能靠前放置，其位置须使救生艇尾端至少在推进器之前相当于一倍半救生艇的长度之处；   
  
     （4）每艘救生艇应在安全和可行的条件下尽可能放置于靠近海面处所。   
  
     二、（一）每艘捕鲸工厂船、鱼类加工船或制罐头工厂船，以及每艘载运捕鲸、鱼类加工或制罐头工业的从业人员的船舶，均应配备：   
  
     1．每舷救生艇的总容量能容纳船上所有人员的半数；   
  
     但是，主管机关可准许以同样总容量的救生筏来代替救生艇，然而无论如何船舶每舷应配备足够容纳不少于船上所有人员37．5％的救生艇。   
  
     2．总容量足够容纳船上所有人员半数的救生筏。   
  
     但是，鱼类加工船或制罐头工厂船如配备完全符合本章要求的救生艇为不切实际时，则主管机关可以允许以其他小艇代替；但此种小艇应提供不少于本条所要求的容量，并应具有本章对救生艇所要求的最少浮力及属具。   
  
     （二）每艘捕鲸工厂船、鱼类加工船或制罐头工厂船，以及每艘载运捕鲸、鱼类加工或制罐头工业的从业人员的船舶，应配备小艇2艘（每舷1艘），以供紧急时使用，这些艇应为认可的型式，且其长度不得大于8．5米（28英尺）。如其完全符合于本章对救生艇的要求，则可计入本款的艇数；此外，如其也符合于第九条及第十四条的相应要求，则可计入第八条的艇数。当船在海上时，这些艇应经常保持随时可用状态。为满足第三十六条七款的规定在船上救生艇两侧所要求装置的设备，对于用以满足本条要求的两只小艇上，应免于装设。   
  
     三、船中部没有上层建筑而其登记长度为150米（492英尺）及150米以上的每艘货船，除本条一款（一）项所要求的救生筏之外，尚应配备1只至少能容纳6人的救生筏，此筏应在合理和可行的条件下，尽量靠前放置。   
  
     第三十六条 吊艇架及降落装置   
  
     一、货船上救生艇及救生筏的存放，应得到主管机关的同意。   
  
     二、每艘救生艇应附连于1副独立的吊艇架。   
  
     三、要求备有认可的降落装置的救生艇和救生筏，最好应存放于尽可能靠近起居和服务处所的地方。其存放位置应使其确能安全降落水中，特别应该注意距推进器及船体的陡斜悬空部分的距离，以尽可能使艇与筏能从船舷平直部分降落水中。如果置于船的前部，则应存放于防撞舱壁之后有遮蔽的地方，对此，主管机关应对吊艇架的强度给予特别的考虑。   
  
     四、吊艇架的设计，须经认可，并应置于主管机关认为满意的适当地位。   
  
     五、1600总吨及1600总吨以上的油轮、捕鲸工厂船、鱼类加工船或制罐头工厂船，以及载运捕鲸、鱼类加工或制罐头工业的从业人员的船舶，其所有吊艇架均应为重力式。其他船舶的吊艇架应为：   
  
     （一）所操作的救生艇在转出状态下的重量不超过2300公斤（2．25英吨）时，用摇出式或重力式；   
  
     （二）所操作的救生艇在转出状态下的重量超过2300公斤（2．25英吨）时，用重力式。   
  
     六、吊艇架、吊艇索、滑车及一切其他装置的强度，应在救生艇载有放艇船员时能被转出舷外，然后在载足全部人员及属具后在船舶向任何一舷横倾15°及纵倾10°的情况下能被安全降落。   
  
     七、为了在船舶横倾15°时便于救生艇的降落，应设置滑橇或其他适当装置。   
  
     八、应设置将救生艇贴靠并系留在船舷的装置，以便乘员安全登艇。   
  
     九、救生艇以及本章第三十五条二款（二）项所要求的应急小艇，均须使用钢丝吊艇索与认可型式的绞车；而用于应急小艇的绞车，须能迅速收回该艇。如主管机关认为使用白棕绳吊艇索或其他认可材料的吊艇索为合适时，可特准采用与绞车连用或不与绞车连用的白棕绳吊艇索或其他认可材料的吊艇索（但应急小艇应由能迅速收回该艇的绞车来操作）。   
  
     十、在吊艇架横张索上至少应设置救生索两条，吊艇索及救生索的长度，应能于船舶在最小航海吃水并向任何一舷横倾15°时足以达到水面。吊艇索的下滑车应装以适当的链环或长链环，以供连接吊艇钩，但装有认可型的联动脱钩装置者例外。   
  
     十一、如设有机动装置用以收回救生艇者，仍应配备有效的手动装置，若吊艇架系通过吊艇索的动作而复原时，则须设有安全装置，在吊艇架回到原位限制器前能自动切断动力，以防止钢丝吊艇索或吊艇架受到过度应力。   
  
     十二、救生艇的吊艇索须随时可用，应设有将救生艇与吊艇索迅速但不必同时脱开的装置。吊艇索与救生艇的连接点高于艇舷边的高度，应确保救生艇在降落中的稳定。   
  
     十三、捕鲸工厂船、鱼类加工船或制罐头工业船，以及载运捕鲸、鱼类加工或制罐头工业的从业人员的船舶按第三十五条二款（一）项2目的要求配备救生艇与救生筏者，不需对救生筏配备认可的降落装置，但应按照主管机关的意见，对按该条二款（一）项1目要求配备的救生筏，配备足够数量的认可降落装置，使其在载乘额定乘员，在平静的环境下，能于30分钟内降落水中。如此配备的认可降落装置，应尽可能平均地分配在船的两舷。如船上要求备有认可的降落装置，则配备在船上的每只救生筏，应为能由此装置降落水中的型式。   
  
     第三十七条 应配备的救生圈数量   
  
     至少应配备符合本章第二十一条要求的救生圈8个。   
  
     第三十八条 应 急 照 明   
  
     本章第十九条一款（二）项、二款（二）项及（三）项所要求的照明，应由按照第二章甲第二十六条所要求的应急电源至少能供电3小时。对1600总吨及1600总吨以上的货船，主管机关应确保对走廊、梯道和出口所作照明，务使船上所有人员在通往艇筏降落地点及存放地点时不受阻碍。   
  
     第四章 无线电报与无线电话   
  
       
  
     第一节 适用范围与定义   
  
     第一条 适 用 范 围   
  
     一、除另有明文规定外，本章适用于一切适用本规则的船舶。   
  
     二、本章不适用于在北美洲五大湖以及与其接连的，东至加拿大魁北克省蒙特利尔的圣拉姆伯特船闸下游出口处为止的水域及支流内航行的船舶，而该船舶在其他情况下应适用本规则①。  
  
①此类船舶按为安全目的利用无线电的有关特殊要求办理，此要求载于加拿大  
       
     与美利坚合众国的有关协议内。   
  
     三、本章的规定，概不妨碍遇险船舶或遇险救生艇筏自行采用任何方法以引起注意，表明其位置及求得救助。   
  
     第二条 名词与定义   
  
     用于本章的下列名词，其含义解释如下。用于本章的，同时在无线电规则内也有定义的一切其他名词，其含义与该规则所定的定义相同：   
  
     一、“无线电规则”系指随时可生效的最新国际电信公约所附的或认为所附的无线电规则。   
  
     二、“无线电报自动报警器”系指业经认可并能响应无线电报报警信号的自动报警接收设备。   
  
     三、“无线电话自动报警器”系指业经认可并能响应无线电话报警信号的自动报警接收设备。   
  
     四、“无线电话台”、“无线电话装置”和“无线电话值班”，除另有明文规定外，应考虑属于中频频带。   
  
     五、“无线电报务员”系指持有符合无线电规则规定的至少一级或二级无线电报务员证书或水上活动业务无线电通信报务员一般证书，并从事于符合本章第三条或第四条规定的船舶无线电报台工作的人员。   
  
     六、“无线电话务员”系指持有符合无线电规则规定的适当证书的人员。   
  
     七、“现有设备”系指：   
  
     （一）不管各个主管机关接受公约的生效日期如何，凡在本公约生效之日以前，已全部安装于船上的设备；   
  
     （二）设备的一部分在本公约生效之日以前已安装上船，而其余部分由相同部件来代替或由符合本章要求的各部件所组成。   
  
     八、“新设备”系指非现有设备的任何设备。   
  
     第三条 无线电报台   
  
     任何吨位的客船与1600总吨及1600总吨以上的货船，除按本章第五条得以免除者外，应设置符合本章第九和第十条规定的无线电报台。   
  
     第四条 无线电话台   
  
     300总吨及300总吨以上但小于1600总吨的货船，除设有符合本章第九和第十条规定的无线电报台外，如未能得到本章第五条的免除，则应设置符合本章第十五和第十六条规定的无线电话台。   
  
     第五条 对第三条与第四条的免除   
  
     一、各缔约国政府虽认为对本章第三条与第四条的执行不宜有所放宽，但主管机关可准许个别客船或个别货船，部分地及（或）有条件地免除或全部免除本章第三条或第四条的要求。   
  
     二、按本条一款所准许的免除，仅对从事某一航线的船舶，如其离岸最大距离、航程的远近、不存在一般航行危险及影响安全的其他情况均导致使其完全适用本章第三条或第四条为不合理或不必要时，才应予以核准。对个别船舶决定可否免除时，主管机关应考虑该项免除对那些为所有船舶安全所进行的遇险业务在总效果上的影响。主管机关应牢记，对按本章第三条规定获得免除的船舶，须要求其设置符合本章第十五和十六条规定的无线电话台作为免除的条件。   
  
     各主管机关应于每年1月1日后，尽早向海协组织提交前一年度内按本条一及二款所有核准免除的报告，并阐明核准这些免除的理由。   
  
     第二节 值 班   
  
     第六条 无线电报值班   
  
     一、按照本章第三或第四条的规定设置无线电报台的每艘船舶，当其在海上时，至少应配备无线电报务员1名。如未设置无线电报自动报警器，则应由1名无线电报务员用耳机或扬声器在无线电报遇险频率上连续守听，并须按本条四款的规定办理。   
  
     二、按照本章第三条的规定设置无线电报台的每艘客船，如设有无线电报自动报警器，当其在海上时，则应由1名无线电报务员用耳机或扬声器在无线电报遇险频率上守听，并须按本条四款的规定办理。其守听时间如下：   
  
     （一）如载客或核准载客为250人或250人以下者，每日守听累计至少8小时；   
  
     （二）如载客或核准载客在250人以上并航行于两连续港口间航程时间超过16小时者，每日守听累计至少16小时。在此情况下，船上应至少配备两名无线电报务员；   
  
     （三）如载客或核准载客在250人以上而航行于两个连续港口间航程时间少于16小时者，每日守听累计至少8小时。   
  
     三、（一）按照本章第三条的规定设置无线电报台的每艘货船，如设有无线电报自动报警器，当其在海上时，应由1名无线电报务员用耳机或扬声器在无线电报遇险频率上守听，每日累计至少8小时，并须按本条四款的规定办理。   
  
     （二）300总吨及300总吨以上而小于1600总吨并按本章第四条设置无线电报台的每艘货船，若设有无线电报自动报警器，当其在海上时，应由1名无线电报务员用耳机或扬声器于主管机关可能决定的时间内在无线电报遇险频率上守听，并须按本条四款的规定办理。但主管机关应考虑到每当实际可行时，须要求其作每日累计至少8小时的守听值班。   
  
     四、（一）在本条所要求的无线电报务员在无线电报遇险频率上守听的时间内，如该员正在处理其他频率上的业务或执行其他重要无线电任务时，可以中断此项守听，但仅以不能使用分股耳机或扬声器者为限。在无线电规则所规定的静默时间内，应由1名无线电报务员用耳机或扬声器始终保持此项守听值班。   
  
     本条中“重要无线电任务”一词包括对下述设备的紧急修理：   
  
     1．用于安全的无线电通信设备；   
  
     2．船长指令的无线电助航设备。   
  
     （二）除本款（一）项的规定外，在配有多名报务员的客船以外的船舶上，报务员尚可在特殊情况下，即在不能使用分股耳机或扬声器的情况下，按船长的指令中断守听，以进行为防止下述设备发生紧急故障所需的维修工作：   
  
     －－用于安全的无线电通信设备；   
  
     －－无线电助航设备；   
  
     －－其他电子助航设备，包括其修理；   
  
     但应：   
  
     1．按照有关主管机关的意见，该报务员是适合于胜任和执行这些任务的；   
  
     2．该船装有满足无线电规则要求的接收选择器；   
  
     3．在无线电规则所规定的静默时间内，有1名无线电报务员用耳机或扬声器，始终保持此项守听值班。   
  
     五、当设有无线电报自动报警器的所有船舶在海上未按本条二、三及四款的规定进行守听时，以及在测向工作的时间内每当实际可行时，均应将无线电报自动报警器开启工作。   
  
     六、本条所规定的守听时间，包括经主管机关确定的守听时间，均须在无线电规则所指定的无线电报业务时间内优先执行。   
  
     第七条 无线电话值班   
  
     一、按照本章第四条设置无线电话台的每艘船舶，为了安全的目的，应至少配备无线电话务员1名（该员可为持有无线电话证书的船长、驾驶员或其他船员），当该船在海上时，应在船上通常驾驶的地方，通过利用扬声器、滤波扬声器或无线电话自动报警器的无线电话遇险频率值班收信机，在无线电话遇险频率上保持连续值班。   
  
     二、按照本章第三条或第四条的规定设置无线电报台的每艘船舶，当其在海上时，应在主管机关指定的地方，通过利用扬声器、滤波扬声器或无线电话自动报警器的无线电话遇险频率值班收信机，在无线电话遇险频率上保持连续值班。   
  
     第八条 甚高频无线电话值班   
  
     按照第五章第十八条的规定设有甚高频无线电话站的每艘船舶，应按该条述及的缔约国政府所可能要求的时间和频道，在驾驶室内保持守听值班。   
  
     第三节 技 术 要 求   
  
     第九条 无线电报台   
  
     一、无线电报台应设置在没有外来机械干扰或其他噪音的有害干扰，而影响对无线电信号的正常接收的地方，并应尽可能设置在船内高处，使其可获得最大可能的安全程度。   
  
     二、无线电报工作室应足够宽敞和通风良好，使主用和备用无线电报设备能有效地工作，并不应用作任何会妨碍无线电报台工作的用途。   
  
     三、至少有一名无线电报务员的住室应尽可能靠近无线电报工作室。在新船上，此住室不应设在无线电报工作室内。   
  
     四、无线电报工作室与驾驶室及另一驾驶处所（如设有时）之间，应装设有效的双向呼唤和双向声话通信系统。此系统应与船上的主通信系统分开。   
  
     五、无线电报设备应设于能防水或防高温和低温的有害影响的处所，并应在遇险即刻使用和修理情况下，能易于到达。   
  
     六、应备有一可靠的同心秒针的时钟，其盘面直径不得少于12．5厘米（5英寸），字盘面上应有表示按无线电规则为无线电报业务所规定的静默时间的标志。此钟应牢固地装于无线电报工作室内，其位置应使无线电报务员自无线电报操作位置或无线电报自动报警接收机试验位置能容易而准确地看见整个时钟字盘。   
  
     七、在无线电报工作室内，应备有可靠的应急照明灯，该灯由固定装置的电灯所组成，其位置应对主用及备用无线电报设备的操作控制及按本条六款要求的时钟能提供良好的照明。在新设备内，如该灯由本章第十条一款（三）项所要求的备用电源供电时，除非无线电报工作室的布局不许可，则应由设于无线电报工作室主门附近及无线电报操作处所的双路开关控制。此开关须以清晰标志指明其用途。   
  
     八、在无线电报工作室内，应备有按本章第十条一款（三）项所要求的备用电源供电并设有足够长度软线的检查灯，或备有手电筒。   
  
     九、无线电报台应备置必要的备件、工具以及测试设备，使无线电报设备能在海上经常保持于良好的工作状态。测试设备应包括一只或数只测量交流电压、直流电压及电阻的仪表。   
  
     十、如设有独立的应急无线电报工作室，则本条四、五、六、七及八款的要求均应适用。   
  
     第十条 无线电报设备   
  
     一、除本条内另有明文规定外，应按下列规定：   
  
     （一）无线电报台应包括主用设备及备用设备，在电源上应互相分开而彼此独立。   
  
     （二）主用设备应包括主用发信机、主用收信机、无线电话遇险频率值班收信机及主用电源。   
  
     （三）备用设备应包括备用发信机、备用收信机及备用电源。认为设置备用天线为不切实际或不合理时，可准该船免装备用天线，但在此情况下，应备有整套装妥的适当备用天线，以备随时架设。此外，在任何情况下，须备有足够的天线导线及绝缘子，使能架设适当的天线。   
  
     如主用天线悬于易受抖动的支柱之间，则应予以适当保护以防断线。   
  
     二、货船上的无线电设备（1600总吨及1600总吨以上的货船，在1952年11月19日或以后安装的设备除外），如其主用发信机符合于备用发信机的所有要求，则不必另设备用发信机。   
  
     三、（一）主用及备用发信机，应能迅速地与主用天线连接和调谐，如设有备用天线时亦应如此。   
  
     （二）主用及备用收信机，应能迅速地与其所需使用的任何天线连接。   
  
     四、备用设备的所有部件，应尽可能设置在船内高处，使其可获得最大可能的安全程度。   
  
     五、主用及备用发信机，应能在无线电报遇险频率上，按无线电规则对该频率所指定使用的某一发射类型进行发射。此外，主用发信机应能于核准的频带在405千赫和535千赫之间至少两个工作频率上，按无线电规则对这些频率所指定使用的各种发射类型进行发射。备用发信机可由1台按无线电规则所规定的并限制使用的船舶应急发信机所组成。   
  
     六、主用及备用发信机如按无线电规则规定为调制发射者，则应具有不少于70％的调制深度及在450赫至1350赫之间的音频。   
  
     七、当主用及备用发信机连接于主用天线时，应具有下列最小正常射程，意即在昼间以及正常情况和环境下，于所规定的射程内，它们应能在船与船之间发送清晰可辨的信号①（如收信机处的场强有效值至少为每米50微伏时，通常将能收到清晰可辨的信号）。  
  
①在无场强的直接测量时，下列数据可作为近似地确定正常射程的参考。  
－－－－－－－－－－－－－－－－－－－－－－  
  正常射程  ｜          ｜  天线总功率＋  ｜  
            ｜米－安培＋｜                ｜  
    海里数  ｜          ｜    （瓦特）＋  ｜  
－－－－－－｜－－－－－｜－－－－－－－－｜  
  200    ｜  128  ｜      200    ｜  
  175    ｜  102  ｜      125    ｜  
  150    ｜    76  ｜        71    ｜  
－－－－－－－－－－－－－－－－－－－－－  
｜  正常射程  ｜          ｜  天线总功率＋  
｜            ｜米－安培＋｜  
｜    海里数  ｜          ｜    （瓦特）＋  
｜－－－－－－｜－－－－－｜－－－－－－－  
｜    125  ｜    58  ｜    41  
｜    100  ｜    45  ｜    25  
｜      75  ｜          ｜    14  
    ＋  此数值表示天线在最深载重水线以上的最大高度米数与天线电流安培数（有  
        效值）的乘积。  
        表中第二栏所列数值，相当于下式比值的平均值：  
                                天线有效高度  
                                －－－－－－＝0．47  
                                天线最大高度  
        此比值随天线附近情况而变，其变化范围约在0．3与0．7之间。  
    ＋  表中第三栏所列数值，相当于下式比值的平均值：  
    ＋  
                                天线辐射功率  
                                －－－－－－＝0．08  
                                  天线总功率  
        此比值依天线有效高度及无线电阻的值而发生较大的变化。  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                                          ｜      最小正常射程海里数  
                                          ｜－－－－－－－－－－－－－－－－－－  
                                          ｜    主发信机    ｜    备用发信机  
－－－－－－－－－－－－－－－－－－－－－｜－－－－－－－－｜－－－－－－－－－  
  所有客船与1600总吨及1600总吨    ｜      150    ｜      100  
  以上的货船                              ｜                ｜  
                                          ｜                ｜  
  1600总吨以下的货船                  ｜      100    ｜        75  
       
     八、（一）主用及备用收信机应能对无线电报遇险频率及按无线电规则对该频率所指定的各种发射类型进行接收。   
  
     （二）此外，主用收信机应能对用作发送报时信号、气象通报及主管机关可能认为有关航行安全所必需的其他通信的各种频率及各种发射类型进行接收。   
  
     （三）无线电话遇险频率值班收信机应预先调整在遇险频率上。如驾驶室没有无线电话报警信号装置，则该收信机应设有滤波组件或抑制扬声器的器械。此器械应易于接入和断开，当遇到保持守听值班将会干扰船舶安全航行的情况时，则可根据船长的意见，使用该项器械。   
  
     （四）1．无线电话发信机（如设有时），应设有产生无线电话报警信号的自动装置，其设计应能防止由于误动作而开动，并须符合本章第十六条五款的要求。该装置应随时能停止工作，以便能立即发送遇险通信。   
  
     2．应作好布置，以便在遇险频率以外的其他频率上，使用一根适当的仿真天线，定期检查产生无线电话报警信号的自动装置是否正常工作。   
  
     九、主用收信机当其接收输入低至50微伏时应有足够的灵敏度，使在耳机内或借助于扬声器能产生信号。备用收信机当其接收输入低至100微伏时，应有足够的灵敏度，能产生同样的信号。   
  
     十、当船舶在海上时，应随时有足够的电力供给主用设备按本条七款所规定的正常射程范围进行工作，并供构成无线电报台组成部分的任何电池组充电。主用设备的供电电压，在新船上应保持在其额定电压的±10％以内；在现有船舶上应尽可能保持接近于其额定电压，如实际可能，则保持在±10％以内。   
  
     十一、备用设备应设有与船上推进动力及船舶电力系统不相连属的独立电源。   
  
     十二、（一）备用电源最好应以能由船舶电力系统充电的蓄电池组组成，在所有情况下，应能迅速投入运用，并且使备用发信机及收信机在正常工作条件下能至少连续工作6小时；此外尚须供给本条十三及十四款所列的任何附加负荷①。  
  
①为了确定备用电源供给的负荷，建议以下式作为参考：  
       
     1／2发信机按键（点划）耗电流＋1／2发信机启键（间断）耗电流＋收信机   
  
     以及与备用电源连接的附加电路的耗电流。   
  
     （二）备用电源的容量，应足以使备用发信机和甚高频装置（如设有时）能同时工作至少6小时，但有一个开关装置能保证其仅作交替工作者除外。甚高频对于备用电源使用，应仅限于遇险、紧急和安全的通信。作为另一办法，亦可设一个独立的备用电源供甚高频装置使用。   
  
     十三、备用电源应用来供电给备用设备及本条十八款所规定的报警信号自动拍发器（如为电动者）。   
  
     备用电源也可用来供电给：   
  
     （一）无线电报自动报警器；   
  
     （二）本章第九条七款所规定的应急照明灯；   
  
     （三）无线电测向仪；   
  
     （四）甚高频装置；   
  
     （五）产生无线电话报警信号的装置（如设有时）；   
  
     （六）按无线电规则所规定的使能从发射转换为接收，或从接收转换为发射的任何设备。   
  
     除应按本条十四款的规定办理外，备用电源不得用于本款规定以外的用途。   
  
     十四、虽在本条十三款有所规定，但主管机关可核准在货船内将备用电源供给被全部限制在船舶上部的少量小功率应急电路，例如艇甲板上的应急照明；其条件是这些电路须在必要时能随时被切断，并且此备用电源具有足够容量来承担此项附加负荷。   
  
     十五、备用电源及其配电板，应尽可能设置在船内高处，并须便于无线电报务员迅速到达。如为可能，配电板应置于无线电室内；如不可能，则应能予以照明。   
  
     十六、当船舶在海上时，不论构成主用设备组成部分或备用设备组成部分的蓄电池组，均应每日充电使其达到正常充足状态。   
  
     十七、应采取一切措施尽可能消除船上电气设备及其他设备对无线电产生干扰的原因，并抑制其干扰。如必要，应采取措施保证接于广播收音机的天线不致干扰无线电报设备的有效或正确的工作。在设计新船时，对此项要求应特别注意。   
  
     十八、除手控拍发无线电报报警信号装置外，还应备有无线电报报警信号自动拍发器，以键控主用及备用发信机来发送无线电报报警信号。此拍发器须能随时被停止动作，以便对发信机立即进行手控拍发信号。如拍发器为电动者，应能由备用电源供电工作。   
  
     十九、当船舶在海上时，如备用发信机未用于通信，则应每日以仿真天线进行试验；并且，如设有备用天线，则在每航次中用备用天线至少试验一次。备用电源亦应每日试验。   
  
     二十、构成无线电报设备组成部分的一切属具，应是可靠的，其结构应易于到达，以便进行维护培养。   
  
     二十一、虽在本章第四条有所规定，主管机关可对1600总吨以下的货船，准许对本规则及本章第九条的全部要求予以放宽，但对其无线电报台的标准应尽可能不低于本章第十五及十六条对无线电话台所规定的同等的标准。特别对300总吨及300总吨以上而少于500总吨的货船，主管机关不需要求配备下列设备：   
  
     （一）备用收信机；   
  
     （二）现有设备中的备用电源；   
  
     （三）预防主用天线受抖动而断线的保护装置；   
  
     （四）独立于主通信系统的无线电报台与驾驶室之间的通信装置；   
  
     （五）发射射程大于75海里。   
  
     第十一条 无线电报自动报警器   
  
     一、1965年5月26日以后安装的任何无线电报自动报警器，应符合下列最低要求：   
  
     （一）如无任何干扰，且在接收输入的信号强度大于100微伏而小于1伏时，此自动报警器应在不需人工调整的情况下，能由海岸电台、船舶应急发信机和救生艇筏的发信机根据无线电规则在无线电报遇险频率上拍发的任何无线电报报警信号所开动。   
  
     （二）在无任何干扰时，此自动报警器应能由连续三长划或四长划的信号所开动，其条件是每一长划的时间在3．5秒至尽可能近于6秒内变化，而长划之间的间隔时间在1．5秒与一最好不超过10毫秒的最低可能值之间变化。   
  
     （三）报警器不应被天电和其收到的实际上未构成上述本款（二）项所指公差限度内的无线电报警信号以外的任何信号所开动。   
  
     （四）无线电报自动报警的选择性，应在无线电报遇险频率向每边扩展不少于4千赫不大于8千赫的频带宽度内，提供一个在实际上是均匀的灵敏度，并在该频带宽度以外，提供一个在符合最佳技术实践的条件下能尽速降低的灵敏度。   
  
     （五）如可能，当存在天电或干扰信号时，无线电报自动报警器应能自动调整，使其在合理的短时间内，达到能迅速辨别无线电报报警信号的状态。   
  
     （六）当无线电报自动报警器被无线电报报警信号所开动或当其万一失效时，应能在无线电报工作室、无线电报务员住室及驾驶室上发出连续的可听警告。如可能，当其整个报警接收系统的任何部分失效时，也应能发出警告。只应设置一个停止此项警告的开关，而此开关应设在无线电报工作室内。   
  
     （七）为了经常对无线电报自动报警器进行试验，该报警器应包括预先调谐至无线电报遇险频率的振荡器和拍发器，以产生本款上述（一）项所指的最低强度无线电报报警信号。为了守听由无线电报自动报警器所接收下来的信号，还应备有耳机插座。   
  
     （八）无线电报自动报警器，应能承受相当于船舶在海上所经历的恶劣情况下的振动、湿度及温度变化，并应能在这些情况下继续工作。   
  
     二、在认可某种新型无线电报自动报警器之前，有关主管机关应通过相当于实际操作情况下的实效试验，以证实该设备符合本条一款的规定。   
  
     三、当装有无线电报自动报警器的船舶在海上时，须由无线电报务员每24小时至少试验该报警器的效能一次。如其处于不正常工作状态，则无线电报务员应将此事报告给船长或驾驶室上的值班驾驶员。   
  
     四、无线电报务员应定期检查无线电自动报警器收信机是否正常工作，在检查时，接通其正常天线，收听信号，并与主用设备在无线电报遇险频率上所收到的相同信号作比较。   
  
     五、当无线电报自动报警器与天线连接时，应尽可能使其不影响测向仪的准确性。   
  
     第十二条 测 向 仪   
  
     一、（一）第五章第十二条所要求的测向仪，应能有效地收听信号并具有最小的接收机噪音，还应能有效地测定方位，从而可以确定真方位及真方向。   
  
     （二）测向仪应能接收由无线电规则对遇险和测向以及水上无线电示位标所指定的各种无线电报频率的信号。   
  
     （三）如无干扰时，测向仪应有足够的灵敏度，使其能对场强低至每米50微伏的信号测出准确的方位。   
  
     （四）如实际可能，测向仪应设置在机械干扰或其他噪音干扰尽可能少的地方，以免妨碍有效地测定方位。   
  
     （五）如实际可能，测向仪天线系统的设置，应使其方位的有效测定，尽可能不受由于其他天线、吊杆、钢丝旗绳或其他大型金属物的靠近而引起的妨碍。   
  
     （六）在测向仪与驾驶室之间，应装设有效的双向呼唤及双向声话通信装置。   
  
     （七）所有初装的测向仪均应校准至主管机关满意的程度，当任何天线或甲板上任何建筑物的位置变更可能明显影响测向仪的准确性时，应以方位进行核对或重行校准。校准表应每经一年或近于每经一年的期间核对一次。校准或任何有关准确性的核对。均应留存记录。   
  
     二、（一）在无线电话遇险频率上进行搜索的无线电设备应能在该频率上测取测向方位，并应在首部两舷各30°的弧度范围内不存在方向模糊点。   
  
     （二）安装和试验本条所涉及的设备时，应考虑国际无线电咨询委员会的有关建议。   
  
     （三）应采取一切合理步骤以保证本款所要求的搜索能力。如由于技术上的困难而不能达到此种搜索能力时，主管机关可容许个别船舶免除本款要求。   
  
     第十三条 装于机动救生艇上的无线电报设备   
  
     一、按第三章第十四条所要求的无线电报设备应包括发信机、收信机及电源，其设计应能于紧急时由不熟练的人员使用。   
  
     二、发信机应能在无线电报遇险频率上，用按无线电规则对该频率所指定的发射类型进行发射。该发信机还应能以按无线电规则指定供救生艇筏使用的发射类型在4000千赫至27500千赫的频带范围内进行发射。   
  
     三、发信机如按无线电规则规定为调制发射者，则应具有不少于70％的调制深度及在450赫至1350赫之间的音频。   
  
     四、发信机除应备有手控发报电键外，尚应设置供发送无线电报报警及遇险信号用的自动拍发器。   
  
     五、发信机利用固定天线在无线电报遇险频率上发射时，应具有25海里的最小正常射程（按本章第十条七款的规定）①。  
  
①在无场强测量时，如天线在水线上的高度与天线电流（有效值）的乘积为10  
       
     米－安，则可假定获得了此射程。   
  
     六、收信机应能对无线电报遇险频率及按无线电规则对该频率所指定的各种发射类型进行接收。   
  
     七、电源应由容量足供发信机在正常工作状态下连续工作4小时用的蓄电池组所组成。如电池为充电型式者，则应备有便于自船舶电源充电的装置。此外，并应备有在救生艇业已下水后对电池充电的装置。   
  
     八、当第三章第十四条所要求的无线电报设备和探照灯的电力均取于同一电池组时，此电池组应有足够的容量，以供探照灯所需的附加负荷。   
  
     九、要设置固定式天线及连同架设此天线至最大可能高度的装置。此外，如实际可能，应备有以风筝或气球支持的天线。   
  
     十、当船舶在海上时，应由无线电报务员每经一周用适宜的仿真天线试验发信机；如其电池为充电型式者，则应将电池充足。   
  
     第十四条 救生艇筏的手提无线电设备   
  
     一、第三章第十三条所要求的无线电设备，应包括发信机、收信机、天线及电源，其设计应能在紧急时由不熟练的人员使用。   
  
     二、此设备应为便于携带、水密，能浮于海面以及能被投于海中而不致损坏。新的设备应尽可能轻便紧凑，并最好能对救生艇及救生筏均为适用。   
  
     三、发信机应能在无线电报遇险频率上以按无线电规则对该频率所指定的发射类型进行发射，并能在无线电报频率上4000千赫至27500千赫的频带内以按无线电规则指定供救生艇筏使用的某一发射类型进行发射。但主管机关可准许该发信机能在无线电话遇险频率上并能以按无线电规则对该频率所指定的某一发射类型进行发射，用来作为按无线电规则对救生艇筏所指定的在无线电报频率上4000千赫至27500千赫频带内发射的一种替代或附加措施。   
  
     四、发信机如按无线电规则规定为调制发射者，应具有不少于70％的调制深度；而在以无线电报发射者，则应具有450赫至1350赫之间的音频。   
  
     五、发信机除应备有手控发报电键外，尚应设置供发送无线电报报警及遇险信号用的自动拍发器。如发信机能在无线电话遇险频率上发射，则应装设符合本章第十六条五款要求的自动装置，用以发送无线电话报警信号。   
  
     六、收信机应能对无线电报遇险频率及按无线电规则对该频率所指定的各种发射类型进行接收。如发信机能在无线电话遇险频率上进行发射，则收信机也应能对该频率及按无线电规则对该频率所指定的某种发射类型进行接收。   
  
     七、天线应自行支撑或能以救生艇桅杆架设至最大可能高度。此外，如实际可能，最好应备有由风筝或气球支持的天线。   
  
     八、发信机应对本条一款所要求的天线供以充足的射频功率①，并最好由手摇发电机供电。如以电池供电，则此电池应符合主管机关所规定的条件，以确保其为耐久型式和具有足够容量。  
  
①如能实现下列条件，即可认为满足本条的要求：  
       
     输入至未级阳极的功率至少为10瓦特，或在500千赫输出至由一有效电阻为  
  
                                      －12  
        15欧姆及一电容为100×10      法拉相串联的仿真天线的射频功率至少  
       
     为2瓦特（Ａ2发射类型）。其调制深度至少应为70％。   
  
     九、当船舶在海上时，应由无线电报务员或无线电话务员每经一周用适当的仿真天线试验发信机，如其电池为充电型式者，则应将电池充足。   
  
     十、本条规定的新设备，系指本公约生效后供给船上的设备。   
  
     第十五条 无线电话台   
  
     一、无线电话台应设在船舶的上部，并应置于最大可能避免噪音的处所，以免妨碍通信及信号的正确收听。   
  
     二、在无线电话台与驾驶室之间应有有效的通信联系。   
  
     三、应牢固地装设一只可靠的时钟，其位置应放在能从无线电话操作位置容易看清整个字盘的处所。   
  
     四、应备有可靠的应急照明灯，其电源应与无线电话设备的正常照明供电系统分开，且应固定布置使能对无线电话设备的操作控制、本条三款要求的时钟以及本条六款要求的解说图片提供充分的照明。   
  
     五、如电源由电池或电池组组成时，则无线电话台应备有测定充电状态的仪表。   
  
     六、载列无线电话遇险程序的简明解说图片，应张贴在从无线电话操作位置能全部见到的地点。   
  
     第十六条 无线电话装置   
  
     一、无线电话装置应包括发射和接收设备以及适当的电源（以下分别称为“发信机”、“收信机”、“无线电话遇险频率值班收信机”和“电源”）。   
  
     二、发信机应能在无线电话遇险频率上，以及在1605千赫至2850千赫频带间的至少另一频率上，按无线电规则对这些频率所指定的各种发射类型进行发射。在正常工作情况下，双边带发射或全载波单边带（即Ａ3Ｈ）发射，在峰值强度处应至少有70％的调制深度。减幅载波单边带（Ａ3Ａ）或抑止载波单边带（Ａ3Ｊ）发射的调制，其相互调制分量应不超过无线电规则所规定的值。   
  
     三、（一）500总吨及500总吨以上但小于1600总吨的货船，其发信机应具有150海里的最小正常射程，即在昼间以及正常情况和环境下，发信机应能在此射程①范围上，在船与船之间发送清晰可辨的信号（如在收信机上，由未调制载波所产生的场强有效值至少为每米25微伏时，通常将能收到清晰可辨的信号）。  
  
①在无场强测量时，如天线上的功率为15瓦特（未调制载波），并具有27％的  
       
     天线效率，则可假定获得了此射程。   
  
     （二）300总吨及300总吨以上但小于500总吨的货船：   
  
     1．对现有设备，其发信机的最小正常射程应至少为75海里；   
  
     2．对新设备，其发信机在天线上所产生的功率应至少为15瓦特（未调制载波）。   
  
     四、发信机应设有产生无线电话报警信号的自动装置，其设计应能防止由于误动作而开动。该装置应随时能停止工作，以便能立即发送遇险通信。应作好布置，以便在无线电话遇险频率以外的其他频率上，使用适当的仿真天线，定期检查该自动装置是否正常工作。   
  
     五、本条四款所要求的装置，应符合下列要求：   
  
     （一）各音调的频率容限为±1．5％；   
  
     （二）各音调持续时间容限为±50毫秒；   
  
     （三）连续音调间的间隔时间，不应超过50毫秒；   
  
     （四）强音波幅与弱音波幅的比值，应在1至1．2的范围内。   
  
     六、本条一款所要求的收信机应能在无线电话遇险频率上，以及在1605千赫至2850千赫频带间供海上无线电话台使用的至少另一频率上，按无线电规则对这些频率指定的各种发射类型进行接收。此外，收信机尚应能在其他频率上，按无线电规则所指定的各种发射类型，对由无线电话发送的气象通报和由主管机关可能认为有关航行安全所必须的其他通信进行接收。当接收输入低至50微伏时，收信机仍应有足够的灵敏度通过扬声器来产生信号。   
  
     七、无线电话遇险频率值班收信机应预先调整在遇险频率上。如没有无线电话报警装置，则该收信机应设有滤波组件或抑制扬声器的器械。此器械应易于接入和断开，当遇到保持守听值班将会干扰船舶航行安全时，可根据船长的意见，使用该项器械。   
  
     八、如采用手控开关以使由发射迅速转换至接收，则在实际可行的情况下，该开关的控制装置，应设在送话器上或电话机的送受话器上。   
  
     九、当船舶在海上时，应随时有足供无线电话装置按本条三款所规定的正常射程进行工作的主用电源。如设置电池组，则在一切情况下应具有充足的容量，以供发信机及收信机在正常工作状态下至少连续工作六小时①。500总吨及500总吨以上而小于1600吨的货船，其无线电话装置设于1952年11月19日或以后者，应在船内上部备有备用电源，但其主用电源已在此位置者除外。  
  
①为了确定由被要求具有六小时储备容量的电池组进行供电的负荷量，建议以  
       
     下列公式作为参考：   
  
     1／2语言传送所耗电流＋收信机的耗电流＋在遇险或紧急时可由蓄电池组供   
  
     电的一切附加负荷的耗电流。   
  
     十、备用电源（如设有时）仅可用以供电给：   
  
     （一）无线电话装置；   
  
     （二）本章第十五条四款要求的应急照明灯；   
  
     （三）本条四款要求的用以产生无线电话报警信号的装置；   
  
     （四）甚高频设备。   
  
     十一、虽在本条十款有所规定，但主管机关可核准将备用电源（如备有时）用于测向仪（如设有时），以及用于完全限制在船舶上部的若干小功率应急电路，例如艇甲板上的应急照明；但这些附加负荷能随时被切断，并且此备用电源具有足够容量来承担这些负荷。   
  
     十二、当船舶在海上时，所备的任何电池，均应保持充足状态，以满足本条九款的要求。   
  
     十三、应设置一根天线。如该天线悬于易受抖动的支杆之间，则500总吨及500总吨以上但小于1600总吨的货船上，应予保护以防断线。此外，应备有整套装妥能随时替换的备用天线，如实际不可能时，则应备有足够的天线导线及绝缘子，以使能架设备用天线。架设天线的必需工具亦应备全。   
  
     第十七条 甚高频无线电话台   
  
     一、按照第五章第十八条的规定设有甚高频无线电话台时，该电话台应位于船内上部并应包括一套符合本条规定的甚高频无线电话设备，此设备由发信机和收信机、能供其在额定功率上工作的电源以及适于在工作频率上有效地发射和接收信号的天线所组成。   
  
     二、此甚高频设备应符合无线电规则为国际水上行动甚高频无线电话业务所用设备所规定的要求，并应在无线电规则所规定的各频道上和按第五章第十八条述及的缔约国政府可能要求的频道上都能工作。   
  
     三、缔约国政府不应要求发信机射频载波的输出功率大于10瓦特。天线应尽可能在所有方向不受遮挡①。  
  
①为供参考起见，假设每船将装有高出水面9．15米（30英尺）公称高度的垂  
       
     直极化单位增益天线，射频输出功率为10瓦特的发信机，以及通过输入端的信   
  
     噪比为20分贝，灵敏度为2微伏的收信机。   
  
     四、为航行安全所需的甚高频频道的控制装置，应在驾驶室内便于指挥的地点即刻可用；必要时，在驾驶室两翼亦应有能进行无线电通信的设备。   
  
     第十八条 无线电话自动报警器   
  
     一、无线电话自动报警器应符合下列最低要求：   
  
     （一）调谐电路的最大响应的频率以及其他音调选择设备，在每种情况下的容限应为±1．5％；该响应在最大响应的频率3％内的所有频率上不应降低至最大响应的50％以下；   
  
     （二）在无噪音和干扰的情况下，自动接收设备应能于收到报警信号后在不少于4秒和不超过6秒的期间内进行动作；   
  
     （三）在天电和报警信号以外的强信号造成断续干扰的情况下，自动接收设备应能响应报警信号，并且在该设备保持值班的任何期间最好不需要作任何人工调整；   
  
     （四）自动接收设备不应被为天电或报警信号以外的强信号所开动；   
  
     （五）自动接收设备在能满意传送语言的范围以外应是有效的；   
  
     （六）自动接收设备应能承受相当于船舶在海上所经历的恶劣情况下的振动、湿度、温度变化和供电电压变化，并应能在这些情况下继续工作；   
  
     （七）自动接收设备在值班时间内，当发生各种会妨碍其正常功能的故障时，应尽可能发出警报。   
  
     二、在认可某种新型无线电话自动报警器之前，有关主管机关应通过相当于实际操作情况下的实效试验，以证实该设备符合本条一款的规定。   
  
     第四节 无线电日志   
  
     第十九条 无线电日志   
  
     一、按本章第三条或第四条设有无线电报台的船舶，根据无线电规则所要求的无线电日志（无线电业务日记），在航行期间应存放于无线电报工作室内。每一名无线电报务员，应在日志内记载其姓名、上下班时刻及其值班时间内所发生的可能对海上人命安全具有重要性的有关无线电业务的一切事件。此外，在日志内尚须记入：   
  
     （一）无线电规则所要求的记载事项；   
  
     （二）维护细节，包括电池充电记录在内，其格式可按主管机关的规定；   
  
     （三）业已执行本章第十条十六款所要求的日报；   
  
     （四）按本章第十条十九款的规定对备用发信机和备用电源所作试验的细节；   
  
     （五）在装有无线电报自动报警器的船上，按本章第十一条三款所作试验的细节；   
  
     （六）电池组维护细节，包括按本章第十三条十款（如适用时）所要求的充电记录在内，以及对按该款所要求的关于装在机动救生艇上的发信机所作试验的细节；   
  
     （七）电池组维护细节，包括按本章第十四条九款（如适用时）所要求的充电记录在内，以及对按该款所要求的关于救生艇筏的手提无线电设备所作试验的细节；   
  
     （八）按本章第六条四款的规定中断守听值班的时间和原因，以及恢复守听值班的时间。   
  
     二、按本章第四条设有无线电话台的船舶，根据无线电规则所要求的无线电日志（无线电业务日记），应存放于守听值班之处。每一名合格话务员及按本章第七条执行守听值班的每一名船长、驾驶员或其他船员，应将其姓名及其值班时所发生的可能对海上人命安全具有重要性的有关无线电业务的一切事件，记入日志。此外，在日志内尚须记入：   
  
     （一）无线电规则所要求的细节；   
  
     （二）船舶离港时守听值班的开始时间，及船舶到港时守听值班的结束时间；   
  
     （三）因任何原因而中断守听值班的时间和理由，以及恢复守听值班的时间；   
  
     （四）电池组（如备有时）的维护细节，包括本章第十六条十二款所要求的充电记录；   
  
     （五）电池组维护细节，包括按本章第十四条九款（如适用时）所要求的充电记录在内，以及对按该款所要求的关于救生艇筏的手提无线电设备所作试验的细节。   
  
     三、无线电日志，应备供主管机关授权的检验人员检查。   
  
     第五章 航 行 安 全   
  
     第一条 适 用 范 围   
  
     除本章另有明文规定外，本章适用于一切航线上的所有船舶，但军用舰艇和专门航行于北美洲五大湖以及与其连接的，东至加拿大魁北克省蒙特利尔的圣拉姆伯特船闸下游出口处为止的水域及支流的船舶，不在此限。   
  
     第二条 危 险 通 报   
  
     一、每艘船舶的船长如遇到危险的冰、危险的漂浮物，或其他任何对航行的直接危险，或热带风暴，或遇到伴随强风的低于冰点的气温致使上层建筑严重积聚冰块，或者未曾收到暴风警报而遇到蒲福风级10级或10级以上的风力时，均有责任自行采取一切措施将此情报通知附近各船及能与之通信的最近岸上主管当局。发送这种情报，形式不受限制，可以用明语（最好用英文）或用国际信号码发送。这种情报应广播给邻近的一切船舶，还应发送到能与之通信的最近岸上地点，并要求其转达给适当的主管当局。   
  
     二、各缔约国政府采取一切必要步骤，保证在收到本条一款所述的任何危险情报时，迅速通知有关方面并传达给其他有关政府。   
  
     三、向有关船舶传达上述危险通报时，不收费用。   
  
     四、根据本条一款所发的一切无线电报应冠以完全信号，并按第四章第二条所指无线电规则所规定的程序办理。   
  
     第三条 危险通报内所需的情报   
  
     在危险通报内要包括下列情报：   
  
     一、冰、漂浮物及其他对航行的直接危险。   
  
     （一）所观测到的冰、漂浮物或航行危险的种类；   
  
     （二）最后所观测到的冰、漂浮物或航行危险的位置；   
  
     （三）最后所观测到的航行危险的时刻和日期（格林威治平时）。   
  
     二、热带风暴（西印度群岛的飓风、中国海的台风、印度海面的旋风以及其他地区类似的风暴）。   
  
     （一）遇到热带风暴的报告书。这项义务应从广义来理解，每当船长有充分理由认为在他附近正在发展或存在有热带风暴时，即须发送情报。   
  
     （二）观测时的时刻、日期（格林威治平时）和船舶的位置。   
  
     （三）在通报内必须尽可能包括下列情报：   
  
     气压，最好是修正过的气压（注明其为毫巴、毫米或英寸，以及是否已经修正）；   
  
     气压趋势（过去3小时内气压的变化）；   
  
     真风向；   
  
     风力（蒲福风级）；   
  
     浪级（小浪，轻浪，中浪，巨浪）；   
  
     涌级（小，中，巨）及其传来的真方向。涌的周期和长度（短，中，长）亦将是有价值的；   
  
     船的真航向及速度。   
  
     三、继续观测。船长报告热带或其他危险的风暴后，在该船仍受风暴影响的时间内，虽无义务约束，如属可能仍希每小时作进一步的观测和通报，但无论如何每隔不超过3小时应进行一次。   
  
     四、虽未收到风暴警报而风力已达蒲福风级10级或10级以上时。   
  
     本款系指本条二款所述热带风暴以外的其他风暴；当遇到这种风暴时，通报中须包括该款所列的同样情报但不包括有关浪和涌的详情。   
  
     五、伴随强风的低于冰点的气温致使上层建筑严重积聚冰块：   
  
     （一）时刻和日期（格林威治平时）；   
  
     （二）气温；   
  
     （三）海水温度（如属可能）；   
  
     （四）风力和风向。   
  
     举 例   
  
     冰   
  
     ＴＴＴ冰。5月15日格林威治平时8点在北纬46°05′，西经44°10′发现大冰山。   
  
     漂浮物   
  
     ＴＴＴ漂浮物。4月21日格林威治平时16点30分在北纬40°06′，西经12°43′见到几乎淹没的漂浮物。   
  
     航行危险   
  
     ＴＴＴ航行。1月3日格林威治平时18点。甲号灯船不在原位。   
  
     热带风暴   
  
     ＴＴＴ风暴。8月18日格林威治平时0点30分。北纬20°04′，东经113°54′。修正气压994毫巴，趋势下降6毫巴。西北风，风力9级，暴风雨。巨涌由东来。航向067°，航速5节。   
  
     ＴＴＴ风暴。飓风接近的现象。9月14日格林威治平时13点。北纬22°，西经72°36′。修正气压29．64英寸，趋势下降0．015英寸。东北风，风力8级，阵风骤雨。航向035°，航速9节。   
  
     ＴＴＴ风暴。情况表明已形成强旋风。5月4日格林威治平时2点。北纬16°20′，东经92°03′。未修正气压753毫米，趋势下降5毫米。风向南偏西，风力5级。航向300°，航速8节。   
  
     ＴＴＴ风暴。6月12日格林威治平时3点。北纬18°12′，东经126°05′。台风在东南方。气压急速下降。北风在增强中。   
  
     ＴＴＴ风暴。风力11级，未收到暴风警报。5月4日格林威治平时3点。北纬48°30′，西经30°。修正气压983毫巴，趋势下降4毫巴。西南风，风力11级，顺时针转向。航向260°，航速6节。   
  
     冰冻   
  
     ＴＴＴ经受严重冰冻。3月2日格林威治平时14点。北纬69°，西经10°。气温18°，海水温度29°。东北风，风力8级。   
  
     第四条 气 象 服 务   
  
     一、各缔约国政府承担义务，鼓励海上船舶收集气象资料，并保证用最适宜于助航目的的方式安排这些资料的审查、传播和交换。主管机关应鼓励使用高度精确的仪器，并应于请求校对此种仪器时给予便利。   
  
     二、各缔约国政府尤应承担义务，在执行下列气象安排方面尽可能进行合作：   
  
     （一）发送无线电通报同时在沿岸地点显示适当信号，警告船舶注意强风、风暴及热带风暴。   
  
     （二）每日以无线电发出适用于航运的气象公报，其中包括当时的天气、波浪和冰的资料以及天气预报，在可能时，还要发表充分的补充情报，以便能在海上编制简单的天气图，并鼓励传送适当的传真天气图。   
  
     （三）准备并发行供海上顺利开展气象工作所可能需要的刊物；如可能，并安排发布及提供每日天气图作为出航船舶的参考。   
  
     （四）安排选定的船舶配备经过校验的仪器（例如气压计、气压记录仪、湿度计及测量海水温度的适宜仪器），以供气象服务之用，并使其在主要标准时刻进行气象观测（当环境许可，每日至少4次），作为海面天气形势分析之用，并且鼓励其他船舶用变通方式进行观测，特别是在航船稀少的地区；安排这些船舶将他们的观测结果用无线电发送，以使各公立气象服务机构得到便利，并由它们重复发送这种情报使附近船舶也得到便利。应鼓励在热带风暴或疑在热带风暴附近的船舶，当可能时增加它们的观测和发送次数，但要顾到驾驶人员在风暴情况下所需先行处理的航行任务。   
  
     （五）安排海岸电台与船舶间气象通报的收发事项。应鼓励不能直接与岸上通信的船舶将它们的气象通报经由海洋气象船或其他能与岸上联系的船舶转达。   
  
     （六）鼓励所有船长每当遇到时速50海里或50海里以上的风（蒲福风级10级风力）时，通知附近船舶及海岸电台。   
  
     （七）努力使上述国际气象服务获得统一程序，并尽可能地符合世界气象组织提出的技术规则和建议。各缔约国政府可以就执行本公约过程中所产生的任何气象问题提交该世界气象组织研究和征求意见。   
  
     三、本条所规定的情报，应按无线电规则规定的发送格式优先发送，在“向一切电台”发送气象情报、预报和警报时间内，所有船舶电台都必须遵守无线电规则的规定。   
  
     四、供船舶用的预报、警报、天气形势和其他气象报告，应按有关缔约国政府间的共同协定，由国家气象机构在为不同区域或地区服务的最佳地点，进行发布和传播。   
  
     第五条 冰区巡逻服务   
  
     一、各缔约国政府承担义务，继续担任北大西洋冰区巡逻和研究与观测冰情的服务。于整个冰季内，在纽芬兰大滩附近冰山区的东南、南及西南界限应予警戒，以便将该危险区的范围通知过往船舶，研究浮冰的一般情况以及对巡逻船活动区内的船舶和船员提供所需的援助。在一年中其余时间内也应适当保持对冰情的研究与观测。   
  
     二、用于供冰区巡逻服务及研究与观测冰情的船舶和飞机可担任管理国政府分配的其他任务，只要这些其他任务不妨碍本服务工作的原有目的或增加其费用。   
  
     第六条 冰区巡逻的管理与费用   
  
     一、美利坚合众国政府同意继续管理冰区巡逻服务及冰情的研究与观测，包括传播由此得到的情报。对这些服务工作有特殊利害关系的缔约国政府承担义务，分摊维持和提供这些服务的费用；每次分摊系根据每个分摊国政府经过冰区巡逻所警戒的冰山区的船舶合计总吨位计算；具体地说，每个有特殊利害关系的缔约国政府要承担义务，每年根据其在冰季内经过冰区巡逻所警戒的冰山区的船舶合计总吨位，与所有分摊国政府在冰季内经过冰区巡逻所警戒的冰山区内的船舶合计总吨位，按比例分摊维持和提供这些服务的费用。有特殊利害关系的非缔约国政府，可以在同样的基础上分摊维持和提供这些服务的费用。管理国政府将每年把维持和执行冰区巡逻的总费用及各分摊国政府的比例分摊额的表报供给各分摊国政府。   
  
     二、每个分摊国政府有权变更或中止其摊款，其他有关政府可承担义务来分摊服务费用。运用这项权利的分摊国政府，仍应继续负担其当时的分摊费用直至变更或中止其摊款的通知发出后的9月1日为止。在利用这项权利时，该分摊国必须在所述9月1日以前至少6个月通知管理国政府。   
  
     三、无论何时，美利坚合众国政府如欲中止担任这些服务工作，或有一个分摊国政府表示欲废弃它的摊款责任或变更它的摊款数，或另一缔约国政府愿意承担义务来分摊服务费用，则各分摊国政府对此项问题应根据它们的共同利益予以解决。   
  
     四、各分摊国政府经共同同意，有权随时对本条及本章第五条的规定作适当的变更。   
  
     五、凡本条规定经分摊国政府间同意后可以采取的某种措施，任何缔约国政府对实行这一措施的提案应送交管理国政府，由其同其他分摊国政府联系以确定它们是否接受此项提案，并将询问的结果通知其他分摊国政府和提出提案的缔约国政府。尤其是对有关这些服务费用分摊的安排，应由各分摊国政府在每隔不超过3年的时间内进行复查。为达到此目的，管理国政府应主动采取必要的行动。   
  
     第七条 接近浮冰的航速   
  
     每艘船舶的船长当据报有浮冰在该船航线上或在其航线附近时，在夜间必须以缓速前进或变更该船航向，以便远离危险区。   
  
     第八条 划定航路   
  
     一、为了分道通航包括避免通过指定对各船或某类船舶应避免航行的区域，或者为了避免不安全的情况，已采用的划定航路的作法，尤其是在航线密集区域，业已对航行安全作出了贡献，现建议所有有关船舶采用。   
  
     二、海协组织被认为是在国际水平上，在有关划定航路和规定各船或某类船舶应避免航行的水域方面进行建立和采取措施的唯一国际组织。它将把一切有关资料进行核对并散发给所有缔约国政府。   
  
     三、航路的选择及其付诸实施，以及怎样构成航线密集区的解释，主要由有关政府负责。在研制某些侵犯国际水域的划定航路的规划中，或在研制某些希望海协组织采用的此类其他规划中，有关政府要适当考虑海协组织已公布的有关资料。   
  
     四、缔约国政府要运用其影响保证适当使用所划定的航路，并尽一切力量保证遵循海协组织在有关船舶划定航路方面所采取的措施。   
  
     五、缔约国政府要促使航行于靠近纽芬兰大滩航线的所有船舶，尽其可能，避开北纬43°以北的纽芬兰渔场，并在已知或认为有冰险的区域外通过。   
  
     第九条 误用遇险信号   
  
     每艘船舶或每架飞机除表示遇险外，禁止使用国际遇险信号及任何与国际遇险信号可能相混的信号。   
  
     第十条 遇险通信－－义务和程序   
  
     一、船长在海上当由任何方面接到遇险中的船舶或飞机或救生艇筏的信号时，应以全速前往援助遇险人员，如有可能并应通知他们正在前往援助中。如果该船长不能前往援助，或因情况特殊认为前往援助为不合理或不必要时，他必须将未能前往援助遇险人员的理由载入航海日志。   
  
     二、遇险船的船长在尽可能与应召援助的各船船长协商后，有权召请其中被认为最能给予援助的一船或数船；被召请的一船或数船的船长有义务履行应召，继续全速前进以援助遇险人员。   
  
     三、某船船长，当他知悉除他本船外其他一船或数船已被召请并正在履行应召时，得解除本条一款所责成的义务。   
  
     四、某船船长如经遇险人员的通知或经业已到达遇险人员处的另一船船长的通知，认为不再需要提供援助时，得解除本条一款所责成的义务；如果他的船为被召请者，得解除本条二款所责成的义务。   
  
     五、本条所有规定与1910年9月23日在布鲁塞尔签订的为统一关于海上救助打捞若干规则的国际公约并无抵触，特别是该公约第十一条所责成的援助义务。   
  
     第十一条 通信信号灯   
  
     所有150总吨以上的船舶，当从事国际航行时，应在船上备有有效的白昼通信信号灯一盏，这种信号灯不应单纯依靠船舶的主用电源。   
  
     第十二条 船上航行设备   
  
     一、所有1600总吨和1600总吨以上的船舶，均应装设一台主管机关认可型式的雷达。这些船的驾驶室内应有便于标绘雷达读数的设备。   
  
     二、所有1600总吨和1600总吨以上的船舶，当从事国际航行时，应装设符合第四章第十二条规定的无线电测向设备，主管机关在适当考虑了无线电测向设备既可作为一种航行仪器又可作为一种帮助测定其他船舶、飞机或救生艇筏位置的重要工具的事实以后，若认为在某些航区装设此项设备为不合理或不必要时，可以对任何5000总吨以下的船舶免除这项要求。   
  
     三、所有1600总吨和1600总吨以上的船舶，当从事国际航行时，除磁罗经外，应增设1具电罗经。主管机关如果认为装设电罗经为不合理或不必要时，可以对5000总吨以下的任何船舶免除这项要求。   
  
     四、所有500总吨和500总吨以上的新船，当从事国际航行时，应装设1具回声测深仪。   
  
     五、虽应采取一切合理步骤以保持各种设备处于有效状态，但雷达设备、电罗经或回声测深仪的功能失常，不得认作船舶不适航，而在那些不能提供修理便利的港口亦不得作为拖延船舶在港的理由。   
  
     六、所有1600总吨和1600总吨以上的新船，当从事国际航行时，应装设符合第四章第十二条二款有关规定的在无线电话遇险频率上进行搜索的无线电设备。   
  
     第十三条 配 员   
  
     从海上人命安全观点出发，各缔约国政府承担义务，对其本国的每艘船舶应经常保持，或在必要时采取措施来保证所有船舶配备足够数量和胜任的船员。   
  
     第十四条 助航设备   
  
     各缔约国政府承担义务，安排建立和维护它们认为从大量运输上证明以及从危险程度上考虑所需要的助航设备，包括无线电示位标及电子助航设备，并安排向一切有关方面提供关于这些助航设备的情报资料。   
  
     第十五条 搜寻与营救   
  
     一、每一缔约国政府承担义务，保证作一切必要的安排进行海岸守望及对沿其海岸的海上遇险者进行营救。这些安排，考虑到海上运输密度和航行障碍物的密度，必须包括被认为是实际可行和必要的海上安全设施的建立、运转和维护，并须尽可能提供足够的为寻找和营救遇险人员的设备。   
  
     二、每一缔约国政府承担义务，提供关于它现有营救设施的资料以及对其中内容所作的更改方案（如有时）。   
  
     第十六条 救生信号   
  
     救生站与海上救助单位同遇险船舶或遇险人员通信时，以及遇险船舶或遇险人员同救生站与海上救助单位通信时，应使用下列信号。飞机在进行搜寻与营救工作中，指引船舶所用的信号在下面四款中加以规定。凡适用本章的船舶应备有说明下列各种信号的图解说明表，以供该船值班驾驶员易于取用。   
  
     一、救生站与海上救助单位对船舶或个人所发遇险信号的答复：  
  
            信    号                        意    义  
    昼间……橙色烟雾信号，或3个单        “已见到你，将尽速给  
            发的声光混合信号（雷光）      予援助”  
            每隔约1分钟发射1次。  ｝  
    夜间……3个单发的白色星光火箭        （重复此项信号，其意  
            每隔约1分钟发射1次。        义相同）  
    必要时，昼间信号可用于夜间或者夜间信号用于昼间。  
    二、引导载有遇险船员或遇险人员小艇的登陆信号：  
            信    号                        意    义  
    昼间……一面白旗或双臂上下挥动  
            或发出一绿色星光信号或  
            用灯光或音响信号工具发  
            送电码字母“Ｋ”（－·－）。  
    夜间……一盏白灯或白色火焰上下      ｝“此处是最好的登陆地  
            挥动或发出一绿色星光信        点”  
            号或用灯光或音响信号工  
            具发送电码字母“Ｋ”（－·  
            －）。可以用一盏稳定的  
            白灯或白色火焰置于与观  
            测者成一直线的较低处以  
            作示标（指示方向）。  
    昼间……一面白旗作横向运动或将  
            双臂横伸，或发出一红色  
            星光信号或用灯光或音响  
            信号工具发送电码字母  
            “Ｓ”（···）。          ｝“在此处登陆极危险”  
    夜间……一盏白灯或白色火焰作水  
            平运动，或发出一红色星  
            光信号或用灯光或音响信  
            号工具发送电码字母“Ｓ”  
            （···）。  
    昼间……一面白旗作水平运动，  
            随即将此白旗插于地上并  
            持另一面白旗指示引导的  
            方向，或者垂直地发出一  
            红色星光信号并向较好的  
            登陆地点的方向发一白色  
            星光信号；若较好的登陆  
            地点在遇险艇驶来方向的  
            右边，也可发送电码字母  
            “Ｓ”  
            （···），接着发一电码  
            字母“Ｒ”（·－·）；如  
            较好的登陆地点在遇险艇  
            驶来方向的左边，则在电  
            码字母“Ｓ”  
            （···）后接着发一电码  
            字母“Ｌ”（·－··）。      ｝“在此处登陆极危险，在  
    夜间……一盏白灯或白色火焰作水          所指的方向有一较好的  
            平运动，随即将这盏白灯          登陆处”  
            或白色火焰置于地上并持  
            另一盏白灯或白色火焰指  
            于引导的方向，或者垂直  
            地发出一红色星光信号  
            并向较好的登陆地点的方  
            向发一白色星光信号；若  
            较好的登陆地点在遇险艇  
            驶来方向的右边，也可发  
            送电码字母“Ｓ”（···），  
            接着发一电码字母“Ｒ”  
            （·－·）；如较好的登陆  
            地点在遇险艇驶来方向的  
            左边，则在电码字母“Ｓ”  
            （···）后，接着发一电  
            码字母“Ｌ”（·－··）  
       
     三、关于使用岸上救生工具所用的信号：  
  
            信    号                        意    义  
    昼间……一面白旗或双臂作上下挥    一般表示：“肯定”。  
            动或发出一绿色星光信      特别意义：“火箭绳已  
            号。                  ｝  握住”。  
    夜间……一盏白灯或白色火焰作上    “带尾索滑车已系牢”。  
            下挥动或发出一绿色星光    “绳缆已系牢”。“人在  
            信号。                    裤形救生圈中”。“拉”。  
    昼间……一面白旗作水平运动或将  
            双臂横伸或发出一红色星    一般表示：“否定”。  
            光信号。              ｝  特别意义：“放松”。  
    夜间……一盏白灯或白色火焰作水    “停拉”。  
            平运动或发出一红色星光  
            信号。  
       
     四、飞机在进行搜寻与营救工作中指引船舶驶向遇险的飞机、船舶或人员所用的信号（见以下附注）：   
  
     （一）飞机顺序执行下列程序，表示它正在指引一艘水面船艇驶向一遇险的飞机或遇险的水面船艇。   
  
     1．环绕水面船艇飞行至少1次；   
  
     2．紧贴水面船艇首前方低飞，并横越其航线的延伸方向，开闭节气阀（油门）或变更推进器螺距。   
  
     3．飞向指引水面船艇应前进的方向。   
  
     重复这些程序，其意义相同。   
  
     （二）飞机执行下列程序表示已不再需要信号所指引的水面船艇提供援助：   
  
     紧贴水面船艇尾后方低飞并横越该船艇的航迹，开闭节气阀（油门）或变更推进器螺距。   
  
     注：对这些信号的变更将由海协组织按需要预先发布通告。   
  
     第十七条 引航员软梯及引航员机械升降器   
  
     从事各航线的船舶在其航程中欲招请引航员者，应符合下列要求：   
  
     一、引航员软梯   
  
     （一）软梯应有效地供引航员能安全登船和离船，保持清洁和良好状态，并可于船舶到港或离港过程中供公务人员和其他人员使用。   
  
     （二）软梯的系固位置应避开船上任何可能的排水孔，每级踏板要稳固地紧靠于船旁，并应尽可能避开船型尖瘦的部位，同时使引航员在攀登不少于1．5米（5英尺）而不多于9米（30英尺）之后，即能安全和顺利地到达船上。使用单根软梯应能从登船口处直达水面；在备置此项软梯时，应考虑船舶的装载和纵倾以及15°不利横倾的所有情况。每当从海面到登船口处的距离超过9米（30英尺）时，则用引航员软梯登船的方法应改用舷梯或其他同等安全和便利的设备。   
  
     （三）引航员软梯的踏板应为：   
  
     1．采用硬木或其他等效性质的材料整块制成而没有节疤，并具有有效的防滑表面；最低的四级踏板可采用足够强度和硬度的橡皮或用等效特性的其他适当材料制成。   
  
     2．踏板的长度不少于480毫米（19英寸），宽度不少于115毫  
  
      1  
米（4－英寸），不计防滑装置的厚度不少于25毫米（1英寸）。  
      2  
       
     3．各级踏板之间应为等距，其间距不小于300毫米（12英寸），也不超过380毫米（15英寸），踏板的系固，要使其保持水平的状态。   
  
     （四）引航员软梯上不应有两块以上其系固方法不同于该梯原结构所用方法的换配踏板；这种换配踏板，应尽早用按该梯原结构所用系固方法的踏板来替换。当任何换配踏板以在边上开槽口的办法来系固于软梯的边绳时，则这种槽口应开在踏板的长边上。   
  
     （五）软梯每边的边绳应由两根裸露的白棕绳所组成，其周  
  
                    1  
长不小于60毫米（2－英寸）。在顶端踏板之下的每根边绳应为整  
                    4  
根而无接头。应备有两根适当系牢于船上的扶手绳，其周长不小  
              1  
于65毫米（2－英寸），此外还要有一根安全绳，置于手边，以备  
              2  
需要时使用。  
       
     （六）应备有由整根硬木或其他等效性质材料制成的几根板条，每根长度不少于1．8米（5英尺10英寸）。此项板条应安置在一定间隔的位置，以防止引航员软梯翻转。最低一根板条应装在从梯底倒数第五块踏板上，两根板条之间的间隔不得超过9块踏板。   
  
     （七）在引航员软梯或任何舷梯或其他装置的顶端，应有供登上或进入船舶，或者离开船舶的安全和便利的通道设施。如这种通道是利用栏杆上或舷墙上的门，则应装有适当的扶手；如这种通道是利用舷墙梯子，则这种梯子应牢固地连接在舷墙盖板上或平台上，并在进出船舶口处装两根扶手支柱，两支柱相距不少于0．7米（2英尺3英寸），也不大于0．8米（2英尺7英寸）。每根支柱在其根部或接近其根部以及另一较高之点应系固在船体结  
  
                                    1  
构上，支柱的直径应不小于40毫米（1－英寸），并应伸出舷墙顶  
                                    2  
以上不少于1．2米（3英尺11英寸）。  
       
     （八）夜间应备有灯光，使舷外边的引航员软梯及引航员登船的地点，均能充分照亮。应有一个带有自亮浮灯的救生圈，置于手边，以备使用；还应有一根抛缆绳，置于手边，以备需要时使用。   
  
     （九）在船舶的两舷，均应设置能使用引航员软梯的设备。   
  
     （十）软梯的装设和引航员的登船和离船，均应由船上一位负责驾驶员进行管理。   
  
     （十一）根据船舶的构造特点，诸如装有防擦护舷材以致妨碍执行任何上述规定时，应备有使主管机关认为满意的特殊装置，以保证人员能安全地登船和离船。   
  
     二、引航员机械升降器   
  
     （一）如设有引航员机械升降器及其辅助设备，其型式须经主管机关认可。它的设计和构造应保证引航员能安全登船和离船，包括安全地从升降器到达甲板，或从甲板到达升降器。   
  
     （二）在甲板上邻近升降器之处，应备有一套符合本条一款规定的引航员软梯，以便立刻使用。   
  
     第十八条 甚高频无线电话台   
  
     某一缔约政府如要求在其主权管辖地区内航行的船舶设置甚高频无线电话台，用以与为促进航行安全而设立起来的系统相联系时，则此种无线电话台应符合第四章第十七条的规定，且应按照第四章第八条进行工作。   
  
     第十九条 自动操舵仪的使用   
  
     一、在运输稠密的地区、在能见度受限制的情况下以及在所有其他航行危险的处境中，使用自动操舵仪时，应能立即改为人工操舵。   
  
     二、在上述情况下，应能毫不迟延地为值班驾驶员提供一位合格的舵工，该舵工应随时准备接过操舵的工作。   
  
     三、从自动操舵转换为人工操舵，以及相反地从人工操舵转换为自动操舵，应由一位负责的驾驶员操作或在其监督下进行操作。   
  
     第二十条 航海资料   
  
     所有船舶应备有为其计划航程所必须的足够和最新的海图、航路指南、灯塔表、航行通告、潮汐表以及一切其他航海资料。   
  
     第二十一条 国际信号规则   
  
     按照本公约需要设有无线电报或无线电话装置的所有船舶，应备有国际信号规则。主管机关认为有必要使用该规则的任何其他船舶，亦应备有此规则。   
  
     第六章 谷物装运   
  
       
  
     第一节 通 则   
  
     第一条 适用范围   
  
     除另有明文规定外，本章包括第一节、第二节和第三节，它适用于本公约所适用的一切船舶的谷物装运。   
  
     第二条 定 义   
  
     一、“谷物”一词包括小麦、玉蜀黍（苞米）、燕麦、稞麦、大麦、大米、豆类、种子，以及由其加工的与谷物在自然状态下具有相同特点的制成品。   
  
     二、“满载舱”一词系指在任何舱内按第三条的要求经装载和平舱之后，散装谷物达到其可能的最高水平面。   
  
     三、“部分装载舱”一词系指在任何舱内，散装谷物未装载到本条二款所规定的状态。   
  
     四、“进水角”（θf）一词系指船体、上层建筑或甲板室上不能关闭成风雨密的开口进水时的横倾角。在引用这个定义时，对不可能发生蔓延进水的小型开口，可不认为是开敞的。   
  
     第三条 谷物的平舱   
  
     应进行一切必要的和合理的平舱工作，以便把所有的谷物自由表面整成水平，并使谷物移动的影响减至最小。   
  
     一、在任何“满载舱”中，应对散装谷物加以平舱，使其尽最大可能填满甲板下方及舱口盖下方的一切空间。   
  
     二、在装载之后，“部分装载舱”内所有的谷物自由表面都应整成水平。   
  
     三、发给批准证的主管机关可按本章第一节第九条在下述情况下允许免予平舱；设置输送管道、甲板添注口或其他类似装置，使谷物自由流进舱内因而形成的甲板下方空档形状，在计算其高度时，经主管机关考虑认为满意。   
  
     第四条 完整稳性要求   
  
     一、本条要求的计算，应按本公约第二章甲第十九条的规定或按本章第一节第十条发给批准证的主管机关的要求所提供的稳性资料为基础。   
  
     二、任何装运散装谷物的船舶在整个航程中的完整稳性特征，当按照第二节所述方法考虑到由于谷物移动产生的倾侧力矩后，至少应表明能满足下列标准：   
  
     （一）由于谷物移动而产生的横倾角应不大于12度，但根据本章第一节第十条发给批准证的主管机关如经实践证明认为较小的横倾角是必要时，则可要求较小的横倾角；①   
  
     ①例如，允许的横倾角可以限制为当露天甲板的边缘在静水中被浸没时的横倾   
  
     角。   
  
     （二）在静稳性曲线图上，到达倾侧力臂曲线与复原力臂曲线的纵座标最大差值的横倾角或40度角或“进水角”（θf）时，取其小者，该两曲线之间的净面积或剩余面积，在一切装载情况下应不小于0．075米－弧度；   
  
     （三）经修正各舱内自由液面影响后的初稳性高度，应不小于0．3米。   
  
     三、在装载散装谷物之前，如经装货港所在缔约国政府要求，船长应利用按本章第一节第十和十一条认可和发给的资料，证明该船在任何航程的一切阶段，均能符合本条二款所要求的稳性标准。   
  
     四、在装载后，船长应确保船舶在出海之前为正浮状态。   
  
     第五条 纵向隔壁与托盘   
  
     一、在“满载舱”和“部分装载舱”内，均可设置纵向隔壁，作为减少谷物移动的有害横倾影响，或作为固定谷物表面而限制货物高度的一种装置，这种隔壁应设置成谷密，其构造应符合本章第三节第一条的规定。   
  
     二、在“满载舱”内，如设置隔壁用以减少谷物移动的有害影响，则该隔壁应：   
  
     （一）在甲板间舱内者，从甲板延伸到甲板；   
  
     （二）在货舱内者，从甲板或舱口盖的下边向下延伸，如本章第二节第二条所述。   
  
     除装运亚麻子和具有类似性质的其他种子的情况外，在舱口下方的纵向隔壁，可以用本章第三节第一条所述方法构成的托盘来代替。   
  
     三、在“部分装载舱”内，如设置隔壁时，则该隔壁应从所装谷物水平表面以上高度为该舱最大宽度1／8之处，向下延伸到谷物表面以下的同等距离。当用来限制面上堆装的高度时，中心线隔壁在谷物水平表面以上高度至少应为0．6米。   
  
     四、此外，可用充分限制移动的袋装谷物或其他适宜的货物紧密堆装于舱的两侧和两端，以减少谷物移动的有害横倾影响。   
  
     第六条 固 定   
  
     一、如果不按照本规则考虑由于谷物移动所产生的有害横倾影响，则任何“部分装载舱”内的散装谷物表面应整成水平，并用袋装谷物紧密地在面上堆装，堆装高度不小于谷物自由表面最大宽度的1／16或1．2米，取其较大者。可用至少具有相等压力的其他适宜货物来代替袋装谷物。   
  
     二、面上堆装的袋装谷物或其他适宜货物应按本章第三节第二条所述方法加以支承；或选取另一方法，散装谷物表面可用该条所述捆扎或绑缚的方法来加以固定。   
  
     第七条 添注漏斗和围阱   
  
     如果设置添注漏斗或围阱，在按本章第二节第三条所述方法计算横倾力矩时，应适当考虑由此所产生的影响。构成这种添注漏斗边界的隔壁的强度应符合本章第三节第一条的规定。   
  
     第八条 连通装载布置   
  
     底层货舱及其上面的甲板间舱，如果在计算横向倾侧力矩时适当考虑了谷物流入底层舱空间的情况，则可作为一个舱进行装载。   
  
     第九条 第二和第三节的适用范围   
  
     如果满足本章第一节第四条二款的稳性标准，主管机关或代表某一主管机关的缔约国政府，经考虑了装载条件或结构布置后认为合理时，可以批准偏离第二及第三节的假定条件。根据本条所作的此种批准，其细节应记入批准证或谷物装载资料内。   
  
     第十条 批 准   
  
     一、每艘按照本章规则装载的船舶，应由主管机关或其承认的机构，或由代表该主管机关的缔约国政府，发给一份批准证。这种批准证应被承认为该船能符合本章规则要求的证明。   
  
     二、该批准证应附于并提及为使船长能满足本章第一节第四条三款的要求而备置的谷物装载稳性簿。此稳性簿应满足本章第一节第十一条的要求。   
  
     三、这种批准证、谷物装载稳性资料及其附属图表可用发证国的一种官方文字或几种官方文字写成。如果使用的文字既不是英文，也不是法文，则该文本应包括有上述文字之一的译本。   
  
     四、船上应备有一份这种批准证和谷物装载稳性资料及其附属图表，以便在要求提交时由船长提交给装货港所在缔约国政府检查。   
  
     五、未持有这种批准证的船舶，在船长向主管机关或代表该主管机关的装货港所在缔约国政府证明该船的计划装载情况能够符合本章规则的要求并取得其同意之前，不得装载谷物。   
  
     第十一条 谷物装载资料   
  
     谷物装载资料，应足以使船长能在一切合理的装载情况下，确定按本章第二节计算的由于谷物移动所产生的横向倾侧力矩。此资料应包括下述内容：   
  
     一、应经主管机关或代表该主管机关的缔约国政府批准的资料：   
  
     （一）关于每个满载舱或部分装载舱，或连通装载舱的谷物倾侧力矩的曲线或图表，包括临时装置的效用；   
  
     （二）足以供船长证明符合本章第一节第四条三款要求的最大许可横向倾侧力矩表或其他资料；   
  
     （三）任何临时装置的详细尺寸，以及为满足本章第三节第一条五款要求的必要规定（如适用时）；   
  
     （四）出港和到港时典型的装载营运情况，以及必要时介于二者之间的最差装载营运情况；   
  
     （五）作为船长指南的装载实例；   
  
     （六）概括本章各项要求，以摘录形式编成的装载指示。   
  
     二、应送交主管机关或代表该主管机关的缔约国政府的资料：   
  
     （一）船舶特征；   
  
     （二）空船排水量及从船型基线与中剖面的交点至船舶重心的垂直距离（ＫＧ）；   
  
     （三）自由液面修正表；   
  
     （四）容量和重心。   
  
     第十二条 等 效   
  
     如主管机关按照本公约第一章第五条准许采用等效措施，则其细节应载入批准证或谷物装载资料内。   
  
     第十三条 对某些航程的免除   
  
     主管机关或代表该主管机关的缔约国政府，如认为由于某一航程的遮蔽性和条件，使执行本章第一节第三条至第十二条的任何要求均为不合理或不必要时，则可对个别船舶或个别类型船舶免除这些特定的要求。   
  
     第二节 假定倾侧力矩的计算   
  
     第一条 假定空档的说明和完整稳性的计算方法   
  
     一、通则   
  
     （一）为了计算装运散装谷物的船舶由于货物表面移动产生的有害倾侧力矩，应假定：   
  
     1．按照本章第一节第三条的规定经过平整的“满载舱”内，在所有对水平面的倾角小于30°的限界面下存在一个空档，该空档与边界表面平行，其平均深度按下列公式计算：   
  
     Ｖｄ＝Ｖｄ1＋0．75（ｄ－600） （毫米）   
  
     式中：Ｖｄ－－空档平均深度（毫米）；   
  
     Ｖｄ1－－下面表1所列的标准空档深度；   
  
     ｄ－－实际桁材深度（毫米）；   
  
     在任何情况下，Ｖｄ值概不得假定小于100毫米。   
  
     2．未按本章第一节第三条的规定加以平舱且限界面与水平面的倾角小于30°的“满载舱”内，装载后货物表面与水平线的倾角为30°。   
  
     3．在装满的舱口内，除在舱口盖内任何开敞的空档外，有一个自舱口盖最低部分或舱口边围板的顶端（取其较低者）量至谷物表面的平均深度为150毫米的空档。   
  
     （二）在“部分装载舱”内，假定谷物表面变动形状的说明见本节第四条。   
  
     （三）为了证明符合本章第一节第四条二款的稳性标准（见   
  
     表1  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
从舱口端或舱口边到  ｜标准空档深度Ｖｄ1 ｜从舱口端或舱口边到  ｜标准空档深度Ｖｄ1  
货舱边界的距离（米）｜    （毫米）      ｜货舱边界的距离（米）｜    （毫米）  
－－－－－－－－－－｜－－－－－－－－－｜－－－－－－－－－－｜－－－－－－－－－  
      0．5        ｜      570      ｜      4．5        ｜      430  
      1．0        ｜      530      ｜      5．0        ｜      430  
      1．5        ｜      500      ｜      5．5        ｜      450  
      2．0        ｜      480      ｜      6．0        ｜      470  
      2．5        ｜      450      ｜      6．5        ｜      490  
      3．0        ｜      440      ｜      7．0        ｜      520  
      3．5        ｜      430      ｜      7．5        ｜      550  
      4．0        ｜      430      ｜      8．0        ｜      590  
       
     表1注：   
  
     如距离大于8．0米，在距离每增加1．0米，深度增加80毫米时，标准空档深度Ｖｄ1可按外插法计算，如果舱口边桁材或其延伸部分和舱口端横梁的深度不同时，则应采用较大的深度，但下列各项除外：   
  
     ①当舱口边桁材或其延伸部分的深度较舱口端横梁的深度为小时，则与舱口并列的各空档可以采用较小的深度计算；   
  
     ②当舱口端横梁的深度较舱口边桁材或其延伸部分的深度为小时，则在舱口前、后方位于舱口边桁材的延伸部分以内的各空档可以采用较小的深度计算；   
  
     ③当在舱口之外有一升高甲板时，则量自升高甲板下边的空档平均深度，应以标准空档深度加上舱口端横梁的桁材深度，再加上升高甲板的高度来计算。图1），通常应根据假定“满载舱”的货物重心就是整个货物处所的体积中心来进行船舶稳性计算。在某些情况下，如主管机关批准在“满载舱”内应考虑甲板下方各假定空档对货物重心的垂向位置的影响时，则有必要按下式用增加由于谷物横向移动的假定倾侧力矩，以补偿谷物表面垂向移动的有害影响：   
  
     总倾侧力矩＝1．06×计算的横向倾侧力矩   
  
     在所有情况下，“满载舱”内货物的重量应为整个货物处所的容积除以以积载因数。   
  
     （四）在“部分装载舱”内，应按下式计算谷物表面垂向移动的有害影响：   
  
     总倾侧力矩＝1．12×计算的横向倾侧力矩   
  
     （五）上述（三）和（四）项所要求的补偿，可采用任何其他等效的方法。图1（略）   
  
     第二条 满载舱的假定体积倾侧力矩   
  
     一、通则   
  
     （一）谷物表面移动的形状与通过所考虑的该舱某一部分的横剖面有关，该部分的总力矩应以所得倾侧力矩乘以长度求得。   
  
     （二）由于谷物移动而假定的横向倾侧力矩，是谷物从高边向低边移动后，各空档形状和位置最终变更的结果。   
  
     （三）移动后所得到的谷物表面，应假定为与水平成15°角。   
  
     （四）计算相对于纵向构件所能形成的最大空档面积时，任何水平面的影响，例如折边或面材，应忽略不计。   
  
     （五）初始和最终的各空档的总面积应相等。   
  
     （六）一个不连续的纵向隔壁，应认为对其全长有效。   
  
     二、假定   
  
     在下述各项内，一个舱的假定总倾侧力矩是由分别考虑下列各部分的结果相加而得：   
  
     （一）各舱口以前和以后部分：   
  
     1．如果一个舱间有两个或两个以上的主舱口可进行装载，则这些舱口之间一部分（或几部分）的甲板下空档深度，应以舱口以前及以后至两舱口间中点的距离确定之。   
  
     2．假定谷物移动之后，最终的空档形状应如图2所示（略）。   
  
     （二）各舱口内和两侧：   
  
     假定谷物移动之后，最终的空档形状应如图3及图4所示（略）。   
  
     三、连通装载舱   
  
     下列各项说明当各舱作连通装载时应假定空档变动的形状：   
  
     （一）未设置有效的中心线隔壁：   
  
     1．在上甲板下方－－当作本节第二条二款所述的单层甲板布置。   
  
     2．在第二层甲板下方－－供从低边转移的空档面积，即初始空档面积减去靠于舱口边桁材的空档面积，应假定转移如下：   
  
     一半转移到上甲板的舱口内，1／4转移到上甲板下方的高边，另1／4转移到第二层甲板下方的高边。   
  
     3．在第三层及更低的甲板下方－－所有供从这些甲板每层低边转移的空档面积，应假定为按相等数量转移到各层甲板下方高边的空档以及上甲板舱口内的空档。   
  
     （二）设有延伸到上甲板舱口内的有效的中心线隔壁：   
  
     1．在所有甲板水平面内的隔壁两侧，供从低边转移的空档面积，应假定转移到上甲板舱口低半边下方的空档内。   
  
     2．在直接位于隔壁底端下面的一层甲板的水平面内，供从低边转移的空档面积，应假定转移如下：   
  
     一半转移到上甲板舱口低半边下方的空档，其余按相等数量转移到各层甲板下方高边的各空档内。   
  
     3．在低于本项1和2目所述的各甲板水平面内，所有供从这些甲板每层低边转移的空档面积，应假定按相等数量转移到上甲板舱口内在隔壁两边的每一空档内，以及各层甲板下方高边的各空档内。   
  
     （三）设有未延伸到上甲板舱口内的有效的中心线隔壁：   
  
     由于在与隔壁相同的甲板水平面内可假定不发生空档在水平方向的转移，所以在此水平面内供从低边转移的空档面积，应假定为按照上述（一）和（二）项的原则，转移到隔壁上方各高边的空档内。   
  
     第三条 添注漏斗和围阱的假定体积倾侧力矩   
  
     一、适宜布置的两侧添注漏斗（见图5略）   
  
     可假定由于船舶运动的影响，甲板下方各空档将实际上被从一对纵向的两侧添注漏斗中流出的谷物所填满，其条件为：   
  
     （一）添注漏斗应延伸到甲板的全长，并且在甲板上开有适当间隔的添注孔。   
  
     （二）每一添注漏斗的容积等于舱口边桁材及其延伸部分外侧的甲板下方空档的体积。   
  
     二、位于主舱口上的围阱   
  
     假定谷物移动之后，其最终的空档形状应如图6所示（略）。   
  
     第四条 部分装载舱的假定体积倾侧力矩   
  
     一、通则   
  
     当散装谷物的自由表面未经按照本章第一节第六条加以固定时，应假定谷物表面在移动之后与水平成25°角。   
  
     二、不连续的纵向隔壁   
  
     在某一舱内，如果纵向隔壁在该舱的横向边界之间不连续，则任何此种作为阻止谷物表面作全宽度移动的隔壁有效长度，应取该隔壁的实际长度减去该隔壁与相邻隔壁之间或该隔壁与船舷之间的较大横向距离的2／7。   
  
     这个修正对上层舱间可以是“满载舱”或是“部分装载舱”的任何连通装载的底层舱不适应。   
  
     第五条 现有船舶可替代的装载布置   
  
     一、通则   
  
     按照下述二款或三款的规定装载的船舶，应认为至少与本章第一节第四条二款要求的完整稳性特征等效。允许这样装载的批准证，应根据本章第一节第十条一款予以承认。   
  
     在本节中，“现有船舶”一词，系指在本章生效之日以前安放龙骨的船舶。   
  
     二、特别适合装运谷物的船舶的装载   
  
     （一）不论本章第二节中有何规定，如船舶的结构具有两道或两道以上垂直或倾斜的谷密纵向隔壁，且作适当分布以限制谷物的任何横向移动的影响，则在下述条件下散装谷物可不按该节规定的要求进行装运：   
  
     1．应将尽可能多的货舱或舱间装满并平舱满实；   
  
     2．在任何指定的装载布置情况下，船舶在其航程的任何阶段不致倾斜到大于5°。这里假设：   
  
     （1）在经过平舱满实的货舱或舱间内，谷物表面从初始表面下沉了容积的2％，并且在这些货舱和舱间的所有对水平的倾角小于30°的限界面下，移动至与初始谷物表面成12°的倾角。   
  
     （2）在“部分装载的舱间或货舱”内，谷物自由表面下沉和移动如上面2目（1）所述，或移动到主管机关或代表该主管机关的缔约国政府认为必要的较大角度；如谷物表面按照本章第一节第五条加以面上堆装，则移动到与原来整成水平的表面成8°倾角。在本项2目的情况下，如设置止移板，可认为能限制谷物表面的横向移动。   
  
     3．船长持有表明作为本项2目进行计算所依据的各种稳性情况，包括所采用的各种装载布置的谷物配载图及稳性簿，两者均经主管机关或代表该主管机关的缔约国政府认可。   
  
     （二）主管机关或代表该主管机关的缔约国政府对按照本条二款（一）项的规定设计的并满足该项2及3目要求的船舶，应规定在所有其他装载情况下防止移动的措施。   
  
     三、未备有批准证的船舶   
  
     凡未备有按本章第一节第四条及第十条的规定发给批准证的船舶，可根据本条二款的要求或者下述条件，允许装载散装谷物；   
  
     （一）所有“满载舱”应设置延伸到该舱全长度的中心线隔壁，此隔壁从甲板或舱口盖的下边向下延伸到甲板线以下至少等于该舱最大宽度的1／8或2．4米的距离，取其较大者；但按照第三节第二条的要求制成托盘时，可同意用来代替在舱口内和舱口下的中心线隔壁。   
  
     （二）所有“满载舱”的舱口，都要关闭，并将舱口盖固定就位。   
  
     （三）在“部分装载舱”内的所有谷物自由表面，应平整成水平，并按照第三节第二条的规定加以固定。   
  
     （四）在整个航程中，经修正各舱内自由液面影响后的初稳性高度应为0．3米，或者按下列公式求得，取其较大者：  
  
                                                      ＿＿＿  
                    ＬＢＶｄ（0．25Ｂ－0．645√ＶｄＢ）  
          ＧＭR＝－－－－－－－－－－－－－－－－－－－－－－－－  
                            ＳＦ×△×0．0875  
式中：Ｌ－－所有满装舱间的合计总长度；  
      Ｂ－－船舶的型宽；  
      ＳＦ－－积载因数；  
      Ｖｄ－－按本节第一条一款（一）项1目的计算的空档平  
            均深度；  
      △－－排水量。  
       
     第三节 谷物装置及其固定   
  
     第一条 谷物装置的强度   
  
     一、通则   
  
     （一）木材：用于谷物装置的木材应具有上等完好质量，其品种和等级经证明能满足于这一用途。木材成品的实际尺寸应按照本节下述规定的尺寸。外用型用防水胶粘合的胶合板并在设置时使面层板的纹理方向垂直于支撑立柱或束缚物，如其强度与适当尺寸的实体木材的强度等效，也可使用。   
  
     （二）工作应力：当使用本条三款（一）和（二）项的表列数值计算单侧受载的隔壁尺寸时，应采取下列工作应力：   
  
     对钢制隔壁……………………2000公斤／平方厘米   
  
     对木质隔壁……………………160公斤／平方厘米   
  
     （三）其他材料：除木材或钢材之外的其他材料，如对其机械性能已作适当考虑，可同意用来制造此种隔壁。   
  
     （四）立柱：   
  
     1．除设有能防止立柱端部从其插座中脱出的装置者外，每一立柱每端插入插座的深度应不小于75毫米。如某一立柱在其顶端未作固定，则最上面的撑柱或拉索应尽可能靠近其顶端设置。   
  
     2．如将立柱的剖面削除一部分用来插入止移板，则这种措施不应使局部应力过分增高。   
  
     3．作用在支持单侧受载隔壁的立柱上的最大弯曲力矩，通常应在计算时假定各立柱的两端为自由支持。但是，如主管机关同意所假定的某种程度的固定将能在实际中达到，则可考虑对由于立柱两端作某种程度的固定而产生的最大弯曲力矩作某种减少。   
  
     （五）组合剖面：如果立柱、束缚件或任何其他强力构件是由两个分开的剖面组成，在隔壁的两侧各设一个剖面，并按适当间距用贯穿螺栓使其互相连结，则其有效剖面模数应取两个分开的剖面模数之和。   
  
     （六）局部隔壁：如果隔壁没有延伸到货舱的全深度，这种隔壁及其立柱应加以支持或牵拉，以使其达到与延伸到全深度的隔壁同等有效。   
  
     二、两侧受载的隔壁   
  
     （一）止移板：   
  
     1．止移板的厚度应不小于50毫米，并应设置成谷密，且在其必要处用立柱支持。   
  
     2．各种厚度的止移板的最大自由跨距应如下：  
  
            厚    度              最大自由跨距  
            50毫米                2．5米  
            60毫米                3．0米  
            70毫米                3．5米  
            80毫米                4．0米  
       
     如果厚度超过上列数值，则最大自由跨距可直接按厚度的增大作比例增加。   
  
     3．所有止移板的端部应牢固地嵌入插槽，并具有75毫米的最小支承长度。   
  
     （二）其他材料：采用木材以外的其他材料构成的隔壁，应与本款（一）项对止移板所要求的强度等效。   
  
     （三）立柱：   
  
     1．用于支持两侧受载隔壁的钢质立柱，其剖面模数应按下式求得：   
  
     Ｗ＝ａ×Ｗ1   
  
     式中：Ｗ－－剖面模数，立方厘米；   
  
     ａ－－立柱间水平跨距（米）。   
  
     每米跨距的剖面模数Ｗ1应不小于按下述公式求得之值：   
  
     Ｗ1＝14．8（ｈ1－1．2）立方厘米／米   
  
     式中：ｈ1－－垂向自由跨距，以米计，应取相邻两支索的固定点之间或支索固定点与立柱任一端部之间的最大距离。如这个距离小于2．4米，则应在计算各模数时，假定距离的实际值为2．4米。   
  
     2．木质立柱的模数应按钢质立柱的相应模数乘以12．5来确定。如采用其他材料，其模数至少应等于对钢的要求，并按钢与所采用材料的许用应力的比例予以增加。在这些情况下，还应注意到每根立柱的相对刚性，以保证其不致发生过度的挠曲。   
  
     3．立柱间的水平距离，应使止移板的自由跨距不超过本款（一）项2目规定的最大跨距。   
  
     （四）撑柱：   
  
     1．当采用木质撑柱时，该撑柱应为整根的，其每一端均应牢固地加以固定，并应将撑柱的跟部撑牢在船舶的永久性结构上，但不应直接支撑在船旁板上面。   
  
     2．木质撑柱的最小尺寸应如下表所列，并应遵守下述3和4目的规定。  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
    撑  柱  的  长  度    ｜  矩  形  剖  面（毫米）｜圆形剖面直径（毫米）  
－－－－－－－－－－－－－｜－－－－－－－－－－－－｜－－－－－－－－－－  
    不超过3米            ｜    150×100      ｜      140  
    3米以上但不超过5米  ｜    150×150      ｜      165  
    5米以上但不超过6米  ｜    150×150      ｜      180  
    6米以上但不超过7米  ｜    200×150      ｜      190  
    7米以上但不超过8米  ｜    200×150      ｜      200  
    超过8米              ｜    200×150      ｜      215  
       
     撑柱的长度为7米及7米以上时，应在近长度中点处牢固地架撑。   
  
     表Ⅰ①  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
    ｈ    ｜                            Ｂ    （米）  
          ｜－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
  （米）  ｜    2            3            4            5  
－－－－－｜－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
    1．5｜    850        900      1010      1225  
    2．0｜  1390      1505      1710      1985  
    2．5｜  1985      2160      2430      2740  
    3．0｜  2615      2845      3150      3500  
    3．5｜  3245      3525      3870      4255  
    4．0｜  3890      4210      4590      5015  
    4．5｜  4535      4890      5310      5770  
    5．0｜  5185      5570      6030      6530  
    6．0｜  6475      6935      7470      8045  
    7．0｜  7765      8300      8910      9560  
    8．0｜  9055      9665    10350    11075  
    9．0｜10345    11030    11790    12590  
  10．0｜11635    12395    13230    14105  
－－－－－－－－－－－－－－－－－－－－－－－－－－－  
－－－－－－－－－－－－－－－－－－－－－－－－－－－  
    6            7            8            10  
－－－－－－－－－－－－－－－－－－－－－－－－－－－  
  1500      1770      2060      2645  
  2295      2605      2930      3590  
  3090      3435      3800      4535  
  3885      4270      4670      5480  
  4680      5100      5540      6425  
  5475      5935      6410      7370  
  6270      6765      7280      8315  
  7065      7600      8150      9260  
  8655      9265      9890    11150  
10245    10930    11630    13040  
11835    12595    13370    14930  
13425    14260    15110    16820  
15015    15925    16850    18710  
       
     ｈ－－从隔壁底部算起的谷物高度（米）②   
  
     Ｂ－－散装谷物横向范围（米）   
  
     ｈ或Ｂ为其他数值时，负荷应按需要用内插法或外插法计算。   
  
     ① 上述负荷如需换算为英制单位（英吨／英尺）时，1公斤／米应等于0．0003   
  
     英吨／英尺。   
  
     ② 如从隔壁到添注漏斗或舱口的距离为1米或1米以下时，高度ｈ应取至该   
  
     舱口内或漏斗内的谷物水平面。在所有其他情况下高度应取至隔壁所在处   
  
     的顶甲板。   
  
     3．当各立柱之间的水平距离与4米相差甚大时，撑柱的惯性矩可按比例予以变更。   
  
     4．当撑柱与水平线所成夹角超过10°时，应选用按本项2目所要求的较大一档的撑柱，但在任何情况下撑柱与水平线之间的夹角应不超过45°。   
  
     （五）拉索：如使用拉索来支持两侧受载的隔壁，则拉索应水平地或尽可能水平地设置。拉索应由钢丝绳制成，其两端应妥善固定。钢丝绳的尺寸，应按假定由拉索支持的隔壁和立柱所承受的均匀负荷为500公斤／平方米来确定。由此假定的在拉索上的工作负荷，应不超过其破断负荷的1／3。   
  
     三、仅单侧受载的隔壁   
  
     （一）纵向隔壁，隔壁的每米长度所受负荷的公斤数，应取表Ⅰ所列数值。   
  
     （二）横向隔壁，隔壁的每米长度所受负荷的公斤数，应取表Ⅱ所列数值。   
  
     （三）负荷的垂向分布，以上表Ⅰ及表Ⅱ所列隔壁的每单位长度总负荷，如认为必要，可假定沿高度成梯形分布。在这种情况下，垂向构件或立柱的上端或下端的反作用负荷是不相等的。以垂向构件或立柱所承受的总负荷的百分数表示的上端反作用负荷，应取下面表Ⅲ及表Ⅳ所列数值。   
  
     这种垂向构件或立柱的端部连接的强度，可以每一端可能承受的最大负荷作为基础来计算。这些负荷如下：   
  
     纵向隔壁 顶端最大负荷………………………表Ⅰ中相应的总负荷的50％。底端最大负荷………………………表Ⅰ中相应的总负荷的55％。   
  
     横向隔壁 顶端最大负荷………………………表Ⅱ中相应的总负荷的45％。底端最大负荷………………………表Ⅱ中相应的总负荷的60％。   
  
     表Ⅱ①  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
    ｈ    ｜  
          ｜－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
  （米）  ｜    2          3          4          5          6  
－－－－－｜－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
    1．5｜    670      690      730      780      835  
    2．0｜  1040    1100    1170    1245    1325  
    2．5｜  1460    1565    1675    1780    1880  
    3．0｜  1925    2065    2205    2340    2470  
    3．5｜  2425    2605    2770    2930    3075  
    4．0｜  2950    3160    3355    3535    3690  
    4．5｜  3495    3725    3940    4130    4295  
    5．0｜  4050    4305    4535    4735    4910  
    6．0｜  5175    5465    5720    5945    6135  
    7．0｜  6300    6620    6905    7150    7365  
    8．0｜  7425    7780    8090    8360    8590  
    9．0｜  8550    8935    9275    9565    9820  
  10．0｜  9680  10095  10460  10770  11045  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                  Ｌ（米）  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
    7          8          10        12        14        16  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
    890      935    1000    1040    1050    1050  
  1400    1470    1575    1640    1660    1660  
  1980    2075    2210    2285    2305    2305  
  2590    2695    2845    2925    2950    2950  
  3205    3320    3480    3570    3595    3595  
  3830    3950    4120    4210    4235    4240  
  4440    4565    4750    4850    4880    4885  
  5060    5190    5385    5490    5525    5530  
  6300    6445    6655    6775    6815    6825  
  7445    7700    7930    8055    8105    8115  
  8685    8950    9200    9340    9395    9410  
  9930  10205  10475  10620  10685  10705  
11270  11460  11745  11905  11975  11997  
       
     ｈ－－从隔壁底部算起的谷物度高（米）②   
  
     Ｌ－－散装谷物纵向范围（米）   
  
     ｈ或Ｌ为其他数值时，负荷应按需要用内插法或外插法计算。   
  
     ①上述负荷如需换算为英制单位（英吨／英尺）时，1公斤／米应等于0．0003英吨／   
  
     英尺。   
  
     ②如从隔壁到添注漏斗或舱口的距离为1米或1米以下时，高度ｈ应取至该舱口内   
  
     或漏斗内的谷物水平面。在所有其他情况下高度应取至隔壁所在处的顶甲板。   
  
     表Ⅲ 仅单侧受载的纵向隔壁   
  
     立柱上端的支承反作用力，以负荷（表Ⅰ）的百分数表示  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
    ｈ    ｜                                            Ｂ（米）  
          ｜－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
  （米）  ｜    2            3        4          5          6  
－－－－－｜－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
    1．5｜  43．3    45．1    45．9    46．2    46．2  
    2    ｜  44．5    46．7    47．6    47．8    47．8  
    2．5｜  45．4    47．6    48．6    48．8    48．8  
    3    ｜  46．0    48．3    49．2    49．4    49．4  
    3．5｜  46．5    48．8    49．7    49．8    49．8  
    4    ｜  47．0    49．1    49．9    50．1    50．1  
    4．5｜  47．4    49．4    50．1    50．2    50．2  
    5    ｜  47．7    49．4    50．1    50．2    50．2  
    6    ｜  47．9    49．5    50．1    50．2    50．2  
    7    ｜  47．9    49．5    50．1    50．2    50．2  
    8    ｜  47．9    49．5    50．1    50．2    50．2  
    9    ｜  47．9    49．5    50．1    50．2    50．2  
  10    ｜  47．9    49．5    50．1    50．2    50．2  
－－－－－－－－－－－－－－－－－  
－－－－－－－－－－－－－－－－－  
    7          8          10  
－－－－－－－－－－－－－－－－－  
  46．2    46．2    46．2  
  47．8    47．8    47．8  
  48．8    48．8    48．8  
  49．4    49．4    49．4  
  49．8    49．8    49．8  
  50．1    50．1    50．1  
  50．2    50．2    50．2  
  50．2    50．2    50．2  
  50．2    50．2    50．2  
  50．2    50．2    50．2  
  50．2    50．2    50．2  
  50．2    50．2    50．2  
  50．2    50．2    50．2  
       
     Ｂ－－散装谷物横向范围（米）   
  
     ｈ或Ｂ为其他数值时，反作用负荷应按需要用内插法或外插法计算。   
  
     在考虑到上述表Ⅲ及表Ⅳ所表示的负荷的垂向分布的情况下，水平木板的厚度也可按下式确定。   
  
     表Ⅳ 仅单侧受载的横向隔壁   
  
     支柱上端的支承反作用力以负荷（表Ⅱ）的百分数表示  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
    ｈ    ｜  
          ｜－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
  （米）  ｜    2        3        4        5        6        7  
－－－－－｜－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
    1．5｜  37．3  38．7  39．7  40．6  41．4  42．1  
    2    ｜  39．6  40．6  41．4  42．1  42．7  43．1  
    2．5｜  41．0  41．8  42．5  43．0  43．5  43．8  
    3    ｜  42．1  42．8  43．3  43．8  44．2  44．5  
    3．5｜  42．9  43．5  43．9  44．3  44．6  44．8  
    4    ｜  43．5  44．0  44．4  44．7  44．9  45．0  
    5    ｜  43．9  44．3  44．6  44．8  45．0  45．2  
    6    ｜  44．2  44．5  44．8  45．0  45．2  45．3  
    7    ｜  44．3  44．6  44．9  45．1  45．3  45．4  
    8    ｜  44．3  44．6  44．9  45．1  45．3  45．4  
    9    ｜  44．3  44．6  44．9  45．1  45．3  45．4  
  10    ｜  44．3  44．6  44．9  45．1  45．3  45．4  
－－－－－－－－－－－－－－－－－－－－－－－－－  
      Ｌ（米）  
－－－－－－－－－－－－－－－－－－－－－－－－－  
    8        10      12      14      16  
－－－－－－－－－－－－－－－－－－－－－－－－－  
  42．6  43．6  44．3  44．8  45．0  
  43．6  44．3  44．7  45．0  45．2  
  44．2  44．7  45．0  45．2  45．2  
  44．7  45．0  45．2  45．3  45．3  
  45．0  45．2  45．3  45．3  45．3  
  45．2  45．4  45．4  45．4  45．4  
  45．3  45．5  45．5  45．5  45．5  
  45．4  45．6  45．6  45．6  45．6  
  45．5  45．6  45．6  45．6  45．6  
  45．5  45．6  45．6  45．6  45．6  
  45．5  45．6  45．6  45．6  45．6  
  45．5  45．6  45．6  45．6  45．6  
       
     Ｌ－－散装谷物纵向范围（米）   
  
     ｈ或Ｌ为其他数值时，反作用负荷应按需要用内插法或外插法计算。  
  
                     ＿＿＿＿＿＿＿＿＿  
                    ／      ｐ×ｋ  
        ｔ＝10ａ√－－－－－－－－－  
                      ｈ×213．3  
式中：ｔ－－木板厚度（毫米）；  
      ａ－－板的水平跨距，即立柱之间的距离（米）；  
      ｈ－－从谷物顶部到隔壁的底部的高度（米）；  
      ｐ－－从表Ⅰ或表Ⅱ求得的单位长度总负荷（公斤）；  
      ｋ－－按负荷垂向分布情况而定的系数。  
       
     假定负荷的垂向分布是均匀的，即矩形分布，ｋ应取为1。对于梯形分布，则   
  
     ｋ＝1．0＋0．06（50－Ｒ）   
  
     式中：Ｒ为从表Ⅲ或表Ⅳ所查得的上端支承反作用负荷。   
  
     （四）拉索或撑柱：拉索和撑柱的尺寸应这样来确定，即从前述三款（一）及（二）项中表Ⅰ及表Ⅱ求得的负荷应不超过破断负荷的1／3。   
  
     四、托盘   
  
     当使用托盘来减小“满载舱”内的倾侧力矩时，量自托盘底部至甲板线的托盘深度应如下：   
  
     对于型宽为9．1米及9．1米以下的船舶，不小于1．2米。   
  
     对于型宽为18．3米及18．3米以上的船舶，不小于1．8米。   
  
     对于型宽在9．1米至18．3米之间的船舶，托盘的最小深度应用内插法计算。   
  
     托盘的顶部（盘口）应由舱口范围的甲板下结构，即舱口边桁材或围板及舱口端梁所构成。托盘和其上面的舱口都应全部以放置在垫隔布或其等效物上的袋装谷物或其他适宜货物所填充，并应与邻近的构件及如已安装就位的活动舱口梁紧靠堆装。   
  
     五、散装谷物捆包   
  
     作为另一方法，可用散装谷物捆包代替袋装谷物或其他适宜货物来填装托盘，但需：   
  
     （一）托盘顶上备有适当的固定装置，托盘内衬以经主管机关同意的材料，这种材料具有每5厘米宽的狭条不小于274公斤的抗拉强度。   
  
     （二）如果托盘具有下述结构，亦可使用经主管机关同意的具有每5厘米宽狭条不少于137公斤的抗拉强度的材料，作为变通方法，来代替上述（一）项的要求：   
  
     用几根经主管机关同意的横向绑绳放置在插入散装谷物内的托盘内面，其间距不大于2．4米。这些绑绳应有足够长度，使能拉紧并固定在托盘的顶上。   
  
     用厚度不小于25毫米和宽度为150至300毫米的木垫板或其他同等强度的适当材料，沿首尾方向放置在这些绑绳上，以防止应放在托盘内的衬里材料被割破或擦伤。   
  
     （三）托盘内应装满散装谷物，并在顶上加以固定。但当使用上述（二）项经认可的材料时，衬里材料在包裹起来之后，在用绑绳捆扎使托盘固定以前，还应将木垫板放在捆包的顶上。   
  
     （四）如用一张以上的衬里材料来垫托盘，则各张材料应在盘底缝合或加以钩边折迭。   
  
     （五）托盘的顶部应与安装就位的舱口活动梁的底部相凑合，并在托盘的顶上，用适宜的杂货或散装谷物放置于活动梁之间。   
  
     六、“满载舱”舱口盖的固定   
  
     如果在“满载舱”上面没有散装谷物或其他货物，则舱口盖应在考虑到供固定这些舱口盖的重量和固定装置的情况下以认可的方式加以固定。   
  
     按本章第一节第十条发给的批准证，应包括发证的主管机关认为必要的固定方式的说明。   
  
     第二条 部分装载舱的固定   
  
     一、捆扎或绑缚   
  
     （一）为了消除“部分装载舱”内的倾侧力矩，当利用捆扎或绑缚时，应按下列方式固定：   
  
     1．谷物应加以平舱和整平至使顶部略成拱形，并以垫隔用的粗帆布、舱盖布或等效物覆盖。   
  
     2．垫隔用的粗帆布和（或）舱盖布应搭接至少1．8米。   
  
     3．应铺设二层满铺的木材地板，每块木板厚约25毫米，宽150至300毫米。上层地板纵向铺置，钉于底层横向铺置的地板上。亦可采用另一种办法，即用一层满铺地板，厚50毫米，纵向铺置，钉于厚50毫米，宽度不少于150毫米的底垫木上；这些底垫木应延伸到舱的全宽，其间隔距离不超过2．4米。利用其他材料制成的装置，经主管机关认为与上述装置等效者，也可加以采用。   
  
     4．钢丝绳（直径19毫米或等效者）、双层钢带（50毫米×1．3毫米，破断拉力至少5000公斤），或同等强度的链条，每一件皆用32毫米的松紧旋扣旋紧者，均可作为绑缚的工具。当使用钢带时，采用与锁制杆连用的绞车拉紧器可以代替32毫米的松紧旋扣，但应备有必要的供拉紧用的适当扳手。使用钢带时，至少应有3个折卷封头用来系固端部。使用钢丝绳时，至少应有4个钢绳夹用来构成绑绳的眼环。   
  
     5．在完成装载之前，绑绳应用一种25毫米的卸扣或同等强度的梁夹具牢固地连接于船体骨架上，连接点是在预计的谷物最终表面以下约450毫米之处。   
  
     6．各根绑绳的放置间距应不超过2．4米，每根要由钉在纵向地板上的垫木予以支持。这种垫木应由不小于25毫米×150毫米的木材或其等效物所组成，并应延伸到该舱的全宽。   
  
     7．在航程中应对钢带经常进行检查，必要时应重新收紧。   
  
     二、面上堆装布置   
  
     如利用袋装谷物或其他适宜的货物来固定“部分装载舱”，则在谷物的自由表面上应盖上垫隔布或其等效物，或者盖以某种适宜的平台。这种平台应由在间距不大于1．2米的垫木上方放置间距不大于100毫米、厚25毫米的木板所组成。平台也可用经主管机关认为是等效的其他材料构成。   
  
     三、袋装谷物   
  
     袋装谷物应装在完好的袋内，妥为装满，并牢固地缝口。   
  
     第七章 危险货物装运   
  
     第一条 适用范围   
  
     一、除另有明文规定外，本章适用于本公约所适用的一切船舶的危险货物装运。   
  
     二、本章规定不适用于船用物料及设备或专为载运特种货物而特别建造或改建的船舶如油轮等所载的该种货物。   
  
     三、除符合本章规定外，船舶禁止装运危险货物。   
  
     四、为了补充本章的规定，各缔约国政府应颁布或促使颁布关于指定的某种危险货物或各类危险货物的安全包装及装载的细则，该细则应包括这些货物涉及到其他货物的必要的任何预防措施。   
  
     第二条 分 类   
  
     危险货物应分为如下的类别：   
  
     1类－－爆炸品。   
  
     2类－－压缩、液化或加压溶解的气体。   
  
     3类－－易燃液体。   
  
     4类（1）－－易燃固体。   
  
     4类（2）－－易于自燃的易燃固体或物质。   
  
     4类（3）－－遇水发生易燃气体的易燃固体或物质。   
  
     5类（1）－－氧化剂。   
  
     5类（2）－－有机过氧化物。   
  
     6类（1）－－有毒的（毒性的）物质。   
  
     6类（2）－－感染性的物质。   
  
     7类－－放射性物质。   
  
     8类－－腐蚀性物质。   
  
     9类－－杂类危险物质，即经验已经证明或可以证明按其危险性质必须应用本章规定的任何其他物质。   
  
     第三条 包 装   
  
     一、危险货物的包装应是：   
  
     （一）坚固而完好；   
  
     （二）包装的内表面可能与货物相接触者，应不致受所装货物的严重影响；   
  
     （三）能经受得住装卸及海运的一般危险。   
  
     二、如包装液体容器按常例采用具有吸收性或减震性的材料的，此种材料应为：   
  
     （一）能减少此液体所引起的危险；   
  
     （二）其布置应能防止移动，并确保该容器保持围衬状态；   
  
     （三）如为合理与可能，应具有足够的数量，以便在容器万一破裂时能吸收液体。   
  
     三、装盛危险液体的容器，应在灌注温度下留有在正常装运过程中最高温度所需的足够膨胀空隙。   
  
     四、压缩气体的盛瓶或容器，应为构造合适，经过检验，保持良好以及正确充灌者。   
  
     五、曾用于装运危险货物的空容器，其本身应作为危险货物处理，但经清洗和干燥，或认为其前装货物的性质具有安全性并经严密封闭的容器除外。   
  
     第四条 标志与标签   
  
     每个装盛危险货物的容器，应以正确的学名（不应使用商品名称）加以标志，并用显著的标签或签条板加以识别，以表明其危险的性质。每个容器均应按前述加上标签，但装盛少量包装化学品的容器以及大宗货物能成票堆装、搬运及识别者例外。   
  
     第五条 单 据   
  
     一、在有关海运危险货物的所有单据中，货物的名称应使用正确学名（不应使用商品名称）并应按本章第二条所列类别加以正确说明。   
  
     二、由托运人预备的托运单据，应包括或附有证明书或声明书，注明所交运的货物业已正确地加以包装、标志及标签，并处于合适的装运状态。   
  
     三、每一艘装运危险货物的船舶，须具有按照本章第二条的规定载明船上所装危险货物及其位置的特殊清单或舱单。标明所有危险货物类别及注明其在船上位置的详细配载图，可以代替此特殊清单或舱单。   
  
     第六条 堆装要求   
  
     一、危险货物应按其性质安全地和适当地予以堆装。性质互不相容的货物，应彼此分开。   
  
     二、具有严重危险性的爆炸品（弹药除外），应堆装于在航行中须保持严密封闭的火药库内。这类爆炸品应与雷管分开。装运爆炸品的任何舱室内的电气设备及电缆，其设计与使用应能使火灾或爆炸的危险减至最小程度。   
  
     三、会产生危险气体的货物，应堆装于通风良好的处所或甲板上。   
  
     四、装运易燃液体或易燃气体的船舶，在有必要防止火灾或爆炸的处所，应采取特殊的预防措施。   
  
     五、在未经采取足够防止火灾发生的预防措施以前，不得装运易于自热或自燃的物质。   
  
     第七条 客船上的爆炸品   
  
     一、在客船上仅可装运如下的爆炸品：   
  
     （一）安全弹药和安全导火线；   
  
     （二）总净重不超过9公斤（或20磅）的少量爆炸品；   
  
     （三）船舶或飞机使用的遇险信号，其总重量不超过1016公斤（2240磅）者；   
  
     （四）不致发生猛烈爆炸的花炮，但装运统舱旅客的船舶除外。   
  
     二、虽在本条一款有所规定，但在具有经主管机关认可的特殊安全措施的客船上，可载运额外数量或其他类型的爆炸品。   
  
     第八章 核能船舶   
  
     第一条 适 用 范 围   
  
     本章适用于一切核能船舶，但军用船舶除外。   
  
     第二条 其他各章的适用   
  
     本公约其他各章的规定均适用于核能船舶，但本章有所变动者除外。   
  
     第三条 免 除   
  
     在任何情况下，核能船舶均不应被免除执行本公约的任何规定。   
  
     第四条 核能反应堆装置的认可   
  
     核能反应堆装置的设计、构造以及检查和装配的标准，应经主管机关的同意和认可，并应考虑因辐射而使检验所受的限制。   
  
     第五条 船用核能反应堆装置的适应性   
  
     核能反应堆装置的设计，应兼顾船舶在航行中的正常和异常情况下的特殊使用条件。   
  
     第六条 辐射安全   
  
     主管机关应采取措施，确保在海上或港内，使船员、旅客或公众，或水道、食物和水源免受不当的辐射或其他核能的危害。   
  
     第七条 安全鉴定书   
  
     一、应编写安全鉴定书，以评定核动力装置的性能与船舶的安全，从而确保在海上或港内，对船员、旅客或公众，或水道、食物和水源免受不当的辐射或其他核能的危害。主管机关对鉴定书满意时应予认可，此项鉴定书应经常保持为最新编写的。   
  
     二、安全鉴定书应在充裕时间前送交核能船舶拟往访问的缔约国政府，以使其可以评定该核能船舶的安全性。   
  
     第八条 操 作 须 知   
  
     关于核动力装置的一切操作事项，应制订充分详细的且重点放在安全上的操作须知，以供工作人员工作时的参考与指导。主管机关对操作须知满意时，应予认可。该操作须知应保存于船上，并应经常保持为最新编写的。   
  
     第九条 检 验   
  
     核能船舶的检验，应包括第一章第七条或第一章第八、第九及第十条的可适用的要求，但因辐射而受限制的检验除外。此外，检验尚应包括安全鉴定书的各种特殊要求。在所有情况下，虽于第一章第八及第十条有所规定，此项检验应不少于每年1次。   
  
     第十条 证 书   
  
     一、第一章第十二条一款及第一章第十四条的规定，不适用于核能船舶。   
  
     二、对核能客船经检查与检验符合第二章甲、第二章乙、第三、第四及第八章的要求及本规则任何其他有关要求者，应发给证书，称为核能客船安全证书。   
  
     三、对核能货船经检查与检验满足第一章第十条所指出的货船检验要求并符合第二章甲、第二章乙、第三、第四及第八章的要求与本规则任何其他有关要求者，应发给证书，称为核能货船安全证书。   
  
     四、核能客船安全证书与核能货船安全证书应载明：“此船为核能船，符合本公约第八章的一切要求，并与所认可的此船安全鉴定书相一致”。   
  
     五、核能客船安全证书与核能货船安全证书的有效期限，均不应超过12个月。   
  
     六、核能客船安全证书与核能货船安全证书，应由主管机关或由其正式授权的个人或社团发给之。在每一种情况下，主管机关均应对该证书负完全责任。   
  
     第十一条 特殊监督   
  
     除按第一章第十九条的规定执行监督外，核能船舶尚应于进入各缔约国港口之前以及在港时接受特殊监督，其目的为证实船上具备有效的核能船舶安全证书，并证实在海上或港内，对船员、旅客或公众，或对水道、食物和水源无不当的辐射及其他核能的危害。   
  
     第十二条 灾 难   
  
     核能船舶，在发生任何能导致对于周围环境危害的事故时，该船船长应立即报告主管机关，也应立即报告该船在损伤情况下可能处于的水域或驶近的水域所属国家政府的主管当局。   
  
     附录 证 书 格 式   
  
     客船安全证书格式  
  
                             客船安全证书  
    （公章）                                                （国名）  
        国际航行  
    供－－－－－－用  
      短程国际航行  
       
     根据1974年国际海上人命安全公约规定发给  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
        ｜  船舶编号  ｜          ｜          ｜规则第三章第二十七条  ｜安放龙骨  
  船名  ｜            ｜  船籍港  ｜  总吨位  ｜三款（七）项所特准航程｜日    期  
        ｜  或呼号    ｜          ｜          ｜的详细说明（如有时）  ｜（见注）  
－－－－｜－－－－－－｜－－－－－｜－－－－－｜－－－－－－－－－－－｜－－－－  
        ｜            ｜          ｜          ｜                      ｜  
        ｜            ｜          ｜          ｜                      ｜  
    （政府名）            政府  
    －－－－－－－－－－－－－－证明：  
    签名人      （姓名）  
       
     1．此船业经依照上述公约的规定进行了相应的检验。   
  
     2．检验查明，此船符合上述公约所附规则关于下列各项的要求：   
  
     （1）船舶结构、主辅锅炉及其他受压容器与机器；   
  
     （2）水密分舱的布置与细节；   
  
     （3）下列分舱载重线：   
  
     3．救生设备仅供总人数＿＿人用，计有：   
  
     救生艇＿＿艘（包括机动救生艇＿＿艘），能载＿＿人，及装有无线电报设备及探照灯的机动救生艇＿＿艘（包括于上述救生  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
勘定并勘划于船中两舷的分舱｜                    ｜适用于载客处所包括下列  
                          ｜    干        舷    ｜  
载重线（第二章甲第十一条）｜                    ｜客货交替使用处所  
－－－－－－－－－－－－－｜－－－－－－－－－－｜－－－－－－－－－－－－  
            Ｃ·1        ｜        …          ｜        …  
            Ｃ·2        ｜        …          ｜        …  
            Ｃ·3        ｜        …          ｜        …  
       
     艇总数内）以及仅装有探照灯的机动救生艇＿＿艘（也包括于上述救生艇总数内），共需执证救生艇员＿＿人；   
  
     需设认可降落装置的救生筏＿＿只，能载＿＿人；   
  
     不需设认可降落装置的救生筏＿＿只，能载＿＿人；   
  
     救生浮具＿＿只，能浮起＿＿人；   
  
     救生圈＿＿只；   
  
     救生衣＿＿件。   
  
     4．各救生艇与救生筏已按规则的规定配置属具。   
  
     5．此船按规则的规定备有抛绳设备和供救生艇筏用的手提式无线电设备。   
  
     6．此船符合规则关于无线电报设备的要求，计有：  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                                            ｜  规则要求  ｜  实际情况  
－－－－－－－－－－－－－－－－－－－－－－｜－－－－－－｜－－－－－－  
报务员守听小时数                            ｜    …      ｜      …  
报务员人数                                  ｜    …      ｜      …  
是否装有自动报警器                          ｜    …      ｜      …  
是否装有主用设备                            ｜    …      ｜      …  
是否装有应急设备                            ｜    …      ｜      …  
主发信机与应急发信机在电路上为分开的或连通的｜    …      ｜      …  
是否装有无线电测向仪                        ｜    …      ｜      …  
是否装有搜索无线电话遇险频率的无线电设备    ｜    …      ｜      …  
是否装有雷达                                ｜    …      ｜      …  
核准搭载的旅客人数                          ｜    …      ｜      …  
       
     7．机动救生艇的无线电报设备和（或）供救生艇筏用的手提式无线电设备（如设有时）的效用符合规则的规定。   
  
     8．此船符合规则关于探火及灭火设备、雷达、回声测深仪及电罗经的要求，并按规则及现行国际海上避碰规则的规定备有航行灯及号型、引航员软梯、以及发出音响信号及遇险信号的设备。   
  
     9．此船其他方面符合规则对其适用的各项要求。  
  
    本证书由        政府授权发给。本证书有效期限至        止。  
    19    年    月    日发于        。  
    以下由核发证书的主管机关签名或盖章。        （印）  
    若系签名应加注下列字句：  
    签名人声明，本人系由所述政府正式授权发给本证书。  
                                            （签名）  
注：除1952年、1965年和1974年国际海上人命安全公约生效的年份安放龙骨或处  
于相应建造阶段的船舶，应填明实际日期外，其余只填年份即可。  
       
     按公约规则第二章甲第一条二款（一）项或第二章乙第一条一款（一）项的规定进行改建的船舶，应填明改建开工日期。   
  
     货船构造安全证书格式  
  
                           货船构造安全证书  
    （公章）                                                （国名）  
    根据1974年国际海上人命安全公约规定发给  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
            ｜              ｜              ｜              ｜安放龙骨日期  
  船    名  ｜船舶编号或呼号｜  船  籍  港  ｜  总  吨  位  ｜  
            ｜              ｜              ｜              ｜  （见注）  
－－－－－－｜－－－－－－－｜－－－－－－－｜－－－－－－－｜－－－－－－－  
            ｜              ｜              ｜              ｜  
            ｜              ｜              ｜              ｜  
            ｜              ｜              ｜              ｜  
    （政府名）            政府  
    －－－－－－－－－－－－－－证明：  
    签名人      （姓名）  
       
     此船业经依照上述公约所附规则第一章第十条的规定进行了相应的检验；检验查明此船上述规则所指的船体、机器及设备的情况，均属合格；且此船符合第二章甲及第二章乙（除有关灭火设备和防火控制图的要求外）对其适用的各项要求。  
  
    本证书由        政府授权发给。本证书有效期限至        止。  
    19  年    月    日发于          。  
    以下由核发证书的主管机关签名或盖章。  
                                            （印）  
    若系签名应加注下列字句：  
    签名人声明，本人系由所述政府正式授权发给本证书。  
                                            （签名）  
注：除1952年、1965年和1974年国际海上人命安全公约生效的年份安放龙骨或处  
    于相应建造阶段的船舶，应填明实际日期外，其余只填年份即可。  
       
     货船设备安全证书格式  
  
                           货船设备安全证书  
    （公章）                                                （国名）  
    根据1974年国际海上人命安全公约规定发给  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
            ｜              ｜              ｜              ｜安放龙骨日期  
  船    名  ｜船舶编号或呼号｜  船  籍  港  ｜  总  吨  位  ｜  
            ｜              ｜              ｜              ｜  （见注）  
－－－－－－｜－－－－－－－｜－－－－－－－｜－－－－－－－｜－－－－－－－  
            ｜              ｜              ｜              ｜  
            ｜              ｜              ｜              ｜  
            ｜              ｜              ｜              ｜  
       
     （政府名） 政府   
  
     －－－－－－－－－－－－－－证明：   
  
     签名人 （姓名）   
  
     1．此船业经依照上述公约的规定进行了相应的检查。   
  
     2．检验查明，其救生设备仅供总人数＿＿人用，计有：   
  
     左舷救生艇＿＿艘，能载＿＿人；   
  
     右舷救生艇＿＿艘，能载＿＿人；   
  
     机动救生艇＿＿艘（包括于上述救生艇总数内），包括装有无线电报设备及探照灯的机动救生艇＿＿艘，以及仅装有探照灯的机动救生艇艘；   
  
     需设认可降落装置的救生筏＿＿只，能载＿＿人；   
  
     不需设认可降落装置的救生筏＿＿只，能载＿＿人；   
  
     救生圈＿＿只；   
  
     救生衣＿＿件。   
  
     3．各救生艇和救生筏已按公约所附规则的规定配置属具。   
  
     4．此船按规则的规定备有抛绳设备和供救生艇筏用的手提式无线电设备。   
  
     5．检验查明此船符合上述公约关于灭火设备及防火控制图、回声测深仪及电罗经的要求，并按规则及现行国际海上避碰规则的规定备有航行灯及号型、引航员软梯、以及发出音响信号及遇险信号的设备。   
  
     6．此船其他方面符合规则对其适用的各项要求。  
  
    本证书由        政府授权发给，本证书有效期限至        止。  
    19    年    月    日发于        。  
    以下由核发证书的主管机关签名或盖章。  
                                            （印）  
    若系签名应加注下列字句：  
    签名人声明，本人系由所述政府正式授权发给本证书。  
                                            （签名）  
注：除1952年、1965年和1974年国际海上人命安全公约生效的年份安放龙骨  
或处于相应建造阶段的船舶，应填明实际日期外，其余只填年份即可。   
     货船无线电报安全证书格式  
  
                         货船无线电报安全证书  
    （公章）                                                （国名）  
    根据1974年国际海上人命安全公约规定发给  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
            ｜              ｜              ｜              ｜安放龙骨日期  
  船    名  ｜船舶编号或呼号｜  船  籍  港  ｜  总  吨  位  ｜  
            ｜              ｜              ｜              ｜  （见注）  
－－－－－－｜－－－－－－－｜－－－－－－－｜－－－－－－－｜－－－－－－－  
            ｜              ｜              ｜              ｜  
            ｜              ｜              ｜              ｜  
            ｜              ｜              ｜              ｜  
    （政府名）            政府  
    －－－－－－－－－－－－－－证明：  
    签名人      （姓名）  
       
     1．此船符合上述公约所附规则关于无线电报及雷达的规定：  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                                            ｜  规则要求  ｜  实际情况  
－－－－－－－－－－－－－－－－－－－－－－｜－－－－－－｜－－－－－－  
报务员守听小时数                            ｜    …      ｜      …  
报务员人数                                  ｜    …      ｜      …  
是否装有自动报警器                          ｜    …      ｜      …  
是否装有主用设备                            ｜    …      ｜      …  
是否装有应急设备                            ｜    …      ｜      …  
主发信机与应急发信机在电路上为分开的或连通的｜    …      ｜      …  
是否装有无线电测向仪                        ｜    …      ｜      …  
是否装有搜索无线电话遇险频率的无线电设备    ｜    …      ｜      …  
是否装有雷达                                ｜    …      ｜      …  
       
     2．机动救生艇无线电报设备和（或）供救生艇筏用的手提式无线电设备（如设有时）的效用符合上述规则的规定。  
  
    本证书由        政府授权发给。本证书有效期限至        止。  
    19    年    月    日发于        。  
    以下由核发证书的主管机关签名或盖章。        （印）  
    若系签名应加注下列字句：  
    签名人声明，本人系由所述政府正式授权发给本证书。  
                                            （签名）  
注：除1952年、1965年和1974年国际海上人命安全公约生效的年份安放龙骨或处  
    于相应建造阶段的船舶，应填明实际日期外，其余只填年份即可。  
       
     货船无线电话安全证书格式  
  
                         货船无线电话安全证书  
    （公章）                                                （国名）  
    根据1974年国际海上人命安全公约规定发给  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
            ｜              ｜              ｜              ｜安放龙骨日期  
  船    名  ｜船舶编号或呼号｜  船  籍  港  ｜  总  吨  位  ｜  
            ｜              ｜              ｜              ｜  （见注）  
－－－－－－｜－－－－－－－｜－－－－－－－｜－－－－－－－｜－－－－－－－  
            ｜              ｜              ｜              ｜  
            ｜              ｜              ｜              ｜  
            ｜              ｜              ｜              ｜  
    （政府名）            政府  
    －－－－－－－－－－－－－－证明：  
    签名人      （姓名）  
       
     1．此船符合上述公约所附规则关于无线电话的规定：  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                                            ｜  规则要求  ｜  实际情况  
－－－－－－－－－－－－－－－－－－－－－－｜－－－－－－｜－－－－－－  
守听小时数                                  ｜    …      ｜      …  
话务员人数                                  ｜    …      ｜      …  
       
     2．供救生艇筏用的手提式无线电设备（如设有时）的效用符合上述规则的规定。  
  
    本证书由        政府授权发给。本证书有效期限至        止。  
    19    年    月    日发于        。  
    以下由核发证书的主管机关签名或盖章。        （印）  
    若系签名应加注以下字句：  
    签名人声明，本人系由所述政府正式授权发给本证书。  
                                            （签名）  
注：除1952年、1965年和1974年国际海上人命安全公约生效的年份安放龙骨或处  
    于相应建造阶段的船舶，应填明实际日期外，其余只填年份即可。  
       
     免除证书格式  
  
                               免除证书  
    （公章）                                                （国名）  
    根据1974年国际海上人命安全公约规定发给  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
            ｜              ｜              ｜  
  船    名  ｜船舶编号或呼号｜  船  籍  港  ｜  总  吨  位  
            ｜              ｜              ｜  
－－－－－－｜－－－－－－－｜－－－－－－－｜－－－－－－－  
            ｜              ｜              ｜  
            ｜              ｜              ｜  
            ｜              ｜              ｜  
    （政府名）            政府  
    －－－－－－－－－－－－－－证明：  
    签名人      （姓名）  
    此船根据上述公约所附规则第＿＿章第＿＿条的规定，准予  
在＿＿至＿＿航线上免除公约①＿＿＿＿＿＿＿＿＿＿的要求。  
 ①此处填写引自规则何章何条何款。  
   此处填  
    写许可｝  
    免除的  
    条件。  
    本证书由        政府授权发给。本证书有效期限至        止。  
    以下由核发证书的主管机关签名盖章。  
    若系签名应加注以下字句：                  （印）  
    签名人声明，本人系由所述政府正式授权发给本证书。  
                                            （签名）  
       
     核能客船安全证书格式  
  
                           核能客船安全证书  
    （公章）                                                （国名）  
    根据1974年国际海上人命安全公约规定发给  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
            ｜  船舶编号  ｜          ｜          ｜规则第三章第二十七条  ｜安放龙骨  
  船    名  ｜            ｜  船籍港  ｜  总吨位  ｜三款（七）项所特准航程｜日    期  
            ｜  或呼号    ｜          ｜          ｜的详细说明（如有时）  ｜（见注）  
－－－－－－｜－－－－－－｜－－－－－｜－－－－－｜－－－－－－－－－－－｜－－－－  
            ｜            ｜          ｜          ｜                      ｜  
            ｜            ｜          ｜          ｜                      ｜  
    （政府名）            政府  
    －－－－－－－－－－－－－证明：  
    签名人      （姓名）  
       
     1．此船业经依照上述公约的规定进行了相应的检验。   
  
     2．此船为核能船，符合本公约第八章的一切要求，并与所认可的此船安全鉴定书相一致。   
  
     3．检验查明，此船符合上述公约所附规则关于下列各项的要求：   
  
     1）船舶结构、主辅锅炉及其他受压容器与机器；   
  
     2）水密分舱的布置与细节；   
  
     3）下列分舱载重线：   
  
     4．救生设备仅供总人数＿＿人用，计有：   
  
     救生艇＿＿艘（包括机动救生艇＿＿艘）能载＿＿人，及装有无线电报设备及探照灯的机动救生艇＿＿艘（包括于上述救生艇总数内）以及仅装有探照灯的机动救生艇＿＿艘（也包括于上述救生艇总数内），共需执证救生艇员＿＿人；   
  
     需设认可降落装置的救生筏＿＿只，能载＿＿人；  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
勘定并勘划于船中两舷的分舱｜                    ｜适用于载客处所包括下列  
                          ｜    干        舷    ｜  
载重线（第二章甲第十一条）｜                    ｜客货交替使用处所  
－－－－－－－－－－－－－｜－－－－－－－－－－｜－－－－－－－－－－－－  
            Ｃ·1        ｜        …          ｜        …  
            Ｃ·2        ｜        …          ｜        …  
            Ｃ·3        ｜        …          ｜        …  
       
     不需设认可降落装置的救生筏＿＿只，能载＿＿人；   
  
     救生浮具＿＿只，能浮起＿＿人；   
  
     救生圈＿＿只；   
  
     救生衣＿＿件。   
  
     5．各救生艇与救生筏已按规则的规定配置属具。   
  
     6．此船按规则的规定备有抛绳设备和供救生艇筏用的手提式无线电设备。   
  
     7．此船符合规则关于无线电报设备的要求，计有：  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                                            ｜  规则要求  ｜  实际情况  
－－－－－－－－－－－－－－－－－－－－－－｜－－－－－－｜－－－－－－  
报务员守听小时数                            ｜    …      ｜      …  
报务员人数                                  ｜    …      ｜      …  
是否装有自动报警器                          ｜    …      ｜      …  
是否装有主用设备                            ｜    …      ｜      …  
是否装有应急设备                            ｜    …      ｜      …  
主发信机与应急发信机在电路上为分开的或连通的｜    …      ｜      …  
是否装有无线电测向仪                        ｜    …      ｜      …  
是否装有搜索无线电话遇险频率的无线电设备    ｜    …      ｜      …  
是否装有雷达                                ｜    …      ｜      …  
核准搭载的旅客人数                          ｜    …      ｜      …  
       
     8．机动救生艇的无线电报设备和（或）供救生艇筏用的手提式无线电设备（如设有时）的效用符合规则的规定。   
  
     9．此船符合规则关于探火及灭火设备、雷达、回声测深仪及电罗经的要求，并按规则及现行国际海上避碰规则的规定备有航行灯及号型、引航员软梯、以及发出音响信号及遇险信号的设备。   
  
     10．此船其他方面符合规则对其适用的各项要求。   
  
     本证书由 政府授权发给。本证书有效期限至 止。   
  
     19 年 月 日发于 。   
  
     以下由核发证书的主管机关签名或盖章。   
  
     （印）   
  
     若系签名应加注下列字句：   
  
     签名人声明，本人系由所述政府正式授权发给本证书。（签名）  
  
注：除1965年和1974年国际海上人命安全公约生效的年份安放龙骨或处于相应建  
       
     造阶段的船舶，应填明实际日期外，其余只填年份即可。   
  
     按公约规则第二章甲第一条二款（一）项或第二章乙第一条一款（一）项的   
  
     规定进行改建的船舶，应填明改建开工日期。   
  
     核能货船安全证书格式  
  
                           核能货船安全证书  
    （公章）                                                （国名）  
    根据1974年国际海上人命安全公约规定发给  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
            ｜              ｜              ｜              ｜安放龙骨日期  
  船    名  ｜船舶编号或呼号｜  船  籍  港  ｜  总  吨  位  ｜  
            ｜              ｜              ｜              ｜  （见注）  
－－－－－－｜－－－－－－－｜－－－－－－－｜－－－－－－－｜－－－－－－－  
            ｜              ｜              ｜              ｜  
            ｜              ｜              ｜              ｜  
            ｜              ｜              ｜              ｜  
    （政府名）            政府  
    －－－－－－－－－－－－－－证明：  
    签名人      （姓名）  
       
       
  
     1．此船业经依照上述公约的规定进行了相应的检验。   
  
     2．此船为核能船，符合本公约第八章的一切要求，并与所认可的此船安全鉴定书相一致。   
  
     3．检验查明此船满足公约第一章第十条关于船体、机器和设备的各项要求并符合第二章甲及第二章乙的有关要求。   
  
     4．救生设备仅供总人数＿＿人用，计有：   
  
     左舷救生艇＿＿艘，能载＿＿人；   
  
     右舷救生艇＿＿艘，能载＿＿人；   
  
     机动救生艇＿＿艘（包括于上述救生艇总数内），包括设有无线电设备及探照灯的机动救生艇＿＿艘，以及仅设有探照灯的机动救生艇＿＿艘；   
  
     需设认可降落装置的救生筏＿＿只，能载＿＿人；   
  
     不需设认可降落装置的救生筏＿＿只，能载＿＿人；   
  
     救生圈＿＿只；   
  
     救生衣＿＿件。  
  
－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－－  
                                            ｜  规则要求  ｜  实际情况  
－－－－－－－－－－－－－－－－－－－－－－｜－－－－－－｜－－－－－－  
报务员守听小时数                            ｜    …      ｜      …  
报务员人数                                  ｜    …      ｜      …  
是否装有自动报警器                          ｜    …      ｜      …  
是否装有主用设备                            ｜    …      ｜      …  
是否装有应急设备                            ｜    …      ｜      …  
主发信机与应急发信机在电路上为分开的或连通的｜    …      ｜      …  
是否装有无线电测向仪                        ｜    …      ｜      …  
是否装有搜索无线电话遇险频率的无线电设备    ｜    …      ｜      …  
是否装有雷达                                ｜    …      ｜      …  
       
     5．各救生艇和救生筏已按公约所附规则的规定配置属具。   
  
     6．此船按规则的规定备有抛绳设备和供救生艇筏用的手提式无线电设备。   
  
     7．此船符合规则关于无线电报设备的要求，计有：   
  
     8．机动救生艇的无线电报设备和（或）供救生艇筏用的手提式无线电设备（如设有时）的效用符合规则的规定。   
  
     9．检查证明此船符合上述公约关于灭火设备、雷达、回声测深仪及电罗经的要求，并按规则及现行国际海上避碰规则的规定备有航行灯及号型、引航员软梯、以及发出音响信号及遇险信号的设备。   
  
     10．此船其他方面符合规则对其适用的各项要求。  
  
    本证书由        政府授权发给，本证书有效期限至        止。  
    19    年    月    日发于        。  
    以下由核发证书的主管机关签名或盖章。  
                                            （印）  
    若系签名应加注下列字句：  
    签名人声明，本人系由所述政府正式授权发给本证书。  
                                            （签名）  
    注：除1965年和1974年国际海上人命安全公约生效的年份安放龙骨或处于相应建  
        造阶段的船舶，应填明实际日期外，其余只填年份即可。

INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974  
  
  
TABLEOFCONTENTS  
  
ARTICLESOFTHEINTERNATIONALCONVENTIONFORTHESAFETYOFLIFEATSEA,  
1974  
ANNEX  
CHAPTERIGENERALPROVISIONS  
PARTAAPPLICATION,DEFINITIONS,ETC.  
1Application  
2Definitions  
3Exceptions  
4Exemptions  
5Equivalents  
PARTBSURVEYSANDCERTIFICATES  
6InspectionandSurvey  
7SurveysofPassengerShips  
8SurveysofLife-savingAppliancesandotherEquipmentofcargoships  
9SurveysofRadioandRadarInstallationsofCargoShips  
10SurveysofHull,MachineryandEquipmentofCargoShips  
11MaintenanceofConditionsafterSurvey  
12IssueofCertificates  
13IssueofCertificatesbyanotherGovernment  
14DurationofCertificates  
15FormofCertificates  
16PostingupofCertificates  
17AcceptanceofCertificates  
18QualificationofCertificates  
19Control  
20Privileges  
PARTCCASUALTIES  
21Casualties  
CHAPTERII-1CONSTRUCTION-SUBDIVISIONANDSTABILITY,MACHINERYAND  
ELECTRICALINSTALLATIONS  
PARTAGENERAL  
1Application  
2Definitions  
PARTBSUBDIVISIONANDSTABILITY  
3FloodableLength  
4Permeability  
5PermissibleLengthofCompartments  
6SpecialRulesconcerningSubdivision  
7StabilityofShipsinDamagedCondition  
8Ballasting  
9PeakandMachinerySpaceBulkheads,ShaftTunnels,etc.  
10DoubleBottoms  
11Assigning,MarkingandRecordingofSubdivisionLoadlines  
12ConstructionandInitialTestingofWatertightBulkheadsetc.  
13OpeningsinwatertightBulkheads  
14OpeningsintheShellPlatingbelowtheMarginLine  
15ConstructionandInitialTestsofWatertightDoors,Sidescuttles,  
etc.  
16ConstructionandInitialTestsofWatertightDeck,Trunks,etc.  
17WatertightIntegrityabovetheMarginLine  
18BilgePumpingArrangementsinPassengerShips  
19StabilityInformationforPassengerShipsandCargoShips  
20DamageControlPlans  
21Marking,PeriodicalOperationandInspectionofWatertightDoors,  
etc.  
22EntriesinLog  
PARTCMACHINERYANDELECTRICALINSTALLATIONS  
23General  
24MainSourceofElectricalPowerinPassengerShips  
25EmergencySourceofElectricalPowerinPassengerShips  
26EmergencySourceofElectricalPowerinCargoships  
27PrecautionsagainstShock,FireandotherHazardsofElectrical  
Origin  
28MeansofGoingAstern  
29SteeringGear  
30ElectricandElectrohydraulicSteeringGear  
31LocationofEmergencyInstallationsinPassengerShips  
32CommunicationbetweenBridgeandEngineRoom  
CHAPTERII-2CONSTRUCTION-FIREPROTECTION,FIREDETECTIONANDFIRE  
EXTINCTION  
PARTAGENERAL  
1Application  
2BasicPrinciples  
3Definitions  
4FireControlPlans  
5FirePumps,FireMains,HydrantsandHoses  
6MiscellaneousItems  
7FireExtinguishers  
8FixedGasFire-ExtinguishingSystems  
9FixedFrothFire-ExtinguishingSystemsinMachinerySpaces  
10FixedHighExpansionFrothFire-ExtinguishingSystemsinMachinery  
Spaces  
11FixedPressureWater-sprayingFire-ExtinguishingSystemsin  
MachinerySpaces  
12AutomaticSprinklerandFireAlarmandFireDetectionSystems  
13AutomaticFireAlarmandfireDetectionSystems  
14Fireman\'sOutfit  
15ReadyAvailabilityofFire-ExtinguishingAppliances  
16AcceptanceofSubstitutes  
PARTBFIRESAFETYMEASURESFORPASSENGERSHIPSCARRYINGMORETHAN36  
PASSENGERS  
17Structure  
18MainVerticalZonesandHorizontalZones  
19BulkheadswithinaMainVerticalZone  
20FireIntegrityofBulkheadsandDecks  
21MeansofEscape  
22ProtectionofStairwaysandLiftsinAccommodationandService  
Spaces  
23Openingsin"A"ClassDivisions  
24Openingsin"B"ClassDivisions  
25VentilationSystems  
26WindowsandSidescuttles  
27RestrictionofCombustibleMaterials  
28MiscellaneousItems  
29AutomaticSprinklerandFireAlarmandFireDetectionSystemsor  
AutomaticFireAlarmandFireDetectionSystems  
30ProtectionofSpecialCategorySpaces  
31ProtectionofCargoSpacesotherthanSpecialCategorySpaces  
intendedfortheCarriageofMotorVehicleswithFuelintheirTanksfor  
theirownPropulsion  
32MaintenanceofFirePatrols,etc.,andProvisionfor  
Fire-ExtinguishingEquipment  
33ArrangementsforOilFuelLubricatingOilandotherInflammable  
oils  
34SpecialArrangementsinMachinerySpaces  
PARTCFIRESAFETYMEASURESFORPASSENGERSHIPSCARRYINGNOTMORETHAN  
36PASSENGERS  
35Structure  
36MainVerticalZones  
37Openingsin"A"ClassDivisions  
38FireIntegrityof"A"ClassDivisions  
39SeparationofAccommodationSpacesfromMachinery,Cargoand  
ServiceSpaces  
40ProtectionofAccommodationandServiceSpaces  
41DeckCoverings  
42ProtectionofStairwaysandLiftsinAccommodationandService  
Spaces  
43ProtectionofControlStationsandStore-rooms  
44WindowsandSidescuttles  
45Ventilationsystems  
46DetailsofConstruction  
47FireDetectionSystemsandFire-ExtinguishingEquipment  
48MeansofEscape  
49OilFuelusedforInternalCombustionEngines  
50SpecialArrangementsinMachinerySpaces  
PARTDFIRESAFETYMEASURESFORCARGOSHIPS  
51GeneralRequirementsforCargoShipsof4000tonsGrossTonnageand  
UpwardsotherthanTankersCoveredbyPartEofthisChapter  
52Fire-ExtinguishingSystemsandEquipment  
53MeansofEscape  
54SpecialArrangementsinMachinerySpaces  
PARTEFIRESAFETYMEASURESFORTANKERS  
55Application  
56LocationandSeparationofSpaces  
57Construction  
58Ventilation  
59MeansofEscape  
60CargoTankProtection  
61FixedDeckFrothSystem  
62InertGasSystem  
63CargoPumpRoom  
64HoseNozzles  
PARTFSPECIALFIRESAFETYMEASURESFOREXISTINGPASSENGERSHIPS  
65Application  
66Structure  
67MainVerticalZones  
68OpeningsinMainVerticalZoneBulkheads  
69SeparationofAccommodationSpacesfromMachinery,Cargoand  
ServiceSpaces  
70ApplicationrelativetoMethodI,II,andIII  
71ProtectionofVerticalStairways  
72ProtectionofLifts(PassengerandService),VerticalTrunksfor  
LightandAir,etc.  
73ProtectionofControlStations  
74ProtectionofStore-rooms,etc.  
75WindowsandSidescuttles  
76VentilationSystems  
77MiscellaneousItems  
78CinematographFilm  
79Plans  
80Pumps,FireMainSystems,HydrantsandHoses  
81FireDetectionandExtinctionRequirements  
82ReadyAvailabilityofFire-FightingAppliances  
83MeansofEscape  
84EmergencySourceofElectricalPower  
85PracticeMustersandDrills  
CHAPTERIIILIFE-SAVINGAPPLIANCE,ETC.  
1Application  
PARTAGENERAL  
2Definitions  
3exemptions  
4ReadyAvailabilityofLifeboats,LiferaftsandBuoyantApparatus  
5ConstructionofLifeboats  
6CubicCapacityofLifeboats  
7CarryingCapacityofLifeboats  
8NumberofMotorLifeboatstobeCarried  
9SpecificationofMotorLifeboats  
10SpecificationofMechanicallyPropelledLifeboatsotherthanMotor  
Lifeboats  
11EquipmentofLifeboats  
12SecurityofLifeboatEquipment  
13PortableRadioApparatusforSurvivalCraft  
14RadioApparatusandSearchlightsinMotorLifeboats  
15RequirementsforInflatableLiferafts  
16RequirementsforRigidLiferafts  
17EquipmentofInflatableandRigidLiferafts  
18TrainingintheUseofLiferafts  
19EmbarkationintoLifeboatsandLiferafts  
20MarkingofLifeboats,LiferaftsandBuoyantApparatus  
21SpecificationofaLifebuoy  
22Life-jackets  
23Line-throwingAppliances  
24Ships\'DistressSignals  
25MusterListandEmergencyProcedure  
26PracticeMustersandDrills  
PARTBPASSENGERSHIPSONLY  
27Lifeboats,LiferaftsandBuoyantApparatus  
28TablerelatingtoDavitsandLifeboatCapacityforShipsonShort  
InternationalVoyages  
29StowageandHandlingofLifeboats,LiferaftsandBuoyantApparatus  
30LightingforDecks,Lifeboats,Liferafts,etc.  
31ManningofLifeboatsandLiferafts  
32CertificatedLifeboatman  
33BuoyantApparatus  
34NumberofLifebuoystobeProvided  
PARTCCARGOSHIPSONLY  
35NumberandCapacityofLifeboatsandLiferafts  
36DavitsandLaunchingArrangements  
37NumberofLifebuoystobeProvided  
38EmergencyLighting  
CHAPTERIVRADIOTELEGRAPHYANDRADIOTELEPHONY  
PARTAAPPLICATIONANDDEFINITION  
1Application  
2TermsandDefinitions  
3RadiotelegraphStation  
4RadiotelephoneStation  
5ExemptionsformRegulations3and4  
PARTBWATCHES  
6Watches-Radiotelegraph  
7Watches-Radiotelephone  
8Watches-VHFRadiotelephone  
PARTCTECHNICALREQUIREMENTS  
9RadiotelegraphStations  
10RadiotelegraphInstallations  
11RadiotelegraphAutoAlarms  
12Direction-Finders  
13RadiotelegraphInstallationforFittinginMotorLifeboats  
14PortableRadioApparatusforSurvivalCraft  
15RadiotelephoneStations  
16RadiotelephoneInstallations  
17VHFRadiotelephoneStations  
18RadiotelephoneAutoalarms  
PARTDRADIOLOGS  
19RadioLogs  
CHAPTERVSAFETYOFNAVIGATION  
1Application  
2DangerMassages  
3InformationrequiredinDangerMessages  
4MeteorologicalServices  
5IcePatrolService  
6IcePatrolManagementandCost  
7SpeedNearIce  
8Routing  
9MisuseofDistressSignals  
10DistressMessages-ObligationsandProcedures  
11SignallingLamps  
12ShipborneNavigationalEquipment  
13Manning  
14AidstoNavigation  
15SearchandRescue  
16Life-Savingsignals  
17PilotLaddersandMechanicalPilotHoists  
18VHFRadiotelephoneStations  
19UseoftheAutomaticPilot  
20NauticalPublications  
21InternationalCodeofSignals  
CHAPTERVICARRIAGEOFGRAIN  
PARTAGENERALPROVISIONS  
1application  
2Definitions  
3TrimmingofGrain  
4IntactStabilityRequirements  
5LongitudinalDivisionsandSaucers  
6Securing  
7FeedersandTrunks  
8CombinationArrangements  
9ApplicationofPartsBandC  
10Authorization  
11GrainLoadingInformation  
12Equivalents  
13ExemptionsforCertainVoyages  
PARTBCALCULATIONOFASSUMEDHEELINGMOMENTS  
SECTIONI-DESCRIPTIONOFTHEASSUMEDVOIDSANDMETHOD  
OFCALCULATINGINTACTSTABILITY  
SECTIONII-ASSUMEDVOLUMETRICHEELINGMOMENTOF  
AFILLEDCOMPARTMENT  
SECTIONIII-ASSUMEDVOLUMETRICHEELINGMOMENTOF  
FEEDERSANDTRUNKS  
SECTIONIV-ASSUMEDVOLUMETRICHEELINGMOMENTOF  
PARTLYFILLEDCOMPARTMENTS  
SECTIONV-ALTERNATIVELOADINGARRANGEMENTSFOR  
EXISTINGSHIPS  
PARTCGRAINFITTINGSANDSECURING  
SECTIONI-STRENGTHOFGRAINFITTINGS  
SECTIONII-SECURINGOFPARTLYFILLEDCOMPARTMENTS  
CHAPTERVIICARRIAGEOFDANGEROUSGOODS  
1Application  
2Classification  
3Packing  
4MarkingandLabelling  
5Documents  
6StowageRequirements  
7ExplosivesinPassengerShips  
CHAPTERVIIINUCLEARSHIPS  
1Application  
2ApplicationofotherChapters  
3Exemptions  
4ApprovalofReactorInstallation  
5SuitabilityofReactorInstallationforServiceonBoardShip  
6RadiationSafety  
7SafetyAssessment  
8OperatingManual  
9Surveys  
10Certificates  
11Specialcontrol  
12Casualties  
APPENDIXFORMSOFCERTIFICATES  
INTERNATIONALCONVENTIONFORTHESAFETYOFLIFEATSEA,1974  
TheContractingGovernments,  
Beingdesirousofpromotingsafetyoflifeatseabyestablishingin  
commonagreementuniformprinciplesandrulesdirectedthereto,  
Consideringthatthisendmaybestbeachievedbytheconclusionofa  
ConventiontoreplacetheInternationalConventionfortheSafetyofLife  
atSea,1960,takingaccountofdevelopmentssincethatConventionwas  
concluded,  
Haveagreedasfollows:  
  
ArticleIGeneralObligationsundertheConvention  
  
(a)TheContractingGovernmentsundertaketogiveeffecttothe  
provisionsofthepresentConventionandtheAnnexthereto,whichshall  
constituteanintegralpartofthepresentConvention.Everyreferenceto  
thepresentConventionconstitutesatthesametimeareferencetothe  
Annex.  
(b)TheContractingGovernmentsundertaketopromulgatealllaws,  
decrees,ordersandregulationsandtotakeallotherstepswhichmaybe  
necessarytogivethepresentConventionfullandcompleteeffect,soas  
toensurethat,fromthepointofviewofsafetyoflife,ashipisfit  
fortheserviceforwhichitisintended.  
  
ArticleIIApplication  
  
ThepresentConventionshallapplytoshipsentitledtoflytheflag  
ofStatestheGovernmentsofwhichareContractingGovernments.  
  
ArticleIIILaws,Regulations  
  
TheContractingGovernmentsundertaketocommunicatetoanddeposit  
withtheSecretary-GeneraloftheInter-GovernmentalMaritimeConsultative  
Organization(hereinafterreferredtoas"theOrganization"):  
(a)alistofnon-governmentalagencieswhichareauthorizedtoactin  
theirbehalfintheadministrationofmeasuresforsafetyoflifeatsea  
forcirculationtotheContractingGovernmentsfortheinformationof  
theirofficers;  
(b)thetextoflaws,decrees,ordersandregulationswhichshallhave  
beenpromulgatedonthevariousmatterswithinthescopeofthepresent  
Convention;  
(c)asufficientnumberofspecimensoftheirCertificatesissued  
undertheprovisionsofthepresentConventionforcirculationtothe  
ContractingGovernmentsfortheinformationoftheirofficers.  
  
ArticleIVCasesofForceMajeure  
  
(a)Aship,whichisnotsubjecttotheprovisionsofthepresent  
Conventionatthetimeofitsdepartureonanyvoyage,shallnotbecome  
subjecttotheprovisionsofthepresentConventiononaccountofany  
deviationfromitsintendedvoyageduetostressofweatheroranyother  
causeofforcemajeure.  
(b)Personswhoareonboardashipbyreasonofforcemajeureorin  
consequenceoftheobligationlaiduponthemastertocarryshipwreckedor  
otherpersonsshallnotbetakenintoaccountforthepurposeof  
ascertainingtheapplicationtoashipofanyprovisionsofthepresent  
Convention.  
  
ArticleVCarriageofPersonsinEmergency  
  
(a)Forthepurposeofevacuatingpersonsinordertoavoidathreat  
tothesecurityoftheirlivesaContractingGovernmentmaypermitthe  
carriageofalargernumberofpersonsinitsshipsthanisotherwise  
permissibleunderthepresentConvention.  
(b)SuchpermissionshallnotdepriveothercontractingGovernmentsof  
anyrightofcontrolunderthepresentConventionoversuchshipswhich  
comewithintheirports.  
(c)Noticeofanysuchpermission,togetherwithastatementofthe  
circumstances,shallbesenttotheSecretary-GeneraloftheOrganization  
bytheContractingGovernmentgrantingsuchpermission.  
  
ArticleVIPriorTreatiesandConventions  
  
(a)AsbetweentheContractingGovernments,thepresentConvention  
replacesandabrogatestheInternationalConventionfortheSafetyofLife  
atSeawhichwassignedinLondonon17June1960.  
(b)Allothertreaties,conventionsandarrangementsrelatingto  
safetyoflifeatsea,ormattersappertainingthereto,atpresentin  
forcebetweenGovernmentspartiestothepresentconventionshallcontinue  
tohavefullandcompleteeffectduringthetermsthereofasregards:  
(i)shipstowhichthepresentConventiondoesnotapply;  
(ii)shipstowhichthepresentConventionapplies,inrespectof  
mattersforwhichithasnotexpresslyprovided.  
(c)Totheextent,however,thatsuchtreaties,conventionsor  
arrangementsconflictwiththeprovisionsofthepresentConvention,the  
provisionsofthepresentConventionshallprevail.  
(d)Allmatterswhicharenotexpresslyprovidedforinthepresent  
ConventionremainsubjecttothelegislationoftheContracting  
Governments.  
  
ArticleVIISpecialRulesdrawnupbyAgreement  
  
WheninaccordancewiththepresentConventionspecialrulesaredrawn  
upbyagreementbetweenallorsomeoftheContractingGovernments,such  
rulesshallbecommunicatedtotheSecretary-GeneraloftheOrganization  
forcirculationtoallContractingGovernments.  
  
ArticleVIIIAmendments  
  
(a)ThepresentConventionmaybeamendedbyeitheroftheprocedures  
specifiedinthefollowingparagraphs.  
(b)AmendmentsafterconsiderationwithintheOrganization:  
(i)AnyamendmentproposedbyaContractingGovernmentshallbe  
submittedtotheSecretary-GeneraloftheOrganization,whoshallthen  
circulateittoallMembersoftheOrganizationandallContracting  
Governmentsatleastsixmonthspriortoitsconsideration.  
(ii)Anyamendmentproposedandcirculatedasaboveshallbe  
referredtotheMaritimeSafetyCommitteeoftheOrganizationfor  
consideration.  
(iii)ContractingGovernmentsofStates,whetherornotMembersof  
theOrganization,shallbeentitledtoparticipateintheproceedingsof  
theMaritimeSafetyCommitteefortheconsiderationandadoptionof  
amendments.  
(iv)Amendmentsshallbeadoptedbyatwo-thirdsmajorityofthe  
ContractingGovernmentspresentandvotingintheMaritimeSafety  
Committeeexpandedasprovidedforinsub-paragraph(iii)ofthis  
paragraph(hereinafterreferredtoas"theexpandedMaritimeSafety  
Committee")onconditionthatatleastone-thirdoftheContracting  
Governmentsshallbepresentatthetimeofvoting.  
(v)Amendmentsadoptedinaccordancewithsub-paragraph(iv)of  
thisparagraphshallbecommunicatedbytheSecretary-Generalofthe  
OrganizationtoallContractingGovernmentsforacceptance.  
(vi)(1)AnamendmenttoanArticleoftheConventionorto  
ChapterIoftheAnnexshallbedeemedtohavebeenacceptedonthedate  
onwhichitisacceptedbytwo-thirdsoftheContractingGovernments.  
(2)AnamendmenttotheAnnexotherthanChapterIshallbe  
deemedtohavebeenaccepted:  
(aa)attheendoftwoyearsfromthedateonwhichitis  
communicatedtoContractingGovernmentsforacceptance;or  
(bb)attheendofadifferentperiod,whichshallnotbe  
lessthanoneyear,ifsodeterminedatthetimeofitsadoptionbya  
two-thirdsmajorityoftheContractingGovernmentspresentandvotingin  
theexpandedMaritimeSafetyCommittee.  
However,ifwithinthespecifiedperiodeithermorethan  
one-thirdofContractingGovernments,orContractingGovernmentsthe  
combinedmerchantfleetsofwhichconstitutenotlessthan50percent,of  
thegrosstonnageoftheworld\'smerchantfleet,notifythe  
Secretary-GeneraloftheOrganizationthattheyobjecttotheamendment,  
itshallbedeemednottohavebeenaccepted.  
(vii)(1)AnamendmenttoanArticleoftheConventionorto  
ChapterIoftheAnnexshallenterintoforcewithrespecttothose  
ContractingGovernmentswhichhaveacceptedit,sixmonthsafterthedate  
onwhichitisdeemedtohavebeenaccepted,andwithrespecttoeach  
ContractingGovernmentwhichacceptsitafterthatdate,sixmonthsafter  
thedateofthatContractingGovernment\'sacceptance.  
(2)AnamendmenttotheAnnexotherthanChapterIshallenter  
intoforcewithrespecttoallContractingGovernments,exceptthosewhich  
haveobjectedtotheamendmentundersub-paragraph(vi)(2)ofthis  
paragraphandwhichhavenotwithdrawnsuchobjections,sixmonthsafter  
thedateonwhichitisdeemedtohavebeenaccepted.However,beforethe  
datesetforentryintoforce,anyContractingGovernmentmaygivenotice  
totheSecretary-GeneraloftheOrganizationthatitexemptsitselffrom  
givingeffecttothatamendmentforaperiodnotlongerthanoneyearfrom  
thedateofitsentryintoforce,orforsuchlongerperiodasmaybe  
determinedbyatwo-thirdsmajorityoftheContractingGovernmentspresent  
andvotingintheexpandedMaritimeSafetyCommitteeatthetimeofthe  
adoptionoftheamendment.  
(c)AmendmentbyaConference:  
(i)UpontherequestofaContractingGovernmentconcurredinby  
atleastone-thirdoftheContractingGovernments,theOrganizationshall  
conveneaConferenceofContractingGovernmentstoconsideramendmentsto  
thepresentConvention.  
(ii)EveryamendmentadoptedbysuchaConferencebyatwo-thirds  
majorityoftheContractingGovernmentspresentandvotingshallbe  
communicatedbytheSecretary-GeneraloftheOrganizationtoall  
ContractingGovernmentsforacceptance.  
(iii)UnlesstheConferencedecidesotherwise,theamendmentshall  
bedeemedtohavebeenacceptedandshallenterintoforceinaccordance  
withtheproceduresspecifiedinsub-paragraphs(b)(vi)and(b)(vii)  
respectivelyofthisArticle,providedthatreferencesinthese  
paragraphstotheexpandedMaritimeSafetyCommitteeshallbetakento  
meanreferencestotheConference.  
(d)(i)AContractingGovernmentwhichhasacceptedanamendmentto  
theAnnexwhichhasenteredintoforceshallnotbeobligedtoextendthe  
benefitofthepresentConventioninrespectofthecertificatesissuedto  
ashipentitledtoflytheflagofaStatetheGovernmentofwhich,  
pursuanttotheprovisionsofsubparagraph(b)(vi)(2)ofthisArticle,  
hasobjectedtotheamendmentandhasnotwithdrawnsuchanobjection,but  
onlytotheextentthatsuchcertificatesrelatetomatterscoveredbythe  
amendmentinquestion.  
(ii)AContractingGovernmentwhichhasacceptedanamendmentto  
theAnnexwhichhasenteredintoforceshallextendthebenefitofthe  
presentConventioninrespectofthecertificatesissuedtoaship  
entitledtoflytheflagofaStatetheGovernmentofwhich,pursuantto  
theprovisionsofsub-paragraph(b)(vii)(2)ofthisArticle,has  
notifiedtheSecretary-GeneraloftheOrganizationthatitexemptsitself  
fromgivingeffecttotheamendment.  
(e)Unlessexpresslyprovidedotherwise,anyamendmenttothepresent  
ConventionmadeunderthisArticle,whichrelatestothestructureofa  
ship,shallapplyonlytoshipsthekeelsofwhicharelaidorwhichare  
atasimilarstageofconstruction,onorafterthedateonwhichthe  
amendmententersintoforce.  
(f)Anydeclarationofacceptanceof,orobjectionto,anamendmentor  
anynoticegivenundersub-paragraph(b)(vii)(2)ofthisArticleshall  
besubmittedinwritingtotheSecretary-GeneraloftheOrganization,who  
shallinformallContractingGovernmentsofanysuchsubmissionandthe  
dateofitsreceipt.  
(g)TheSecretary-GeneraloftheOrganizationshallinformall  
ContractingGovernmentsofanyamendmentswhichenterintoforceunder  
thisArticle,togetherwiththedateonwhicheachsuchamendmententers  
intoforce.  
  
ArticleIXSignature,Ratification,Acceptance,ApprovalandAc-cession  
  
(a)ThepresentConventionshallremainopenforsignatureatthe  
HeadquartersoftheOrganizationfromNovember1,1974untilJuly1,1975  
andshallthereafterremainopenforaccession.Statesmaybecomeparties  
tothepresentConventionby:  
(i)signaturewithoutreservationastoratification,acceptance  
orapproval:or  
(ii)signaturesubjecttoratification,acceptanceorapproval,  
followedbyrectification,acceptanceorapproval;or  
(iii)accession.  
(b)Ratification,acceptance,approvaloraccessionshallbeeffected  
bythedepositofaninstrumenttothateffectwiththeSecretary-General  
oftheOrganization.  
(c)TheSecretary-GeneraloftheOrganizationshallinformthe  
GovernmentsofallStateswhichhavesignedthepresentConventionor  
accededtoitofanysignatureorofthedepositofanyinstrumentof  
ratification,acceptance,approvaloraccessionandthedateofits  
deposit.  
  
ArticleXEntryintoForce  
  
(a)ThepresentConventionshallenterintoforce12monthsafterthe  
dateonwhichnotlessthan25States,thecombinedmerchantfleetsof  
whichconstitutenotlessthan50percent,ofthegrosstonnageofthe  
world\'smerchantshipping,havebecomepartiestoitinaccordancewith  
ArticleIX.  
(b)Anyinstrumentofratification,acceptance,approvaloraccession  
depositedafterthedateonwhichthepresentConventionentersintoforce  
shalltakeeffectthreemonthsafterthedateofdeposit.  
(c)AfterthedateonwhichanamendmenttothepresentConventionis  
deemedtohavebeenacceptedunderArticleVIII,anyinstrumentof  
rectification,acceptance,approvaloraccessiondepositedshallapplyto  
theConventionasamended.  
  
ArticleXIDenunciation  
  
(a)ThepresentConventionmaybedenouncedbyanyContracting  
Governmentatanytimeaftertheexpiryoffiveyearsfromthedateon  
whichtheConventionentersintoforceforthatGovernment.  
(b)Denunciationshallbeeffectedbythedepositofaninstrumentof  
denunciationwiththeSecretary-GeneraloftheOrganizationwhoshall  
notifyalltheotherContractingGovernmentsofanyinstrumentof  
denunciationreceivedandofthedateofitsreceiptaswellasthedate  
onwhichsuchdenunciationtakeseffect.  
(c)Adenunciationshalltakeeffectoneyear,orsuchlongerperiod  
asmaybespecifiedintheinstrumentofdenunciation,afteritsreceipt  
bytheSecretary-GeneraloftheOrganization.  
  
ArticleXIIDepositandRegistration  
  
(a)ThepresentConventionshallbedepositedwiththe  
Secretary-GeneraloftheOrganizationwhoshalltransmitcertifiedtrue  
copiesthereoftotheGovernmentsofallStateswhichhavesignedthe  
presentConventionoraccededtoit.  
(b)AssoonasthepresentConventionentersintoforce,thetext  
shallbetransmittedbytheSecretary-GeneraloftheOrganizationtothe  
Secretary-GeneraloftheUnitedNationsforregistrationandpublication,  
inaccordancewithArticle102oftheCharteroftheUnitedNations.  
  
ArticleXIIILanguages  
  
ThepresentConventionisestablishedinasinglecopyintheChinese,  
English,French,RussianandSpanishlanguages,eachtextbeingequally  
authentic.OfficialtranslationsintheArabic,GermanandItalian  
languagesshallbepreparedanddepositedwiththesignedoriginal.  
INWITNESSWHEREOFtheundersigned①,beingdulyauthorizedbytheir  
respectiveGovernmentsforthatpurpose,havesignedthepresent  
Convention.  
[①Signatureomitted.]  
DONEATLONDONthisfirstdayofNovemberonethousandninehundred  
andseventy-four.  
  
ANNEX  
  
  
  
CHAPTERIGENERALPROVISIONS  
  
  
  
PARTAAPPLICATION,DEFINITIONS,ETC.  
  
  
  
Regulation1:Application  
  
(a)Unlessexpresslyprovidedotherwise,thepresentRegulationsapply  
onlytoshipsengagedoninternationalvoyages.  
(b)TheclassesofshipstowhicheachChapterappliesaremore  
preciselydefined,andtheextentoftheapplicationisshown,ineach  
Chapter.  
  
Regulation2:Definitions  
  
ForthepurposeofthepresentRegulations,unlessexpresslyprovided  
otherwise:  
(a)"Regulations"meanstheRegulationscontainedintheAnnextothe  
presentConvention.  
(b)"Administration"meanstheGovernmentoftheStatewhoseflagthe  
shipisentitledtofly.  
(c)"Approved"meansapprovedbytheAdministration.  
(d)"Internationalvoyage"meansavoyagefromacountrytowhichthe  
presentConventionappliestoaportoutsidesuchcountry,orconversely.  
(e)Apassengeriseverypersonotherthan:  
(i)themasterandthemembersofthecreworotherpersons  
employedorengagedinanycapacityonboardashiponthebusinessof  
thatship;and  
(ii)achildunderoneyearofage.  
(f)Apassengershipisashipwhichcarriesmorethan12passengers.  
(g)Acargoshipisanyshipwhichisnotapassengership.  
(h)Atankerisacargoshipconstructedoradaptedforthecarriage  
inbulkofliquidcargoesofaninflammable\*nature.  
[\*"Inflammable"hasthesamemeaningas"flammable".]  
(i)Afishingvesselisavesselusedforcatchingfish,whales,  
seals,walrusorotherlivingresourcesofthesea.  
(j)Anuclearshipisashipprovidedwithanuclearpowerplant.  
(k)"Newship"meansashipthekeelofwhichislaidorwhichisata  
similarstageofconstructiononorafterthedateofcomingintoforceof  
thepresentConvention.  
(l)"Existingship"meansashipwhichisnotanewship.  
(m)Amileis1,852metresor6,080feet.  
  
Regulation3:Exceptions  
  
(a)ThepresentRegulations,unlessexpresslyprovidedotherwise,do  
notapplyto:  
(i)Shipsofwarandtroopships.  
(ii)Cargoshipsoflessthan500tonsgrosstonnage.  
(iii)Shipsnotpropelledbymechanicalmeans.  
(iv)Woodenshipsofprimitivebuild.  
(v)Pleasureyachtsnotengagedintrade.  
(vi)Fishingvessels.  
(b)ExceptasexpresslyprovidedinChapterV,nothinghereinshall  
applytoshipssolelynavigatingtheGreatLakesofNorthAmericaandThe  
RiverSt.LawrenceasfareastasastraightlinedrawnfromCapdes  
RosierstoWestPoint,AnticostiIslandand,onthenorthsideof  
AnticostiIsland,the63rdMeridian.  
  
Regulation4:Exemptions  
  
(a)Ashipwhichisnotnormallyengagedoninternationalvoyagesbut  
which,inexceptionalcircumstances,isrequiredtoundertakeasingle  
internationalvoyagemaybeexemptedbytheAdministrationfromanyofthe  
requirementsofthepresentRegulationsprovidedthatitcomplieswith  
safetyrequirementswhichareadequateintheopinionofthe  
Administrationforthevoyagewhichistobeundertakenbytheship.  
(b)TheAdministrationmayexemptanyshipwhichembodiesfeaturesof  
anovelkindfromanyoftheprovisionsofChaptersII-1,II-2,IIIandIV  
oftheseRegulationtheapplicationofwhichmightseriouslyimpede  
researchintothedevelopmentofsuchfeaturesandtheirincorporationin  
shipsengagedoninternationalvoyages.Anysuchshipshall,however,  
complywithsafetyrequirementswhich,intheopinionofthat  
Administration,areadequatefortheserviceforwhichitisintendedand  
aresuchastoensuretheoverallsafetyoftheshipandwhichare  
acceptabletotheGovernmentsoftheStatestobevisitedbytheship.The  
Administrationwhichallowsanysuchexemptionshallcommunicatetothe  
Organizationparticularsofsameandthereasonsthereforwhichthe  
OrganizationshallcirculatetotheContractingGovernmentsfortheir  
information.  
  
Regulation5:Equivalents  
  
(a)WherethepresentRegulationsrequirethataparticularfitting,  
material,applianceorapparatus,ortypethereof,shallbefittedor  
carriedinaship,orthatanyparticularprovisionshallbemade,the  
Administrationmayallowanyotherfitting,material,applianceor  
apparatus,ortypethereof,tobefittedorcarried,oranyother  
provisiontobemadeinthatship,ifitissatisfiedbytrialthereofor  
otherwisethatsuchfitting,material,applianceorapparatus,ortype  
thereof,orprovision,isatleastaseffectiveasthatrequiredbythe  
presentRegulations.  
(b)AnyAdministrationwhichsoallows,insubstitution,afitting,  
material,applianceorapparatus,ortypethereof,orprovision,shall  
communicatetotheOrganizationparticularsthereoftogetherwithareport  
onanytrialsmadeandtheOrganizationshallcirculatesuchparticulars  
tootherContractingGovernmentsfortheinformationoftheirofficers.  
  
PARTBSURVEYSANDCERTIFICATES  
  
  
  
Regulation6:InspectionandSurvey  
  
Theinspectionandsurveyofships,sofarasregardstheenforcement  
oftheprovisionsofthepresentRegulationsandthegrantingof  
exemptionstherefrom,shallbecarriedoutbyofficersofthecountryin  
whichtheshipisregistered,providedthattheGovernmentofeachcountry  
mayentrusttheinspectionandsurveyeithertosurveyorsnominatedfor  
thepurposeortoorganizationsrecognizedbyit.Ineverycasethe  
Governmentconcernedfullyguaranteesthecompletenessandefficiencyof  
theinspectionandsurvey.  
  
Regulation7:SurveysofPassengerShips  
  
(a)Apassengershipshallbesubjectedtothesurveysspecified  
below:  
(i)Asurveybeforetheshipisputinservice.  
(ii)Aperiodicalsurveyonceevery12months.  
(iii)Additionalsurveys,asoccasionarises.  
(b)Thesurveysreferredtoaboveshallbecarriedoutasfollows:  
(i)Thesurveybeforetheshipisputinserviceshallincludea  
completeinspectionofitsstructure,machineryandequipment,including  
theoutsideoftheship\'sbottomandtheinsideandoutsideofthe  
boilers.Thissurveyshallbesuchastoensurethatthearrangements,  
material,andscantlingsofthestructure,boilersandotherpressure  
vesselsandtheirappurtenances,mainandauxiliarymachinery,electrical  
installation,radioinstallation,radiotelegraphinstallationsinmotor  
lifeboats,portableradioapparatusforsurvivalcraft,life-saving  
appliances,fireprotection,firedetectingandextinguishingappliances,  
radar,echo-soundingdevice,gyro-compass,pilotladders,mechanicalpilot  
hoistsandotherequipment,fullycomplywiththerequirementsofthe  
presentConvention,andofthelaws,decrees,ordersandregulations  
promulgatedasaresultthereofbytheAdministrationforshipsofthe  
serviceforwhichitisintended.Thesurveyshallalsobesuchasto  
ensurethattheworkmanshipofallpartsoftheshipanditsequipmentis  
inallrespectssatisfactory,andthattheshipisprovidedwiththe  
lights,shapes,meansofmakingsoundsignalsanddistresssignalsas  
requiredbytheprovisionsofthepresentConventionandtheInternational  
RegulationsforPreventingCollisionsatSeainforce.  
(ii)Theperiodicalsurveyshallincludeaninspectionofthe  
structure,boilersandotherpressurevessels,machineryandequipment,  
includingtheoutsideoftheship\'sbottom.Thesurveyshallbesuchasto  
ensurethattheship,asregardsthestructure,boilersandotherpressure  
vesselsandtheirappurtenances,mainandauxiliarymachinery,electrical  
installation,radioinstallation,radiotelegraphinstallationsinmotor  
lifeboats,portableradioapparatusforsurvivalcraft,life-saving  
appliances,fireprotection,firedetectingandextinguishingappliances,  
radar,echo-soundingdevice,gyro-compass,pilotladders,mechanical  
pilothoistsandotherequipment,isinsatisfactoryconditionandfitfor  
theserviceforwhichitisintended,andthatitcomplieswiththe  
requirementsofthepresentConvention,andofthelaws,decrees,orders  
andregulationspromulgatedasaresultthereofbytheAdministration.The  
lights,shapesandmeansofmakingsoundsignalsandthedistresssignals  
carriedbytheshipshallalsobesubjecttotheabove-mentionedsurvey  
forthepurposeofensuringthattheycomplywiththerequirementsofthe  
presentConventionandoftheInternationalRegulationsforPreventing  
CollisionsatSeainforce.  
(iii)Asurveyeithergeneralorpartial,accordingtothe  
circumstances,shallbemadeeverytimeanaccidentoccursoradefectis  
discoveredwhichaffectsthesafetyoftheshiportheefficiencyor  
completenessofitslife-savingappliancesorotherequipment,or  
wheneveranyimportantrepairsorrenewalsaremade.Thesurveyshallbe  
suchastoensurethatthenecessaryrepairsorrenewalshavebeen  
effectivelymade,thatthematerialandworkmanshipofsuchrepairsarein  
allrespectssatisfactory,andthattheshipcompliesinallrespectswith  
theprovisionsofthepresentConventionandoftheInternational  
RegulationsforPreventingCollisionsatSeainforce,andofthelaws,  
decrees,ordersandregulationspromulgatedasaresultthereofbythe  
Administration.  
(c)(i)Thelaws,decrees,ordersandregulationsreferredtoin  
paragraph(b)ofthisRegulationshallbeinallrespectssuchasto  
ensurethat,fromthepointofviewofsafetyoflife,theshipisfitfor  
theserviceforwhichitisintended.  
(ii)Theyshallamongotherthingsprescribetherequirementsto  
beobservedastotheinitialandsubsequenthydraulicorotheracceptable  
alternativeteststowhichthemainandauxiliaryboilers,connexions,  
steampipes,highpressurereceivers,andfueltanksforinternal  
combustionenginesaretobesubmittedincludingthetestprocedurestobe  
followedandtheintervalsbetweentwoconsecutivetests.  
  
Regulation8:SurveysofLife-SavingappliancesandotherEquip-ment  
  
Thelife-savingappliances,exceptaradiotelegraphinstallationina  
motorlifeboatoraportableradioapparatusforsurvivalcraft,the  
echo-soundingdevice,thegyro-compass,andthefire-extinguishing  
appliancesofcargoshipstowhichChaptersII-1,II-2,IIIandVapply  
shallbesubjecttoinitialandsubsequentsurveysasprovidedfor  
passengershipsinRegulation7ofthisChapterwiththesubstitutionof  
24monthsfor12monthsinsub-paragraph(a)(ii)ofthatRegulation.The  
firecontrolplansinnewshipsandthepilotladders,mechanicalpilot  
hoists,lights,shapesandmeansofmakingsoundsignalscarriedbynew  
andexistingshipsshallbeincludedinthesurveysforthepurposeof  
ensuringthattheycomplyfullywiththerequirementsofthepresent  
Conventionand,whereapplicable,theInternationalRegulationsfor  
PreventingCollisionsatSeainforce.  
  
Regulation9:SurveysofRadioandRadarInstallationsofCargoShips  
  
TheradioandradarinstallationsofcargoshipstowhichChaptersIV  
andVapplyandanyradiotelegraphinstallationinamotorlifeboator  
portableradioapparatusforsurvivalcraftwhichiscarriedincompliance  
withtherequirementsofChapterIIIshallbesubjecttoinitialand  
subsequentsurveysasprovidedforpassengershipsinRegulation7ofthis  
Chapter.  
  
Regulation10:SurveysofHull,MachineryandEquipmentofCargoShips  
  
Thehull,machineryandequipment(otherthanitemsinrespectof  
whichCargoShipSafetyEquipmentCertificates,CargoShipSafety  
RadiotelegraphyCertificatesorCargoShipSafetyRadiotelephony  
Certificatesareissued)ofacargoshipshallbesurveyedoncompletion  
andthereafterinsuchmannerandatsuchintervalsastheAdministration  
mayconsidernecessaryinordertoensurethattheirconditionisinall  
respectssatisfactory.Thesurveyshallbesuchastoensurethatthe  
arrangements,material,andscantlingsofthestructure,boilersand  
otherpressurevesselsandtheirappurtenances,mainandauxiliary  
machinery,electricalinstallationsandotherequipmentareinall  
respectssatisfactoryfortheserviceforwhichtheshipisintended.  
  
Regulation11:MaintenanceofConditionsafterSurvey  
  
AfteranysurveyoftheshipunderRegulations7,8,9or10ofthis  
Chapterhasbeencompleted,nochangeshallbemadeinthestructural  
arrangements,machinery,equipment,etc.,coveredbythesurvey,without  
thesanctionoftheAdministration.  
  
Regulation12:IssueofCertificates  
  
(a)(i)AcertificatecalledaPassengerShipSafetyCertificateshall  
beissuedafterinspectionandsurveytoapassengershipwhichcomplies  
withtherequirementsofChaptersII-1,II-2,IIIandIVandanyother  
relevantrequirementsofthepresentRegulations.  
(ii)AcertificatecalledaCargoShipSafetyConstruction  
Certificateshallbeissuedaftersurveytoacargoshipwhichsatisfies  
therequirementsforcargoshipsonsurveysetoutinRegulation10of  
thisChapterandcomplieswiththeapplicablerequirementsofChapters  
II-1andII-2otherthanthoserelatingtofire-extinguishingappliances  
andfirecontrolplans.  
(iii)AcertificatecalledaCargoShipSafetyEquipment  
Certificateshallbeissuedafterinspectiontoacargoshipwhich  
complieswhichtherelevantrequirementsofChaptersII-1,II-2andIII  
andanyotherrelevantrequirementsofthepresentRegulations.  
(iv)AcertificatecalledaCargoShipSafetyRadiotelegraphy  
Certificateshallbeissuedafterinspectiontoacargoship,fittedwith  
aradiotelegraphinstallation,whichcomplieswiththerequirementsof  
ChapterIVandanyotherrelevantrequirementsofthepresentRegulations.  
(v)AcertificatecalledaCargoShipSafetyRadiotelephony  
Certificateshallbeissuedafterinspectiontoacargoship,fittedwith  
aradiotelephoneinstallation,whichcomplieswhichtherequirementsof  
ChapterIVandanyotherrelevantrequirementsofthepresentRegulations.  
(vi)Whenanexemptionisgrantedtoashipunderandin  
accordancewiththeprovisionsofthepresentRegulations,acertificate  
calledanExemptionCertificateshallbeissuedinadditiontothe  
certificatesprescribedinthisparagraph.  
(vii)PassengerShipSafetyCertificates,CargoShipSafety  
ConstructionCertificates,CargoShipSafetyEquipmentCertificates,  
CargoShipSafetyRadiotelegraphyCertificates,CargoShipSafety  
RadiotelephonyCertificatesandExemptionCertificatesshallbeissued  
eitherbytheAdministrationorbyanypersonororganizationduly  
authorizedbyit.Ineverycase,thatAdministrationassumesfull  
responsibilityfortheCertificate.  
(b)NotwithstandinganyotherprovisionofthepresentConventionany  
certificateissuedunder,andinaccordancewith,theprovisionsofthe  
InternationalConventionfortheSafetyofLifeatSea,1960,whichis  
currentwhenthepresentConventioncomesintoforceinrespectofthe  
Administrationbywhichthecertificateisissued,shallremainvalid  
untilitexpiresunderthetermsofRegulation14ofChapterIofthat  
Convention.  
(c)AContractingGovernmentshallnotissuecertificatesunder,and  
inaccordancewith,theprovisionsoftheInternationalConventionforthe  
SafetyofLifeatSea,1960,1948or1929,afterthedateonwhich  
acceptanceofthepresentConventionbytheGovernmenttakeseffect.  
  
Regulation13:IssueofCertificatebyanotherGovernment  
  
AContractingGovernmentmay,attherequestoftheAdministration,  
causeashiptobesurveyedand,ifsatisfiedthattherequirementsofthe  
presentRegulationsarecompliedwith,shallissuecertificatestothe  
shipinaccordancewiththepresentRegulations.Anycertificatesoissued  
mustcontainastatementtotheeffectthatithasbeenissuedatthe  
requestoftheGovernmentofthecountryinwhichtheshipisorwillbe  
registered,anditshallhavethesameforceandreceivethesame  
recognitionasacertificateissuedunderRegulation12ofthisChapter.  
  
Regulation14:DurationofCertificates  
  
(a)CertificatesotherthanCargoshipSafetyConstruction  
Certificates,CargoShipSafetyEquipmentCertificatesandExemption  
Certificatesshallbeissuedforaperiodofnotmorethan12months.  
CargoShipSafetyEquipmentCertificatesshallbeissuedforaperiodof  
notmorethan24months.ExemptionCertificatesshallnotbevalidfor  
longerthantheperiodofthecertificatestowhichtheyrefer.  
(b)Ifasurveytakesplacewithintwomonthsbeforetheendofthe  
periodforwhichaCargoShipSafetyRadiotelegraphyCertificateora  
CargoShipSafetyRadiotelephonyCertificateissuedinrespectofcargo  
shipsof300tonsgrosstonnageandupwards,butlessthan500tonsgross  
tonnage,wasoriginallyissued,thatcertificatemaybewithdrawn,anda  
newcertificatemaybeissuedwhichshallexpire12monthsaftertheend  
ofthesaidperiod.  
(c)Ifashipatthetimewhenitscertificateexpiresisnotina  
portofthecountryinwhichitisregistered,thecertificatemaybe  
extendedbytheAdministration,butsuchextensionshallbegrantedonly  
forthepurposeofallowingtheshiptocompleteitsvoyagetothecountry  
inwhichitisregisteredoristobesurveyed,andthenonlyincases  
whereitappearsproperandreasonabletodoso.  
(d)Nocertificateshallbethusextendedforalongerperiodthan  
fivemonths,andashiptowhichsuchextensionisgrantedshallnot,on  
itsarrivalinthecountryinwhichitisregisteredortheportinwhich  
itistobesurveyed,beentitledbyvirtueofsuchextensiontoleave  
thatportorcountrywithouthavingobtainedanewcertificate.  
(e)Acertificatewhichhasnotbeenextendedundertheforegoing  
provisionsofhisRegulationmaybeextendedbytheAdministrationfora  
periodofgraceofuptoonemonthfromthedateofexpirystatedonit.  
  
Regulation15:FormofCertificates  
  
(a)Allcertificatesshallbedrawnupintheofficiallanguageor  
languagesofthecountrybywhichtheyareissued.  
(b)Theformofthecertificatesshallbethatofthemodelsgivenin  
theAppendixtothepresentRegulations.Thearrangementoftheprinted  
partofthemodelcertificatesshallbeexactlyreproducedinthe  
certificatesissued,orincertifiedcopiesthereof,andtheparticulars  
insertedinthecertificatesissued,orincertifiedcopiesthereof,shall  
beinRomancharactersandArabicfigures.  
  
Regulation16:PostingupofCertificates  
  
Allcertificatesorcertifiedcopiesthereofissuedunderthepresent  
Regulationsshallbepostedupinaprominentandaccessibleplaceinthe  
ship.  
  
Regulation17:AcceptanceofCertificates  
  
CertificatesissuedundertheauthorityofaContractingGovernment  
shallbeacceptedbytheotherContractingGovernmentsforallpurposes  
coveredbythepresentConvention.Theyshallberegardedbytheother  
ContractingGovernmentsashavingthesameforceascertificatesissuedby  
them.  
  
Regulation18:QualificationofCertificates  
  
(a)Ifinthecourseofaparticularvoyageashiphasonboarda  
numberofpersonslessthanthetotalnumberstatedinthePassengerShip  
SafetyCertificateandisinconsequence,inaccordancewiththe  
provisionsofthepresentRegulations,freetocarryasmallernumberof  
lifeboatsandotherlife-savingappliancesthanthatstatedinthe  
Certificate,anannexmaybeissuedbytheGovernment,personor  
organizationreferredtoinRegulation12or13ofthisChapter.  
(b)Thisannexshallstatethatinthecircumstancesthereisno  
infringementoftheprovisionsofthepresentRegulations.Itshallbe  
annexedtotheCertificateandshallbesubstitutedforitinsofaras  
thelife-savingappliancesareconcerned.Itshallbevalidonlyforthe  
particularvoyageforwhichitisissued.  
  
Regulation19:Control  
  
EveryshipholdingacertificateissuedunderRegulation12or  
Regulation13ofthisChapterissubjectintheportsoftheother  
ContractingGovernmentstocontrolbyofficersdulyauthorizedbysuch  
Governmentsinsofarasthiscontrolisdirectedtowardsverifyingthat  
thereisonboardavalidcertificate.Suchcertificateshallbeaccepted  
unlesstherearecleargroundsforbelievingthattheconditionofthe  
shiporofitsequipmentdoesnotcorrespondsubstantiallywiththe  
particularsofthatcertificate.Inthatcase,theofficercarryingout  
thecontrolshalltakesuchstepsaswillensurethattheshipshallnot  
sailuntilitcanproceedtoseawithoutdangertothepassengersorthe  
crew.Intheeventofthiscontrolgivingrisetointerventionofany  
kind,theofficercarryingoutthecontrolshallinformtheConsulofthe  
countryinwhichtheshipisregisteredinwritingforthwithofallthe  
circumstancesinwhichinterventionwasdeemedtobenecessary,andthe  
factsshallbereportedtotheOrganization.  
  
Regulation20:Privileges  
  
ThePrivilegesofthepresentConventionmaynotbeclaimedinfavour  
ofanyshipunlessitholdsappropriatevalidcertificates.  
  
PARTCCASUALTIES  
  
  
  
Regulation21:Casualties  
  
(a)EachAdministrationundertakestoconductaninvestigationofany  
casualtyoccurringtoanyofitsshipssubjecttotheprovisionsofthe  
presentConventionwhenitjudgesthatsuchaninvestigationmayassistin  
determiningwhatchangesinthepresentRegulationsmightbedesirable.  
(b)EachContractingGovernmentundertakestosupplytheOrganization  
withpertinentinformationconcerningthefindingsofsuchinvestigations.  
NoreportsorrecommendationsoftheOrganizationbaseduponsuch  
informationshalldisclosetheidentityornationalityoftheships  
concernedorinanymannerfixorimplyresponsibilityuponanyshipor  
person.  
  
CHAPTERII-1CONSTRUCTION-SUBDIVISIONANDSTABILITY,MACHINERYANDELECTRICALINSTALLATIONS  
  
  
  
PARTAGENERAL  
  
  
  
Regulation1:Application  
  
(a)(i)Unlessexpresslyprovidedotherwise,thisChapterappliesto  
newships.  
(ii)Existingpassengershipsandcargoshipsshallcomplywith  
thefollowing:  
(1)forshipsthekeelsofwhichwerelaidorwhichwereata  
similarstageofconstructiononorafterthedateofcomingintoforceof  
theInternationalConventionfortheSafetyofLifeatSea,1960,the  
Administrationshallensurethattherequirementswhichwereappliedunder  
ChapterIIofthatConventiontonewshipsasdefinedinthatChapterare  
compliedwith;  
(2)forshipsthekeelsofwhichwerelaidorwhichwereata  
similarstageofconstructiononorafterdateofcomingintoforceofthe  
InternationalConventionfortheSafetyofLifeatSea,1948,butbefore  
thedateofcomingintoforceoftheInternationalConventionforthe  
SafetyofLifeatSea,1960,theAdministrationshallensurethatthe  
requirementswhichwereappliedunderChapterIIofthe1948Conventionto  
newshipsasdefinedinthatChapterarecompliedwith;  
(3)forshipsthekeelsofwhichwerelaidorwhichwereata  
similarstageofconstructionbeforethedateofcomingintoforceofthe  
InternationalConventionfortheSafetyofLifeatSea,1948,the  
Administrationshallensurethattherequirementswhichwereappliedunder  
ChapterIIofthatConventiontoexistingshipsasdefinedinthatChapter  
arecompliedwith;  
(4)asregardstherequirementsofChapterII-1ofthepresent  
ConventionwhicharenotcontainedinChapterIIofthe1960and1948  
Conventions,theAdministrationshalldecidewhichoftheserequirements  
shallbeappliedtoexistingshipsasdefinedinthepresentConvention.  
(iii)Ashipwhichundergoesrepairs,alterations,modifications  
andoutfittingrelatedtheretoshallcontinuetocomplywithatleastthe  
requirementspreviouslyapplicabletotheship.Anexistingshipinsucha  
caseshallnot,asarule,complytoalesserextentwiththerequirements  
foranewshipthanitdidbefore.Repairs,alterationsandmodifications  
ofamajorcharacterandoutfittingrelatedtheretoshouldmeetthe  
requirementsforanewshipinsofarastheAdministrationdeems  
reasonableandpracticable.  
(b)ForthepurposeofthisChapter:  
(i)Anewpassengershipisapassengershipthekeelofwhichis  
laidorwhichisatasimilarstageofconstructiononorafterthedate  
ofcomingintoforceofthepresentConvention,oracargoshipwhichis  
convertedtoapassengershiponorafterthatdate,allotherpassenger  
shipsbeingdescribedasexistingpassengerships.  
(ii)Anewcargoshipisacargoshipthekeelofwhichislaidor  
whichisatasimilarstageofconstructionafterthedateofcominginto  
forceofthepresentConvention.  
(c)TheAdministrationmay,ifitconsidersthattheshelterednature  
andconditionsofthevoyagearesuchastorendertheapplicationofany  
specificrequirementsofthisChapterunreasonableorunnecessary,exempt  
fromthoserequirementsindividualshipsorclassesofshipsbelongingto  
itscountrywhichinthecourseoftheirvoyage,donotproceedmorethan  
20milesfromthenearestland.  
(d)Inthecaseofapassengershipwhichispermittedunderparagraph  
(c)ofRegulation27ofChapterIIItocarryanumberofpersonsonboard  
inexcessofthelifeboatcapacityprovided,itshallcomplywiththe  
specialstandardsofsubdivisionsetoutinparagraph(e)ofRegulation5  
ofthisChapter,andtheassociatedspecialprovisionsregarding  
permeabilityinparagraph(d)ofRegulation4ofthisChapter,unlessthe  
Administrationissatisfiedthat,havingregardtothenatureand  
conditionsofthevoyage,compliancewiththeotherprovisionsofthe  
RegulationsofthisChapterandChapterII-2ofthepresentConventionis  
sufficient.  
(e)Inthecaseofpassengershipswhichareemployedinspecial  
tradesforthecarriageoflargenumbersofspecialtradepassengers,such  
asthepilgrimtrade,theAdministration,ifsatisfiedthatitis  
impracticabletoenforcecompliancewiththerequirementsofthisChapter,  
mayexemptsuchships,whentheybelongtoitscountry,fromthose  
requirements,providedthattheycomplyfullywiththeprovisionsof:  
(i)theRulesannexedtotheSpecialTradePassengerShips  
Agreement,1971,and  
(ii)theRulesannexedtotheProtocolonSpaceRequirementsfor  
SpecialTradePassengerships,1973,whenitentersintoforce.  
  
Regulation2:Definitions  
  
ForthepurposeofthisChapter,unlessexpresslyprovidedotherwise:  
(a)(i)Asubdivisionload-lineisawater-lineusedindetermining  
thesubdivisionoftheship.  
(ii)Thedeepestsubdivisionload-lineisthewater-linewhich  
correspondstothegreatestdraughtpermittedbythesubdivision  
requirementswhichareapplicable.  
(b)Thelengthoftheshipisthelengthmeasuredbetween  
perpendicularstakenattheextremitiesofthedeepestsubdivision  
load-line.  
(c)Thebreadthoftheshipistheextremewidthfromoutsideofframe  
tooutsideofframeatorbelowthedeepestsubdivisionload-line.  
(d)Thedraughtistheverticaldistancefromthemouldedbaseline  
amidshipstothesubdivisionload-lineinquestion.  
(e)Thebulkheaddeckistheuppermostdeckuptowhichthetransverse  
watertightbulkheadsarecarried.  
(f)Themarginlineisalinedrawnatleast76millimetres(3inches)  
belowtheuppersurfaceofthebulkheaddeckatside.  
(g)Thepermeabilityofaspaceisthepercentageofthatspacewhich  
canbeoccupiedbywater.  
Thevolumeofaspacewhichextendsabovethemarginlineshallbe  
measuredonlytotheheightofthatline.  
(h)Themachineryspaceistobetakenasextendingfromthemoulded  
baselinetothemarginlineandbetweentheextrememaintransverse  
watertightbulkheadsboundingthespacescontainingthemainandauxiliary  
propellingmachinery,boilersservingtheneedsofpropulsion,andall  
permanentcoalbunkers.  
Inthecaseofunusualarrangements,theAdministrationmaydefinethe  
limitsofthemachineryspaces.  
(i)Passengerspacesarethosewhichareprovidedforthe  
accommodationanduseofpassengers,excludingbaggage,store,provision  
andmailrooms.  
ForthepurposesofRegulations4and5ofthisChapter,spaces  
providedbelowthemarginlinefortheaccommodationanduseofthecrew  
shallberegardedaspassengerspaces.  
(j)Inallcasesvolumesandareasshallbecalculatedtomoulded  
lines.  
  
PARTBSUBDIVISIONANDSTABILITY\*  
  
[\*InsteadoftherequirementsinthisPart,theRegulationson  
SubdivisionandStabilityofPassengerShipsasanEquivalenttoPartBof  
ChapterIIoftheInternationalConventionfortheSafetyofLifeatSea,  
1960,adoptedbytheOrganizationbyResolutionA.265(VIII),maybe  
used,ifapplied,intheirentirety.]  
(PartBappliestopassengershiponly,exceptthatRegulation19also  
appliestocargoships.)  
  
Regulation3:FloodableLength  
  
(a)Thefloodablelengthatanypointofthelengthofashipshallbe  
determinedbyamethodofcalculationwhichtakesintoconsiderationthe  
form,draughtandothercharacteristicsoftheshipinquestion.  
(b)Inashipwithacontinuousbulkheaddeck,thefloodablelengthat  
agivenpointisthemaximumportionofthelengthoftheship,havingits  
centreatthepointinquestion,whichcanbefloodedunderthedefinite  
assumptionssetfrothinRegulation4ofthisChapterwithouttheship  
beingsubmergedbeyondthemarginline.  
(c)(i)Inthecaseofashipnothavingacontinuousbulkheaddeck,  
thefloodablelengthatanypointmaybedeterminedtoanassumed  
continuousmarginlinewhichatnopointislessthan76millimetres(3  
inches)belowthetopofthedeck(atside)towhichthebulkheads  
concernedandtheshellarecarriedwatertight.  
(ii)Whereaportionofanassumedmarginlineisappreciably  
belowthedecktowhichbulkheadsarecarried,theAdministrationmay  
permitalimitedrelaxationinthewatertightnessofthoseportionsofthe  
bulkheadswhichareabovethemarginlineandimmediatelyunderthehigher  
deck.  
  
Regulation4:Permeability  
  
(a)ThedefiniteassumptionsreferredtoinRegulation3ofthis  
Chapterrelatedtothepermeabilitiesofthespacesbelowthemarginline.  
Indeterminingthefloodablelength,auniformaveragepermeability  
shallbeusedthroughoutthewholelengthofeachofthefollowing  
portionsoftheshipbelowthemarginline:  
(i)themachineryspaceasdefinedinRegulation2ofthis  
Chapter;  
(ii)theportionforwardofthemachineryspace;and  
(iii)theportionabaftthemachineryspace.  
(b)(i)Theuniformaveragepermeabilitythroughoutthemachinery  
spaceshallbedeterminedfromtheformula  
a-c  
85+10(-----)  
v  
where:  
a=volumeofthepassengerspaces,asdefinedinRegulation2ofthis  
Chapter,whicharesituatedbelowthemarginlinewithinthelimitsofthe  
machineryspace;  
c=volumeofbetweendeckspacesbelowthemarginlinewithinthe  
limitsofthemachineryspacewhichareappropriatedtocargo,coalor  
stores;  
v=wholevolumeofthemachineryspacebelowthemarginline.  
(ii)WhereitisshowntothesatisfactionoftheAdministration  
thattheaveragepermeabilityasdeterminedbydetailedcalculationis  
lessthanthatgivenbytheformula,thedetailedcalculatedvaluemaybe  
used.Forthepurposeofsuchcalculation,thepermeabilitiesof  
passengerspaces,asdefinedinRegulation2ofthisChapter,shallbe  
takenas95,thatofallcargo,coalandstorespacesas60,andthatof  
doublebottom,oilfuelandothertanksatsuchvaluesasmaybeapproved  
ineachcase.  
(c)Exceptasprovidedinparagraph(d)ofthisRegulation,the  
uniformaveragepermeabilitythroughouttheportionoftheshipbefore(or  
abaft)themachineryspaceshallbedeterminedfromtheformula  
a  
65+35---  
v  
where:  
a=volumeofthepassengerspaces,asdefinedinRegulation2ofthis  
Chapter,whicharesituatedbelowthemarginline,before(orabaft)the  
machineryspace,and  
v=Wholevolumeoftheportionoftheshipbelowthemarginline  
before(orabaft)hemachineryspace.  
(d)Inthecaseofashipwhichispermittedunderparagraph(c)of  
Regulation27ofChapterIIItocarryanumberofpersonsonboardin  
excessofthelifeboatcapacityprovided,andisrequiredunderparagraph  
(d)ofRegulation1ofthisChaptertocomplywithspecialprovisions,the  
uniformaveragepermeabilitythroughouttheportionoftheshipbefore(or  
abaft)themachineryspaceshallbedeterminedfromtheformula  
b  
95-35---  
v  
where:b=thevolumeofthespacesbelowthemarginlineandabove  
thetopsoffloors,innertottom,orpeaktanks,asthecasemaybe,which  
areappropriatedtoandusedascargospaces,coaloroilfuelbunkers,  
store-rooms,baggageandmailrooms,chainlockersandfreshwatertanks,  
before(orabaft)themachineryspace;and  
v=wholevolumeoftheportionoftheshipbelowthemarginline  
before(orabaft)themachineryspace.  
Inthecaseofshipengagedonserviceswherethecargoholdsarenot  
generallyoccupiedbyanysubstantialquantitiesofcargo,nopartofthe  
cargospacesistobeincludedincalculating"b".  
(e)InthecaseofunusualarrangementstheAdministrationmayallow,  
orrequire,adetailedcalculationofaveragepermeabilityforthe  
portionsbeforeorabaftthemachineryspace.Forthepurposeofsuch  
calculation,thepermeabilityofpassengerspacesasdefinedinRegulation  
2ofthisChaptershallbetakenas95,thatofspacescontaining  
machineryas85,thatofallcargo,coalandstorespacesas60,andthat  
ofdoublebottom,oilfuelandothertanksatsuchvalueasmaybe  
approvedineachcase.  
(f)Whereabetweendeckcompartmentbetweentwowatertighttransverse  
bulkheadscontainsanypassengerorcrewspace,thewholeofthat  
compartment,lessanyspacecompletelyenclosedwithinpermanentsteel  
bulkheadsandappropriatedtootherpurposes,shallberegardedas  
passengerspace.Where,however,thepassengerorcrewspaceinquestion  
iscompletelyenclosedwithinpermanentsteelbulkheads,onlythespaceso  
enclosedneedbeconsideredaspassengerspace.  
  
Regulation5:PermissibleLengthofCompartments  
  
(a)Shipshallbeasefficientlysubdividedasispossiblehaving  
regardtothenatureoftheserviceforwhichtheyareintended.The  
degreeofsubdivisionshallvarywiththelengthoftheshipandwiththe  
service,insuchmannerthatthehighestdegreeofsubdivisioncorresponds  
withtheshipsofgreatestlength,primarilyengagedinthecarriageof  
passengers.  
(b)FactorofSubdivision.Themaximumpermissiblelengthofa  
compartmenthavingitscentreatanypointintheship\'slengthis  
obtainedfromthefloodablelengthbymultiplyingthelatterbyan  
appropriatefactorcalledthefactorofsubdivision.  
Thefactorofsubdivisionshalldependonthelengthoftheship,and  
foragivenlengthshallvaryaccordingtothenatureoftheservicefor  
whichtheshipisintended.Itshalldecreaseinaregularandcontinuous  
manner:  
(i)asthelengthoftheshipincreases,and  
(ii)fromafactorA,applicabletoshipsprimarilyengagedinthe  
carriageofcargo,toafactorB,applicabletoshipsprimarilyengagedin  
thecarriageofpassengers.  
ThevariationsofthefactorsAandBshallbeexpressedbythe  
followingformulae(I)and(II)whereListhelengthoftheshipas  
definedinRegulation2ofthisChapter:  
Linmetres  
58.2  
A=---------+.18(L=131andupwards).............(I)  
L-60  
Linfeet  
190  
A=---------+.18(L=430andupwards)  
L-198  
Linmetres  
30.4  
B=---------+.18(L=79andupwards).............(II)  
L-42  
Linfeet  
100  
B=---------+.18(L=260andupwards)  
L-138  
(c)CriterionofService.Forashipofgivenlengththeappropriate  
factorofsubdivisionshallbedeterminedbytheCriterionofService  
Numeral(hereinaftercalledtheCriterionNumeral)asgivenbythe  
followingformulae(III)and(IV)where:  
|-----------------------------------|  
|C=theCriterionNumeral;|  
|s|  
|-----------------------------------|  
L=lengthoftheship,asdefinedinRegulation2ofthisChapter;  
M=thevolumeofthemachineryspace,asdefinedinRegulation2  
ofthisChapter;withtheadditiontheretoofthevolumeofanypermanent  
oilfuelbunkerswhichmaybesituatedabovetheinnerbottomandbefore  
orabaftthemachineryspace;  
P=thewholevolumeofthepassengerspacesbelowthemarginline,  
asdefinedinRegulation2ofthisChapter;  
V=thewholevolumeoftheshipbelow the margin line;  
|------------------------------|  
|      P  = KN where:          |  
|       1                      |  
|------------------------------|  
             N = number of passengers for which the ship is to be  
certified, and  
             K has the following values:  
                                                              Value of K  
             Length in metres and volumes in cubic metres         .056 L  
             Length in feet and volumes in cubic feet             .6   L  
    Where the value of KN is greater than the sum of P and the whole  
volume of the actual passenger spaces above the margin line, the figure to  
be taken as P  is that sum or two-thirds  
                                                                   1 KN,  
whichever is the greater.  
         |----|  
    When | P  | is greater than P  
         |  1 |  
         |----|  
|------------------------|  
|             M + 2P     |  
|                   1    |  
|   C  = 72 ------------ | ...............................(III)  
|    s      V + P  - P   |  
|                1       |  
|------------------------|  
    and in other cases  
|------|           M + 2P  
|   C  | =    72 ------------  ............................(IV)  
|    s |             V  
|------|  
    For ships not having a continuous bulkhead deck the volumes are to be  
taken up to the actual margin lines used in determining the floodable  
lengths.  
    (d) Rules for Subdivision of Ships other than those covered by  
paragraph (e) of this Regulation.  
        (i) The subdivision abaft the forepeak of ships 131 metres (430  
feet) in length and upwards having a criterion numeral of 23 or less shall  
be governed by the factor A given by formula (I); of those having a  
criterion numeral of 123 or more by the factor B given by formula (II);  
and of those having a criterion numeral between 2?? and 123 by the factor  
F obtained by linear interpolation between the factors A and B,  using the  
formula  
|-------------------------------------|  
|                  (A - B)(C  - 23)   |  
|                           s         |  
|          F = A - ----------------   |   .......................(V)  
|                        100          |  
|-------------------------------------|  
            Nevertheless, where the criterion numeral is equal to 45 or  
more and simultaneously the computed factor of subdivision as given by  
formula (V) is .65 or less, but more than .50, the subdivision abaft the  
forepeak shall be governed by the factor. 50.  
            Where the factor F is less than .40 and it is shown to the  
satisfaction of the Administration to be impracticable to comply with the  
factor F in a machinery compartment of the ship, the subdivision of such  
compartment may be governed by an increased factor, which, however, shall  
not exceed .40.  
        (ii) The subdivision abaft the forepeak of ships less than 131  
metres (430 feet) but not less than 79 metres (260 feet) in length having  
a criterion numeral equal to S,  where  
                 3,574 - 25L                     9,382 - 20L  
           S = ----------------  (L in metres) = ------------ (L in feet)  
                      13                              34  
    shall be governed by the factor unity; of those having a criterion  
numeral of 123 or more by the factor B given by the formula (II); of those  
having a criterion numeral between S and 123 by the factor F obtained by  
linear interpolation between unity and the factor B using the formula:  
     |-------------------------------|  
     |             (1 - B)(C  - S)   |  
     |                      s        |  
     |     F = 1 - ----------------  |   .........................(VI)  
     |                123 - S        |  
     |-------------------------------|  
        (iii) The subdivision abaft the forepeak of ships less than 131  
metres (430 feet) but not less than 79 metres (260 feet) in length and  
having a criterion numeral less than S,  and of all ships less than 79  
metres  (260 feet) in length shall be governed by the factor unity,  
unless, in either case, it is shown to the satisfaction of the  
Administration to be impracticable to comply with this factor in any part  
of the ship, in which case the Administration may allow such relaxation as  
may appear to be justified,  having regard to all the circumstances.  
        (iv) The provisions of sub-paragraph (iii) of this paragraph shall  
apply also to ships of whatever length, which are to be certified to carry  
a number of passengers exceeding 12 but not exceeding  
|--------------------------------------|  
|     2                    2           |  
|    L                    L            |  
|  ----- (in metres) = ----- (in feet) | , or 50, whichever is the less.  
|   650                7,000           |  
|--------------------------------------|  
    (e) Special Standards of Subdivision for Ships which are permitted  
under paragraph (c) of Regulation 27 of Chapter III to carry a number of  
persons on board in excess of the lifeboat capacity provided and are  
required under paragraph (d) of Regulation 1 of this Chapter to comply  
with special provisions  
        (i) (1) In the case of ship primarily engaged in the carriage of  
passengers, the subdivision abaft the forepeak shall be governed by a  
factor of .50 or by the factor determined according to paragraphs (c) and  
(d) of this Regulation, if less than .50.  
            (2) In the case of such ships less than 91.5 metres (300 feet)  
in length, if the Administration is satisfied that compliance with such  
factor would be impracticable in a compartment, it may allow the length of  
that compartment to be governed by a higher factor provided the factor  
used is the lowest that is practicable and reasonable in the  
circumstances.  
        (ii) Where, in the case of any ship whether less than 91.5 metres  
(300 feet) or not,  the necessity of carrying appreciable quantities of  
cargo makes it impracticable to require the subdivision abaft the forepeak  
to be governed by a factor not exceeding .50, the standard of subdivision  
to be applied shall be determined in accordance with the following  
subparagraphs (1) to (5), subject to the condition that where the  
Administration is satisfied that insistence on strict compliance in any  
respect would be unreasonable, it may allow such alternative arrangement  
of the watertight bulkheads as appears to be justified on merits and will  
not diminish the general effectiveness of the subdivision  
            (1) The provisions of paragraph (c) of this Regulation  
relating to the criterion numeral shall apply with the exception that in  
                         |----|  
calculating the value of | P  |  for  
                         |  1 |  
                         |----|  
berthed passengers K is to have the value defined in paragraph (c) of this  
Regulation, or 3.55 cubic metres (125 cubic feet), whichever is the  
greater,  and for unbearthed passengers K is to have the value 3.55 cubic  
metres (125 cubic feet).  
            (2) The factor B in paragraph (b) of this Regulation shall be  
replaced by the factor BB determined by the following formula:  
            L in metres  
                    17.6  
              BB = ------ + .20     (L = 55 and upwards)  
                   L - 33  
            L in feet  
                    57.6  
              BB = ------- + .20     (L = 180 and upwards)  
                   L - 108  
            (3) The subdivision abaft the forepeak of ships 131 metres  
(430 feet) in length and upwards having a criterion numeral of 23 or less  
shall be governed by the factor A given by formula (I) in paragraph (b) of  
this Regulation; of those having a criterion numeral of 123 or more by the  
factor BB given by the formula in sub-paragraph (ii) (2) of this  
paragraph; and of those having a criterion numeral between 23 and 123 by  
the factor F obtained by linear interpolation between the factors A and  
BB, using the formula:  
            |-------------------------------|  
            |          (A - BB) (C  - 23)   |  
            |                     s         |  
            |  F = A - -------------------  |  
            |                100            |  
            |-------------------------------|  
    except that if the factor F so obtained is less than .50 the factor to  
be used shall be either .50 or the factor calculated according to the  
provisions of subparagraph (d) (i) of this Regulation, whichever is the  
smaller.  
            (4) The subdivision abaft the forepeak of ships less than 131  
metres (430 feet)  but not less than 55 metres (180 feet) in length having  
                             |-----|  
a criterion numeral equal to |  S  |  where  
                             |   1 |  
                             |-----|  
|-------------------------------------------------------|  
|                    3,712 - 25L                        |  
|             S  = ----------------  (L in metres)      |  
|              1                                        |  
|                        19                             |  
|-------------------------------------------------------|  
|-------------------------------------------------------|  
|                    1,950 - 4L                         |  
|             S  = ----------------  (L in feet)        |  
|              1                                        |  
|                        10                             |  
|-------------------------------------------------------|  
    shall be governed by the factor unity; of those having a criterion  
numeral of 123 or more by the factor BB given by the formula in  
sub-paragraph (ii) (2)  of this paragraph; of those having a criterion  
                |----|  
numeral between | S  | and 123 by the factor F obtained by linear  
                |  1 |  
                |----|  
interpolation between unity and the factor BB using the formula:  
|-------------------------------------------------------|  
|                       (1 - BB) (C  - S )              |  
|                                  s    1               |  
|               F = 1 - -------------------             |  
|                          123 - S                      |  
|                                 1                     |  
|-------------------------------------------------------|  
    except that in either of the two latter cases if the factor so  
obtained is less than .50 the subdivision may be governed by a factor not  
exceeding .50.  
            (5) The subdivision abaft the forepeak of ships less than 131  
metres (430 feet)  but not less than 55 metres (180 feet) in length and  
having a criterion numeral less than S  and of all ships less than 55  
metres (180 feet) in length  
                 1 shall be governed by the factor unity, unless it is  
shown to the satisfaction of the Administration to be impracticable to  
comply with this factor in particular compartments, in which event the  
Administration may allow such relaxations in respect of those compartments  
as appear to be justified, having regard to all the circumstances,  
provided that the aftermost compartment and as many as possible of the  
forward compartments (between the forepeak and the after end of the  
machinery space) shall be kept within the floodable length.  
       
     Regulation 6: Special Rules concerning Subdivision  
  
    (a) Where in a portion or portions of a ship the watertight bulkheads  
are carried to a higher deck than in the remainder of the ship and it is  
desired to take advantage of this higher extension of the bulkheads in  
calculating the floodable length, separate margin lines may be used for  
each such portion of the ship provided that:  
        (i) the sides of the ship are extended throughout the ship\'s  
length to the deck corresponding to the upper margin line and all openings  
in the shell plating below this deck throughout the length of the ship are  
treated as being below a margin line,  for the purposes of Regulation 14  
of this Chapter; and  
        (ii) the two compartments adjacent to the "step" in the bulkhead  
deck are each within the permissible length corresponding to their  
respective margin lines, and, in addition, their combined length does not  
exceed twice the permissible length based on the lower margin line.  
    (b) (i) A compartment may exceed the permissible length determined by  
the rules of Regulation 5 of this Chapter provided the combined length of  
each pair of adjacent compartments to which the compartment in question is  
common does not exceed either the floodable length or twice the  
permissible length, whichever is the less.  
        (ii) If one of the two adjacent compartments is situated inside  
the machinery space,  and the second is situated outside the machinery  
space, and the average permeability of the portion of the ship in which  
the second is situated differs from that of the machinery space, the  
combined length of the two compartments shall be adjusted to the mean  
average permeability of the two portions of the ship in which the  
compartments are situated.  
        (iii) Where the two adjacent compartments have different factors  
of subdivision, the combined length of the two compartments shall be  
determined proportionately.  
    (c) In ship 100 metres (330 feet) in length and upwards, one of the  
main transverse bulkheads abaft the forepeak shall be fitted at a distance  
from forward perpendicular which is not greater than the permissible  
length.  
    (d) A main transverse bulkhead may be recessed provided that all parts  
of the recess lie inboard of vertical surfaces on both sides of the ship,  
situated at a distance from the shell plating equal to one-fifth the  
breadth of the ship, as defined in Regulation 2 of this Chapter,  and  
measured at right angles to the centre line at the level of the deepest  
subdivision loadline.  
    Any part of a recess which lies outside these limits shall be dealt  
with as a step in accordance with paragraph (e) of this Regulation.  
    (e) A main transverse bulkhead may be stepped provided that it meets  
one of the following conditions:  
        (i) the combined length of the two compartments, separated by the  
bulkhead in question,  does not exceed either 90 per cent, of the  
floodable length or twice the permissible length, except that in ships  
having a factor of subdivision greater than .9,  the combined length of  
the two compartments in question shall not exceed the permissible length;  
        (ii) additional subdivision is provided in way of the step to  
maintain the same measure of safety as that secured by a plane bulkhead;  
        (iii) the compartment over which the step extends does not exceed  
the permissible length corresponding to a margin line taken 76 milimetres  
(3 inches) below the step.  
    (f) Where a main transverse bulkhead is recessed or stepped, an  
equivalent plane bulkhead shall be used in determining the subdivision.  
    (g) If the distance between two adjacent main transverse bulkheads, or  
their equivalent plane bulkheads, or the distance between the transverse  
planes passing through the nearest stepped portions of the bulkheads, is  
less than 3.05 metres (10 feet) plus 3 per cent. of the length of the  
ship, or 10.67 metres (35 feet) whichever is the less, only one of these  
bulkheads shall be regarded as forming part of the subdivision of the ship  
in accordance with the provisions of Regulation 5 of this Chapter.  
    (h) Where a main transverse watertight compartment contains local  
subdivision and it can be shown to the satisfaction of the Administration  
that, after any assumed side damage extending over a length of 3.05 metres  
(10 feet) plus 3 per cent. of the length of the ship, or 10.67 metres (35  
feet) whichever is the less, the whole volume of the main compartment will  
not be flooded, a proportionate allowance may be made in the permissible  
length otherwise required for such compartment. In such a case the volume  
of effective buoyancy assumed on the undamaged side shall not be greater  
than that assumed on the damaged side.  
    (i) Where the required factor of subdivision is .50 or less, the  
combined length of any two adjacent compartments shall not exceed the  
floodable length.  
       
     Regulation 7: Stability of Ships in Damaged Condition  
  
    (a) Sufficient intact stability shall be provided in all service  
conditions so as to enable the ship to withstand the final stage of  
flooding of any one main compartment which is required to be within the  
floodable length.  
    Where two adjacent main compartments are separated by a bulkhead which  
is stepped under the conditions of sub-paragraph (e) (i) of Regulation 6  
of this Chapter in intact stability shall be adequate to withstand the  
flooding of those two adjacent main compartments.  
    Where the required factor of subdivision is .50 or less but more than  
.33 intact stability shall be adequate to withstand the flooding of any  
two adjacent main compartments.  
    Where the required factor of subdivision is .33 or less the intact  
stability shall be adequate to withstand the flooding of any three  
adjacent main compartments.  
    (b) (i) The requirements of paragraph (a) of this Regulation shall be  
determined by calculations which are in accordance with paragraphs (c),  
(d) and (f) of this Regulation and which take into consideration the  
proportions and design characteristics of the ship and the arrangement and  
configuration of the damaged compartments. In making these calculations  
the ship is to be assumed in the worst anticipated service condition as  
regards stability.  
        (ii) Where it is proposed to fit decks, inner skins or  
longitudinal bulkheads of sufficient tightness to seriously restrict the  
flow of water, the Administration shall be satisfied that proper  
consideration is given to such restrictions in the calculations.  
        (iii) In cases where the Administration considers the range of  
stability in the damage condition to be doubtful, it may require  
investigation thereof.  
    (c) For the purpose of making damage stability calculations the volume  
and surface permeabilities shall be in general as follows:  
                Spaces                                   Permeability  
    Appropriated to Cargo, Coal or Stores                      60  
    Occupied by Accommodation                                  95  
    Occupied by Machinery                                      85  
    Intended for Liquids                                    0 or 95\*  
    [\* Whichever results in the more severe requirements.]  
    Higher surface permeabilities are to be assumed in respect of spaces  
which, in the vicinity of the damage waterplane, contain no substantial  
quantity of accommodation or machinery and spaces which are not generally  
occupied by any substantial quantity of cargo or stores.  
    (d) Assumed extent of damage shall be as follows:  
        (i) Longitudinal extent: 3.05 metres (10 feet) plus 3 per cent. of  
the length of the ship, or 10.67 metres (35 feet) whichever is the less.  
Where the required factor of subdivision is .33 or less the assumed  
longitudinal extent of damage shall be increased as necessary so as to  
include any two consecutive main transverse watertight bulkheads;  
        (ii) transverse extent (measured inboard from the ship\'s side, at  
right angles to the centre line at the level of the deepest subdivision  
load-line): a distance of one-fifth of the breadth of the ship, as defined  
in Regulation 2 of this Chapter; and  
        (iii) vertical extent: from the base line upwards without limit.  
        (iv) if any damage of lesser extent than that indicated in  
sub-paragraphs (i), (ii) and (iii) of this paragraph would result in a  
more severe condition regarding heel or loss of metacentric height, such  
damage shall be assumed in the calculations.  
    (e) Unsymmetrical flooding is to be kept to a minimum consistent with  
efficient arrangements. Where it is necessary to correct large angles of  
heel, the means adopted shall, where practicable, be self-acting, but in  
any case where controls to cross-flooding fittings are provided they shall  
be operable from above the bulkhead deck. These fittings together with  
their controls as well as the maximum heel before equalization shall be  
acceptable to the Administration. Where cross-flooding fittings are  
required the time for equalization shall not exceed 15 minutes. Suitable  
information concerning the use of cross-flooding fittings shall be  
supplied to the master of the ship.\*\*  
    [\*\* Reference is made to the Recommendation on a Standard Method for  
Establishing Compliance with the Requirements for Cross-Flooding  
Arrangements in Passenger Ships, adopted by the Organization by Resolution  
A.266(VIII).]  
    (f) The final conditions of the ship after damage and, in the case of  
unsymmetrical flooding, after equalization measures have been taken shall  
be as follows:  
        (i) in the case of symmetrical flooding there shall be a positive  
residual metacentric height of at least 50 millimetres (2 inches) as  
calculated by the constant displacement method;  
        (ii) in the case of unsymmetrical flooding the total heel shall  
not exceed seven degrees,  except that, in special cases, the  
Administration may allow additional heel due to the unsymmetrical moment,  
but in no case shall the final heel exceed 15 degrees;  
        (iii) in no case shall the margin line be submerged in the final  
stage of flooding. If it is considered that the margin line may become  
submerged during an intermediate stage of flooding, the Administration may  
require such investigations and arrangements as it considers necessary for  
the safety of the ship.  
    (g) The master of the ship shall be supplied with the data necessary  
to maintain sufficient intact stability under service conditions to enable  
the ship to withstand the critical damage. In the case of ships requiring  
cross-flooding the master of the ship shall be informed of the conditions  
of stability on which the calculations of heel are based and be warned  
that excessive heeling might result should the ship sustain damage when in  
a less favourable condition.  
    (h) (i) No relaxation from the requirements for damage stability may  
be considered by the Administration unless it is shown that the intact  
metacentric height in any service condition necessary to meet these  
requirements is excessive for the service intended.  
        (ii) Relaxations from the requirements for damage stability shall  
be permitted only in exceptional cases and subject to the condition that  
the Administration is to be satisfied that the proportions, arrangements  
and other characteristics of the ship are the most favourable to stability  
after damage which can practically and reasonably be adopted in the  
particular circumstances.  
       
     Regulation 8: Ballasting  
  
    When ballasting with water is necessary, the water ballast should not  
in general be carried in tanks intended for oil fuel. In ships in which it  
is not practicable to avoid putting water in oil fuel tanks, oily-water  
separator equipment to the satisfaction of the Administration shall be  
fitted, or other alternative means acceptable to the Administration shall  
be provided for disposing of the oily-water ballast.  
       
     Regulation 9: Peak and Machinery Space Bulkheads, Shaft Tunnels,etc.  
  
    (a) (i) A ship shall have a forepeak or collision bulkhead, which  
shall be watertight up to the bulkhead deck. This bulkhead shall be fitted  
not less than 5 per cent. of the length of the ship, and not more than  
3.05 metres (10 feet) plus 5 per cent of the length of the ship from the  
forward perpendicular.  
        (ii) If the ship has a long forward superstructure, the forepeak  
bulkhead shall be extended weathertight to the deck next above the  
bulkhead deck. The extension need not be fitted directly over the bulkhead  
below, provided it is at least 5 per cent. of the length of the ship from  
the forward perpendicular, and the part of the bulkhead deck which forms  
the step is made effectively weathertight.  
    (b) An after-peak bulkhead, and bulkheads dividing the machinery  
space, as defined in Regulation 2 of this Chapter, from the cargo and  
passenger spaces forward and aft, shall also be fitted and made watertight  
up to the bulkhead deck. The after-peak bulkhead may,  however, be stepped  
below the bulkhead deck, provided the degree of safety of the ship as  
regards subdivision is not thereby diminished.  
    (c) In all cases stern tubes shall be enclosed in watertight spaces of  
moderate volume. The stern gland shall be situated in a watertight shaft  
tunnel or other watertight space separate from the stern tube compartment  
and of such volume that, if flooded by leakage through the stern gland,  
the margin line will not be submerged.  
       
     Regulation 10: Double Bottoms  
  
    (a) A double bottom shall be fitted extending from the forepeak  
bulkhead to the after-peak bulkhead as far as this is practicable and  
compatible with the design and proper working of the ship.  
        (i) In ships 50 metres (165 feet) and under 61 metres (200 feet)  
in length a double bottom shall be fitted at least from the machinery  
space to the forepeak bulkhead,  or as near thereto as practicable.  
        (ii) In ships 61 metres (200 feet) and under 76 metres (249 feet)  
in length a double bottom shall be fitted at least outside the machinery  
space, and shall extend to the fore and after peak bulkheads, or as near  
thereto as practicable.  
        (iii) In ships 76 metres (249 feet) in length and upwards, a  
double bottom shall be fitted amidships, and shall extend to the fore and  
after peak bulkheads, or as near thereto as practicable.  
    (b) Where a double bottom is required to be fitted its depth shall be  
to the satisfaction of the Administration and the inner bottom shall be  
continued out to the ship\'s sides in such a manner as to protect the  
bottom to the turn of the bilge. Such protection will be deemed  
satisfactory if the line of intersection of the outer edge of the margin  
plate with the bilge plating is not lower at any part than a horizontal  
plane passing through the point of intersection with the frame line  
amidships of a transverse diagonal line inclined at 25 degrees to the base  
line and cutting it at a point one-half the ship\'s moulded breadth from  
the middle line.  
    (c) Small wells constructed in the double bottom in connexion with  
drainage arrangements of holds, etc., shall not extend downwards more than  
necessary. The depth of the well shall in no case be more than the depth  
less 457 millimetres (18 inches) of the double bottom at the centreline,  
nor shall the well extend below the horizontal plane referred to in  
paragraph (b) of this Regulation. A well extending to the outer bottom is,  
however, permitted at the after end of the shaft tunnel of screw-ships.  
Other wells (e.g., for lubricating oil under main engines) may be  
permitted by the Administration if satisfied that the arrangements give  
protection equivalent to that afforded by a double bottom complying with  
this Regulation.  
    (d) A double bottom need not be fitted in way of watertight  
compartments of moderate size used exclusively for the carriage of  
liquids, provided the safety of the ship, in the event of bottom or side  
damage, is not, in the opinion of the Administration, thereby impaired.  
    (e) In the case of ships to which the provisions of paragraph (d) of  
Regulation 1 of this Chapter apply and which are engaged on regular  
service within the limits of a short international voyage as defined in  
Regulation 2 of Chapter III, the Administration may permit a double bottom  
to be dispensed with in any part of the ship which is subdivided by a  
factor not exceeding .50, if satisfied that the fitting of a double bottom  
in that part would not be compatible with the design and proper working of  
the ship.  
       
     Regulation 11: Assigning, Marking and Recording of SubdivisionLoad-Lines  
  
    (a) In order that the required degree of subdivision shall be  
maintained, a load-line corresponding to the approved subdivision draught  
shall be assigned and marked on the ship\'s sides. A ship having spaces  
which are specially adapted for the accommodation of passengers and the  
carriage of cargo alternatively may, if the owners desire, have one or  
more additional load-lines assigned and marked to correspond with the  
subdivision draughts which the Administration may approve for the  
alternative service conditions.  
    (b) The subdivision load-lines assigned and marked shall be recorded  
in the Passenger Ship Safety Certificate, and shall be distinguished by  
the notation C. 1 for the principal passenger condition, and C.2, C.3,  
etc., for the alternative conditions.  
    (c) The freeboard corresponding to each of these load-lines shall be  
measured at the same position and from the same deck line as the  
freeboards determined in accordance with the International Convention  
respecting Load-Lines in force.  
    (d) The freeboard corresponding to each approved subdivision load-line  
and the conditions of service for which it is approved, shall be clearly  
indicated on the Passenger Ship Safety Certificate.  
    (e) In no case shall any subdivision load-line mark be placed above  
the deepest load-line in salt water as determined by the strength of the  
ship and/or the International Convention respecting Load-Lines in force.  
    (f) Whatever may be the position of the subdivision load-line marks, a  
ship shall in no case be loaded so as to submerge the load-line mark  
appropriate to the season and locality as determined in accordance with  
the International Convention respecting Load-Lines in force.  
    (g) A ship shall in no case be so loaded that when she is in salt  
water the subdivision load-line mark appropriate to the particular voyage  
and condition of service is submerged.  
       
     Regulation 12: Construction and Initial Testing of WatertightBulkheads etc.  
  
    (a) Each watertight subdivision bulkhead, whether transverse or  
longitudinal, shall be constructed in such a manner that it shall be  
capable of supporting, with a proper margin of resistance, the pressure  
due to the maximum head of water which it might have to sustain in the  
event of damage to the ship but at least the pressure due to a head of  
water up to the margin line. The construction of these bulkheads shall be  
to the satisfaction of the Administration.  
    (b) (i) Steps and recesses in bulkheads shall be watertight and as  
strong as the bulkhead at the place where each occurs.  
        (ii) Where frames or beams pass through a watertight deck or  
bulkhead, such deck or bulkhead shall be made structurally watertight  
without the use of wood or cement.  
    (c) Testing main compartments by filling them with water is not  
compulsory. When testing by filling with water is not carried out, a hose  
test is compulsory; this test shall be carried out in the most advanced  
stage of the fitting out of the ship. In any case, a thorough inspection  
of the watertight bulkheads shall be carried out.  
    (d) The forepeak, double bottoms (including duct keels) and inner  
skins shall be tested with water to a head corresponding to the  
requirements of paragraph (a) of this Regulation.  
    (e) Tanks which are intended to hold liquids, and which form part of  
the subdivision of the ship, shall be tested for tightness with water to a  
head up to the deepest subdivision load-line or to a head corresponding to  
two-thirds of the depth from the top of keel to the margin line in way of  
the tanks, whichever is the greater; provided that in no case shall the  
test head be less than 0.92 metres (3 feet) above the top of the tank.  
    (f) The tests referred to in paragraphs (d) and (e) of this Regulation  
are for the purpose of ensuring that the subdivision structural  
arrangements are watertight and are not to be regarded as a test of the  
fitness of any compartment for the storage of oil fuel or for other  
special purposes for which a test of a superior character may be required  
depending on the height to which the liquid has access in the tank or its  
connexions.  
       
     Regulation 13: Openings in Watertight Bulkheads  
  
    (a) The number of openings in watertight bulkheads shall be reduced to  
the minimum compatible with the design and proper working of the ship;  
satisfactory means shall be provided for closing these openings.  
    (b) (i) Where pipes, scuppers, electric cables. etc., are carried  
through watertight subdivision bulkheads, arrangements shall be made to  
ensure the integrity of the watertightness of the bulkheads.  
        (ii) Valves and cocks not forming part of a piping system shall  
not be permitted in watertight subdivision bulkheads.  
        (iii) Lead or other heat sensitive materials shall not be used in  
systems which penetrate watertight subdivision bulkheads, where  
deterioration of such systems in the event of fire would impair the  
watertight integrity of the bulkheads.  
    (c) (i) No doors, manholes, or access openings are permitted:  
            (1) in the collision bulkhead below the margin line;  
            (2) in watertight transverse bulkheads dividing a cargo space  
from an adjoining cargo space or from a permanent or reserve bunker,  
except as provided in paragraph (1) of this Regulation.  
        (ii) Except as provided in sub-paragraph (iii) of this paragraph,  
the collision bulkhead may be pierced below the margin line by not more  
than one pipe for dealing with fluid in the forepeak tank, provided that  
the pipe is fitted with a screwdown valve capable of being operated from  
above the bulkhead deck, the valve chest being secured inside the forepeak  
to the collision bulkhead.  
        (iii) If the forepeak is divided to hold two different kinds of  
liquids the Administration may allow the collision bulkhead to be pierced  
below the margin line by two pipes, each of which is fitted as required by  
sub-paragraph (ii) of this paragraph,  provided the Administration is  
satisfied that there is no practical alternative to the fitting of such a  
second pipe and that, having regard to the additional subdivision provided  
in the forepeak, the safety of the ship is maintained.  
    (d) (i) Watertight door fitted in bulkheads between permanent and  
reserve bunkers shall be always accessible, except as provided in  
subparagraph (ii) of paragraph (k) of this Regulation for between deck  
bunker doors.  
        (ii) Satisfactory arrangements shall be made by means of screens  
or otherwise to prevent the coal from interfering with the closing of  
watertight bunker doors.  
    (e) Within spaces containing the main and auxiliary propelling  
machinery including boilers serving the needs of propulsion and all  
permanent bunkers, not more than one door apart from the doors to bunkers  
and shaft tunnels may be fitted in each main transverse bulkhead. Where  
two or more shafts are fitted the tunnels shall be connected by an  
inter-communicating passage. There shall be only one door between the  
machinery space and the tunnel spaces where two shafts are fitted and only  
two doors where there are more than two shafts. All these doors shall be  
of the sliding type and shall be located so as to have their sills as high  
as practicable. The hand gear for operating these doors from above the  
bulkhead deck shall be situated outside the spaces containing the  
machinery if this is consistent with a satisfactory arrangement of the  
necessary gearing.  
    (f) (i) Watertight doors shall be sliding doors or hinged doors or  
doors of an equivalent type. Plate doors secured only by bolts and doors  
required to be closed by dropping or by the action of a dropping weight  
are not permitted.  
        (ii) Sliding doors may be either:  
             hand-operated only, or  
             power-operated as well as hand-operated.  
        (iii) Authorized watertight doors may therefore by divided into  
three Classes:  
              Class 1-hinged doors;  
              Class 2-hand-operated sliding doors;  
              Class 3-sliding doors which are power-operated as well as  
hand-operated.  
        (iv) The means of operation of any watertight door whether  
power-operated or not shall be capable of closing the door with the ship  
listed to 15 degrees either way.  
        (v) In all classes of watertight doors indicators shall be fitted  
which show, at all operating stations from which the doors are not  
visible, whether the doors are open or closed. If any of the watertight  
doors, of whatever Class, is not fitted so as to enable it to be closed  
from a central control station, it shall be provided with a mechanical,  
electrical, telephonic, or any other suitable direct means of  
communication,  enabling the officer of the watch promptly to contact the  
person who is responsible for closing the door in question, under previous  
orders.  
    (g) Hinged doors (Class 1) shall be fitted with quick action closing  
devices, such as catches, workable from each side of the bulkhead.  
    (h) Hand-operated sliding doors (Class 2) may have a horizontal or  
vertical motion. It shall be possible to operate the mechanism at the door  
itself from either side, and in addition,  from an accessible position  
above the bulkhead deck, with an all round crank motion,  or some other  
movement providing the same guarantee of safety and of an approved type.  
Departures from the requirement of operation on both sides may be allowed,  
if this requirement is impossible owing to the layout of the spaces. When  
operating a hand gear the time necessary for the complete closure of the  
door with the vessel upright, shall not exceed 90 seconds.  
    (i) (i) Power-operated sliding doors (Class 3) may have a vertical or  
horizontal motion. If a door is required to be power-operated from a  
central control, the gearing shall be so arranged that the doors can be  
operated by power also at the door itself from both sides. The arrangement  
shall be such that the door will close automatically if opened by local  
control after being closed from the central control,  and also such that  
any door can be kept closed by local systems which will prevent the door  
from being opened from the upper control. Local control handles in  
connexion with the power gear shall be provided each side of the bulkhead  
and shall be so arranged as to enable persons passing through the doorway  
to hold both handles in the open position without being able to set the  
closing mechanism in operation accidentally, Power-operated sliding doors  
shall be provided with hand gear workable at the door itself on either  
side and form an accessible position above the bulkhead deck, with an all  
round crank motion or some other movement providing the same guarantee of  
safety and of an approved type. Provision shall be made to give warnings  
by sound signal that the door has begun to close and will continue to move  
until it is completely closed. The door shall take a sufficient time to  
close to ensure safety.  
        (ii) There shall be at least two independent power sources capable  
of opening and closing all the doors under control, each of them capable  
of operating all the doors simultaneously. The two power sources shall be  
controlled from the central station on the bridge provided with all the  
necessary indicators for checking that each of the two power sources is  
capable of giving the required service satisfactorily.  
        (iii) In the case of hydraulic operation, each power source shall  
consist of a pump capable of closing all doors in not more than 60  
seconds. In addition, there shall be for the whole installation hydraulic  
accumulators of sufficient capacity to operate all the doors at least  
three times, i.e., closed-open-closed. The fluid used shall be one which  
does not freeze at any of the temperatures liable to be encountered by the  
ship during its service.  
    (j) (i) Hinged watertight doors (Class 1) in passenger, crew and  
working spaces are only permitted above a deck the underside of which, at  
its lower point at side, is at least 2.13 metres (7 feet) above the  
deepest subdivision load-line.  
        (ii) Watertight doors, the sills of which are above the deepest  
load-line and below the line specified in the preceding sub-paragraph  
shall be sliding doors and may be hand-operated (Class 2), except in  
vessels engaged on short international voyages and required to have a  
factor of subdivision of .50 or less in which all such doors shall be  
power-operated. When trunk ways in connexion with refrigerated cargo and  
ventilation or forced draught ducts are carried through more than one main  
watertight subdivision bulkhead, the doors at such openings shall be  
operated by power.  
    (k) (i) Watertight doors which may sometimes be opened at sea, and the  
sills of which are below the deepest subdivision load-line shall be  
sliding doors. The following rules shall apply:  
            (1) when the number of such doors (excluding doors at  
entrances to shaft tunnels)  exceeds five, all of these doors and those at  
the entrance to shaft tunnels or ventilation or forced draught ducts,  
shall be power-operated (Class 3) and shall be capable of being  
simultaneously closed from a central station situated on the bridge;  
            (2) when the number of such doors (excluding doors at  
entrances to shaft tunnels)  is greater than one, but does not exceed  
five,  
                (a) where the ship has no passenger spaces below the  
bulkhead deck, all the above-mentioned doors may be hand-operated (Class  
2);  
                (b) where the ship has passenger spaces below the bulkhead  
deck all the above mentioned doors shall be power-operated (Class 3) and  
shall be capable of being simultaneously closed from a central station  
situated on the bridge;  
            (3) in any ship where there are only two such watertight doors  
and they are into or within the space containing machinery, the  
Administration may allow these two doors to be hand-operated only (Class  
2).  
        (ii) If sliding watertight doors which have sometimes to be open  
at sea for the purpose of trimming coal are fitted between bunkers in the  
between decks below the bulkhead deck, these doors shall be operated by  
power. The opening and closing of these doors shall be recorded in such  
log book as may be prescribed by the Administration.  
    (l) (i) If the Administration is satisfied that such doors are  
essential, watertight doors of satisfactory construction may be fitted in  
watertight bulkheads dividing cargo between deck spaces. Such doors may be  
hinged, rolling or sliding doors but shall not be remotely controlled.  
They shall be fitted at the highest level and as far from the shell  
plating as practicable, but in no case shall the outboard vertical edges  
be situated at a distance from the shell plating which is less than one  
fifth of the breadth of the ship, as defined in Regulation 2 of this  
Chapter, such distance being measured at right angles to the centre line  
of the ship at the level of the deepest subdivision load-line.  
        (ii) Such doors as shall be closed before the voyage commences and  
shall be kept closed during navigation; and the time of opening such doors  
in port and of closing them before the ship leaves port shall be entered  
in the log book. Should any of the doors be accessible during the voyage,  
they shall be fitted with a device which prevents unauthorized opening.  
When it is proposed to fit such doors,  the number and arrangements shall  
receive the special consideration of the Administration.  
    (m) Portable plates on bulkheads shall not be permitted except in  
machinery spaces. Such plates shall always be in place before the ship  
leaves port, and shall not be removed during navigation except in case of  
urgent necessity. The necessary precautions shall be taken in replacing  
them to ensure that the joints shall be watertight.  
    (n) All watertight doors shall be kept closed during navigation except  
when necessarily opened for the working of the ship, and shall always be  
ready to be immediately closed.  
    (o) (i) Where trunk ways or tunnels for access from crew accommodation  
to the stokehold,  for piping, or for any other purposes are carried  
through main transverse watertight bulkheads, they shall be watertight and  
in accordance with the requirements of Regulation 16 of this Chapter. The  
access to at least one end of each such tunnel or trunkway, if used as a  
passage at sea, shall be through a trunk extending watertight to a height  
sufficient to permit access above the margin line. The access to the other  
end of the trunkway or tunnel may be through a watertight door of the type  
required by its location in the ship. Such trunkways or tunnels shall not  
extend through the first subdivision bulkhead abaft the collision  
bulkhead.  
        (ii) Where it is proposed to fit tunnels or trunkways for forced  
draught, piercing main transverse watertight bulkheads, these shall  
receive the special consideration of the Administration.  
       
     Regulation 14: Openings in the Shell Plating below the Margin Line  
  
    (a) The number of openings in the shell plating shall be reduced to  
the minimum compatible with the design and proper working of the ship.  
    (b) The arrangement and efficiency of the means for closing any  
opening in the shell plating shall be consistent with its intended purpose  
and the position in which it is fitted and generally to the satisfaction  
of the Administration.  
    (c) (i) If in a between decks, the sills of any sidescuttles are below  
a line drawn parallel to the bulkhead deck at side and having its lowest  
point 2 1/2 per cent of the breadth of the ship above the deepest  
subdivision load-line, all sidescuttles in that between deck shall be of  
the non-opening type.  
        (ii) All sidescuttles the stills of which are below the margin  
line, other than those required to be of a non-opening type by  
sub-paragraph (i) of this paragraph,  shall be of such construction as  
will effectively prevent any person opening them without the consent of  
the master of the ship.  
        (iii) (1) Where in a between decks, the sills of any of the  
sidescuttles referred to in sub-paragraph (ii) of this paragraph are below  
a line drawn parallel to the bulkhead deck at side and having its lowest  
point 1.37 metres (4 1/2 feet)  plus 2 1/2 per cent of the breadth of the  
ship above the water when the ship departs from any port, all the  
sidescuttles in that between decks shall be closed watertight and locked  
before the ship leaves port, and they shall not be opened before the ship  
arrives at the next port. In the application of this sub-paragraph the  
appropriate allowance for fresh water may be made when applicable.  
                (2) The time of opening such sidescuttles in port and of  
closing and locking them before the ship leaves port shall be entered in  
such log book as may be prescribed by the Administration.  
                (3) For any ship that has one or more sidescuttles so  
placed that the requirements of clause (1) of this sub-paragraph would  
apply when she was floating at her deepest subdivision load-line, the  
Administration may indicate the limiting mean draught at which these  
sidescuttles will have their sills above the line drawn parallel to the  
bulkhead deck at side, and having its lowest point 1.37 metres (4 1/2  
feet) plus 2 1/2 per cent of the breadth of the ship above the water-line  
corresponding to the limiting mean draught, and at which it will therefore  
be permissible to depart from port without previously closing and locking  
them and to open them at sea on the responsibility of the master during  
the voyage to the next port. In tropical zones as defined in the  
International Convention respecting Load-Lines in force, this limiting  
draught may be increased by 0.305 metres (1 foot)  
    (d) Efficient hinged inside deadlights arranged so that they can be  
easily and effectively closed and secured watertight shall be fitted to  
all sidescuttles except that abaft one-eighth of the ship\'s length from  
the forward perpendicular and above a line drawn parallel to the bulkhead  
deck at side and having its lowest point at a height of 3.66 metres (12  
feet) plus 2 1/2 per cent of the breadth of the ship above the deepest  
subdivision load-line, the deadlights may be portable in passenger  
accommodation other than that for steerage passengers, unless the  
deadlights are required by the International convention respecting  
Load-Lines in force to be permanently attached in their proper position.  
Such portable deadlights shall be stowed adjacent to the sidescuttles they  
serve.  
    (e) Sidescuttles and their deadlights, which will not be accessible  
during navigation,  shall be closed and secured before the ship leaves  
port.  
    (f) (i) No sidescuttles shall be fitted in any spaces which are  
appropriated exclusively to the carriage of cargo or coal.  
        (ii) Sidescuttles may, however, be fitted in spaces appropriated  
alternatively to the carriage of cargo or passengers, but they shall be of  
such construction as will effectively prevent any person opening them or  
their deadlights without the consent of the master of the ship.  
        (iii) If cargo is carried in such spaces, the sidescuttles and  
their deadlights shall be closed watertight and locked before the cargo is  
shipped and such closing and locking shall be recorded in such log book as  
may be prescribed by the Administration.  
    (g) Automatic ventilating sidescuttles shall not be fitted in the  
shell plating below the margin line without the special sanction of the  
Administration.  
    (h) The number of scuppers, sanitary discharges and other similar  
openings in the shell plating shall be reduced to the minimum either by  
making each discharge serve for as many as possible of the sanitary and  
other pipes, or in any other satisfactory manner.  
    (i) (i) All inlets and discharges in the shell plating shall be fitted  
with efficient and accessible arrangements for preventing the accidental  
admission of water into the ship. Lead or other heat sensitive materials  
shall not be used for pipes fitted outboard of shell valves in inlets or  
discharges, or any other application where the deterioration of such pipes  
in the event of fire would give rise to danger of flooding.  
        (ii) (1) Except as provided in sub-paragraph (iii) of this  
paragraph, each separate discharge led through the shell plating from  
spaces below he margin line shall be provided either with one automatic  
non-return valve fitted with a positive means of closing it from above the  
bulkhead deck, or, alternatively,  with two automatic non-return valves  
without such means, the upper of which is so situated above the deepest  
subdivision load-line as to be always accessible for examination under  
service conditions, and is of a type which is normally closed.  
                (2) Where a valve with positive means of closing is  
fitted, the operating position above the bulkhead deck shall always be  
readily accessible, and means shall be provided for indicating whether the  
valve is open or closed.  
        (iii) Main and auxiliary sea inlets and discharges in connexion  
with machinery shall be fitted with readily accessible cocks or valves  
between the pipes and shell plating or between the pipes and fabricated  
boxes attached to the shell plating.  
    (j) (i) Gangway, cargo and coaling ports fitted below the margin line  
shall be of sufficient strength. They shall be effectively closed and  
secured watertight before the ship leaves port, and shall be kept closed  
during navigation.  
        (ii) Such ports shall be in no case fitted so as to have their  
lowest point below the deepest subdivision load-line.  
    (k) (i) the inboard opening of each ash-shoot, rubbish-shoot, etc.,  
shall be fitted with an efficient cover.  
        (ii) If the inboard opening is situated below the margin line, the  
cover shall be watertight,  and in addition an automatic non-return valve  
shall be fitted in the shoot in an easily accessible position above the  
deepest subdivision load-line. When the shoot is not in use both the cover  
and the valve shall be kept closed and secured.  
       
     Regulation 15: Construction and Initial Tests of Watertight Doors,Sidescuttles, etc.  
  
    (a) (i) The design, materials and construction of all watertight  
doors, sidescuttles,  gangway, cargo and coaling ports, valves, pipes,  
ash-shoots and rubbish-shoots referred to in these Regulation shall be to  
the satisfaction of the Administration.  
        (ii) The frames of vertical watertight doors shall have no groove  
at the bottom in which dirt might lodge and prevent the door closing  
properly.  
        (iii) All cocks and valves for sea inlets and discharges below the  
bulkhead deck and all fittings outboard of such cocks and valves shall be  
made of steel, bronze or other approved ductile material. Ordinary cast  
iron or similar materials shall not be used.  
    (b) Each watertight door shall be tested by water pressure to a head  
up to the bulkhead deck. The test shall be made before the ship is put in  
service, either before or after the door is fitted.  
       
     Regulation 16: Construction and Initial Tests of Watertight Decks,Trunks, etc.  
  
    (a) Watertight decks, trunks, tunnels, duct keels and ventilators  
shall be of the same strength as watertight bulkheads at corresponding  
levels. The means used for making them watertight, and the arrangements  
adopted for closing openings in them, shall be to the satisfaction of the  
Administration. Watertight ventilators and trunks shall be carried at  
least up to the bulkhead deck.  
    (b) After completion, a hose or flooding test shall be applied to  
watertight decks and a hose test to watertight trunks, tunnels and  
ventilators.  
       
     Regulation 17: Watertight Integrity above the Margin Line  
  
    (a) The Administration may require that all reasonable and practicable  
measures shall be taken to limit the entry and spread of water above the  
bulkhead deck. Such measures may include partial bulkheads or webs. When  
partial watertight bulkheads and webs are fitted on the bulkhead deck,  
above or in the immediate vicinity of main subdivision bulkheads, they  
shall have watertight shell and bulkhead deck connexions so as to restrict  
the flow of water along the deck when the ship is in a heeled damaged  
condition. Where the partial watertight bulkhead does not line up with the  
bulkhead below, the bulkhead deck between shall be made effectively  
watertight.  
    (b) The bulkhead deck or a deck above it shall be weathertight in the  
sense that in ordinary sea conditions water will not penetrate in a  
downward direction. All openings in the exposed weather deck shall have  
coamings of ample height and strength and shall be provided with efficient  
means for expeditiously closing them weathertight. Freeing ports, open  
rails and/or scuppers shall be fitted as necessary for rapidly clearing  
the weather deck of water under all weather condition.  
    (c) Sidescuttles, gangway, cargo and coaling ports and other means for  
closing openings in the shell plating above the margin line shall be of  
efficient design and construction and of sufficient strength having regard  
to the spaces in which they are fitted and their positions relative to the  
deepest subdivision load-line.  
    (d) Efficient inside deadlights, arranged so that they can be easily  
and effectively closed and secured watertight, shall be provided for all  
sidescuttles to spaces below the first deck above the bulkhead deck.  
       
     Regulation 18: Bilge Pumping Arrangements in Passenger Ships  
  
    (a) Ships shall be provided with an efficient bilge pumping plant  
capable of pumping from and draining any watertight compartment which is  
neither a permanent oil compartment nor a permanent water compartment  
under all practicable conditions after a casualty whether the ship is  
upright or listed. For this purpose wing suctions will generally be  
necessary except in narrow compartments at the ends of the ship, where one  
suction may be sufficient. In compartments of unusual form, additional  
suctions may be required. Arrangements shall be made whereby water in the  
compartment may find its way to the suction pipes. Where in relation to  
particular compartments the Administration is satisfied that the provision  
of drainage may be undesirable, it may allow such provision to be  
dispensed with if calculations made in accordance with the conditions laid  
down in paragraph (b) of Regulation 7 of this Chapter show that the safety  
of the ship will not be impaired. Efficient means shall be provided for  
draining water from insulated holds.  
    (b) (i) Ships shall have at least three power pumps connected to the  
bilge main, one of which may be attached to the propelling unit. Where the  
criterion numeral is 30 or more, one additional independent power pump  
shall be provided.  
        (ii) The requirements are summarised in the following table:  
|-------------------------------------------------------------------|  
|                              |                  |                 |  
|  Criterion numeral           |   Less than 30   |    30 and over  |  
|                              |                  |                 |  
|-------------------------------------------------------------------|  
|                              |                  |                 |  
| Main engine pump (may be     |                  |                 |  
| replaced by one independent  |                  |                 |  
| pump)                        |        1         |        1        |  
| Independent pumps            |        2         |        3        |  
|                              |                  |                 |  
|-------------------------------------------------------------------|  
        (iii) Sanitary, ballast and general service pumps may be accepted  
as independent power bilge pumps if fitted with the necessary connexions  
to the bilge pumping system.  
    (c) Where practicable, the power bilge pumps shall be placed in  
separate watertight compartments so arranged or situated that these  
compartments will not readily be flooded by the same damage. If the  
engines and boilers are in two or more watertight compartments,  the pumps  
available for bilge service shall be distributed throughout these  
compartments as far as is possible.  
    (d) On ships 91.5 metres (300 feet) or more in length of having a  
criterion numeral of 30 or more, the arrangements shall be such that at  
least one power pump shall be available for use in all ordinary  
circumstances in which a ship may be flooded at sea. This requirement will  
be satisfied if:  
        (i) one of the required pumps is an emergency pump of a reliable  
submersible type having a source of power situated above the bulkhead  
deck; or  
        (ii) the pumps and their sources of power are so disposed  
throughout the length of the ship that under any condition of flooding  
which the ship is required to withstand,  at least one pump in an  
undamaged compartment will be available.  
    (e) With the exception of additional pumps which may be provided for  
peak compartments only, each required bilge pump shall be arranged to draw  
water from any space required to be drained by paragraph (a) of this  
Regulation.  
    (f) (i) Each power bilge pump shall be capable of giving a speed of  
water through the required main bilge pipe of not less than 122 metres  
(400 feet) per minute. Independent power bilge pumps situated in machinery  
spaces shall have direct suctions from these spaces, except that not more  
than two such suctions shall be required in any one space. Where two or  
more such suctions are provided there shall be at least one on the port  
side and one on the starboard side. The Administration may require  
independent power bilge pumps situated in other spaces to have separate  
direct suctions. Direct suctions shall be suitably arranged and those in a  
machinery space shall be of a diameter not less than that required for the  
bilge main.  
        (ii) In coal-burning ships there shall be provided in the  
stokehold, in addition to the other suctions required by this Regulation,  
a flexible suction hose of suitable diameter and sufficient length,  
capable of being connected to the suction side of an independent power  
pump.  
    (g) (i) In addition to the direct bilge suction or suctions required  
by paragraph (f) of this Regulation there shall be in the machinery space  
a direct suction from the main circulating pump leading to the drainage  
level of the machinery space and fitted with a non-return valve. The  
diameter of this direct suction pipe shall be at least two-thirds of the  
diameter of the pump inlet in the case of steamships,  and of the same  
diameter as the pump inlet in the case of motorships.  
        (ii) Where in the opinion of the Administration the main  
circulating pump is not suitable for this purpose, a direct emergency  
bilge suction shall be led from the largest available independent power  
driven pump to the drainage level of the machinery space; the suction  
shall be of the same diameter as the main inlet of the pump used. The  
capacity of the pump so connected shall exceed that of a required bilge  
pump by an amount satisfactory to the Administration.  
        (iii) The spindles of the sea inlet and direct suction valves  
shall extend well above the engine room platform.  
        (iv) Where the fuel is, or may be, coal and there is no watertight  
bulkhead between the engines and the boilers, a direct discharge overboard  
or alternatively a bypass to the circulating pump discharge, shall be  
fitted from any circulating pump used in compliance with a sub-paragraph  
(i) of this paragraph.  
    (h) (i) All pipes from the pumps which are required for draining cargo  
or machinery spaces shall be entirely distinct from pipes which may be  
used for filling or emptying spaces where water or oil is carried.  
        (ii) All bilge pipes used in or under coal bunkers or fuel storage  
tanks or in boiler or machinery spaces, including spaces in which  
oil-settling tanks or oil fuel pumping units are situated, shall be of  
steel or other approved material.  
    (i) The diameter of the bilge main shall be calculated according to  
the following formulae provided that the actual internal diameter of the  
bilge main may be of the nearest standard size acceptable to the  
Administration:  
                             \_\_\_\_\_\_\_\_\_  
                    d = 1.68√L(B + D) + 25  
    Where:     d = internal diameter of the bilge main in millimetres,  
               L and B are the length and the breadth of the ship in  
metres, as defined in Regulation 2 of this Chapter, and  
               D = moulded depth of the ship to bulkhead deck in metres;  
                              \_\_\_\_\_\_\_\_\_\_  
                              /L(B + D)  
                        d = √---------- + 1  
                                2,500  
    where:     d = internal diameter of the bilge main in inches,  
               L and B are the length and the breadth of the ship in feet,  
as defined in Regulation 2 of this Chapter, and  
               D = moulded depth of the ship to bulkhead deck in feet.  
    The diameter of the bilge branch pipes shall be determined by rules to  
be made by the Administration.  
    (j) The arrangement of the bilge and ballast pumping system shall be  
such as to prevent the possibility of water passing from the sea and from  
water ballast spaces into the cargo and machinery spaces, or from one  
compartment to another. Special provision shall be made to prevent any  
deep tank having bilge and ballast connexions being inadvertently run up  
from the sea when containing cargo, or pumped out through a bilge pipe  
when containing water ballast.  
    (k) Provision shall be made to prevent the compartment served by any  
bilge suction pipe being flooded in the event of the pipe being served, or  
otherwise damaged by collision or grounding in any other compartment. For  
this purpose, where the pipe is at any part situated nearer the side of  
the ship than one-fifth the breadth of the ship (measured at right angles  
to the centre line at the level of the deepest subdivision load-line), or  
in a duct keel, a non-return valve shall be fitted to the pipe in the  
compartment containing the open end.  
    (l) All the distribution boxes, cocks and valves in connexion with the  
bilge pumping arrangements shall be in positions which are accessible at  
all times under ordinary circumstances. They shall be so arranged that, in  
the event of flooding, one of the bilge pumps may be operative on any  
compartment; in addition, damage to a pump or its pipe connecting to the  
bilge main outboard of a line drawn at one-fifth of the breadth of the  
ship shall not put the bilge system out of action. If there is only one  
system of pipes common to all the pumps,  the necessary cocks or valves  
for controlling the bilge suctions must be capable of being operated from  
above the bulkhead deck. Where in addition to the main bilge pumping  
system an emergency bilge pumping system is provided, it shall be  
independent of the main system and so arranged that a pump is capable of  
operating on any compartment under flooding conditions;  in that case only  
the cocks and valves necessary for the operation of the emergency system  
need be capable of being operated from above the bulkhead deck.  
    (m) All cocks and valves mentioned in paragraph (l) of this Regulation  
which can be operated from above the bulkhead deck shall have their  
controls at their place of operation clearly marked and provided with  
means to indicate whether they are open or closed.  
       
     Regulation 19: Stability Information for Passenger Ships and CargoShips \*  
  
    [\* Reference is made to the Recommendation on Intact Stability for  
Passenger and Cargo ships under 100 metres in length, adopted by the  
Organization by Resolution A.167(ES.IV) and Amendments to this  
Recommendation adopted by the Organization by Resolution A.206(VII).]  
    (a) Every passenger ship and cargo ship shall be inclined upon its  
completion and the elements of its stability determined. The master shall  
be supplied with such reliable information as is necessary to enable him  
by rapid and simple processes to obtain accurate guidance as to the  
stability of the ship under varying conditions of service, and a copy  
shall be furnished to the Administration.  
    (b) Where any alternations are made to a ship so as to materially  
affect the stability information supplied to the master, amended stability  
information shall be provided. If necessary the ship shall be re-inclined.  
    (c) The Administration may allow the inclining test of an individual  
ship to be dispensed with provided basic stability data are available from  
the inclining test of a sister ship and it is shown to the satisfaction of  
the Administration that reliable stability information for the exempted  
ship can be obtained from such basic data.  
    (d) The Administration may also allow the inclining test of an  
individual ship or class of ships, especially designed for the carriage of  
liquids or ore in bulk, to be dispensed with when reference to existing  
data for similar ships clearly indicates that due to the ship\'s  
proportions and arrangements more than sufficient metacentric height will  
be available in all probable loading conditions.  
       
     Regulation 20: Damage Control Plans  
  
    There shall be permanently exhibited, for the guidance of the officer  
in charge of the ship, plans showing clearly for each deck and hold the  
boundaries of the watertight compartments,  the openings therein with the  
means of closure and position of any controls thereof,  and the  
arrangements for the correction of any list due to flooding. In addition,  
booklets containing the aforementioned information shall be made available  
to the officers of the ship.  
       
     Regulation 21: Marking, Periodical Operation and Inspection ofWatertight Doors, etc.  
  
    (a) This Regulation applies to new and existing ships.  
    (b) Drills for the operating of watertight doors, sidescuttles, valves  
and closing mechanisms of scuppers, ash-shoots and rubbish-shoots shall  
take place weekly. In ships in which the voyage exceeds one week in  
duration a complete drill shall be held before leaving port,  and others  
thereafter at least once a week during the voyage. In all ships all  
watertight power doors and hinged doors, in main transverse bulkheads, in  
use at sea, shall be operated daily.  
    (c) (i) The watertight doors and all mechanisms and indicators  
connected therewith, all valves the closing of which is necessary to make  
a compartment watertight, and all valves the operation of which is  
necessary for damage control cross connexions shall be periodically  
inspected at sea at least once a week.  
        (ii) Such valve, doors and mechanisms shall be suitably marked to  
ensure that they may be properly used to provide maximum safety.  
       
     Regulation 22: Entries in Log  
  
    (a) This Regulation applies to new and existing ships.  
    (b) Hinged doors, portable plates, sidescuttles, gangway, cargo and  
coaling ports and other openings, which are required by these Regulations  
to be kept closed during navigation,  shall be closed before the ship  
leaves port. The time of closing and the time of opening (if permissible  
under these Regulations) shall be recorded in such log book as may be  
prescribed by the Administration.  
    (c) A record of all drills and inspections required by Regulation 21  
of this Chapter shall be entered in the log book with an explicit record  
of any defects which may be disclosed.  
       
     PART C. MACHINERY AND ELECTRICAL INSTALLATIONS \*  
  
    [\* Reference is made to the Recommendation on Safety Measures for  
Periodically Unattended Machinery Spaces of Cargo Ships additional to  
those normally considered necessary for an Attended Machinery Space,  
adopted by the Organization by Resolution A.211(VII).]  (Part C applies to  
passenger ships and cargo ships)  
       
     Regulation 23: General  
  
    (a) Electrical installations in passenger ships shall be such that:  
        (i) services essential for safety will be maintained under various  
emergency conditions;  and  
        (ii) the safety of passengers, crew and ship from electrical  
hazards will be assured.  
    (b) Cargo ships shall comply with Regulation 26, 27, 28, 29, 30 and 32  
of this Chapter.  
       
     Regulation 24: Main Source of Electrical Power in Passenger Ships  
  
    (a) Every passenger ship, the electrical power of which constitutes  
the only means of maintaining the auxiliary services indispensable for the  
propulsion and the safety of the ship,  shall be provided with at least  
two main generating sets. The power of these sets shall be such that it  
shall still be possible to ensure the functioning of the services referred  
to in subparagraph (a) (i) of Regulation 23 of this Chapter in the event  
of any one of these generating sets being stopped.  
    (b) In a passenger ship where there is only one main generating  
station, the main switchboard shall be located in the same main fire zone.  
Where there is more than one main generating station, it is permissible to  
have only one main switchboard.  
       
     Regulation 25: Emergency Source of Electrical Power in PassengerShips  
  
    (a) There shall be above the bulkhead deck and outside the machinery  
casings a self-contained emergency source of electrical power. Its  
location in relation to the main source or sources of electrical power  
shall be such as to ensure to the satisfaction of the Administration that  
a fire or other casualty to the machinery space as defined in paragraph  
(h) of Regulation 2 of this Chapter will not interfere with the supply or  
distribution of emergency power. It shall not be forward of the collision  
bulkhead.  
    (b) The power available shall be sufficient to supply all those  
services that are, in the opinion of the Administration, necessary for the  
safety of the passengers and the crew in an emergency, due regard being  
paid to such services as may have to be operated simultaneously. Special  
consideration shall be given to emergency lighting at every boat station  
on deck and oversides, in all alleyways, stairways and exits, in the  
machinery spaces and in the control stations as defined in paragraph (r)  
of Regulation 3 of Chapter II-2, to the sprinkler pump, to navigation  
lights, and to the daylight signalling lamp if operated from the main  
source of power. The power shall be adequate for a period of 36 hours,  
except that, in the case of ships engaged regularly on voyages of short  
duration, the Administration may accept a lesser supply if satisfied that  
the same standard of safety would be attained.  
    (c) The emergency source of power may be either:  
        (i) a generator driven by a suitable prime-mover with an  
independent fuel supply and with approved starting arrangements; the fuel  
used shall have a flashpoint of not less than 43 ℃ (110 °F); or  
        (ii) an accumulator (storage) battery capable of carrying the  
emergency load without recharging or excessive voltage drop.  
    (d) (i) Where the emergency source of power is a generator there shall  
be provided a temporary source of emergency power consisting of an  
accumulator battery of sufficient capacity:  
            (1) to supply emergency lighting continuously for half an  
hour;  
            (2) to close the watertight doors (if electrically operated)  
but not necessarily to close them all simultaneously;  
            (3) to operate the indicators (if electrically operated) which  
show whether power-operated watertight doors are open or closed; and  
            (4) to operate the sound signals (if electrically operated)  
which give warning that power-operated watertight doors are about to  
close.  
            The arrangements shall be such that the temporary source of  
emergency power will come into operation automatically in the event of  
failure of the main electrical supply.  
        (ii) Where the emergency source of power is an accumulator  
battery, arrangements shall be made to ensure that emergency lighting will  
automatically come into operation in the event of failure of the main  
lighting supply.  
    (e) An indicator shall be mounted in the machinery space, preferably  
on the main switchboard, to indicate when any accumulator battery fitted  
in accordance with this Regulation is being discharged.  
    (f) (i) The emergency switchboard shall be installed as near as is  
practicable to the emergency source of power.  
        (ii) Where the emergency source of power is a generator, the  
emergency switchboard shall be located in the same space as the emergency  
source of power, unless the operation of the emergency switchboard would  
thereby be impaired.  
        (iii) No accumulator battery fitted in accordance with this  
Regulation shall be installed in the same space as the emergency  
switchboard.  
        (iv) The Administration may permit the emergency switchboard to be  
supplied from the main switchboard in normal operation.  
    (g) Arrangements shall be such that the complete emergency  
installation will function when the ship is inclined 22 1/2 degrees and/or  
when the trim of the ship is 10 degrees.  
    (h) Provision shall be made for the periodic testing of the emergency  
source of power and the temporary source of power, if provided, which  
shall include the testing of automatic arrangements.  
       
     Regulation 26: Emergency Source of Electrical Power in Cargo Ships  
  
    (a) Cargo ships of 5,000 Tons Gross Tonnage and upwards  
        (i) In cargo ships of 5,000 tons gross tonnage and upwards there  
shall be a self-contained emergency source of power, located to the  
satisfaction of the Administration above the uppermost continuous deck and  
outside the machinery casings, to ensure its functioning in the event of  
fire or other casualty causing failure to the main electrical  
installation.  
        (ii) The power available shall be sufficient to supply all those  
services which are, in the opinion of the Administration, necessary for  
the safety of all on board in an emergency,  due regard being paid to such  
services as may have to be operated simultaneously. Special consideration  
shall be given to:  
            (1) emergency lighting at every boat station on deck and  
oversides, in all alleyways,  stairways and exits, in the main machinery  
space and main generating set space, on the navigating bridge and in the  
chartroom;  
            (2) the general alarm; and  
            (3) navigation lights if solely electric, and the daylight  
signalling lamp if operated by the main source of electrical power.  
    The power shall be adequate for a period of 6 hours.  
        (iii) The emergency source of power may be either:  
            (1) an accumulator (storage) battery capable of carrying the  
emergency load without recharging or excessive voltage drop; or  
            (2) a generator driven by a suitable prime-mover with an  
independent fuel supply and with starting arrangements to the satisfaction  
of the Administration. The fuel used shall have a flashpoint of not less  
than 43℃ (110 °F).  
        (iv) Arrangements shall be such that the complete emergency  
installation will function when the ship is inclined 22 1/2 degrees and/or  
when the trim of the ship is 10 degrees.  
        (v) Provision shall be made for the periodic testing of the  
complete emergency installation.  
    (b) Cargo ships of less than 5,000 Tons Gross Tonnage  
        (i) In cargo ships of less than 5,000 tons gross tonnage there  
shall be a self-contained emergency source of power located to the  
satisfaction of the Administration, and capable of supplying the  
illumination at launching stations and stowage positions of survival craft  
prescribed in sub-paragraphs (a) (ii), (b) (ii) and (b) (iii) of  
Regulation 19 of Chapter III, and in addition such other services as the  
Administration may require, due regard being paid to Regulation 38 of  
Chapter III.  
        (ii) The power available shall be adequate for a period of at  
least 3 hours.  
        (iii) These ships shall also be subject to sub-paragraphs (iii),  
(iv), and (v) of paragraph (a) of this Regulation.  
       
     Regulation 27: Precaution against Shock, Fire and other Hazards ofElectrical Origin  
  
    (a) Passenger Ships and Cargo Ships  
        (i) (1) All exposed metal parts of electrical machines or  
equipment which are not intended to be "live" but are liable to become  
"live" under fault conditions, shall be earthed (grounded); and all  
electrical apparatus shall be so constructed and so installed that danger  
of injury in ordinary handling shall not exist.  
            (2) Metal frames of all portable electric lamps, tools and  
similar apparatus, supplied as ship\'s equipment and rated in excess of a  
safety voltage to be prescribed by the Administration shall be earthed  
(grounded) through a suitable conductor, unless equivalent provisions are  
made such as by double insulation or by an isolating transformer. The  
Administration may require additional special precautions for electric  
lamps, tools or similar apparatus for use in damp spaces.  
        (ii) Main and emergency switchboards shall be so arranged as to  
give easy access back and front, without danger to attendants. The sides  
and backs and, where necessary,  the fronts of switchboards shall be  
suitably guarded. There shall be non-conducting mats or gratings front and  
rear where necessary. Exposed current-carrying parts at voltages to earth  
(ground) exceeding a voltage to be specified by the Administration shall  
not be installed on the face of any switchboard or control panel.  
        (iii) (1) Where the hull return system of distribution is used,  
special precautions shall be taken to the satisfaction of the  
Administration.  
            (2) Hull return shall not be used in tankers.  
        (iv) (1) All metal sheaths and armour of cables shall be  
electrically continuous and shall be earthed (grounded).  
            (2) Where the cables are neither sheathed nor armoured and  
there might be a risk of fire in the event of an electrical fault,  
precautions shall be required by the Administration.  
        (v) Lighting fittings shall be arranged to prevent temperature  
rises that would be injurious to the wiring, and to prevent surrounding  
material from becoming excessively hot.  
        (vi) Wiring shall be supported in such a manner as to avoid  
chafing or other injury.  
        (vii) Each separate circuit shall be protected against short  
circuit. Each separate circuit shall also be protected against overload,  
except in accordance with Regulation 30 of this Chapter or where the  
Administration grants an exemption. The current-carrying capacity of each  
circuit shall be permanently indicated, together with the rating or  
setting of the appropriate overload protective device.  
        (viii) Accumulator batteries shall be suitably housed, and  
compartments used primarily for their accommodation shall be properly  
constructed and efficiently ventilated.  
    (b) Passenger Ships only  
        (i) Distribution systems shall be so arranged that fire in any  
main fire zone will not interfere with essential services in any other  
main fire zone. This requirement will be met if main and emergency feeders  
passing through any zone are separated both vertically and horizontally as  
widely as is practicable.  
        (ii) Electric cables shall be of a flame retarding type to the  
satisfaction of the Administration. The Administration may require  
additional safeguards for electric cables in particular spaces of the ship  
with a view to the prevention of fire or explosion.  
        (iii) In spaces where inflammable mixtures are liable to collect,  
no electrical equipment shall be installed unless it is of a type which  
will not ignite the mixture concerned,  such as flameproof (explosion  
proof) equipment.  
        (iv) A lighting circuit in a bunker or hold shall be provided with  
an isolating switch outside the space.  
        (v) Joints in all conductors except for low voltage communication  
circuits shall be made only in junction or outlet boxes. All such boxes or  
wiring devices shall be so constructed as to prevent the spread of fire  
from the box or device. Where splicing is employed it shall only be by an  
approved method such that it retains the original mechanical and  
electrical properties of the cable.  
        (vi) Wiring systems for interior communications essential for  
safety and for emergency alarm systems shall be arranged to avoid galleys,  
machinery spaces and other enclosed spaces having a high risk of fire  
except in so far as it is necessary to provide communication or to give  
alarm within those spaces. In the case of ships the construction and small  
size of which do not permit of compliance with these requirements,  
measures satisfactory to the Administration shall be taken to ensure  
efficient protection for these wiring systems where they pass through  
galleys,  machinery spaces and other enclosed spaces having a high risk of  
fire.  
    (c) Cargo Ships only  
    Devices liable to arc shall not be installed in any compartment  
assigned principally to accumulator batteries unless the devices are  
flameproof (explosion proof).  
       
     Regulation 28: Means of Going Astern  
  
    (a) Passenger Ships and Cargo Ships  
    Ships shall have sufficient power for going astern to secure proper  
control of the ship in all normal circumstances.  
    (b) Passenger Ships only  
    The ability of the machinery to reverse the direction of thrust of the  
propeller in sufficient time, under normal manoeuvring conditions, and so  
to bring the ship to rest from maximum ahead service speed shall be  
demonstrated at the initial survey.  
       
     Regulation 29: Steering Gear\*  
  
    [\* Reference is made to the Recommendation on Steering Gear for Large  
Ships, adopted by the Organization by Resolution A.210 (VII).]  
    (a) Passenger Ship and Cargo Ship  
        (i) Ships shall be provided with a main steering gear and an  
auxiliary steering gear to the satisfaction of the Administration.  
        (ii) The main steering gear shall be of adequate strength and  
sufficient to steer the ship at maximum service speed. The main steering  
gear and rudder stock shall be so designed that they are not damaged at  
maximum astern speed.  
        (iii) The auxiliary steering gear shall be of adequate strength  
and sufficient to steer the ship at navigable speed and capable of being  
brought speedily into action in an emergency.  
        (iv) The exact position of the rudder, if power-operated, shall be  
indicated at the principal steering station.  
    (b) Passenger Ships only  
        (i) The main steering gear shall be capable of putting the rudder  
over from 35 degrees on one side to 35 degrees on the other side with the  
ship running ahead at maximum service speed. The rudder shall be capable  
of being put over from 35 degrees on either side to 30 degrees on the  
other side in 28 seconds at maximum service speed.  
        (ii) The auxiliary steering gear shall be operated by power in any  
case in which the Administration would require a rudder stock of over  
228.6 millimetres (9 inches) diameter in way of the tiller.  
        (iii) Where main steering gear power units and their connexions  
are fitted in duplicate to the satisfaction of the Administration, and  
each power unit enables the steering gear to meet the requirements of  
sub-paragraph (i) of this paragraph, no auxiliary steering gear need be  
required.  
        (iv) Where the Administration would require a rudder stock with a  
diameter in way of the tiller exceeding 228.6 millimetres (9 inches) there  
shall be provided an alternative steering station located to the  
satisfaction of the Administration. The remote steering control systems  
from the principal and alternative steering station shall be so arranged  
to the satisfaction of the Administration that failure of either system  
would not result in inability to steer the ship by means of the other  
system.  
        (v) Means satisfactory to the Administration shall be provided to  
enable orders to be transmitted from the bridge to the alternative  
steering station.  
    (c) Cargo Ships only  
        (i) The auxiliary steering gear shall be operated by power in any  
case in which the Administration would require a rudder stock of over  
355.6 millimetres (14 inches) diameter in way of the tiller.  
        (ii) Where power-operated steering gear units and connexions are  
fitted in duplicate to the satisfaction of the Administration, and each  
unit complies with sub-paragraph (iii) of paragraph (a) of this  
Regulation, no auxiliary steering gear need be required,  provided that  
the duplicate units and connexions operating together comply with  
sub-paragraph (ii) of paragraph (a) of this Regulation.  
       
     Regulation 30: Electric and Electrohydraulic Steering Gear\*  
  
    [\* Reference is made to the Recommendation on Steering Gear for Large  
Ships, adopted by the Organization by Resolution A.210(VII).]  
    (a) Passenger Ships and Cargo Ships  
    Indicators for running indication of the motors of electric and  
electrohydraulic steering gear shall be installed in a suitable location  
to the satisfaction of the Administration.  
    (b) All Passenger Ships (irrespective of tonnage) and Cargo Ships of  
5,000 Tons Gross Tonnage and upwards  
        (i) Electric and electrohydraulic steering gear shall be served by  
two circuits fed from the main switchboard. One of the circuits may pass  
through the emergency switchboard,  if provided. Each circuit shall have  
adequate capacity for supplying all the motors which are normally  
connected to it and which operate simultaneously. If transfer arrangements  
are provided in the steering gear room to permit either circuit to supply  
any motor or combination of motors, the capacity of each circuit shall be  
adequate for the most severe load condition. The circuits shall be  
separated throughout their length as widely as is practicable.  
        (ii) Short circuit protection only shall be provided for these  
circuits and motors.  
    (c) Cargo Ships of less than 5,000 Tons Gross Tonnage  
        (i) Cargo ships in which electrical power is the sole source of  
power for both main and auxiliary steering gear shall comply with  
sub-paragraphs (i) and (ii) of paragraph (b) of this Regulation, except  
that if the auxiliary steering gear is powered by a motor primarily  
intended for other services, paragraph (b) (ii) may be waived, provided  
that the Administration is satisfied with the protection arrangements.  
        (ii) Short Circuit protection only shall be provided for motors  
and power circuits of electrically or electrohydraulically operated main  
steering gear.  
       
     Regulation 31: Location of Emergency Installations in PassengerShips  
  
    The emergency source of electrical power, emergency fire pumps,  
emergency bilge pumps, batteries of carbon dioxide bottles for fire  
extinguishing purposes and other emergency installations which are  
essential for the safety of the ship shall not be installed in a passenger  
ship forward of the collision bulkhead.  
       
     Regulation 32: Communication between Bridge and Engine Room  
  
    Ships shall be fitted with two means of communicating orders from the  
bridge to the engine room. One means shall be an engine room telegraph.  
       
     CHAPTER II-2 CONSTRUCTION-FIRE PROTECTION, FIRE DETECTION AND FIREEXTINCTION   
  
       
  
     PART A GENERAL\*  
  
    [\* See IMCO Recommendations concerning Fire Safety Requirements for  
Cargo Ships contained in Resolution A.327 (IX) of November 12, 1975 as  
well as Resolution A.417 (XI) of November 15, 1979 reproduced after the  
Convention.]  
       
     Regulation 1: Application  
  
    (a) For the purpose of this Chapter:  
        (i) A new passenger ship is a passenger ship the keel of which is  
laid or which is at a similar stage of construction on or after the date  
of coming into force of the present Convention, or a cargo ship which is  
converted to a passenger ship on or after that date, all other passenger  
ships being considered as existing ships.  
        (ii) A new cargo ship is a cargo ship the keel of which is laid or  
which is at a similar stage of construction on or after the date of coming  
into force of the present Convention.  
        (iii) A ship which undergoes repairs, alterations, modifications  
and outfitting related thereto shall continue to comply with at least the  
requirements previously applicable to the ship. An existing ship in such a  
case shall not as a rule comply to a lesser extent with the requirements  
for a new ship than it did before. Repairs,  alternations and  
modifications of a major character and outfitting related thereto should  
meet requirements for a new ship in so far as the Administration deems  
reasonable and practicable.  
    (b) Unless expressly provided otherwise:  
        (i) Regulation 4 to 16 of Part A of this Chapter apply to new  
ships.  
        (ii) Part B of this Chapter applies to new passenger ships  
carrying more than 36 passengers.  
        (iii) Part C of this Chapter applies to new passenger ships  
carrying not more than 36 passengers.  
        (iv) Part D of this Chapter applies to new cargo ships.  
        (v) Part E of this Chapter applies to new tankers.  
    (c) (i) Part F of this Chapter applies to existing passenger ships  
carrying more than 36 passengers.  
        (ii) Existing passenger ships carrying not more than 36 passengers  
and existing cargo ships shall comply with following:  
            (1) for ships the keels of which were laid or which were at a  
similar stage of construction on or after the date of coming into force of  
the International Convention for the Safety of Life at Sea, 1960,  the  
Administration shall ensure that the requirements which were applied under  
Chapter II of that Convention to new ships as defined in that Chapter are  
complied with;  
            (2) for ships the keels of which were laid or which were at a  
similar stage of construction on or after the date of coming into force of  
the International Convention for the Safety of Life at Sea, 1948,  but  
before the date of coming into force of the International Convention for  
the Safety of Life at Sea, 1960,  the Administration shall ensure that the  
requirements which were applied under Chapter II of the 1948 Convention to  
new ships as defined in that Chapter are complied with;  
            (3) for ships the keels of which were laid or which were at a  
similar stage of construction before the date of coming into force of the  
International Convention for the Safety of Life at Sea, 1948, the  
Administration shall ensure that the requirements which were applied under  
Chapter II of that Convention to existing ships as defined in that Chapter  
are complied with.  
    (d) For any existing ship as defined in the present Convention the  
Administration, in addition to applying the requirements of sub-paragraph  
(c) (i) of this Regulation, shall decide which of the requirements of this  
Chapter not contained in Chapter II of the 1948 and 1960 Conventions shall  
be applied.  
    (e) The Administration may, if it considers that the sheltered nature  
and conditions of the voyage are such as to render the application of any  
specific requirements of this Chapter unreasonable or unnecessary, exempt  
from those requirements individual ships or classes of ships belonging to  
its country which, in the course of their voyage, do not proceed more than  
20 miles from the nearest land.  
    (f) In the case of passenger ships which are employed in special  
trades for the carriage of large numbers of special trade passengers, such  
as the pilgrim trade, the Administration,  if satisfied that it is  
impracticable to enforce compliance with the requirements of this Chapter,  
may exempt such ships, when they belong to its country, from those  
requirements, provided that they comply fully with the provisions of:  
        (i) the Rules annexed to the Special Trade Passenger Ships  
Agreement, 1971, and  
        (ii) the Rules annexed to the Protocol on Space Requirements for  
Special Trade Passenger Ships, 1973, when it comes into force.  
       
     Regulation 2: Basic Principles  
  
    The purpose of this Chapter is to require the fullest practicable  
degree of fire protection,  fire detection and fire extinction in ships.  
The following basic principles underlie the Regulations in this Chapter  
and are embodied in the Regulations as appropriate, having regard to the  
type of ships and the potential fire hazard involved:  
    (a) division of ship into main vertical zones by thermal and  
structural boundaries;  
    (b) separation of accommodation spaces from the remainder of the ship  
by thermal and structural boundaries;  
    (c) restricted used of combustible materials;  
    (d) detection of any fire in the zone of origin;  
    (e) containment and extinction of any fire in the space of origin;  
    (f) protection of means of escape or access for fire fighting;  
    (g) ready availability of fire-extinguishing appliances;  
    (h) minimization of possibility of ignition of inflammable \* cargo  
vapour.  
    [\* "Inflammable" has the same meaning as "flammable."]  
       
     Regulation 3: Definitions  
  
    For the purpose of this Chapter, unless expressly provided otherwise:  
    (a) "Non-combustible material" means a material which neither burns  
nor gives off inflammable vapour in sufficient quantity for self-ignition  
when heated to approximately 750℃ (1,382 °F) this being determined to  
the satisfaction of the Administration by an established test procedure.  
\*\* any other material is a combustible material.  
    [\*\* Reference is made to Recommendation on Test Method for Qualifying  
Marine Construction Materials as Non-Combustible, adopted by the  
Organization by Resolution A.270 (VIII).]  
    (b) "A Standard Fire Test" is one in which specimens of the relevant  
bulkheads or decks are exposed in a test furnace to temperatures  
corresponding approximately to the standard time-temperature curve. The  
specimen shall have an exposed surface of not less than 4.65 square metres  
(50 square feet) and height (or length of deck) of 2.44 metres (8 feet)  
resembling as closely as possible the intended construction and including  
where appropriate at least one joint. The standard time-temperature curve  
is defined by a smooth curve drawn through the following points:  
              at the end of the first 5 minutes - 538 ℃ (1,000 °F)  
              at the end of the first 10 minutes - 704℃ (1,300 °F)  
              at the end of the first 30 minutes - 843℃ (1,550 °F)  
              at the end of the first 60 minutes - 927℃ (1,700 °F)  
    (c) " `A\' Class Divisions" are those divisions formed by bulkheads and  
decks which comply with the following:  
        (i) they shall be constructed of steel or other equivalent  
material;  
        (ii) they shall be suitably stiffened;  
        (iii) they shall be so constructed as to be capable of preventing  
the passage of smoke and flame to the end of the one-hour standard fire  
test;  
        (iv) they shall be insulated with approved non-combustible  
materials such that the average temperature of the unexposed side will not  
rise more than 139℃ (250 °F)  above the original temperature, nor will  
the temperature at any one point, including any joint,  rise more than 180  
℃ (325 °F) above the original temperature, within the time listed below:  
                  Class "A-60"         60 minutes  
                  Class "A-30"         30 minutes  
                  Class "A-15"         15 minutes  
                  Class "A-0"           0 minutes  
        (v) the Administration may require a test of a prototype bulkhead  
or deck to ensure that it meets the above requirements for integrity and  
temperature rise. \*  
    [\* Reference is made to Recommendation for Fire Test Procedures for  
"A" and "B" Class Divisions, adopted by the Organization by Resolutions A.  
163 (ES. IV) and A. 215(VII).]  
    (d) " `B\' Class Divisions" are those divisions formed by bulkheads,  
decks, ceilings or linings which comply with the following:  
        (i) they shall be so constructed as to be capable of preventing  
the passage of flame to the end of the first one-half hour of the standard  
fire test;  
        (ii) they shall have an insulation value such that the average  
temperature of the unexposed side will not rise more than 139℃ (250 °F)  
above the original temperature,  nor will the temperature at any one  
point, including any joint, rise more than 225 ℃ (405 °F) above the  
original temperature, within the time listed below:  
                  Class "B-15"         15 minutes  
                  Class "B-0"           0 minutes  
        (iii) they shall be constructed of approved non-combustible  
materials and all materials entering into the construction and erection of  
"B" Class divisions shall be non-combustible,  except where in accordance  
with Parts C and D of this Chapter the use of combustible material is not  
precluded, in which case it shall comply with the temperature rise  
limitation specified in sub-paragraph (ii) of this paragraph up to the end  
of the first one-half hour of the standard fire test;  
        (iv) the Administration may require a test of a prototype division  
to ensure that it meets the above requirements for integrity and  
temperature rise. \*  
    [\* Reference is made to Recommendation for Fire Test Procedures for  
"A" and "B" Class Divisions, adopted by the Organization by Resolutions  
A.163 (ES.IV) and A.215 (VII).]  
    (e) " `C\' Class Divisions" shall be constructed of approved  
non-combustible materials. They need meet no requirements relative to the  
passage of smoke and flame nor the limiting of temperature rise.  
    (f) "Continuous `B\' Class Ceilings or Linings" are those `B\' Class  
ceilings or linings which terminate only at an "A" or "B" Class division.  
    (g) "Steel or Other Equivalent Material". Where the words "steel or  
other equivalent material" occur, "equivalent material" means any material  
which, by itself or due to insulation provided, has structural and  
integrity properties equivalent to steel at the end of the applicable fire  
exposure to the standard fire test (e.g., aluminium alloy with appropriate  
insulation).  
    (h) "Low Flame Spread" means that the surface thus described will  
adequately restrict the spread of flame, this being determined to the  
satisfaction of the Administration by an established test procedure.  
    (i) "Main Vertical Zones" are those sections into which the hull,  
superstructure, and deckhouses are divided by "A" Class divisions, the  
mean length of which on any one deck does not in general exceed 40 metres  
(131 feet).  
    (j) "Accommodation Spaces" are those used for public spaces,  
corridors, lavatories,  cabins, offices, crew quarters, barber shops,  
isolated pantries and lockers and similar spaces.  
    (k) "Public Spaces" are those portions of the accommodation which are  
used for halls,  dining rooms, lounges and similar permanently enclosed  
spaces.  
    (l) "Service Spaces" are those used for galleys, main pantries, stores  
(except isolated pantries and lockers), mail and specie rooms, workshops  
other than those forming part of machinery spaces, and similar spaces and  
trunks to such spaces.  
    (m) "Cargo Spaces" are all spaces used for cargo (including cargo oil  
tanks) and trunks to such spaces.  
    (n) "Special Category Spaces" are those enclosed spaces above or below  
the bulkhead deck intended for the carriage of motor vehicles with fuel in  
their tanks for their now propulsion,  into and from which such vehicles  
can be driven and to which passengers have access.  
    (o) "Machinery spaces of Category A" are all spaces which contain:  
        (i) internal combustion type machinery used either for main  
propulsion purposes, or for other purposes where such machinery has in the  
aggregate a total power output of not less than 373 kW, or  
        (ii) any oil-fired boiler or oil fuel unit, and trunks to such  
spaces.  
    (p) "Machinery Spaces" are all machinery spaces of Category A and all  
other spaces containing propelling machinery, boilers, oil fuel units,  
steam and internal combustion engines, generators and major electrical  
machinery, oil filling station, refrigerating,  stabilizing, ventilation  
and air conditioning machinery, and similar spaces; and trunks to such  
spaces.  
    (q) "Oil Fuel Unit" means the equipment used for the preparation of  
oil fuel for delivery to an oil-fired boiler, or equipment used for the  
preparation for delivery of heated oil to an internal combustion engine,  
and includes any oil pressure pumps, filters and heaters dealing with oil  
at a pressure more than 1.8 kilogrammes per square centimetre (25 pounds  
per square inch) gauge.  
    (r) "Control Stations" are those spaces in which the ship\'s radio or  
main navigating equipment or the emergency source of power is located or  
where the fire recording or fire control equipment is centralized.  
    (s) "Rooms containing Furniture and Furnishings of Restricted Fire  
Risk" are, for the purpose of Regulation 20 of this Chapter, those rooms  
containing furniture and furnishings of restricted fire risk (whether  
cabins, public spaces, offices or other types of accommodation) in which:  
        (i) all case furniture such as desks, wardrobes, dressing tables,  
bureaux, dressers, is constructed entirely of approved non-combustible  
materials, except that a combustible veneer not exceeding 2 millimetres  
(1/12 inch) may be used on the working surface of such articles;  
        (ii) all free-standing furniture such as chairs, sofas, tables, is  
constructed with frames of non-combustible materials;  
        (iii) all draperies, curtains and other suspended textile  
materials have, to the satisfaction of the Administration, qualities of  
resistance to the propagation of flame not inferior to those of wool  
weighing 0.8 kilogrammes per square metre (24 ounces per square yard);  
        (iv) all floor coverings have, to the satisfaction of the  
Administration, qualities of resistance to the propagation of flame not  
inferior to those of an equivalent woolen material used for the same  
purpose; and  
        (v) all exposed surfaces of bulkheads, linings and ceilings have  
low flame-spread characteristics.  
    (t) "Bulkhead deck" is the uppermost deck up to which the transverse  
watertight bulkheads are carried.  
    (u) "Deadweight\' is the difference in metric tons between the  
displacement of a ship in water of a specific gravity of 1.025 at the load  
water-line corresponding to the assigned summer freeboard and the  
lightweight of the ship.  
    (v) "Lightweight" is the displacement of a ship in metric tons without  
cargo, fuel,  lubricating oil, ballast water, fresh water and feedwater in  
tanks, consumable stores, together with passengers, and crew and their  
effects.  
    (w) "Combination carrier" is a tanker designed to carry oil or  
alternatively solid cargoes in bulk.  
       
     Regulation 4: Fire Control Plans  
  
    There shall be permanently exhibited in all new and existing ships for  
the guidance of the ship\'s officers general arrangement plans showing  
clearly for each deck the control stations,  the various fire sections  
enclosed by "A" Class divisions, the sections enclosed by "B" Class  
divisions (if any), together with particulars of the fire alarms,  
detecting systems, the sprinkler installation (if any), the  
fire-extinguishing appliances, means of access to different compartments,  
decks, etc., and the ventilating system including particulars of the fan  
control positions, the position of dampers and identification numbers of  
the ventilating fans serving each section. Alternatively, at the  
discretion of the Administration, the aforementioned details may be set  
out in a booklet, a copy of which shall be supplied to each officer,  and  
one copy at all times shall be available on board in an accessible  
position. Plans and booklets shall be kept up to date, any alterations  
being recorded thereon as soon as practicable. Description in such plans  
and booklets shall be in the national language. If the language is neither  
English nor French, a translation into one of those languages shall be  
included. In addition, instructions concerning the maintenance and  
operation of all the equipment and installations on board for the fighting  
and containment of fire shall be kept under one cover,  readily available  
in an accessible position.  
       
     Regulation 5: Fire Pumps, Fire Mains, Hydrants and Hoses  
  
    (a) Total Capacity of Fire Pumps  
        (i) In a passenger ship, the required fire pumps shall be capable  
of delivering for firefighting purposes a quantity of water, at the  
appropriate pressure prescribed below,  not less than two-thirds of the  
quantity required to be dealt with by the bilge pumps when employed for  
bilge pumping.  
        (ii) In a cargo ship, the required fire pumps, other than the  
emergency pump (if any),  shall be capable of delivering for fire-fighting  
purposes a quantity of water, at the appropriate pressure prescribed, not  
less than four-thirds of the quantity required under Regulation 18 of  
Chapter II-1 to be dealt with by each of the independent bilge pumps in a  
passenger ship of the same dimensions when employed on bilge pumping,  
provided that in no cargo ship need the total required capacity of the  
fire pumps exceed 180 cubic metres per hour.  
    (b) Fire Pumps  
        (i) The fire pumps shall be independently driven. Sanitary,  
ballast, bilge or general service pumps may be accepted as fire pumps,  
provided that they are not normally used for pumping oil and that if they  
are subject to occasional duty for the transfer or pumping of fuel oil,  
suitable change-over arrangements are fitted.  
        (ii) (1) In passenger ships carrying more than 36 passengers, each  
of the required fire pumps shall have a capacity not less than 80 per cent  
of the total required capacity divided by the minimum number of required  
fire pumps and each such pump shall in any event be capable of delivering  
at least the two required jets of water. These fire pumps shall be capable  
of supplying the fire main system under the required conditions.  
        Where more pumps than the minimum of required pumps are installed  
the capacity of such additional pumps shall be to the satisfaction of the  
Administration.  
            (2) In all other types of ships, each of the required fire  
pumps (other than any emergency pump required by Regulation 52 of this  
Chapter) shall have a capacity not less than 80 per cent of the total  
required capacity divided by the number of required fire pumps, and shall  
in any event be capable of supplying the fire main system under the  
required conditions.  
        Where more pumps than required are installed their capacity shall  
be to the satisfaction of the Administration.  
        (iii) Relief valves shall be provided in conjunction with all fire  
pumps if the pumps are capable of developing a pressure exceeding the  
design pressure of the water service pipes, hydrants and hoses. These  
valves shall be so placed and adjusted as to prevent excessive pressure in  
any part of the fire main system.  
    (c) Pressure in the Fire Main  
        (i) The diameter of the fire main and water service pipes shall be  
sufficient for the effective distribution of the maximum required  
discharge from two fire pumps operating simultaneously, except that in the  
case of cargo ships the diameter need only be sufficient for the discharge  
of 140 cubic metres per hour.  
        (ii) With the two pumps simultaneously delivering through nozzles  
specified in paragraph (g) of this Regulation the quantity of water  
specified in sub-paragraph (i) of this paragraph, through any adjacent  
hydrants, the following minimum pressures shall be maintained at all  
hydrants:  
        Passenger ships:  
|-------------------------------------------------------------------------------  
|4,000 tons gross tonnage and          3.2 kilogrammes per square centimetre  
|upwards                               (45 pounds per square inch)  
|-------------------------------------------------------------------------------  
|1,000 tons gross tonnage and          2.8 kilogrammes per square centimetre  
|upwards but under 4,000 tons gross    (40 pounds per square inch)  
|tonnage  
|-------------------------------------------------------------------------------  
|Under 1,000 tons gross tonnage        To the satisfaction of the Administration  
|Cargo ships:  
|-------------------------------------------------------------------------------  
|6,000 tons gross tonnage and upwards  2.8 kilogrammes per square centimetre  
|                                      (40 pounds per square inch)  
|-------------------------------------------------------------------------------  
|1,000 tons gross tonnage and          2.6 kilogrammes per square centimetre  
|upwards but under 6,000 tons gross    (37 pounds per square inch)  
|tonnage  
|-------------------------------------------------------------------------------  
|Under 1,000 tons gross tonnage        To the satisfaction of the Administration  
|-------------------------------------------------------------------------------  
    (d) Number and Positions of Hydrants  
    The number and position of the hydrants shall be such that at least  
two jets of water not emanating from the same hydrant, one of which shall  
be from a single length of hose, may reach any part of the ship normally  
accessible to the passengers or crew while the ship is being navigated.  
    (e) Pipes and Hydrants  
        (i) Materials readily rendered ineffective by heat shall not be  
used for fire mains and hydrants unless adequately protected. The pipes  
and hydrants shall be so placed that the fire hoses may be easily coupled  
to them. In ships where deck cargo may be carried, the positions of the  
hydrants shall be such that they are always readily accessible and the  
pipes shall be arranged as far as practicable to avoid risk of damage by  
such cargo. Unless there is provided one hose and nozzle for each hydrant  
in the ship, there shall be complete interchangeability of hose couplings  
and nozzles.  
        (ii) A cock or valve shall be fitted to serve each fire hose so  
that any fire hose may be removed while the fire pumps are at work.  
    (f) Fire Hoses  
    Fire hoses shall be of material approved by the Administration and  
sufficient in length to project a jet of water to any of the spaces in  
which they may be required to be used. Their maximum length shall be to  
the satisfaction of the Administration. Each hose shall be provided with a  
nozzle and the necessary couplings. Hoses specified in this Chapter as  
"fire hoses" shall together with any necessary fittings and tools be kept  
ready for use in conspicuous positions near the water service hydrants or  
connexions. Additionally in interior locations in passenger ships carrying  
more than 36 passengers, fire hoses shall be connected to the hydrants at  
all times.  
    (g) Nozzles  
        (i) For the purposes of this Chapter, standard nozzle sizes shall  
be 12 millimetres (1/2 inch), 16 millimetres (5/8 inch) and 19 millimetres  
(3/4 inch) or as near thereto as possible. Larger diameter nozzles may be  
permitted at the discretion of the Administration.  
        (ii) For accommodation and service spaces, a nozzle size greater  
than 12 millimetres (1/ 2 inch) need not be used.  
        (iii) For machinery spaces and exterior locations, the nozzle size  
shall be such as to obtain the maximum discharge possible from two jets at  
the pressure mentioned in paragraph (c) of this Regulation from the  
smallest pump, provided that a nozzle size greater than 19 millimetres  
(3/4 inch) need not be used.  
        (iv) For machinery spaces or in similar spaces where the risk of  
spillage of oil exists,  the nozzles shall be suitable for spraying water  
on oil or alternatively shall be of a dual purpose type.  
    (h) International Shore Connexion  
    Standard dimensions of flanges for the international shore connexion  
required in this Chapter to be installed in the ship shall be in  
accordance with the following table:  
|------------------------------------------------------------------------------------------------------  
| Description                   | Dimension                                                           |  
|-------------------------------|---------------------------------------------------------------------|  
| Outside diameter              | 178 millimetres (7 inches)                                          |  
|-------------------------------|---------------------------------------------------------------------|  
| Inner diameter                | 64 millimetres (2 1/2 inches)                                       |  
|-------------------------------|---------------------------------------------------------------------|  
| Bolt circle diameter          | 132 millimetres (5 1/4 inches)                                      |  
|-------------------------------|---------------------------------------------------------------------|  
|                               | 4 holes 19 millimetres (3/4 inch) in diameter equidistantly         |  
| Slots in flange               | placed on a bolt circle of the above diameter, slotted to the       |  
|                               | flange periphery                                                    |  
|-------------------------------|---------------------------------------------------------------------|  
| Flange thickness              | 14.5 millimetres (9/16 inch) minimum                                |  
|-------------------------------|---------------------------------------------------------------------|  
|                               | 4, each of 16 millimetres (5/8 inch) diameter, 50 millimetres       |  
| Bolts and nuts                |                                                                     |  
|                               | (2 inches) in length                                                |  
|------------------------------------------------------------------------------------------------------  
    The connexion shall be constructed of material suitable for 10.5  
kilogrammes per square centimetre (150 pounds per square inch) service.  
The flange shall have a flat face on one side and the other shall have  
permanently attached thereto a coupling that will fit the ship\'s hydrant  
and hose. The connexion shall be kept aboard the ship together with a  
gasket of any material suitable for 10.5 kilogrammes per square centimetre  
(150 pounds per square inch)  service, together with four 16 millimetre  
(5/8 inch) bolts, 50 millimetres (2 inches) in length and eight washers.  
       
     Regulation 6: Miscellaneous Items  
  
    (a) Electric radiators, if used, shall be fixed in position and so  
constructed as to reduce fire risks to a minimum. No such radiators shall  
be fitted with an element so exposed that clothing, curtains, or other  
similar materials can be scorched or set on fire by heat from the element.  
    (b) Cellulose-nitrate based films shall not be used for cinematograph  
installations.  
       
     Regulation 7: Fire Extinguishers  
  
    (a) All fire extinguishers shall be of approved types and designs.  
        (i) The capacity of required portable fluid extinguishers shall be  
not more than 13.5 litres (3 gallons) and not less than 9 litres (2  
gallons). Other extinguishers shall not be in excess of the equivalent  
portability of the 13.5 litre (3 gallons) fluid extinguisher and shall not  
be less than the fire-extinguishing equivalent of a 9 litre (2 gallons)  
fluid extinguisher.  
        (ii) The Administration shall determine the equivalents of fire  
extinguishers.  
    (b) Spare charges shall be provided in accordance with requirements to  
be specified by the Administration.  
    (c) fire extinguishers containing an extinguishing medium which, in  
the opinion of the Administration, either by itself or under expected  
conditions of use gives off toxic gases in such quantities as to endanger  
persons shall not be permitted.  
    (d) A portable froth applicator unit shall consist of an inductor type  
of air-froth nozzle capable of being connected to the fire main by a fire  
hose, together with a portable tank containing at least 20 litres (4 1/2  
gallons) of froth-making liquid and one spare tank. The nozzle shall be  
capable of producing effective froth suitable for extinguishing an oil  
fire, at the rate of at least 1.5 cubic metres (53 cubic feet) per minute.  
    (e) Fire extinguishers shall be periodically examined and subjected to  
such tests as the Administration may require.  
    (f) One of the portable fire extinguishers intended for use in any  
space shall be stowed near the entrance to that space.  
       
     Regulation 8: Fixed Gas Fire-Extinguishing Systems  
  
    (a) The use of a fire-extinguishing medium which, in the opinion of  
the Administration,  either by itself or under expected conditions of use  
gives off toxic gases in such quantities as to endanger persons shall not  
be permitted.  
    (b) Where provision is made for the injection of gas for  
fire-extinguishing purposes, the necessary pipes for conveying the gas  
shall be provided with control valves or cocks so marked as to indicate  
clearly the compartments to which the pipes are led. Suitable provision  
shall be made to prevent inadvertent admission of the gas to any  
compartment. Where cargo spaces fitted with such a system for fire  
protection are used as passenger spaces the gas connexion shall be blanked  
during such use.  
    (c) The piping shall be arranged so as to provide effective  
distribution of fire-extinguishing gas.  
    (d) (i) When carbon dioxide is used as the extinguishing medium in  
cargo spaces, the quantity of gas available shall be sufficient to give a  
minimum volume of free gas equal to 30 per cent. of the gross volume of  
the largest cargo compartment in the ship which is capable of being  
sealed.  
        (ii) When carbon dioxide is used as an extinguishing medium for  
machinery spaces of Category A the quantity of gas carried shall be  
sufficient to give a minimum quantity of free gas equal to the larger of  
the following quantities, either:  
            (1) 40 per cent. of the gross volume of the largest space, the  
volume to include the casing up to the level at which the horizontal area  
of the casing is 40 per cent or less of the horizontal area of the space  
concerned taken midway between the tank top and the lowest part of the  
casing; or  
            (2) 35 per cent. of the entire volume of the largest space  
including the casing;  provided that the above-mentioned percentages may  
be reduced to 35 per cent, and 30 per cent. respectively for cargo ships  
of less than 2,000 tons gross tonnage; provided also that if two or more  
machinery spaces of Category A are not entirely separate they shall be  
considered as forming one compartment.  
        (iii) Where the volume of free air contained in air receivers if  
any machinery space of Category A is such that, if released in such space  
in the event of fire, such release of air within that space would  
seriously affect the efficiency of the fixed fire-extinguishing  
installation, the Administration shall require the provision of an  
additional quantity of carbon dioxide.  
        (iv) When carbon dioxide is used as an extinguishing medium both  
for cargo spaces and for machinery spaces of Category A the quantity of  
gas need not be more than the maximum required either for the largest  
cargo compartment or machinery space.  
        (v) For the purpose of this paragraph the volume of carbon dioxide  
shall be calculated at 0.56 cubic metres to the kilogramme (9 cubic feet  
to the pound).  
        (vi) When carbon dioxide is used as the extinguishing medium for  
machinery spaces of Category A the fixed piping system shall be such that  
85 per cent. of the gas can be discharged into the space within 2 minutes.  
        (vii) Carbon dioxide bottle storage rooms shall be situated at a  
safe and readily accessible position and shall be effectively ventilated  
to the satisfaction of the Administration. Any entrance to such storage  
rooms shall preferably be from the open deck, and in any case shall be  
independent of the protected space. Access doors shall be gastight and  
bulkheads and decks which form the boundaries of such rooms shall be  
gastight and adequately insulated.  
    (e) (i) Where gas other than carbon dioxide or steam as permitted by  
paragraph (f) of this Regulation is produced on the ship and is used as an  
extinguishing medium,  it shall be a gaseous product of fuel combustion in  
which the oxygen content,  the carbon monoxide content, the corrosive  
elements and any solid combustible elements have been reduced to a  
permissible minimum.  
        (ii) Where such gas is used as the extinguishing medium in a fixed  
fire-extinguishing system for the protection of machinery spaces of  
Category A it shall afford protection equivalent to that provided by a  
fixed carbon dioxide system.  
        (iii) Where such gas is used as the extinguishing medium in a  
fixed fire-extinguishing system for the protection of cargo spaces a  
sufficient quantity of such gas shall be available to supply hourly a  
volume of free gas at least equal to 25 per cent of the gross volume of  
the largest compartment protected in this way for a period of 72 hours.  
    (f) In general, the Administration shall not permit the use of steam  
as a fire-extinguishing medium in fixed fire-extinguishing systems of new  
ships. Where the use of steam is permitted by the Administration it shall  
be used only in restricted areas as an addition to the required  
fire-extinguishing medium and with the proviso that the boiler or boilers  
available for supplying steam shall have an evaporation of at least 1  
kilogramme of steam per hour for each 0.75 cubic metres (1 pound of steam  
per hour per 12 cubic feet) of the gross volume of the largest space so  
protected. In addition to complying with the foregoing requirements the  
systems in all respects shall be as determined by, and to the satisfaction  
of the Administration.  
    (g) Means shall be provided for automatically giving audible warning  
of the release of fire-extinguishing gas into any space to which personnel  
normally have access. The alarm shall operate for a suitable period before  
the gas is released.  
    (h) The means of control of any such fixed gas fire-extinguishing  
system shall be readily accessible and simple to operate and shall be  
grouped together in as few locations as possible at positions not likely  
to be cut off by a fire in the protected space.  
       
     Regulation 9: Fixed Froth Fire-Extinguishing Systems in MachinerySpaces  
  
    (a) Any required fixed froth fire-extinguishing system in machinery  
spaces shall be capable of discharging through fixed discharge outlets in  
not more than five minutes, a quantity of froth sufficient to cover to a  
depth of 150 millimetres (6 inches) the largest single area over which oil  
fuel is liable to spread. The system shall be capable of generating froth  
suitable for extinguishing oil fires. Means shall be provided for  
effective distribution of the froth through a permanent system of piping  
and control valves or cocks to suitable discharge outlets,  and for the  
froth to be effectively directed by fixed sprayers on other main fire  
hazards in the protected space. The expansion ratio of the froth shall not  
exceed 12 to 1.  
    (b) The means of control of any such systems shall be readily  
accessible and simple to operate and shall be grouped together in as few  
locations as possible at positions not likely to be cut off by a fire in  
the protected space.  
       
     Regulation 10: Fixed High Expansion Froth Fire-Extinguishing Sys-tems in Machinery Spaces  
  
    (a) (i) Any required fixed high expansion froth system in machinery  
spaces shall be capable of rapidly discharging through fixed discharge  
outlets a quantity of froth sufficient to fill the greatest space to be  
protected at a rate of at least 1 metre (3.3 feet) in depth per minute.  
The quantity of froth-forming liquid available shall be sufficient to  
produce a volume of froth equal to five time the volume of the largest  
space to be protected. The expansion ratio of the froth shall not exceed  
1,000 to 1.  
        (ii) The Administration may permit alternative arrangements and  
discharge rates provided that it is satisfied that equivalent protection  
is achieved.  
    (b) Supply ducts for delivering froth, air intakes to the froth  
generator and the number of froth-producing units shall in the opinion of  
the Administration be such as will provide effective froth production and  
distribution.  
    (c) The arrangement of the froth generator delivery ducting shall be  
such that a fire in the protected space will not affect the  
froth-generating equipment.  
    (d) The froth generator, its sources of power supply, froth-forming  
liquid and means of controlling the system shall be readily accessible and  
simple to operate and shall be grouped in as few locations as possible at  
positions not likely to be cut off by fire in the protected space.  
       
     Regulation 11: Fixed Pressure Water-Spraying Fire-Extinguishingsystems in Machinery Spaces  
  
    (a) Any required fixed pressure water-spraying fire-extinguishing  
system in machinery spaces shall be provided with spraying nozzles of an  
approved type.  
    (b) The number and arrangement of the nozzles shall be to the  
satisfaction of the Administration and be such as to ensure an effective  
average distribution of water of at least 5 litres per square metre (0.1  
gallon per square foot) per minute in the spaces to be protected. Where  
increased application rates are considered necessary, these shall be to  
the satisfaction of the Administration. Nozzles shall be fitted above  
bilges, tank tops and other areas over which oil fuel is liable to spread  
and also above other specific fire hazards in the machinery spaces.  
    (c) The system may be divided into sections, the distribution valves  
of which shall be operated from easily accessible positions outside the  
spaces to be protected and which will not be readily cut off by an  
outbreak of fire.  
    (d) The system shall be kept charged at the necessary pressure and the  
pump supplying the water for the system shall be put automatically into  
action by a pressure drop in the system.  
    (e) The pump shall be capable of simultaneously supplying at the  
necessary pressure all sections of the system in any one compartment to be  
protected. The pump and its controls shall be installed outside the space  
or spaces to be protected. It shall not be possible for a fire in the  
space or spaces protected by the water-spraying system to put the system  
out of action.  
    (f) The pump may be driven by independent internal combustion type  
machinery but if it is dependent upon power being supplied from the  
emergency generator fitted in compliance with the provisions of Regulation  
25 or Regulation 26 as appropriate of Chapter II-1 of the present  
Convention that generator shall be arranged to start automatically in case  
of main power failure so that power for the pump required by paragraph (e)  
of this Regulation is immediately available. When the pump is driven by  
independent internal combustion type machinery it shall be so situated  
that a fire in the protected space will not affect the air supply to the  
machinery.  
    (g) Precautions shall be taken to prevent the nozzles from becoming  
clogged by impurities in the water or corrosion of piping, nozzles, valves  
and pump.  
       
     Regulation 12: Automatic Sprinkler and Fire alarm and Fire Detec-tion Systems  
  
    (a) (i) Any required automatic sprinkler and fire alarm and fire  
detection system shall be capable of immediate operation at all times and  
no action by the crew shall be necessary to set it in operation. It shall  
be of the wet pipe type but small exposed sections may be of the dry pipe  
type where in the opinion of the Administration this is a necessary  
precaution. Any parts of the system which ma y be subjected to freezing  
temperatures in service shall be suitably protected against freezing. It  
shall be kept charged at the necessary pressure and shall have provision  
for a continuous supply of water as required in this Regulation.  
        (ii) Each section of sprinklers shall include means for giving a  
visual and audible alarm signal automatically at one or more indicating  
units whenever any sprinkler comes into operation. Such units shall give  
an indication of any fire and its location in any space served by the  
system and shall be centralized on the navigating bridge or in the main  
fire control station, which shall be so manned or equipped as to ensure  
that any alarm from the system is immediately received by a responsible  
member of the crew. Such alarm systems shall be constructed so as to  
indicate if any fault occurs in the system.  
    (b) (i) Sprinklers shall be grouped into separate sections, each of  
which shall contain not more than 200 sprinklers. Any section of  
sprinklers shall not serve more than two decks and shall not be situated  
in more than one main vertical zone,  except that an Administration, if it  
is satisfied that the protection of the ship against fire will not thereby  
be reduced, may permit such a section of sprinklers to serve more than two  
decks or to be situated in more than one main vertical zone.  
        (ii) Each section of sprinklers shall be capable of being isolated  
by one stop valve only. The stop valve in each section shall be readily  
accessible and its location shall be clearly and permanently indicated.  
Means shall be provided to prevent the operation of the stop valves by any  
unauthorized person.  
        (iii) A gauge indicating the pressure in the system shall be  
provided at each section stop valve and at a central station.  
        (iv) The sprinklers shall be resistant to corrosion by marine  
atmospheres. In accommodation and service spaces the sprinklers shall come  
into operation within the temperature range of 68℃ (155 °F) and 79 ℃  
(175°F), except that in locations such as drying rooms, where high  
ambient temperatures might be expected, the operating temperature may be  
increased by not more than 30℃ (54°F) above the maximum deck head  
temperature.  
        (v) A list or plan shall be displayed at each indicating unit  
showing the spaces covered and the location of the zone in respect of each  
section. Suitable instructions for testing and maintenance shall be  
available.  
    (c) Sprinklers shall be placed in an overhead position and spaced in a  
suitable pattern to maintain an average application rate of not less than  
5 litres per square metre (0.1 gallon per square foot) per minute over the  
nominal area covered by the sprinklers. Alternatively, the Administration  
may permit the use of sprinklers providing such other amount of water  
suitably distributed as has been shown to the satisfaction of the  
Administration to be not less effective.  
    (d) (i) A pressure tank having a volume equal to at least twice that  
of the charge of water specified in this sub-paragraph shall be provided.  
The tank shall contain a standing charge of fresh water, equivalent to the  
amount of water which would be discharged in one minute by the pump  
referred to in sub-paragraph (e) (ii) of this Regulation, and the  
arrangements shall provide for maintaining such air pressure in the tank  
to ensure that where the standing charge of fresh water in the tank has  
been used the pressure will be not less than the working pressure of the  
sprinkler, plus the pressure due to a head of water measured from the  
bottom of the tank to the highest sprinkler in the system. Suitable means  
of replenishing the air under pressure and of replenishing the fresh water  
charge in the tank shall be provided. A glass gauge shall be provided to  
indicate the correct level of the water in the tank.  
        (ii) Means shall be provided to prevent the passage of sea water  
into the tank.  
    (e) (i) An independent power pump shall be provided solely for the  
purpose of continuing automatically the discharge of water from the  
sprinklers. The pump shall be brought into action automatically by the  
pressure drop in the system before the standing fresh water charge in the  
pressure tank is completely exhausted.  
        (ii) The pump and the piping system shall be capable of  
maintaining the necessary pressure at the level of the highest sprinkler  
to ensure a continuous output of water sufficient for the simultaneous  
coverage of a minimum area of 280 square metres (3,000 square feet) at the  
application rate specified in paragraph (c) of this Regulation.  
        (iii) The pump shall have fitted on the delivery side a test valve  
with a short openended discharge pipe. The effective area through the  
valve and pipe shall be adequate to permit the release of the required  
pump output while maintain ing the pressure in the system specified in  
sub-paragraph (d) (i) of this Regulation.  
        (iv) The sea inlet to the pump shall wherever possible be in the  
space containing the pump and shall be so arranged that when the ship is  
afloat it will not be necessary to shut off the supply of sea water to the  
pump for any purpose other than the inspection or repair of the pump.  
    (f) The sprinkler pump and tank shall be situated in a position  
reasonably remote from any machinery space of Category A and shall not be  
situated in any space required to be protected by the sprinkler system.  
    (g) There shall be not less than two sources of power supply for the  
sea water pump and automatic alarm and detection system. Where the sources  
of power for the pump are electrical, these shall be a main generator and  
an emergency source of power. One supply for the pump shall be taken from  
the main switchboard, and one from the emergency switchboard by separate  
feeders reserved solely for that purpose.  
    The feeders shall be arranged so as to avoid galleys, machinery spaces  
and other enclosed spaces of high fire risk except in so far as it is  
necessary to reach the appropriate switchboards, and shall be run to an  
automatic change-over switch situated near the sprinkler pump. This switch  
shall permit the supply of power from the main switchboard so long as a  
supply is available therefrom, and be so designed that upon failure of  
that supply it will automatically change over to the supply from the  
emergency switchboard. The switches on the main switchboard and the  
emergency switchboard shall be clearly labelled and normally kept closed.  
No other switch shall be permitted in the feeders concerned. One of the  
sources of power supply for the alarm and detection system shall be an  
emergency source. Where one of the sources of power for the pump is an  
internal combustion-type engine it shall, in addition to complying with  
the provisions of paragraph (f) of this Regulation, be so situated that a  
fire in any protected space will not affect the air supply to the  
machinery.  
    (h) The sprinkler system shall have a connexion from the ship\'s fire  
main by way of a lockable screw-down non-return valve at the connexion  
which will prevent a backflow from the sprinkler system to the fire main.  
    (i) (i) A test valve shall be provided for testing the automatic alarm  
for each section of sprinklers by a discharge of water equivalent to the  
operation of one sprinkler. The test valve for each section shall be  
situated near the stop valve for that section.  
        (ii) Means shall be provided for testing the automatic operation  
of the pump, on reduction of pressure in the system.  
        (iii) Switches shall be provided at one of the indicating  
positions referred to in subparagraph (a) (ii) of this Regulation which  
will enable the alarm and the indicators for each section of sprinklers to  
be tested.  
    (j) Spare sprinkler heads shall be provided for each section of  
sprinklers to the satisfaction of the Administration.  
       
     Regulation 13: Automatic Fire Alarm and Fire Detection Systems  
  
    Requirements for passenger ships carrying more than 36 passengers  
    (a) (i) Any required automatic fire alarm and fire detection system  
shall be capable of immediate operation at all times and no action of the  
crew shall be necessary to set it in operation.  
        (ii) Each section of detectors shall include means for giving a  
visual and audible alarm signal automatically at one or more indicating  
units whenever any detector comes into operation. Such units shall give an  
indication of any fire and its location in any space served by the system  
and shall be centralized on the navigating bridge or in the main fire  
control station which shall be so manned or equipped as to ensure that any  
alarm from the system is immediately received by a responsible member of  
the crew. Such alarm system shall be constructed so as to indicate if any  
fault occurs in the system.  
    (b) Detectors shall be grouped into separate sections each covering  
not more than 50 rooms served by such a system and containing not more  
than 100 detectors. A section of detectors shall not serve spaces on both  
the port and starboard  
sides of the ship nor on more than one deck and neither shall it be  
situated in more than one main vertical zone except that the  
Administration, if it is satisfied that the protection of the ship against  
fire will not thereby be reduced, may permit such a section of detectors  
to serve both the port and starboard sides of the ship and more than one  
deck.  
    (c) The system shall be operated by an abnormal air temperature, by an  
abnormal concentration of smoke or by other factors indicative of  
incipient fire in any one of the spaces to be protected. Systems which are  
sensitive to air temperature shall not operate at less than 57℃ (135 °F)  
and shall operate at a temperature not greater than 74℃ (165 °F) when  
the temperature increase to those levels is not more than 1 ℃ (1.8 °F)  
per minute. At the discretion of the Administration the permissible  
temperature of operation may be increased to 30 ℃(54 °F) above the  
maximum deckhead temperature in drying rooms and similar places of a  
normally high ambient temperature. Systems which are sensitive to smoke  
concentration shall operate on the reduction of the intensity of a  
transmitted light beam by an amount to be determined by the  
Administration. Other equally effective methods of operation may be  
accepted at the discretion of the Administration. The detection system  
shall not be used for any purpose other than fire detection.  
    (d) The detectors may be arranged to operate the alarm by the opening  
or closing of contacts or by other appropriate methods. They shall be  
fitted in an overhead position and shall be suitably protected against  
impact and physical damage. They shall be suitable for use in a marine  
atmosphere. They shall be placed in an open position clear of beams and  
other objects likely to obstruct the flow of hot gases or smoke to the  
sensitive element. Detectors operated by the closing of contacts shall be  
of the sealed contact type and the circuit shall be continuously monitored  
to indicate fault conditions.  
    (e) At least one detector shall be installed in each space where  
detection facilities are required and there shall be not less than one  
detector for each 37 square metres (400 square feet) of deck area. In  
large spaces the detectors shall be arranged in a regular pattern so that  
no detector is more than 9 metres (30 feet) from another detector or more  
than 4.5 metres (15 feet) from a bulkhead.  
    (f) There shall be not less than two sources of power supply for the  
electrical equipment used in the operation of the fire alarm and fire  
detection system, one of which shall be an emergency source. The supply  
shall be provided by separate feeders reserved solely for that purpose.  
Such feeders shall run to a change-over switch situated in the control  
station for the fire detection system. The wiring system shall be so  
arranged to avoid galleys,  machinery spaces and other enclosed spaces  
having a high fire risk except in so far as it is necessary to provide for  
fire detection in such spaces or to reach the appropriate switchboard.  
    (g) (i) A list or plan shall be displayed adjacent to each indicating  
unit showing the spaces covered and the location of the zone in respect of  
each section. Suitable instructions for testing and maintenance shall be  
available.  
        (ii) Provision shall be made for testing the correct operation of  
the detectors and the indicating units by supplying means for applying hot  
air or smoke at detector positions.  
    (h) Spare detector heads shall be provided for each section of  
detectors to the satisfaction of the Administration.  
    Requirements for all other types of ships  
    (i) All required fire detection systems shall be capable of  
automatically indicating the presence or indication of fire and also its  
location. Indicators shall be centralized either on the navigating bridge  
or in other control stations which are provided with a direct  
communication with the bridge. The Administration may permit the  
indicators to be distributed among several stations.  
    (j) In passenger ships electrical equipment used in the operation of  
required fire detection systems shall have two separate sources of power,  
one of which shall be an emergency source.  
    (k) The alarm system shall operate both audible and visible signals at  
the main stations referred to in paragraph (i) of this Regulation.  
Detection systems for cargo spaces need not have audible alarms.  
       
     Regulation 14: Fireman\'s Outfit  
  
    A fireman\'s outfit shall consist of:  
    (a) Personal equipment comprising:  
        (i) Protective clothing of material to protect the skin from the  
heat radiating from the fire and from burns and scalding by steam. The  
outer surface shall be water-resistant.  
        (ii) Boots and gloves of rubber or other electrically  
non-conducting material.  
        (iii) A rigid helmet providing effective protection against  
impact.  
        (iv) An electric safety lamp (hand lantern) of an approved type  
with a minimum burning period of three hours.  
        (v) An axe to the satisfaction of the Administration.  
    (b) A breathing apparatus of an approved type which may be either:  
        (i) A smoke helmet or smoke mask which shall be provided with a  
suitable air pump and a length of air hose sufficient to reach from the  
open deck, well clear of hatch or doorway, to any part of the holds or  
machinery spaces. If, in order to comply with this sub-paragraph, an air  
hose exceeding 36 metres (120 feet) in length would be necessary, a  
self-contained breathing apparatus shall be substituted or provided in  
addition as determined by the Administration, or  
        (ii) a self-contained breathing apparatus which shall be capable  
of functioning for a period of time to be determined by the  
Administration.  
    For each breathing apparatus a fireproof lifeline of sufficient length  
and strength shall be provided capable of being attached by means of a  
snaphook to the harness of the apparatus or to a separate belt in order to  
prevent the breathing apparatus becoming detached when the lifeline is  
operated.  
       
     Regulation 15: Ready Availability of Fire-Extinguishing Appliances  
  
    In all new and existing ships, fire-extinguishing appliances shall be  
kept in good order and available for immediate use at all times during the  
voyage.  
       
     Regulation 16: Acceptance of Substitutes  
  
    Where in this Chapter any special type of appliance, apparatus,  
extinguishing medium or arrangement is specified in any new and existing  
ships, any other type of appliance etc.,  may be allowed, provided the  
Administration is satisfied that it is not less effective.  
       
     PART B FIRE SAFETY MEASURES FOR PASSENGER SHIPS CARRYING MORE THAN36PASSENGERS   
  
       
  
     Regulation 17: Structure  
  
    The hull, superstructure, structural bulkheads, decks and deckhouses  
shall be constructed of steel or other equivalent material. For the  
purpose of applying the definition of steel or other equivalent material  
as given in Regulation 3(g) of this Chapter the "applicable fire exposure"  
shall be according to the integrity and insulation standards given in the  
tables of Regulation 20 of this Chapter. An example where divisions such  
as decks or sides and ends of deckhouses are permitted to have "B-O" fire  
integrity, the "applicable fire exposure" shall be one half-hour.  
    Provided that in cases where any part of the structure is of aluminium  
alloy, the following requirements shall apply:  
    (a) The insulation of aluminium alloy components of "A" or "B" Class  
divisions, except structure which in the opinion of the Administration is  
non-load-bearing, shall be such that the temperature of the structural  
core does not rise more than 200℃ (360 °F) above the ambient temperature  
at any time during the applicable fire exposure to the standard fire test.  
    (b) Special attention shall be given to the insulation of aluminium  
alloy components of columns, stanchions and other structural members  
required to support lifeboat and liferaft stowage, launching and  
embarkation areas, and "A" and "B" Class divisions to ensure:  
        (i) that for such members supporting lifeboat and liferaft areas  
and "A" Class divisions the temperature rise limitation specified in  
paragraph (a) of this Regulation shall apply at the end of one hour; and  
        (ii) that for such members required to support "B" Class  
divisions, the temperature rise limitation specified in paragraph (a) of  
this Regulation shall apply at the end of one half-hour.  
    (c) Crowns and casings of machinery spaces of Category A shall be of  
steel construction adequately insulated and openings therein, if any,  
shall be suitably arranged and protected to prevent the spread of fire.  
       
     Regulation 18: Main Vertical Zones and Horizontal Zones  
  
    (a) The hull, superstructure and deckhouses shall be subdivided into  
main vertical zones by "A" Class division. Steps and recesses shall be  
kept to a minimum, but where they are necessary, they shall also be "A"  
Class divisions. These divisions shall have insulation values in  
accordance with the applicable tables in Regulation 20 of this Chapter.  
    (b) As far as practicable, the bulkheads forming the boundaries of the  
main vertical zones above the bulkhead deck shall be in line with  
watertight subdivision bulkheads situated immediately below the bulkhead  
deck.  
    (c) Such bulkheads shall extend from deck to deck and to the shell or  
other boundaries.  
    (d) Where a main vertical zone is subdivided by horizontal "A" Class  
divisions into horizontal zones for the purpose of providing an  
appropriate barrier between sprinklered and non-sprinklered zones of the  
ship the divisions shall extend between adjacent main vertical zone  
bulkheads and to the shell or exterior boundaries of the ship and shall be  
insulated in accordance with the fire insulation and integrity values  
given in Table 3 of Regulation 20 of this Chapter.  
    (e) On ships designed for special purposes, such as automobile or  
railroad car ferries,  where the provision of main vertical zone bulkheads  
would defeat the purpose for which the ship is intended, equivalent means  
for controlling and limiting a fire shall be substituted and specifically  
approved by the Administration. Provided that in a ship with special  
category spaces, any such space shall comply with the applicable  
provisions of Regulation 30 of this Chapter, and in so far as such  
compliance would be inconsistent with compliance with other requirements  
of this Part of this Chapter, the requirements of Regulation 30 shall  
prevail.  
       
     Regulation 19: Bulkheads within a Main Vertical Zone  
  
    (a) All bulkheads which are not required to be "A" Class divisions  
shall be at least "B" Class or "C" Class divisions as prescribed in the  
tables in Regulation 20 of this Chapter. All such divisions may be faced  
with combustible materials in accordance with the provisions of Regulation  
27 of this Chapter.  
    (b) All corridor bulkheads where not required to be "A" Class shall be  
"B" Class divisions which shall extend from deck to deck except:  
        (i) when continuous "B" Class ceilings and/or linings are fitted  
on both sides of the bulkhead, the portion of the bulkhead behind the  
continuous ceiling or lining shall be of material which in thickness and  
composition is acceptable in the construction of "B" Class divisions but  
which shall be required to meet "B" Class integrity standards only in so  
far as is reasonable and practicable in the opinion of the Administration;  
        (ii) in the case of a ship protected by an automatic sprinkler  
system complying with the provisions of Regulation 12 of this Chapter, the  
corridor bulkheads of "B" Class materials may terminate at a ceiling in  
the corridor provided such a ceiling is of material which in thickness and  
composition is acceptable in the construction of "B" Class divisions.  
Notwithstanding the requirements of Regulation 20 of this Chapter, such  
bulkheads and ceilings shall be required to meet "B" Class integrity  
standards only in so far as is reasonable and practicable in the opinion  
of the Administration. All doors and frames in such bulkheads shall be of  
incombustible materials and shall be constructed and erected so as to  
provide substantial fire resistance to the satisfaction of the  
Administration.  
    (c) All bulkheads required to be "B" Class divisions, except corridor  
bulkheads, shall extend from deck to deck and to the shell or other  
boundaries unless continuous "B" Class ceilings and/or linings are fitted  
on both sides of the bulkhead in which case the bulkhead may terminate at  
the continuous ceiling or lining.  
       
     Regulation 20: Fire Integrity of bulkheads and Decks  
  
    (a) In addition to complying with the specific provisions for fire  
integrity of bulkheads and decks mentioned elsewhere in the Regulations of  
this Part, the minimum fire integrity of all bulkheads and decks shall be  
as prescribed in Tables 1 to 4 in this Regulation. Where, due to any  
particular structural arrangements in the ship, difficulty is experienced  
in determining from the tables the minimum fire integrity value of any  
divisions, such values shall be determined to the satisfaction of the  
Administration.  
    (b) The following requirements shall govern application of the tables:  
        (i) Table 1 shall apply to bulkheads bounding main vertical zones  
or horizontal zones.  
            Table 2 shall apply to bulkheads not bounding either main  
vertical zones or horizontal zones.  
            Table 3 shall apply to decks forming steps in main vertical  
zones or bounding horizontal zones.  
            Table 4 shall apply to decks not forming steps in main  
vertical zones nor bounding horizontal zones.  
        (ii) For the purpose of determining the appropriate fire integrity  
standards to be applied to boundaries between adjacent spaces, such spaces  
are classified according to their fire risk as shown in Categories (1) to  
(14) below. Where the contents and use of a space are such that there is a  
doubt as to its classification for the purpose of this Regulation,  it  
shall be treated as a space within the relevant category having the most  
stringent boundary requirements. The title of each category is intended to  
be typical rather than restrictive. The number in parentheses preceding  
each category refers to the applicable column or row number in the tables.  
            (1) Control Stations  
                Spaces containing emergency sources of power and lighting.  
                Wheelhouse and chartroom.  
                Spaces containing the ship\'s radio equipment.  
                Fire control and recording stations.  
                Control room for propelling machinery when located outside  
the propelling machinery space.  
                Spaces containing centralized fire alarm equipment.  
                Spaces containing centralized emergency public address  
system stations and equipment.  
            (2) Stairways  
                Interior stairways, lifts and escalators (other than those  
wholly contained within the machinery spaces) for passengers and crew and  
enclosures thereto.  
                In this connexion, a stairway which is enclosed at only  
one level shall be regarded as part of the space from which it is not  
separated by a fire door.  
            (3) Corridors  
                Passenger and crew corridors.  
            (4) Lifeboat and Liferaft Handling and Embarkation Stations  
                Open deck spaces and enclosed promenades forming lifeboat  
and liferaft embarkation and lowering stations.  
            (5) Open Deck Spaces  
                Open deck spaces and enclosed promenades clear of lifeboat  
and liferaft embarkation and lowering stations.  
                Air space (the space outside superstructures and  
deckhouses).  
            (6) Accommodation Spaces of Minor Fire Risk  
                Cabins containing furniture and furnishings of restricted  
fire risk.  
                Public spaces containing furniture and furnishings of  
restricted fire risk.  
                Public spaces containing furniture and furnishings of  
restricted fire risk and having a deck area of less than 50 square metres  
(540 square feet).  
                Offices and dispensaries containing furniture and  
furnishings of restricted fire risk.  
            (7) Accommodation Spaces of Moderate Fire Risk  
                Same as (6) above but containing furniture and furnishings  
of other than restricted fire risk.  
                Public spaces containing furniture and furnishings of  
restricted fire risk and having a deck area of 50 square metres (540  
square feet) and greater.  
                Isolated lockers and small store-rooms in accommodation  
spaces.  
                Sale shops.  
                Motion picture projection and film stowage rooms.  
                Diet kitchens (containing no open flame).  
                Cleaning gear lockers (in which inflammable liquids are  
not stowed).  
                Laboratories (in which inflammable liquids are not  
stowed).  
                Pharmacies.  
                Small drying rooms (having a deck area of 4 square metres  
(43 square feet) or less).  
                Specie rooms.  
            (8) Accommodation Spaces of Greater Fire Risk  
                Public spaces containing furniture and furnishings of  
other than restricted fire risk and having a deck area of 50 square metres  
(540 square feet) and greater.  
                Barber shops and beauty parlours.  
            (9) Sanitary and Similar Spaces  
                Communal sanitary facilities, showers, baths, water  
closets, etc.  
                Small laundry rooms.  
                Indoor swimming pool area.  
                Operating rooms.  
                Isolated serving pantries in accommodation spaces.  
                Private sanitary facilities shall be considered a portion  
of the space in which they are located.  
            (10) Tanks, Voids and Auxiliary Machinery Spaces having little  
or no Fire Risk  
                Water tanks forming part of the ship\'s structure.  
                Voids and cofferdams.  
                Auxiliary machinery spaces which do not contain machinery  
having a pressure lubrication system and where storage of combustibles is  
prohibited, such as: ventilation and air-conditioning rooms; windlass  
room; steering gear room; stabilizer equipment room;  electrical  
propulsion motor room; rooms containing section switchboards and purely  
electrical equipment other than oil-filled electrical transformers (above  
10 kVA); shaft alleys and pipe tunnels; spaces for pumps and refrigeration  
machinery (not handling or using inflammable liquids).  
                Closed trunks serving the spaces listed above.  
                Other closed trunks such as pipe and cable trunks.  
            (11) Auxiliary Machinery Spaces, Cargo Spaces, Special  
Category Spaces, Cargo and other Oil Tanks and other Similar Spaces of  
Moderate Fire Risk  
                Cargo oil tanks.  
                Cargo holds, trunkways and hatchways.  
                Refrigerated chambers.  
                Oil fuel tanks (where installed in a separate space with  
no machinery).  
                Shaft alleys and pipe tunnels allowing storage of  
combustibles.  
                Auxiliary machinery spaces as in Category (10) which  
contain machinery having a pressure lubrication system or where storage of  
combustibles is permitted.  
                Oil fuel filling stations.  
                Spaces containing oil-filled electrical transformers  
(above 10 kVA).  
                Spaces containing turbine and reciprocating steam engine  
driven auxiliary generators and small internal combustion engines of power  
output up to 112 kW driving emergency generators, sprinkler, drencher or  
fire pumps, bilge pumps, etc.  
                Special category spaces (Tables 1 and 3 only apply).  
                Closed trunks serving the spaces listed above.  
            (12) Machinery Spaces and Main Galleys  
                Main propelling machinery rooms (other than electric  
propulsion motor rooms)  and boiler rooms.  
                Auxiliary machinery spaces other than those in Categories  
(10) and (11) which contain internal combustion machinery or other  
oil-burning, heating or pumping units.  
                Main galleys and annexes.  
                Trunks and casings to the spaces listed above.  
            (13) Store-rooms, Workshops, Pantries, etc.  
                Main pantries not annexed to galleys.  
                Main laundry  
                Large driving rooms (having a deck area of more than 4  
square metres (43 square feet)).  
                Miscellaneous stores.  
                Mail and baggage rooms.  
                Garbage rooms.  
                Workshops (not part of machinery spaces, galleys, etc.).  
            (14) Other Spaces in which Inflammable Liquids are stowed  
                Lamp rooms.  
       
     TABLE 1-BULKHEADS BOUNDING MAIN VERTICAL ZONES OR HORIZONTAL ZONES  
  
|---------------------------------------------------------------------------------------------------------------------------------------------  
|Spaces                                  |  (1)  |  (2) |  (3) |  (4) |  (5) |  (6) |  (7) |  (8) |  (9) | (10) | (11) | (12) | (13) | (14)  |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Control stations                  (1)   | A-60  | A-30 | A-30 | A-0  | A-0  | A-60 | A-60 | A-60 | A-0  | A-0  | A-60 | A-60 | A-60 | A-60  |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      |      | A-15 | A-30 | A-60 |      |      |      |      | A-15 |       |  
|Stairways                         (2)   |       | A-0  | A-0  | A-0  | A-0  |      |      |      | A-0  | A-0  | A-30 | A-60 |      | A-60  |  
|                                        |       |      |      |      |      | A-0  | A-0  | A-15 |      |      |      |      | A-0  |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      |      |      | A-30 | A-30 |      |      |      |      | A-15 |       |  
|Corridors                         (3)   |       |      | A-0  | A-0  | A-0  | A-0  |      |      | A-0  | A-0  | A-30 | A-60 |      | A-60  |  
|                                        |       |      |      |      |      |      | A-0  | A-0  |      |      |      |      | A-0  |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Lifeboat and liferaft handling    (4)   |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|                                        |       |      |      | -    | -    | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-60 | A-0  | A-60  |  
|and embarkation stations                |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|Open deck spaces                  (5)   |       |      |      |      |      | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0   |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Accommodation spaces of mi-       (6)   |       |      |      |      |      | A-15 | A-30 | A-30 |      |      | A-15 |      | A-15 |       |  
|                                        |       |      |      |      |      |      |      |      | A-0  | A-0  |      | A-30 |      | A-30  |  
|nor fire risk                           |       |      |      |      |      | A-0  | A-0  | A-0  |      |      | A-0  |      | A-0  |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Accommodation spaces of           (7)   |       |      |      |      |      |      | A-30 | A-60 |      |      | A-30 |      | A-30 |       |  
|                                        |       |      |      |      |      |      |      |      | A-0  | A-0  |      | A-60 |      | A-60  |  
|moderate fire risk                      |       |      |      |      |      |      | A-0  | A-15 |      |      | A-0  |      | A-0  |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Accommodation spaces of           (8)   |       |      |      |      |      |      |      | A-60 |      |      | A-60 |      | A-30 |       |  
|                                        |       |      |      |      |      |      |      |      | A-0  | A-0  |      | A-60 |      | A-60  |  
|greater fire risk                       |       |      |      |      |      |      |      | A-15 |      |      | A-15 |      | A-0  |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|Sanitary and similar spaces       (9)   |       |      |      |      |      |      |      |      | A-0  | A-0  | A-0  | A-0  | A-0  | A-0   |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Tanks, voids and auxiliary        (10)  |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|machinery spaces having little          |       |      |      |      |      |      |      |      |      | A-0  | A-0  | A-0  | A-0  | A-0   |  
|or no fire risk                         |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Auxiliary machinery spaces,       (11)  |       |      |      |      |      |      |      |      |      |      | A-0  | A-60 | A-0  | A-60  |  
|cargo spaces, special category          |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|spaces, cargo and other oil             |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|tanks and other similar spaces          |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|of moderate fire risk                   |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Machinery spaces and main         (12)  |       |      |      |      |      |      |      |      |      |      |      |      |     2|       |  
|                                        |       |      |      |      |      |      |      |      |      |      |      | A-60 | A-30 | A-60  |  
|galleys                                 |       |      |      |      |      |      |      |      |      |      |      |      | A-15 |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Store-rooms, workshops,           (13)  |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      | A-0  | A-30  |  
|pantries. etc.                           |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Other spaces in which in-         (14)  |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      | A-60  |  
|flammable liquids are stowed            |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|---------------------------------------------------------------------------------------------------------------------------------------------  
       
     TABLE 2-BULKHEADS NOT BOUNDING EITHER MAIN VERTICAL ZONES OR HORI-ZONTAL ZONES  
  
|---------------------------------------------------------------------------------------------------------------------------------------------  
|Spaces                                  |  (1)  |  (2) |  (3) |  (4) |  (5) |  (6) |  (7) |  (8) |  (9) | (10) | (11) | (12) | (13) | (14)  |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |    1  |      |      |      | A-0  |      |      |      |      |      |      |      |      |       |  
|Control stations                  (1)   | B-0   | A-0  | A-0  | A-0  |      | A-60 | A-60 | A-60 | A-0  | A-0  | A-60 | A-60 | A-60 | A-60  |  
|                                        |       |      |      |      | B-0  |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |    1 |      |      |      |      | A-15 | A-30 |      |      |      |      | A-15 |       |  
|Stairways                         (2)   |       | A-0  | A-0  | A-0  | A-0  | A-0  |      |      | A-0  | A-0  | A-15 | A-30 |      | A-30  |  
|                                        |       |      |      |      |      |      | A-0  | A-0  |      |      |      |      | A-0  |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      | A-0  |      | B-15 | B-15 |      |      |      |      |      | A-30  |  
|Corridors                         (3)   |       |      |  C   | A-0  |      | B-0  |      |      | B-0  | A-0  | A-15 | A-30 | A-0  |       |  
|                                        |       |      |      |      | B-0  |      | B-0  | B-0  |      |      |      |      |      | A-0   |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Lifeboat and liferaft handling    (4)   |       |      |      |      |      |      |      |      |      |      |      |      | A-0  | A-15  |  
|                                        |       |      |      |  -   |  -   | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-15 |      |       |  
|and embarkation stations                |       |      |      |      |      |      |      |      |      |      |      |      |      | A-0   |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      |      | A-0  | A-0  | A-0  | A-0  |      |      |      | A-0  | A-0   |  
|Open deck space                   (5)   |       |      |      |      |  -   |      |      |      |      | A-0  | A-0  | A-0  |      |       |  
|                                        |       |      |      |      |      | B-0  | B-0  | B-0  | B-0  |      |      |      | B-0  | B-0   |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Accommodation spaces of mi-       (6)   |       |      |      |      |      | B-0  | B-15 | B-15 | B-0  | A-0  | A-15 | A-30 |      | A-30  |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      | A-0  |       |  
|nor fire risk                           |       |      |      |      |      |  C   | C    | C    | C    |      | A-0  |      |      | A-0   |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Accommodation spaces of           (7)   |       |      |      |      |      |      | B-15 | B-15 | B-0  | A-0  | A-15 | A-60 | A-15 | A-60  |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|moderate fire risk                      |       |      |      |      |      |      | C    | C    | C    |      | A-0  |      | A-0  | A-15  |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Accommodation spaces of           (8)   |       |      |      |      |      |      |      | B-15 | B-0  | A-0  | A-30 | A-60 | A-15 | A-60  |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|greater fire risk                       |       |      |      |      |      |      |      | C    | C    |      | A-0  |      | A-0  | A-15  |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|Sanitary and similar spaces       (9)   |       |      |      |      |      |      |      |      | C    | A-0  | A-0  | A-0  | A-0  | A-0   |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Tanks. voids and auxiliary        (10)  |       |      |      |      |      |      |      |      |      |    1 |      |      |      |       |  
|machinery spaces having little          |       |      |      |      |      |      |      |      |      | A-0  | A-0  | A-0  | A-0  | A-0   |  
|or no fire risk                         |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Auxiliary machinery spaces,       (11)  |       |      |      |      |      |      |      |      |      |      |    1 |      |      |     2 |  
|cargo spaces, cargo and other           |       |      |      |      |      |      |      |      |      |      | A-0  | A-0  | A-0  | A-30  |  
|oil tanks and other similar             |       |      |      |      |      |      |      |      |      |      |      |      |      | A-15  |  
|spaces of moderate fire risk            |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Machinery spaces and main         (12)  |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|                                        |       |      |      |      |      |      |      |      |      |      |      | A-0  | A-0  | A-60  |  
|galleys                                 |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Store-rooms, workshops.           (13)  |       |      |      |      |      |      |      |      |      |      |      |      |    1 |       |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      | A-0  | A-0   |  
|pantries, etc.                          |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Other spaces in which in-         (14)  |       |      |      |      |      |      |      |      |      |      |      |      |      |     2 |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      | A-30  |  
|flammable liquids are stowed            |       |      |      |      |      |      |      |      |      |      |      |      |      | A-15  |  
|---------------------------------------------------------------------------------------------------------------------------------------------  
       
     TABLE 3-DECKS FORMING STEPS IN MAIN VERTICAL ZONES OR BOUNDINGHORIZONTAL ZONES  
  
|---------------------------------------------------------------------------------------------------------------------------------------------  
|Space below ↓ Space above →           |  (1)  |  (2) |  (3) |  (4) |  (5) |  (6) |  (7) |  (8) |  (9) | (10) | (11) | (12) | (13) | (14)  |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|Control stations                  (1)   | A-60  | A-60 | A-30 | A-0  | A-0  | A-15 | A-30 | A-60 | A-0  | A-0  | A-30 | A-60 | A-15 | A-60  |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      |      |      | A-15 | A-15 |      |      |      |      |      |       |  
|Stairways                         (2)   | A-15  | A-0  | A-0  | A-0  | A-0  | A-0  |      |      | A-0  | A-0  | A-0  | A-60 | A-0  | A-60  |  
|                                        |       |      |      |      |      |      | A-0  | A-0  |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      | A-0  |      | A-15 | A-15 |      |      |      |      |      | A-60  |  
|Corridors                         (3)   | A-30  | A-0  | A-0  | A-0  |      | A-0  |      |      | A-0  | A-0  | A-0  | A-60 | A-0  |       |  
|                                        |       |      |      |      | B-0  |      | B-0  | B-0  |      |      |      |      |      | A-0   |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Lifeboat and liferaft handling    (4)   | A-0   | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0   |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|and embarkation stations                |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|Open deck spaces                  (5)   | A-0   | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0   |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Accommodation spaces of mi-       (6)   |       | A-30 | A-15 |      |      |      | A-15 | A-30 |      |      | A-15 |      |      |       |  
|                                        | A-60  |      |      | A-0  | A-0  | A-0  |      |      | A-0  | A-0  |      | A-15 | A-0  | A-15  |  
|nor fire risk                           |       | A-0  | A-0  |      |      |      | A-0  | A-0  |      |      | A-0  |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Accommodation spaces of           (7)   |       | A-60 | A-30 | A-15 |      | A-15 | A-30 | A-60 |      |      | A-30 |      |      |       |  
|                                        | A-60  |      |      |      | A-0  |      |      |      | A-0  | A-0  |      | A-30 | A-0  | A-30  |  
|moderate fire risk                      |       | A-15 | A-0  | A-0  |      | A-0  | A-0  | A-15 |      |      | A-0  |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Accommodation spaces of           (8)   |       | A-60 | A-60 | A-0  |      | A-60 | A-60 | A-0  |      |      | A-60 |      | A-60 |       |  
|                                        | A-60  |      |      |      | A-30 |      |      |      | A-0  | A-30 |      | A-15 |      |       |  
|greater fire risk                       |       | A-15 | A-15 | A-15 |      | A-0  | A-15 | A-15 |      |      | A-0  |      | A-0  |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|Sanitary and similar spaces       (9)   | A-0   | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0   |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Tanks, voids and auxiliary        (10)  |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|machinery spaces having little          | A-0   | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0   |  
|or no fire risk                         |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Auxiliary machinery spaces.       (11)  | A-60  | A-60 | A-60 | A-60 | A-0  | A-30 | A-60 | A-60 | A-0  | A-0  | A-0  | A-30 |     2| A-30  |  
|cargo spaces, special category          |       |      |      |      |      | A-0  | A-15 | A-15 |      |      |      |      | A-30 |       |  
|spaces, cargo and other oil             |       |      |      |      |      |      |      |      |      |      |      |      | A-0  |       |  
|tanks and other similar spaces          |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|of moderate fire risk                   |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Machinery spaces and main         (12)  |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|                                        | A-60  | A-60 | A-60 | A-60 | A-0  | A-60 | A-60 | A-60 | A-0  | A-0  | A-60 | A-60 | A-60 | A-60  |  
|galleys                                 |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Store-rooms, workshops,           (13)  | A-60  | A-60 | A-30 | A-15 | A-0  | A-15 | A-30 | A-60 | A-0  | A-0  | A-0  | A-30 | A-0  | A-30  |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|pantries, etc.                          |       | A-15 | A-0  |      |      | A-0  | A-0  | A-15 |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Other spaces in which in-         (14)  | A-60  | A-60 | A-60 | A-60 | A-0  | A-60 | A-60 | A-60 | A-0  | A-0  | A-60 | A-60 | A-60 | A-60  |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|flammable liquids are stowed            |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|---------------------------------------------------------------------------------------------------------------------------------------------  
       
     TABLE 4-DECKS NOT FORMING STEPS IN MAIN VERTICAL ZONES NOR BOUN-ING HORIZONTAL ZONES  
  
|---------------------------------------------------------------------------------------------------------------------------------------------  
|Space below ↓ Space above →           |  (1)  |  (2) |  (3) |  (4) |  (5) |  (6) |  (7) |  (8) |  (9) | (10) | (11) | (12) | (13) | (14)  |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        | A-30  | A-30 | A-15 | A-0  | A-0  | A-0  | A-15 | A-30 | A-0  | A-0  | A-0  | A-60 | A-0  | A-60  |  
|Control stations                  (1)   |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|                                        | A-0   | A-0  | A-0  |      | B-0  |      | A-0  | A-0  |      |      |      |      |      | A-15  |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        |       |      |      |      | A-0  |      |      |      |      |      |      |      |      | A-30  |  
|Stairways                         (2)   | A-0   | A-0  | A-0  | A-0  |      | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-30 | A-0  |       |  
|                                        |       |      |      |      | B-0  |      |      |      |      |      |      |      |      | A-0   |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        | A-15  |      |    1 |      | A-0  | A-0  | A-15 | A-15 | A-0  |      |      |      |      | A-30  |  
|Corridors                         (3)   |       | A-0  | A-0  | A-0  |      |      |      |      |      | A-0  | A-0  | A-30 | A-0  |       |  
|                                        |       |      |    1 |      |      |      |      |      |      |      |      |      |      |       |  
|                                        | A-0   |      | B-0  |      | B-0  | B-0  | B-0  | B-0  | B-0  |      |      |      |      | A-0   |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Lifeboat and liferaft handling    (4)   | A-0   | A-0  | A-0  | A-0  |  -   | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0   |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|and embarkation stations                |       |      |      |      |      | B-0  | B-0  | B-0  | B-0  |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|                                        | A-0   | A-0  | A-0  | A-0  |      | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0   |  
|Open deck spaces                  (5)   |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|                                        |       |      | B-0  |      |      | B-0  | B-0  | B-0  | B-0  |      |      |      | B-0  |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Accommodation spaces of mi-       (6)   | A-60  | A-15 | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-15 | A-0  | A-15  |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|nor fire risk                           |       | A-0  |      |      | B-0  | B-0  | B-0  | B-0  | B-0  |      |      | A-0  |      | A-0   |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Accommodation spaces of           (7)   | A-60  | A-30 | A-15 | A-15 | A-0  | A-0  | A-15 | A-30 | A-0  | A-0  | A-15 | A-30 | A-0  | A-30  |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|moderate fire risk                      |       | A-0  | A-0  | A-0  | B-0  | B-0  | B-0  | B-0  | B-0  |      | A-0  | A-0  |      | A-0   |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Accommodation spaces of           (8)   | A-60  | A-60 | A-60 | A-30 | A-0  | A-15 | A-30 | A-60 | A-0  | A-0  | A-30 | A-30 | A-0  | A-30  |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|greater fire risk                       |       | A-15 | A-0  | A-0  | B-0  | B-0  | B-0  | B-0  | B-0  |      | A-0  | A-0  |      | A-0   |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Sanitary spaces and similar             | A-0   | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0   |  
|                                  (9)   |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|spaces                                  |       |      | B-0  | B-0  |      | B-0  | B-0  | B-0  |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Tanks. voids and auxiliary        (10)  |       |      |      |      |      |      |      |      |      |    1 |      |      |      |       |  
|machinery spaces having little          | A-0   | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0  | A-0   |  
|or no fire risk                         |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Auxiliary machinery spaces,       (11)  | A-60  | A-60 | A-60 | A-30 | A-0  | A-0  | A-15 | A-30 | A-0  | A-0  |    1 | A-0  | A-0  |     2 |  
|cargo spaces, cargo and other           |       | A-15 | A-15 | A-0  |      |      | A-0  | A-0  |      |      | A-0  |      |      | A-30  |  
|oil tanks and other similar             |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|spaces of moderate fire risk            |       |      |      |      |      |      |      |      |      |      |      |      |      | A-15  |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Machinery spaces and main         (12)  |       |      |      |      |      |      |      |      |      |      |      |     1|      |       |  
|                                        | A-60  | A-60 | A-60 | A-60 | A-0  | A-60 | A-60 | A-60 | A-0  | A-0  | A-30 | A-30 | A-0  | A-60  |  
|galleys                                 |       |      |      |      |      |      |      |      |      |      |      |      |      |       |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Store-rooms, workshops.           (13)  | A-60  | A-30 | A-15 | A-15 | A-0  | A-15 | A-30 | A-30 | A-0  | A-0  | A-0  | A-0  | A-0  |     2 |  
|                                        |       |      |      |      |      |      |      |      |      |      |      |      |      | A-15  |  
|pantries. etc.                           |       | A-0  | A-0  | A-0  | B-0  | A-0  | A-0  | A-0  | B-0  |      |      |      |      | A-0   |  
|----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|  
|Other spaces in which in-         (14)  | A-60  | A-60 | A-60 | A-60 | A-0  | A-30 | A-60 | A-60 | A-0  | A-0  |     2|     2| A-0  |     2 |  
|                                        |       | A-30 | A-30 |      |      |      |      |      |      |      | A-30 | A-30 |      | A-30  |  
|flammable liquids are stowed            |       |      |      |      |      | A-0  | A-15 | A-15 |      |      | A-0  | A-0  |      | A-0   |  
|---------------------------------------------------------------------------------------------------------------------------------------------  
                Paint rooms.  
                Store-rooms containing inflammable liquids (including  
dyes, medicines, etc.).  
                Laboratories (in which inflammable liquids are stowed).  
        (iii) Where a single value is shown for the fire integrity of a  
boundary between two spaces,  that value shall apply in all cases.  
        (iv) In determining the applicable fire integrity standard of a  
boundary between two spaces within a main vertical zone or horizontal zone  
which is not protected by an automatic sprinkler system complying with the  
provisions of Regulation 12 of this Chapter or between such zones neither  
of which is so protected, the higher of the two values given in the tables  
shall apply.  
        (v) In determining the applicable fire integrity standard of a  
boundary between two spaces within a main vertical zone or horizontal zone  
which is protected by an automatic sprinkler system complying with the  
provisions of Regulation 12 of this Chapter or between such zones both of  
which are so protected, the lesser of the two values given in the tables  
shall apply. In instances where a sprinklered zone and a non-sprinklered  
zone meet within accommodation and service spaces, the higher of the two  
values given in the tables shall apply to the division between the zones.  
        (vi) Where adjacent spaces are in the same numerical category and  
the superscript "1" appears in the tables, a bulkhead or deck between such  
spaces need not be fitted if deemed unnecessary by the Administration. For  
example, in Category (12) a bulkhead need not be required between a galley  
and its annexed pantries provided the pantry bulkheads and decks maintain  
the integrity of the galley boundaries. A bulkhead is, however, required  
between a galley and a machinery space even though both spaces are in  
Category (12).  
        (vii) Where the superscript "2" appears in the tables, the lesser  
insulation value may be permitted only if at least one of the adjoining  
spaces is protected by an automatic sprinkler system complying with the  
provisions of Regulation 12 of this Chapter.  
        (viii) Notwithstanding the provisions of Regulation 19 of this  
Chapter, there are no special requirements for material or integrity of  
boundaries where only a dash appears in the tables.  
        (ix) The Administration shall determine in respect of Category (5)  
spaces whether the insulation values in Table 1 or 2 shall apply to ends  
of deckhouses and superstructures,  and whether the insulation values in  
Table 3 or 4 shall apply to weather decks. In no case shall the  
requirements of Category (5) of Tables 1 to 4 necessitate enclosure of  
spaces which in the opinion of the Administration need not be enclosed.  
    (c) Continuous "B" Class ceilings or linings, in association with the  
relevant decks or bulkheads, may be accepted as contributing wholly or in  
part, to the required insulation and integrity of a division.  
    (d) In approving structural fire protection details, the  
Administration shall have regard to the risk of head transmission at  
intersections and terminal points of required thermal barriers.  
       
     Regulation 21: Means of Escape  
  
    (a) In and from all passenger and crew spaces and in spaces in which  
the crew is normally employed, other than machinery spaces, stairways and  
ladders shall be arranged to provide ready means of escape to the lifeboat  
and liferaft embarkation deck. In particular, the following provisions  
shall be complied with:  
        (i) Below the bulkhead deck, two means of escape, at least one of  
which shall be independent of watertight doors, shall be provided from  
each watertight compartment or similarly restricted space or group of  
spaces. Exceptionally, the Administration may dispense with one of the  
means of escape, due regard being paid to the nature and location of  
spaces and to the number of persons who normally might be quartered or  
employed there.  
        (ii) Above the bulkhead deck, there shall be at least two means of  
escape from each main vertical zone or similarly restricted space or group  
of spaces at least one of which shall give access to a stairway forming a  
vertical escape.  
        (iii) At least one of the means of escape required by  
sub-paragraphs (a) (i) and (ii) of this Regulation shall be by means of a  
readily accessible enclosed stairway, which shall provide continuous fire  
shelter from the level of its origin to the appropriate lifeboat and  
liferaft embarkation decks or the highest level served by the stairway,  
whichever level is the highest. However, where an Administration has  
granted dispensation under the provisions of sub-paragraph (a) (i) of this  
Regulation the sole means of escape shall provide safe escape to the  
satisfaction of the Administration. The width, number and continuity of  
the stairways shall be to the satisfaction of the Administration.  
        (iv) Protection of access from the stairway enclosures to the  
lifeboat and liferaft embarkation areas shall be to the satisfaction of  
the Administration.  
        (v) Lifts shall not be considered as forming one of the required  
means of escape.  
        (vi) Stairways serving only a space and a balcony in that space  
shall not be considered as forming one of the required means of escape.  
        (vii) If a radiotelegraph station has no direct access to the  
weather deck, two means of escape shall be provided from such station.  
        (viii) Dead-end corridors exceeding 13 metres (43 feet) shall not  
be permitted.  
    (b) (i) In special category spaces the number and disposition of the  
means of escape both below and above the bulkhead deck shall be to the  
satisfaction of the Administration, and in general the safety of access to  
the embarkation deck shall be at least equivalent to that provided for  
under sub-paragraphs (a) (i), (ii), (iii), (iv) and (v) of this  
Regulation.  
        (ii) One of the escape routes from the machinery spaces where the  
crew is normally employed shall avoid direct access to any special  
category space.  
    (c) Two means of escape shall be provided from each machinery space.  
In particular, the following provisions shall be complied with:  
        (i) Where the space is below the bulkhead deck the two means of  
escape shall consist of either;  
            (1) two sets of steel ladders as widely separated as possible,  
leading to doors in the upper part of the space similarly separated and  
from which access is provided to the appropriate lifeboat and liferaft  
embarkation decks. One of these ladders shall provide continuous fire  
shelter from the lower part of the space to a safe position outside the  
space; or  
            (2) one steel ladder leading to a door in the upper part of  
the space from which access is provided to the embarkation deck and a  
steel door capable of being operated from each side and which provides a  
safe escape route to the embarkation deck.  
        (ii) Where the space is above the bulkhead deck. two means of  
escape shall be as widely separated as possible and the doors leading from  
such means of escape shall be in a position from which access is provided  
to the appropriate lifeboat and liferaft embarkation decks. Where such  
escapes require the use of ladders these shall be of steel.  
    Provided that in a ship of less than 1,000 tons gross tonnage, the  
Administration may dispense with one of the means of escape due regard  
being paid to the width and disposition of the upper part of the space;  
and in a ship of 1,000 tons gross tonnage and above, the Administration  
may dispense with one means of escape from any such space so long as  
either a door or a steel ladder provides a safe escape route to the  
embarkation deck due regard being paid to the nature and location of the  
space and whether persons are normally employed in that space.  
       
     Regulation 22: Protection of Stairways and Lifts in Accommodationand Service Spaces  
  
    (a) All stairways shall be of steel frame construction except where  
the Administration sanctions the use of other equivalent material, and  
shall be within enclosures formed of "A" Class divisions, with positive  
means of closure at all openings, except that:  
        (i) a stairway connecting only two decks need not be enclosed,  
provided the integrity of the deck is maintained by proper bulkheads or  
doors at one between deck space. When a stairway is closed at one between  
deck space, the stairway enclosure shall be protected in accordance with  
the tables for decks in Regulation 20 of this Chapter;  
        (ii) stairways may be fitted in the open in a public space,  
provided they lie wholly within such public space.  
    (b) Stairway enclosure shall have direct communication with the  
corridors and be of sufficient area to prevent congestion, having in view  
the number of persons likely to use them in an emergency. In so far as  
practicable, stairway enclosures shall not give direct access to cabins,  
service lockers, or other enclosed spaces containing combustibles in which  
a fire is likely to originate.  
    (c) Lift trunks shall be so fitted as to prevent the passage of smoke  
and flame from one between deck to another and shall be provided with  
means of closing so as to permit the control of draught and smoke.  
       
     Regulation 23: Openings in "A" Class Divisions  
  
    (a) Where "A" Class divisions are pierced for the passage of electric  
cables, pipes,  trunks, ducts, etc., for girders, beams or other  
structures, arrangements shall be made to ensure that the fire resistance  
is not impaired, subject to the provisions of paragraph (g) of this  
Regulation.  
    (b) Where of necessity, a ventilation duct passes through a main  
vertical zone bulkhead, a fail-safe automatic closing fire damper shall be  
fitted adjacent to the bulkhead. The damper shall also be capable of being  
manually closed from each side of the bulkhead. The operating position  
shall be readily accessible and be marked in red light-reflecting color.  
The duct between the bulkhead and the damper shall be of steel or other  
equivalent material and, if necessary, to an insulating standard such as  
to comply with paragraph (a) of this Regulation. The damper shall be  
fitted on at least one side of the bulkhead with a visible indicator  
showing if the damper is in the open position.  
    (c) Except for hatches between cargo, special category, store, and  
baggage spaces, and between such spaces and the weather decks, all  
openings shall be provided with permanently attached means of closing  
which shall be at least as effective for resisting fires as the divisions  
in which they are fitted.  
    (d) The construction of all doors and door frames in "A" Class  
divisions, with the means of securing them when closed, shall provide  
resistance to fire as well as to the passage of smoke and flame, as far as  
practicable, equivalent to that of the bulkheads in which the doors are  
situated. Such doors and door frames shall be constructed of steel or  
other equivalent material. Watertight doors need not be insulated.  
    (e) It shall be possible for each door to be opened and closed from  
each side of the bulkhead by one person only.  
    (f) Fire doors in main vertical zone bulkheads and stairway  
enclosures, other than power-operated watertight doors and those which are  
normally locked, shall be of the self-closing type capable of closing  
against an inclination of 3 1/2 degrees opposing closure. The speed of  
door closure shall, if necessary, be controlled so as to prevent undue  
danger to personnel. All such doors, except those that are normally  
closed, shall be capable of release from a control station,  either  
simultaneously or in groups, and also individually from a position at the  
door. The release mechanism shall be so designed that the door will  
automatically close in the event of disruption of the control system;  
however, approved power-operated watertight doors will be considered  
acceptable for this purpose. Hold-back hooks, not subject to control  
station release, will not be permitted. When double swing doors are  
permitted, they shall have a latch arrangement which is automatically  
engaged by the operation of the door release system.  
    (g) Where a space is protected by an automatic sprinkler system  
complying with the provisions of Regulation 12 of this Chapter of fitted  
with a continuous "B" Class ceiling, openings in decks not forming steps  
in main vertical zones nor bounding horizontal zones shall be closed  
reasonably tight and such decks shall meet the "A" Class integrity  
requirements in so far as is reasonable and practicable in the opinion of  
the Administration.  
    (h) The requirements for "A" Class integrity of the outer boundaries  
of a ship shall not apply to glass partitions, windows and side scuttles.  
Similarly, the requirements for "A" Class integrity shall not apply to  
exterior doors in superstructures and deckhouses.  
       
     Regulation 24: Openings in "B" Class Divisions  
  
    (a) Where "B" Class divisions are penetrated for the passage of  
electrical cables, pipes,  trunks, ducts, etc., or for the fitting of  
ventilation terminals, lighting fixtures and similar devices, arrangements  
shall be made to ensure that the fire resistance is not impaired.  
    (b) Doors and door frames in "B" Class divisions and means of securing  
them shall provide a method of closure which shall have resistance to fire  
as far as practicable equivalent to the divisions except that ventilation  
openings may be permitted in the lower portion of such doors. Where such  
opening is in or under a door the total net area of any such opening or  
openings shall not exceed 0.05 square metres (78 square inches). When such  
opening is cut in a door it shall be fitted with a grill made of  
non-combustible material. Doors shall be noncombustible.  
    (c) The requirements for "B" Class integrity of the outer boundaries  
of a ship shall not apply to glass partitions, windows and side scuttles.  
Similarly, the requirements for "B" Class integrity shall not apply to  
exterior doors in superstructures and deckhouses.  
    (d) Where an automatic sprinkler system complying with the provisions  
of Regulation 12 of this Chapter is fitted:  
        (i) openings in decks not forming steps in main vertical zones nor  
bounding horizontal zones shall be closed reasonably tight and such decks  
shall meet the "B" Class integrity requirements in so far as is reasonable  
and practicable in the opinion of the Administration; and  
        (ii) openings in corridor bulkheads of "B" Class materials shall  
be protected in accordance with the provisions of Regulation 19 of this  
Chapter.  
       
     Regulation 25: Ventilation Systems  
  
    (a) In general, the ventilation fans shall be so disposed that the  
ducts reaching the various spaces remain within the main vertical zone.  
    (b) Where ventilation systems penetrate decks, precautions shall be  
taken, in addition to those relating to the fire integrity of the deck  
required by Regulation 23 of this Chapter, to reduce the likelihood of  
smoke and hot gases passing from one between deck space to another through  
the system. In addition to insulation requirements contained in this  
Regulation, vertical ducts shall, if necessary, be insulated as required  
by the appropriate tables in Regulation 20 of this Chapter.  
    (c) The main inlets and outlets of all ventilation systems shall be  
capable of being closed from outside the space being ventilated.  
    (d) Except in cargo spaces, ventilation ducts shall be constructed of  
the following materials:  
        (i) Ducts not less than 0.075 square metres (116 square inches) in  
sectional area and all vertical ducts serving more than a single between  
deck space shall be constructed of steel or other equivalent material.  
        (ii) Ducts less than 0.075 square metres (116 square inches) in  
sectional area shall be constructed of non-combustible materials. Where  
such ducts penetrate "A" or "B" Class divisions due regard shall be given  
to ensuring the fire integrity of the division.  
        (iii) Short lengths of duct, not in general exceeding 0.02 square  
metres (31 square inches) in sectional area nor 2 metres (79 inches) in  
length, need not be incombustible provided that all of the following  
conditions are met:  
            (1) the duct is constructed of a material of restricted fire  
risk to the satisfaction of the Administration;  
            (2) the duct is used only at the terminal end of the  
ventilation system; and  
            (3) the duct is not located closer than 0.6 metres (24 inches)  
measured along its length to a penetration of an "A" or "B" Class  
division, including continuous "B" Class ceilings.  
    (e) Where a stairway enclosure is ventilated, the duct or ducts (if  
any) shall be taken from the fan room independently of other ducts in the  
ventilation system and shall not serve any other space.  
    (f) All power ventilation, except machinery and cargo spaces  
ventilation and any alternative system which may be required under  
paragraph (h) of this Regulation, shall be fitted with controls so grouped  
that all fans may be stopped from either of two separate positions which  
shall be situated as far apart as practicable. Controls provided for the  
power ventilation serving machinery spaces shall also be grouped so as to  
be operable from two positions,  one of which shall be outside such  
spaces. Fans serving power ventilation systems to cargo spaces shall be  
capable of being stopped from a safe position outside such spaces.  
    (g) Where they pass through accommodation spaces or spaces containing  
combustible materials, the exhaust ducts from galley ranges shall be  
constructed of "A" Class divisions. Each exhaust duct shall be fitted  
with:  
        (i) a grease trap readily removable for cleaning;  
        (ii) a fire damper located in the lower end of the duct;  
        (iii) arrangements, operable from within the galley, for shutting  
off the exhaust fan; and  
        (iv) fixed means for extinguishing a fire within the duct.  
    (h) Such measures as are practicable shall be taken in respect of  
control stations outside machinery spaces in order to ensure that  
ventilation, visibility and freedom from smoke are maintained, so that in  
the event of fire the machinery and equipment contained therein may be  
supervised and continue to function effectively. Alternative and separate  
means of air supply shall be provided; air inlets of the two sources of  
supply shall be so disposed that the risk of both inlets drawing in smoke  
simultaneously is minimized. At the discretion of the Administration,  
such requirements need not apply to control stations situated on, and  
opening on to, an open deck, or where local closing arrangements would be  
equally effective.  
    (i) Ducts provided for ventilation of machinery spaces of Category A  
shall not in general pass through accommodation, service spaces or control  
stations, except that the Administration may permit relaxation from this  
requirement, provided that:  
        (i) the ducts are constructed of steel, and are insulated to  
"A-60" standard; or  
        (ii) the ducts are constructed of steel and are fitted with an  
automatic fire damper close to the boundary penetrated and are insulated  
to "A-60" standard from the machinery space to a point at least 5 metres  
(16 feet) beyond the fire damper.  
    (j) Ducts provided for ventilation of accommodation, service spaces,  
or control stations shall not in general pass through machinery spaces of  
Category A, except that the Administration may permit relaxation from this  
requirement provided that the ducts are constructed of steel and automatic  
fire dampers are fitted close to the boundaries penetrated.  
       
     Regulation 26: Windows and Sidecuttles  
  
    (a) All windows and sidescuttles in bulkheads within accommodation and  
service spaces and control stations other than those to which the  
provisions of paragraph (h) of Regulation 23 and paragraph (c) of  
Regulation 24 of this Chapter apply, shall be constructed so as to  
preserve the integrity requirements of the type of bulkheads in which they  
are fitted.  
    (b) Notwithstanding the requirements of the tables in Regulation 20 of  
this Chapter:  
        (i) All windows and sidescuttles in bulkheads separating  
accommodation and service spaces and control stations from weather shall  
be constructed with frames of steel or other suitable material. The glass  
shall be retained by a metal glazing bead or angle.  
        (ii) Special attention shall be given to the fire integrity of  
windows facing open or enclosed lifeboat and liferaft embarkation areas  
and to windows situated below such areas in such a position that their  
failure during a fire would impede the launching of, or embarkation into,  
lifeboats or liferafts.  
       
     Regulation 27: Restriction of Combustible Materials  
  
    (a) Except in cargo spaces, mail rooms, baggage rooms, or refrigerated  
compartments of service spaces, all linings, grounds, ceilings and  
insulation shall be of non-combustible materials. Partial bulkheads or  
decks used to subdivide a space for utility or artistic treatment shall  
also be of non-combustible material.  
    (b) Vapour barriers and adhesives used in conjunction with insulation,  
as well as insulation of pipe fittings, for cold service systems need not  
be non-combustible, but they shall be kept to the minimum quantity  
practicable and their exposed surfaces shall have qualities of resistance  
to the propagation of flame to the satisfaction of the Administration.  
    (c) Bulkheads, linings and ceilings in all accommodation and service  
spaces may have combustible veneer, provided that such veneer shall not  
exceed 2 millimetres (1/12 inch) within any such spaces except corridors,  
stairway enclosures and control stations where it shall not exceed 1.5  
millimetres (1/17 inch).  
    (d) The total volume of combustible facings, mouldings, decorations  
and veneers in any accommodation and service space shall not exceed a  
volume equivalent to 2.5 millimeters (1/ 10 inch) veneer on the combined  
area of the walls and ceilings. In the case of ships fitted with an  
automatic sprinkler system complying with the provisions of Regulation 12  
of this Chapter, the above volume may include, some combustible material  
used for erection of "C" Class divisions.  
    (e) All exposed surfaces in corridors or stairway enclosures and  
surfaces in concealed or inaccessible spaces in accommodation and service  
spaces and control stations shall have low flame-spread characteristics. \*  
    [\* Reference is made to Guidelines on the Evaluation of Fire Hazard  
Properties of Materials, adopted by the Organization by Resolution A. 166  
(ES. IV).]  
    (f) Furniture in the passages and stairway enclosures shall be kept to  
a minimum.  
    (g) Paints, varnishes and other finishes used on exposed interior  
surfaces shall not be of a nature to offer an undue fire hazard in the  
judgment of the Administration and shall not be capable of producing  
excessive quantities of smoke or other toxic properties.  
    (h) Primary deck voverings, if applied, within accommodation and  
service spaces and control stations, shall be of approved material which  
will notreadily ignite, or give rise to toxic or explosive hazards at  
elevated temperatures. \*\*  
    [\*\* Reference is made to Improved Provisional Guidelines on Test  
Procedures for Primary Deck Coverings, adopted by the Organization by  
Resolution A.214 (VII).]  
    (i) Waste-paper receptacles shall be constructed of non-combustible  
materials and with solid sides and bottom.  
       
     Regulation 28: Miscellaneous Items  
  
    Requirements Applicable to all Portions of the Ship  
    (a) Pipes penetrating "A" or "B" Class divisions shall be of a  
material approved by the Administration having regard to the temperature  
such divisions are required to withstand. Pipes conveying oil or  
combustible liquids shall be of a material approved by the Administration  
having regard to the fire risk. Materials readily rendered ineffective by  
heat shall not be used for overboard scuppers, sanitary discharges, and  
other outlets which are close to the water-line and where the failure of  
the material in the event of fire would give rise to danger of flooding.  
    Requirements Applicable to Accommodation and Service Spaces, Control  
Stations, Corridors and Stairways  
    (b) (i) Air spaces enclosed behind ceilings, paneling or linings shall  
be suitably divided by close-fitting draught stops not more than 14 metres  
(46 feet) apart.  
        (ii) In the vertical direction, such spaces, including those  
behind linings of stairways,  trunks, etc., shall be closed at each deck.  
    (c) The construction of ceiling and bulkheading shall be such that it  
will be possible,  without impairing the efficiency of the fire  
protection, for the fire patrols to detect any smoke originating in  
concealed and inaccessible places, except where in the opinion of the  
Administration there is no risk of fire originating in such places.  
       
     Regulation 29: Automatic Sprinkler and Fire Alarm and Fire Detec-tion Systems or Automatic Fire Alarm and Fire Detection Systems  
  
    In any ship to which this Part applies there shall be installed  
throughout each separate zone, whether vertical or horizontal, in all  
accommodation and service spaces and, where it is considered necessary by  
the Administration, in control stations, except spaces which afford no  
substantial fire risk (such as void spaces. sanitaryspaces, etc.) either:  
    (i) an automatic sprinkler and fire alarm and fire detection system of  
an approved type,  complying with the provisions of Regulation 12 of this  
Chapter and installed and so arranged as to protect such spaces; or  
    (ii) an automatic fire alarm and fire detection system of an approved  
type, complying with the provisions of Regulation 13 of this Chapter, and  
installed and so arranged as to detect the presence of fire in such  
spaces.  
       
     Regulation 30: Protection of Special Category Spaces  
  
    Provisions Applicable to Special Category Spaces whether above or  
below the Bulkhead Deck  
    (a) General  
        (i) The basic principle underlying the provisions in this  
Regulation is that as normal main vertical zoning may not be practicable  
in special category spaces, equivalent protection must be obtained in such  
spaces on the basis of a horizontal zone concept and the provision of an  
efficient fixed fire-extinguishing system. Under this concept a horizontal  
zone for the purpose of this Regulation may include special category  
spaces on more than one deck provided that the overall height of the zone  
does not exceed 10 metres (33 feet).  
        (ii) All requirements laid down in Regulations 23 and 25 of this  
Chapter for maintaining the integrity of vertical zones shall be applied  
equally to decks and bulkheads forming the boundaries separating  
horizontal zones from each other and from the remainder of the ship.  
    (b) Structural Protection  
        (i) Boundary bulkheads of special category spaces shall be  
insulated as required for Category (11) spaces in Table 1 of Regulation 20  
of this Chapter and the horizontal boundaries as required for Category  
(11) spaces in Table 3 of that Regulation.  
        (ii) Indicators shall be provided on the navigating bridge which  
shall indicate when any fire door leading to or from the special category  
spaces is closed.  
    (c) Fixed Fire-Extinguishing System\*  
    [\* Reference is made to Recommendation of Fixed Fire Extinguishing  
Systems for Special Category Spaces adopted by the Organization by  
Resolution A. 123 (V).]  
    Each special category space shall be fitted with an approved fixed  
pressure water-spraying system for manual operation which shall protect  
all parts of any deck and vehicle platform, if any, in such space,  
provided that the Administration may permit the use of any other fixed  
fire-extinguishing system that has been shown by full-scale test in  
conditions simulating a flowing petrol fire in a special category space to  
be not less effective in controlling fires likely to occur in such a  
space.  
    (d) Patrols and Detection  
        (i) An efficient patrol system shall be maintained in special  
category spaces. In any such space in which the patrol is not maintained  
by a continuous fire watch at all times during the voyage there shall be  
provided in that space an automatic fire detection system of an approved  
type.  
        (ii) Manual fire alarms shall be provided as necessary throughout  
the special category spaces and one shall be placed close to each exit  
from such spaces.  
    (e) Fire-Extinguishing Equipment  
    There shall be provided in each special category space:  
        (i) a number of hydrants with hoses and dual-purpose nozzles of an  
approved type so arranged that at least two jets of water each from a  
single length of hose not emanating from the same hydrant may reach any  
part of such space;  
        (ii) at least three water fog applicators;  
        (iii) one portable applicator unit complying with the provisions  
of Regulation 7(d) of this Chapter, provided that at least two such units  
are available in the ship for use in such spaces; and  
        (iv) such number of portable fire extinguishers of an approved  
type as the Administration may deem sufficient.  
    (f) Ventilation System  
        (i) There shall be provided an effective power ventilation system  
for the special category spaces sufficient to give at least 10 air changes  
per hour. The system for such spaces shall be entirely separated from  
other ventilation systems and shall be operating at all times when  
vehicles are in such spaces. The Administration may require an increased  
number of air changes when vehicles are being loaded and unloaded.  
        (ii) The ventilation shall be such as to prevent air  
stratification and the formation of air pockets.  
        (iii) Means shall be provided to indicate on the navigating bridge  
any loss or reduction of the required ventilating capacity.  
 ------------------------------------------------------------------------  
    Additional Provisions Applicable only to Special Category Spaces above  
the Bulkhead Deck  
    (g) Scuppers  
    In view of the serious loss of stability which could arise due to  
large quantities of water accumulating on the deck or decks consequent on  
the operation of the fixed pressure water-spraying system, scuppers shall  
be fitted so as to ensure that such water is rapidly discharged directly  
overboard.  
    (h) Precautions against Ignition of Inflammable Vapors  
        (i) Equipment which may constitute a source of ignition of  
inflammable vapors and in particular electrical equipment and wiring,  
shall be installed at least 450 millimetres (18 inches) above the deck,  
provided that if the Administration is satisfied that the installation of  
such electrical equipment and wiring below this level is necessary for the  
safe operation of the ship, such electrical equipment and wiring shall be  
of a type approved for use in an explosive petrol and air mixture.  
Electrical equipment installed at more than 450 millimetres (18 inches)  
above the deck shall be of a type so enclosed and protected as to prevent  
the escape of sparks. the reference to a level of 450 millimetres (18  
inches)  above the deck shall be construed to mean each deck on which  
vehicles are carried and on which explosive vapours might be expected to  
accumulate.  
        (ii) Electrical equipment and wiring, if installed in an exhaust  
ventilation duct, shall be of a type approved for use in explosive petrol  
and air mixtures and the outlet from any exhaust duct shall be sited in a  
safe position, having regard to other possible sources of ignition.  
  ---------------------------------------------------------------------  
    Additional Provisions applicable only to Special Category Spaces below  
the Bulkhead Deck  
    (i) Bilge Pumping and Drainage  
    In view of the serious loss of stability which could arise due to  
large quantities of water accumulating on the deck or tank top consequent  
on theoperation of the fixed pressure waterspraying system, the  
Administration may require pumping and drainage facilities to be provided  
additional to the requirements of Regulation 18 of Chap ter II-1 of the  
present Convention.  
    (j) Precautions against Ignition of Inflammable Vapours  
        (i) Electrical equipment and wiring, if fitted, shall be of a type  
suitable for use in explosive petrol and air mixtures. Other equipment  
which may constitute a source of ignition of inflammable vapours shall not  
be permitted.  
        (ii) Electrical equipment and wiring, if installed in an exhaust  
ventilation duct, shall be of a type approved for use in explosive petrol  
and air mixtures and the outlet from any exhaust duct shall be sited in a  
safe position, having regard to other possible sources of ignition.  
       
     Regulation 31: Protection of Cargo Spaces other than Special Cate-gory Spaces intended for the Carriage of Motor Vehicles with Fuel intheir Tanks for their own Propulsion  
  
    In any cargo space (other than special category spaces) containing  
motor vehicles with fuel in their tanks for their own propulsion, the  
following provisions shall be complied with:  
    (a) Fire Detection  
    There shall be provided an approved fire detection and fire alarm  
system.  
    (b) Fire-Extinguishing Arrangements  
        (i) There shall be fitted a fixed gas fire-extinguishing system  
which shall comply with the provisions of Regulation 8 of this Chapter,  
except that if a carbon dioxide system is fitted, the quantity of gas  
available shall be at least sufficient to give a minimum volume of free  
gas equal to 45 per cent of the gross volume of the largest of such cargo  
spaces which is capable of being sealed, and the arrangements shall be  
such as to ensure that the gas is introduced rapidly and effectively into  
the space. Any other fixed gas fire-extinguishing system or fixed high  
expansion froth fireextinguishing system may be fitted provided it gives  
equivalent protection.  
        (ii) There shall be provided for use in any such space such number  
of portable fire extinguishers of an approved type as the Administration  
may deem sufficient.  
    (c) Ventilation System  
        (i) In any such cargo space there shall be provided an effective  
power ventilation system sufficient to give at least 10 air changes per  
hour. The system for such cargo spaces shall be entirely separated from  
other ventilation systems and shall be operating at all times when  
vehicles are in such spaces.  
        (ii) The ventilation shall be such as to prevent air  
stratification and the formation of air pockets.  
        (iii) Means shall be provided to indicate on the navigating bridge  
any loss or reduction of the required ventilating capacity.  
    (d) Precautions against Ignition of Inflammable Vapours  
        (i) Electrical equipment and wiring, if fitted, shall be of a type  
suitable for use in explosive petrol and air mixtures. Other equipment  
which may constitute a source of ignition of inflammable vapours shall not  
be permitted.  
        (ii) Electrical equipment and wiring, if installed in an exhaust  
ventilation duct, shall be of a type approved for use in explosive petrol  
and air mixtures and the outlet from any exhaust duct shall be sited in a  
safe position, having regard to other possible sources of ignition.  
       
     Regulation 32: Maintenance of Fire Patrols, etc., and Provisionfor Fire-Extinguishing Equipment  
  
    (a) Fire Patrols and Detection, Alarms and Public Address Systems  
        (i) An efficient patrol system shall be maintained so that an  
outbreak of fire may be promptly detected. Each member of the fire patrol  
shall be trained to be familiar with the arrangements of the ship as well  
as the location and operation of any equipment he may be called upon to  
use.  
        (ii) Manual alarms shall be fitted throughout the accommodation  
and service spaces to enable the fire patrol to give an alarm immediately  
to the navigating bridge or main fire control station.  
        (iii) An approved fire alarm or fire detecting system shall be  
provided which will automatically indicate at one or more suitable points  
or stations the presence or indication of fire and its location in any  
cargo space which, in the opinion of the Administration, is not accessible  
to the patrol system, except where it is shown to the satisfaction of the  
Administration that the ship is engaged on voyages of such short duration  
that it would be unreasonable to apply this requirement.  
        (iv) The ship shall at all times when at sea, or in port (except  
when out of service), be so manned or equipped as to ensure that any  
initial fire alarm is immediately received by a responsible member of the  
crew.  
        (v) A special alarm, operated from the navigating bridge or fire  
control station, shall be fitted to summon the crew. This alarm may be  
part of the ship\'s general alarm system but it shall be capable of being  
sounded independently of the alarm to the passenger spaces.  
        (vi) A public address system or other effective means of  
communication shall be available throughout the accommodation and service  
spaces and control stations.  
    (b) Fire Pumps and Fire Main System  
    The ship shall be provided with fire pumps, fire main system, hydrants  
and hoses complying with the provisions of Regulation 5 of this Chapter  
andshall comply with the following requirements:  
        (i) In a ship of 4,000 tons gross tonnage and upwards, there shall  
be provided at least three independently-driven fire pumps and, in a ship  
of less than 4,000 tons gross tonnage, at least two such fire pumps.  
        (ii) In a ship of 1,000 tons gross tonnage and upwards, the  
arrangement of sea connexions,  fire pumps and sources of power for  
operating them shall be such as to ensure that a fire in any one  
compartment will not put all the fire pumps out of action.  
        (iii) In a ship of 1,000 tons gross tonnage and upwards, the  
arrangement of fire pumps,  fire mains and hydrants shall be such that at  
least one effective jet of water as stipulated in paragraph (c) of  
Regulation 5 of this Chapter is immediately available from any one hydrant  
in an interior location. Arrangements shall also be made to ensure the  
continuation of the output of water by the automatic starting of a  
required fire pump.  
        (iv) In a ship of less than 1,000 tons gross tonnage the  
arrangements shall be to the satisfaction of the Administration.  
    (c) Fire Hydrants, Hoses and Nozzles  
        (i) The ship shall be provided with fire hoses the number and  
diameter of which shall be to the satisfaction of the Administration.  
There shall be at least one fire hose for each of the hydrants required by  
paragraph (d) of Regulation 5 of this Chapter and these hoses shall be  
used only for the purposes of extinguishing fires or testing the  
fire-extinguishing apparatus at fire drills and surveys.  
        (ii) In accommodation and service spaces and in machinery spaces,  
the number and position of hydrants shall be such that the requirements  
of paragraph (d) of Regulation 5 of this Chapter may be complied with when  
all watertight doors and all doors in main vertical zone bulkheads are  
closed.  
        (iii) The arrangements shall be such that at least two jets of  
water can reach any part of any cargo space when empty.  
        (iv) All required hydrants in machinery spaces shall be fitted  
with hoses having in addition to the nozzles required in paragraph (g) of  
Regulation 5 of this Chapter nozzles suitable for spraying water on oil,  
or alternatively dual-purpose nozzles. Additionally,  each machinery space  
of Category A shall be provided with at least two suitable water fog  
applicators.\*  
    [\* A water fog applicator might consist of a metal "L"-shaped pipe,  
the long limb being about 2 metres (6 feet) in length capable of being  
fitted to a fire hose and the short limb being about 250 millimetres (10  
inches) in length fitted with a fixed water fog nozzle or capable of being  
fitted with a water spray nozzle.]  
        (v) Water spray nozzles or dual-purpose nozzles shall be provided  
for at least one quarter of the number of hoses required in parts of the  
ship other than machinery spaces.  
        (vi) For each pair of breathing apparatus there shall be provided  
one water fog applicator which shall be stored adjacent to such apparatus.  
        (vii) Where, in any machinery space of Category A, access is  
provided at a low level from an adjacent shaft tunnel, two hydrants fitted  
with hoses with dual-purpose nozzles shall be provided external to, but  
near the entrance to that machinery space. Where such access is not  
provided from a tunnel but is provided from other space or spaces there  
shall be provided in one of those spaces two hydrants fitted with hoses  
with dual-purpose nozzles near the entrance to the machinery space of  
Category A. Such provision need not be made when the tunnel or adjacent  
spaces are not part of an escape route.  
    (d) International Shore Connexion  
        (i) A ship of 1,000 tons gross tonnage and upwards shall be  
provided with at least one international shore connexion, complying with  
the provisions of paragraph (h) of Regulation 5 of this Chapter.  
        (ii) Facilities shall be available enabling such a connexion to be  
used on either side of the ship.  
    (e) Portable Fire Extinguishers in Accommodation and Service Spaces  
and Control Stations  
    The ship shall be provided in accommodation and service spaces and  
control stations with such approved portable fire extinguishers as the  
Administration may deem to be appropriate and sufficient.  
    (f) Fixed Fire-Extinguishing Arrangements in Cargo Spaces  
        (i) The cargo spaces of ships of 1,000 tons gross tonnage and  
upwards shall be protected by a fixed gas fire-extinguishing system  
complying with the provisions of Regulation 8 of this Chapter, or by a  
fixed high expansion froth fire-extinguishing system which gives  
equivalent protection.  
        (ii) Where it is shown to the satisfaction of the Administration  
that a ship is engaged on voyages of such short duration that it would be  
unreasonable to apply the requirements of subparagraph (i) of this  
paragraph and also in ship of less than, 1,000 tons gross tonnage, the  
arrangements in cargo spaces shall be to the satisfaction of the  
Administration.  
    (g) Fire-Extinguishing Appliances in Boiler Rooms, etc.  
    Spaces containing oil-fired boilers or oil fuel units shall be  
provided with the following arrangements:  
        (i) There shall be any one of the following fixed  
fire-extinguishing systems:  
            (1) A pressure water-spraying system complying with the  
provisions of Regulation 11 of this Chapter.  
            (2) A gas system complying with the provisions of Regulation 8  
of this Chapter.  
            (3) A froth system complying with the provisions of Regulation  
9 of this Chapter.  
            (4) A high expansion froth system complying with the  
provisions of Regulation 10 of this Chapter.  
            In each case if the engine and boiler rooms are not entirely  
separate, or if fuel oil can drain from the boiler room into the engine  
room, the combined engine and boiler rooms shall be considered as one  
compartment.  
        (ii) There shall be in each boiler room at least one set of  
portable air-froth equipment complying with the provisions of paragraph  
(d) of Regulation 7 of this Chapter.  
        (iii) There shall be at least two approved portable extinguishers  
discharging froth or equivalent in each firing space in each boiler room  
and each space in which a part of the oil fuel installation is situated.  
There shall be not less than one approved froth-type extinguisher of at  
least 136 litres (30 gallons) capacity or equivalent in each boiler room.  
these extinguishers shall be provided with hoses on reels suitable for  
reaching any part of the boiler room.  
        (iv) In each firing space there shall be a receptacle containing  
sand, sawdust impregnated with soda or other approved dry material, in  
such quantity as may be required by the Administration. Alternatively an  
approved portable extinguisher may be substituted therefor.  
    (h) Fire-Extinguishing Appliances in Spaces containing Internal  
Combustion Type Machinery  
    Spaces containing internal combustion machinery sued either for main  
propulsion, or for other purposes when such machinery has in the aggregate  
a total power output of not less than 373 kW, shall be provided with the  
following arrangements:  
        (i) There shall be one of the fire-extinguishing systems required  
by sub-paragraph (g) (i)  of this Regulation  
        (ii) There shall be at least one set of portable air-froth  
equipment complying with the provisions of paragraph (d) of Regulation 7  
of this Chapter.  
        (iii) There shall be in each such space approved froth-type  
extinguishers each of at least 45 litres (10 gallons) capacity or  
equivalent sufficient in number to enable froth or its equivalent to be  
directed on to any part of the fuel and lubricating oil pressure systems,  
gearing and other fire hazards. In addition, there shall be provided a  
sufficient number of portable froth extinguishers or equivalent which  
shall be so located that an extinguisher is not more than 10 metres (33  
feet) walking distance from any point in the space; provided that there  
shall be at least two such extinguishers in each such space.  
    (i) Fire-Extinguishing Arrangements in Spaces containing Steam  
Turbines or enclosed Steam Engines  
    In spaces containing steam turbines or enclosed steam engines used  
either for main propulsion or for other purposes when such machinery has  
in the aggregate a total power output of not less than 373 kW:  
        (i) There shall be provided froth fire extinguishers each of at  
least 45 litres (10 gallons)  capacity or equivalent sufficient in number  
to enable froth or its equivalent to be directed on to any part of the  
pressure lubrication system, on to any part of the casings enclosing  
pressure lubricated parts of the turbines, engines or associated gearing,  
and any other fire hazards. Provided that such extinguishers shall not be  
required if protection at least equivalent to this sub-paragraph is  
provided in such spaces by a fixed fireextinguishing system fitted in  
compliance with sub-paragraph (g) (i) of this Regulation.  
        (ii) There shall be provided a sufficient number of portable froth  
extinguishers or equivalent which shall be so located that an extinguisher  
is not more than 10 metres (33 feet) walking distance from any point in  
the space; provided that there shall be at least two such extinguishers in  
each such space, and such extinguishers shall not be required in addition  
to any provided in compliance with sub-paragraph (h) (iii) of this  
Regulation.  
    (j) Fire-Extinguishing Appliances in other Machinery Spaces  
    Where, in the opinion of the Administration, a fire hazard exists in  
any machinery space for which no specific provisions for  
fire-extinguishing appliances are prescribed in paragraphs (g), (h) and  
(i) of this Regulation there shall be provided in, or adjacent to, that  
space such number of approved portable fire extinguishers or other means  
of fire extinction as the Administration may deem sufficient.  
    (k) Fixed Fire-Extinguishing Appliances not required by this Part  
    Where a fixed fire-extinguishing system not required by this Part of  
this Chapter is installed,  such a system shall be to the satisfaction of  
the Administration.  
    (l) Special Requirements for Machinery Spaces  
        (i) For any machinery space of Category A to which access is  
provided at a low level from an adjacent shaft tunnel there shall be  
provided in addition to any watertight door and on the side remote from  
that machinery space a light steel fire-screen door which shall be  
operable from each side.  
        (ii) An automatic fire detection and alarm system shall be fitted  
when the Administration considers such special precautions warranted in  
any machinery space in which the installation of automatic and remote  
control systems and equipment have been approved in lieu of continuous  
manning of the space.  
    (m) Fireman\'s Outfits and Personal Equipment  
        (i) The minimum number of fireman\'s outfits complying with the  
requirements of Regulation 14 of this Chapter, and of additional sets of  
personal equipment, each such set comprising the items stipulated in  
sub-paragraphs (a) (i), (ii) and (iii) of that Regulation, to be carried  
shall be as follow:  
            (1) two fireman\'s outfits; and in addition  
            (2) for every 80 metres (262 feet) or part thereof, of the  
aggregate of the lengths of all passenger spaces and service spaces on the  
deck which carries such spaces or, if there is more than one such deck, on  
the deck which has the largest aggregate of such lengths, two fireman\'s  
outfits and two sets of personal equipment each such set comprising the  
items stipulated in Regulation 14 (a) (i), (ii) and (iii) of this Chapter.  
        (ii) For each fireman\'s outfit which includes a self-contained  
breathing apparatus as provided in paragraph (b) of Regulation 14 of this  
Chapter, spare charges shall be carried on a scale approved by the  
Administration.  
        (iii) Fireman\'s outfits and sets of personal equipment shall be  
stored in widely separated positions ready for use. At least two fireman\'s  
outfits and one set of personal equipment shall be available at any one  
position.  
       
     Regulation 33: Arrangements for Oil Fuel Lubricating Oil and otherInflammable Oils  
  
    (a) Oil Fuel Arrangements  
    In a ship in which oil fuel is used, the arrangements for the storage,  
distribution and utilization of the oil fuel shall be such as to ensure  
the safety of the ship and persons on board and shall at least comply with  
the following provisions:  
        (i) No oil fuel which has a flashpoint of less than 60℃(140°F)  
(closed cup test) as determined by an approved flashpoint apparatus shall  
be used as fuel, except in emergency generators, in which case the  
flashpoint shall be not less than 43 ℃(110°F).  
            Provided that the Administration may permit the general used  
of fuel oil having a flashpoint of not less than 43℃ (110 °F) subject to  
such additional precautions as it may consider necessary and on condition  
that the temperature of the space in which such fuel is stored or used  
shall not be allowed to rise within 10 ℃ (18°F) below the flashpoint of  
the fuel.  
        (ii) As far as practicable, no part of the oil fuel system  
containing heated oil under pressure exceeding 1.8 kilogrammes per square  
centimetre (25 pounds per square inch)  gauge shall be so concealed that  
defects and leakage cannot readily be observed. In way of such parts of  
the oil fuel system the machinery space shall be adequately illuminated.  
        (iii) The ventilation of machinery spaces shall be sufficient  
under all normal conditions to prevent accumulation of oil vapour.  
        (iv) (1) As far as practicable, oil fuel tanks shall be part of  
the ship\'s structure and shall be located outside machinery spaces of  
Category A. When oil fuel tanks, except double bottom tanks, are  
necessarily located adjacent to machinery spaces of Category A, they shall  
preferably have a common boundary with the double bottom tanks, and the  
area of the tank boundary common with the machinery space shall be kept to  
a minimum. In general, the use of free-standing oil fuel tanks shall be  
avoided but when such tanks are employed they shall not be situated in  
machinery spaces of Category A.  
            (2) No oil tank shall be situated where spillage or leakage  
therefrom can constitute a hazard by falling on heated surfaces.  
Precautions shall be taken to prevent any oil that may escape under  
pressure from any pump, filter or heater from coming into contact with  
heated surfaces.  
        (v) Every oil fuel pipe which if damaged would allow oil to escape  
from a storage, settling or daily service tank situated above the double  
bottom shall be fitted with a cock or valve on the tank capable of being  
closed from a safe position outside the space concerned in the event of a  
fire arising in the space in which such tanks are situated. In the special  
case of deep tanks situated in any shaft or pipe tunnel or similar space,  
valves on the tanks shall be fitted but control in event of fire may be  
effected by means of an additional valve on the pipe or pipes outside the  
tunnel or similar space.  
        (vi) Safe and efficient means of ascertaining the amount of oil  
fuel contained in any oil tank shall be provided. Sounding pipes with  
suitable means of closure may be permitted if their upper ends terminate  
in safe positions. Other means of ascertaining the amount of oil fuel  
contained in any oil fuel tank may be permitted if they do not require  
penetration below the top of the tank, and providing their failure or  
overfilling of the tanks will not permit release of fuel thereby.  
        (vii) Provision shall be made to prevent over-pressure in any oil  
tank or in any part of the oil fuel system, including the filling pipes.  
Any relief valves and air or overflow pipes shall discharge to a position  
which, in the opinion of the Administration, is safe.  
        (viii) Oil fuel pipes shall be of steel or other approved  
material, provided that restricted use of flexible pipes shall be  
permissible in positions where the Administration is satisfied that they  
are necessary. Such flexible pipes and end attachments shall be of  
approved fire-resisting materials of adequate strength and shall be  
constructed to the satisfaction of the Administration.  
    (b) Lubricating Oil Arrangements  
    The arrangements for the storage, distribution and utilization of oil  
used in pressure lubrication systems shall be such as to ensure the safety  
of the ships and persons on board, and such arrangements in machinery  
spaces of Category A and, whenever practicable, in other machinery spaces  
shall at least comply with the provisions of sub-paragraphs (ii), (iv)  
(2),  (v), (vi) and (vii) of paragraph (a) of this Regulation.  
    (c) Arrangements for other Inflammable Oils  
    The arrangements for the storage, distribution and utilization of  
other inflammable oils employed under pressure in power transmission  
systems, control and activating systems and heating systems shall be such  
as to ensure the safety of the ship and persons on board. In locations  
where means of ignition are present such arrangements shall at least  
comply with the provisions of sub-paragraphs (a) (iv) (2) and (a) (vi),  
and with the provisions of sub-paragraph (a) (viii) in respect of strength  
and construction, of this Regulation.  
       
     Regulation 34: Special Arrangements in Machinery Spaces  
  
    (a) The provisions of this Regulation shall apply to machinery spaces  
of Category A and,  where the Administration considers it desirable, to  
other machinery spaces.  
    (b) (i) The number of skylights, doors, ventilators, openings in  
funnels to permit exhaust ventilation and other openings to machinery  
spaces shall be reduced to a minimum consistent with the needs of  
ventilation and the proper and safe working of the ship.  
        (ii) The flaps of such skylights where fitted shall be of steel.  
Suitable arrangements shall be made to permit the release of smoke in the  
event of fire, from the space to be protected.  
        (iii) Such doors other than power-operated watertight doors shall  
be arranged so that positive closure is assured in case of fire in the  
space, by power-operated closing arrangements or by the provision of  
self-closing doors capable of closing against an inclination of 3 1/2  
degrees opposing closure and having a fail-safe hook-back facility,  
provided with a remotely operated release device.  
    (c) Windows shall not be fitted in machinery space casings.  
    (d) Means of control shall be provided for:  
        (i) opening and closure of skylights, closure of openings in  
funnels which normally allow exhaust ventilation, and closure of  
ventilator dampers;  
        (ii) permitting the release of smoke;  
        (iii) closure of power-operated doors or release mechanism on  
doors other than power-operated watertight doors;  
        (iv) stopping ventilating fans; and  
        (v) stopping forced and induced draught fans, oil fuel transfer  
pumps, oil fuel unit pumps and other similar fuel pumps.  
    (e) The controls required for ventilating fans shall comply with the  
provisions of paragraph (f) of Regulation 25 of this Chapter. The controls  
for any required fixed fire-extinguishing system and those required by  
sub-paragraphs (d) (i), (ii), (iii) and (v) of this Regulation and of  
sub-paragraph (a) (v) of Regulation 33 of this Chapter shall be situated  
at one control position, or grouped in as few positions as possible to the  
satisfaction of the Administration. Such position or positions shall be  
located where they will not be cut off in the event of fire in the space  
they serve, and shall have a safe access from the open deck.  
       
     PART C FIRE SAFETY MEASURES FOR PASSENGER SHIPS CARRYING NOT MORETHAN 36 PASSENGERS   
  
       
  
     Regulation 35: Structure  
  
    (a) The hull, superstructure, structural bulkheads, decks and  
deckhouses shall be constructed of steel or other equivalent material.  
    (b) Where fire protection in accordance with paragraph (b) of  
Regulation 40 of this Chapter is employed, the superstructure may be  
constructed of, for example, aluminium alloy,  provided that:  
        (i) for the temperature rise of the metallic cores of "A" Class  
divisions when exposed to the standard fire test, due regard is given to  
the mechanical properties of the material;  
        (ii) the Administration is satisfied that the amount of  
combustible materials used in the relevant part of the ship is suitably  
reduced; the ceilings (i.e., linings of deck heads)  are non-combustible;  
        (iii) adequate provision is made to ensure that in the event of  
fire, arrangements for stowage, launching and embarkation into survival  
craft remain as effective as if the superstructure were constructed of  
steel;  
        (iv) crowns and casings of boiler and machinery spaces are of  
steel construction adequately insulated, and the openings therein, if any,  
are suitably arranged and protected to prevent spread of fire.  
       
     Regulation 36: Main Vertical Zones.  
  
    (a) The hull, superstructure and deckhouses shall be subdivided into  
main vertical zones. Steps and recesses shall be kept to a minimum, but  
where they are necessary, they shall be of "A" Class divisions.  
    (b) As far as practicable, the bulkheads forming the boundaries of the  
main vertical zones above the bulkhead deck shall be in line with  
watertight subdivision bulkheads situated immediately below the bulkhead  
deck.  
    (c) Such bulkheads shall extend from deck to deck and to the shell or  
other boundaries.  
    (d) On ships designed for special purposes, such as automobile or  
railroad car ferries,  where installation of such bulkheads would defeat  
the purpose for which the ship is intended,  equivalent means for  
controlling and limiting a fire shall be substituted and specifically  
approved by the Administration.  
       
     Regulation 37: Openings in "A" Class Divisions  
  
    (a) Where "A" Class divisions are pierced for the passage of electric  
cables, pipes,  trunks, ducts, etc., for girders, beams or other  
structures, arrangements shall be made to ensure that the fire resistance  
is not impaired.  
    (b) Where of necessity, a duct passes through a main vertical zone  
bulkhead, a fail-safe automatic closing fire damper shall be fitted  
adjacent to the bulkhead. The damper shall also be capable of being  
manually closed from both sides of the bulkhead. The operating position  
shall be readily accessible and be marked in red light-reflecting colour.  
The duct between the bulkhead and the damper shall be of steel or other  
equivalent material and, if necessary, to an insulating standard such as  
to comply with paragraph (a) of this Regulation. The damper shall be  
fitted on at least one side of the bulkhead with a visible indicator  
showing if the damper is in the open position.  
    (c) Except for hatches between cargo, store, and baggage spaces, and  
between such spaces and the weather decks, all openings shall be provided  
with permanently attached means of closing which shall be at least as  
effective for resisting fires as the divisions in which they are fitted.  
    (d) The construction of all doors and door frames in "A" Class  
divisions, with the means of securing them when closed, shall provide  
resistance to fire as well as to the passage of smoke and flame as far as  
practicable equivalent to that of the bulkheads in which the doors are  
situated. Watertight doors need not be insulated.  
    (e) It shall be possible for each door to be opened from either side  
of the bulkhead by one person only.  
    (f) Fire doors in main vertical zone bulkheads and stairway  
enclosures, other than power-operated watertight doors and those which are  
normally locked, shall be of the self-closing type capable of closing  
against an inclination of 3 1/2 degrees opposing closure. All such doors,  
except those that are normally closed, shall be capable of release from a  
control station, either simultaneously or in groups, and also individually  
from a position at the door. The release machanism shall be so designed  
that the door will automatically close in the event of disruption of the  
control system; however, approved power-operated watertight doors will be  
considered acceptable for this purpose. Hold-back hooks, not subject to  
control station release, will not be permitted. When double swing doors  
are permitted, they shall have a latch arrangement which is automatically  
engaged by the operation of the door release system.  
       
     Regulation 38: Fire Integrity of "A" Class Divisions  
  
    Where "A" Class divisions are required under this Part, the  
Administration, in deciding the amount of insulation to be provided, shall  
be guided by the provisions of Part B of this Chapter, but may accept a  
reduction of the amount of insulation below that stipulated by that Part.  
       
     Regulation 39: Separation of Accommodation Spaces from Machinery,Cargo and Service Spaces  
  
    The boundary bulkheads and decks separating accommodation spaces from  
machinery, cargo and service spaces shall be constructed of "A" Class  
divisions, and these bulkheads and decks shall have an insulation value to  
the satisfaction of the Administration having regard to the nature of the  
adjacent spaces.  
       
     Regulation 40: Protection of Accommodation and Service Spaces  
  
    The accommodation and service spaces shall be protected in accordance  
with the provisions of either paragraph (a) or (b) of this Regulation.  
    (a) (i) Within the accommodation spaces, all enclosure bulkheads other  
than those required to be of "A" Class divisions, shall be constructed of  
"B" Class Divisions of non-combustible materials, which may, however, be  
faced with combustible materials in accordance with sup-paragraph (iii) of  
this paragraph.  
        (ii) All corridor bulkheads shall extend from deck to deck.  
Ventilation openings may be permitted in the doors in "B" Class bulkheads,  
preferably in the lower portion. All other enclosure bulkheads shall  
extend from deck to deck vertically,  and to the shell or other boundaries  
transversely, unless non-combustible ceilings or linings such as will  
ensure fire integrity are fitted, in which case the bulkheads may  
terminate at the ceilings or linings.  
        (iii) Except in cargo spaces, mail rooms, baggage rooms, or  
refrigerated compartments of service spaces, all linings, groups, ceilings  
and insulation\'s shall be of non-combustible materials. The total volume  
of combustible facings, mouldings, decorations and veneers in any  
accommodation or public space shall not exceed a volume equivalent to 2.54  
millimetres  (1/10 inch) veneer on the combined area of the walls and  
ceilings. All exposed surfaces in corridors or stairway enclosures and in  
concealed or inaccessible spaces shall have low flame-spread  
characteristics.\*  
    [\* Reference is made to Guidelines on the Evaluation of Fire Hazard  
Properties of Materials, adopted by the Organization by Resolution A. 166  
(ES. IV).]  
    (b) (i) All corridor bulkheads in accommodation spaces shall be of  
steel or be constructed of "B" Class panels.  
        (ii) A fire detecting system of an approved type shall be  
installed and so arranged as to detect the presence of fire in all  
enclosed spaces appropriated to the use or service of passengers or crew  
(except spaces which afford no substantial fire hazard)  and automatically  
to indicate at one or more points or stations where it can be most quickly  
observed by officers and crew, the presence or indication of fire and also  
its location.  
       
     Regulation 41: Deck Coverings\*  
  
    [\* Reference is made to Improved Provisional Guidelines on Test  
Procedures for Primary Deck Coverings, adopted by the Organization by  
Resolution A.214 (VII).]  
    Primary deck coverings within accommodation spaces, control stations,  
stairways and corridors shall be of approved material which will not  
readily ignite.  
       
     Regulation 42: Protection of Stairways and Lifts in Accommodationand Service Spaces  
  
    (a) All stairways and means of escape in accommodation and service  
spaces shall be of steel or other suitable material.  
    (b) Passenger and service lift trunks, vertical trunks for light and  
air to passenger spaces,  etc., shall be of "A" Class divisions. Doors  
shall be of steel or other equivalent material and when closed shall  
provide fire resistance at least as effective as the trunks in which they  
are fitted.  
       
     Regulation 43: Protection of Control Stations and Store-rooms  
  
    (a) Control stations shall be separated from the remainder of the ship  
by "A" Class bulkheads and decks.  
    (b) The boundary bulkheads of baggage rooms, mail rooms, store-rooms,  
paint and lamp lockers, galleys and similar spaces shall be of "A" Class  
divisions. Spaces containing highly inflammable stores shall be so  
situated as to minimize the danger to passengers or crew in the event of  
fire.  
       
     Regulation 44: Windows and Sidescuttles  
  
    (a) All windows and sidescuttles in bulkheads separating accommodation  
spaces from weather shall be constructed with frames of steel or other  
suitable materials. The glass shall be retained by a metal glazing bead.  
    (b) All windows and sidescuttles in bulkheads within accommodation  
spaces shall be constructed so as to preserve the integrity requirements  
of the type of bulkhead in which they are fitted.  
       
     Regulation 45: Ventilation Systems  
  
    Power ventilation of machinery spaces shall be capable of being  
stooped from an easily  accessible position outside the machinery spaces.  
       
     Regulation 46: Details of Construction  
  
    (a) Paints, varnishes and similar preparations having a nitrocellulose  
or other highly inflammable base shall not be used in any part of the  
ship.  
    (b) Pipes penetrating "A" or "B" Class divisions shall be of a  
material approved by the Administration having regard to the temperature  
such divisions are required to withstand. Pipes conveying oil or  
combustible liquids shall be of a material approved by the Administration  
having regard to the fire risk. Materials readily rendered ineffective by  
heat shall not be used for overboard scuppers, sanitary discharges, and  
other outlets which are close to the water-line and where the failure of  
the material in the event of fire would give rise to danger of flooding.  
    (c) In spaces containing main propulsion machinery, or oil-fired  
boilers, or auxiliary internal combustion type machinery of total power  
output of 746 kW or over, the following measures shall be taken:  
        (i) skylights shall be capable of being closed from outside the  
space;  
        (ii) skylights containing glass panels shall be fitted with  
external shutters of steel or other equivalent material permanently  
attached;  
        (iii) any window permitted by the Administration in casings of  
such spaces shall be of the non-opening type, and shall be fitted with an  
external shutter of steel or other equivalent material permanently  
attached; and  
        (iv) in the windows and skylights referred to in sub-paragraphs  
(i), (ii) and (iii) of this paragraph, wire reinforced glass shall be  
used.  
       
     Regulation 47: Fire Detection Systems and Fire-Extinguishing Equ-ipment  
  
    (a) Patrols and Detection  
        (i) An efficient patrol system shall be maintained in all ships so  
that any outbreak of fire may be promptly detected. Manual fire alarms  
shall be fitted throughout the passenger and crew accommodation to enable  
the fire patrol to give an alarm immediately to the navigating bridge or  
fire control station.  
        (ii) An approved fire alarm or fire detecting system shall be  
provided with will automatically indicate at one or more suitable points  
or stations the presence or indication of fire and its location in any  
part of the ship which, in the opinion of the Administration, is not  
accessible to the patrol system, except where it is shown to the  
satisfaction of the Administration that the ship is engaged on voyages of  
such short duration that it would be unreasonable to apply this  
requirement.  
        (iii) The ship, whether new or existing, shall at all times when  
at sea, or in port (except when out of service), be so manned or equipped  
as to ensure that any initial fire alarm is immediately received by a  
responsible member of the crew.  
    (b) Fire Pumps and Fire Main System  
    The ship shall be provided with fire pumps, fire main system, hydrants  
and hoses complying with Regulation 5 of this Chapter and with the  
following requirements:  
        (i) A ship of 4,000 tons gross tonnage and upwards shall be  
provided with at least three independently driven fire pumps and every  
ship of less than 4,000 tons gross tonnage with at least two such fire  
pumps.  
        (ii) In a ship of 1,000 tons gross tonnage and upwards, the  
arrangement of sea connexions,  pumps and sources of power for operating  
them shall be such as to ensure that a fire in any one compartment will  
not put all the fire pumps out of action.  
        (iii) In a ship of less than 1,000 tons gross tonnage the  
arrangements shall be to the satisfaction of the Administration.  
    (c) Fire Hydrants, Hoses and Nozzles  
        (i) The ship shall be provided with such number of fire hoses as  
the Administration may deem sufficient. There shall be at least one fire  
hose for each of the hydrants required by paragraph (d) of Regulation 5 of  
this Chapter and these hoses shall be used only for the purposes of  
extinguishing fires or testing the fire-extinguishing apparatus at fire  
drills and surveys.  
        (ii) In accommodation, service and machinery spaces, the number  
and position of hydrants shall be such that the requirements of paragraph  
(d) of Regulation 5 of this Chapter may be complied with when all  
watertight doors and all doors in main vertical zone bulkheads are closed.  
        (iii) The arrangements shall be such that at least two jets of  
water can reach any part of any cargo space when empty.  
        (iv) All required hydrants in the machinery spaces of ships with  
oil-fired boilers or internal combustion type propelling machinery shall  
be fitted with hoses having nozzles as required in paragraph (g)  of  
Regulation 5 of this Chapter.  
    (d) International Shore Connexion  
        (i) A ship of 1,000 tons gross tonnage and upwards shall be  
provided with at least one international shore connexion, complying with  
paragraph (h) of Regulation 5 of this Chapter.  
        (ii) Facilities shall be available enabling such a connexion to be  
used on either side of the ship.  
    (e) Portable Fire Extinguishers in Accommodation and Service Spaces  
    The ship shall be provided in accommodation and service spaces with  
such approved portable fire extinguishers as the Administration may deem  
to be appropriate and sufficient.  
    (f) Fixed Fire-Extinguishing Arrangements in Cargo Spaces  
        (i) The cargo spaces of ships of 1,000 tons gross tonnage and  
upwards shall be protected by a fixed gas fire-extinguishing system  
complying with Regulation 8 of this Chapter.  
        (ii) Where it is shown to the satisfaction of the Administration  
that a ship is engaged on voyages of such short duration that it would be  
unreasonable to apply the requirements of sub-paragraph (i)  of this  
paragraph and also in ships of less than 1,000 tons gross tonnage, the  
arrangements in cargo spaces shall be to the satisfaction of the  
Administration.  
    (g) Fire-Extinguishing Appliances in Boiler Rooms, etc.  
    Where main or auxiliary oil-fire boilers are situated, or in spaces  
containing oil fuel units or settling tanks, a ship shall be provided with  
the following arrangements:  
        (i) There shall be any one of the following fixed  
fire-extinguishing installations:  
            (1) a pressure water-spraying system complying with Regulation  
11 of this Chapter;  
            (2) a gas fire-extinguishing installation complying with  
Regulation 8 of this Chapter;  
            (3) a fixed froth installation complying with Regulation 9 of  
this Chapter. (The Administration may require fixed or mobile arrangements  
by pressure water or froth spraying to fight fire above the floor plates.)  
            In each case if the engine and boiler rooms are not entirely  
separate, or if fuel oil can drain from the boiler room into the engine  
room bilges, the combined engine and boiler rooms shall be considered as  
one compartment.  
        (ii) There shall be at least two approved portable extinguishers  
discharging froth or other approved medium suitable for extinguishing oil  
fires, in each firing space in each boiler room and each space in which a  
part of the oil fuel installation is situated. There shall be not less  
than one approved froth type extinguisher of at least 136 litres (30  
gallons) capacity or equivalent in each boiler room. These extinguishers  
shall be provided with hoses on reels suitable for reaching any part of  
the boiler room and spaces containing any part of the oil fuel  
installations.  
        (iii) In each firing space there shall be a receptacle containing  
sand, sawdust impregnated with soda or other approved dry material, in  
such quantity as may be required by the Administration. Alternatively an  
approved portable extinguisher may be substituted therefor.  
    (h) Fire-Fighting Appliances in Spaces containing Internal Combustion  
Type Machinery  
    Where internal combustion type engines are used, either for main  
propulsion or for auxiliary purposes associated with a total power output  
of not less than 746 kW, a ship shall be provided with the following  
arrangements:  
        (i) there shall be one of the fixed arrangements required by  
sub-paragraph (g) (i) of this Regulation;  
        (ii) there shall be in each engine space one approved froth-type  
extinguisher of not less than 45 litres (10 gallons) capacity or  
equivalent and also one approved portable froth-type extinguisher for each  
746 kW of engine power output or part thereof; but the total number of  
portable extinguishers so supplied shall be not less than two and need not  
exceed six.  
    (i) Fire-Fighting Arrangements in Spaces containing Steam Turbines and  
not requiring any Fixed Installation  
    The Administration shall give special consideration to the  
fire-extinguishing arrangements to be provided in spaces containing steam  
turbines which are separated from boiler rooms by watertight bulkheads.  
    (j) Fireman\'s Outfits and Personal Equipment  
        (i) The minimum number of fireman\'s outfits complying with the  
requirements of Regulation 14 of this Chapter, and of additional sets of  
personal equipment, each such set comprising the items stipulated in  
subparagraphs (a)(i), (ii) and (iii) of that Regulation, to be carried,  
shall be as follows:  
            (1) two fireman\'s outfits; and in addition  
            (2) for every 80 metres (262 feet) or part thereof, of the  
aggregate of the lengths of all passenger spaces and service spaces on the  
deck which carries such spaces or, if there is more than one such deck, on  
the deck which has the largest aggregate of such lengths, two fireman\'s  
outfits and two sets of personal equipment, each such set comprising the  
items stipulated in Regulation 14 (a) (i), (ii) and (iii) of this Chapter.  
        (ii) For each fireman\'s outfit which includes a self-contained  
breathing apparatus as provided in paragraph (b) of Regulation 14 of this  
Chapter, spare charges shall be carried on a scale approved by the  
Administration.  
        (iii) Fireman\'s outfits and sets of personal equipment shall be  
stored in widely separated positions ready for use. At least two fireman\'s  
outfits and one set of personal equipment shall be available at any one  
position.  
       
     Regulation 48: Means of Escape  
  
    (a) In and from all passenger and crew spaces and spaces in which crew  
are normally employed,  other than machinery spaces, stairways and  
ladderways shall be arranged so as to provide ready means of escape to the  
lifeboat embarkation deck. In particular the following precautions shall  
be complied with:  
        (i) below the bulkhead deck, two means of escape, at least one of  
which shall be independent of watertight doors, shall be provided for each  
watertight compartment or similarly restricted space or group of spaces.  
One of these means of escape may be dispensed with by the Administration,  
due regard being paid to the nature and the location of spaces concerned,  
and to the number of persons who normally might be quartered or employed  
there;  
        (ii) above the bulkhead deck, there shall be at least two  
practical means of escape from each main vertical zone or similarly  
restricted space or group of spaces at least one of which shall give  
access to a stairway forming a vertical escape; and  
        (iii) at least one of the means of escape shall be by means of a  
readily accessible enclosed stairway, which shall provide as far as  
practicable continuous fire shelter from the level of its origin to the  
lifeboat embarkation deck. The width, number and continuity of the  
stairways shall be to the satisfaction of the Administration.  
    (b) In machinery spaces, two means of escape, one of which may be a  
watertight door, shall be provided from each engine room, shaft tunnel and  
boiler room. In machinery spaces,  where no watertight door is available,  
the two means of escape shall be formed by two sets of steel ladders as  
widely separated as possible leading to doors in the casing similarly  
separated and from which access is provided to the embarkation deck. In  
the case of ships of less than 2,000 tons gross tonnage, the  
Administration may dispense with this requirement, due regard being paid  
to the width and the disposition of the casing.  
       
     Regulation 49: Oil Fuel used for Internal Combustion Engines  
  
    No internal combustion engine shall be used for any fixed installation  
in a ship if its fuel has a flashpoint of 43 ℃ (110 °F) or less (closed  
cup test) as determined by an approved flashpoint apparatus.  
       
     Regulation 50: Special Arrangements in Machinery Spaces  
  
    (a) Means shall be provided for stopping ventilating fans serving  
machinery and cargo spaces and for closing all doorways, ventilators,  
annular spaces around funnels and other openings to such spaces. These  
means shall be capable of being operated from outside such spaces in case  
of fire.  
    (b) Machinery driving forced and induced draught fans, oil fuel  
transfer pumps, oil fuel unit pumps and other similar fuel pumps shall be  
fitted with remote controls situated outside the space concerned so that  
they may be stopped in the event of a fire arising in the space in which  
they are located.  
    (c) Every oil fuel suction pipe from a storage, settling or daily  
service tank situated above the double bottom shall be fitted with a cock  
or valve capable of being closed from outside the space concerned in the  
event of a fire arising in the space in which such tanks are situated. In  
the special case of deep tanks situated in any shaft or pipe tunnel,  
valves on the tanks shall be fitted but control in event of fire may be  
effected by means of an additional valve on the pipeline or lines outside  
the tunnel or tunnels.  
       
     PART D FIRE SAFETY MEASURES FOR CARGO SHIPS\*  
  
    [\* See IMCO Recommendations concerning Fire Safety Requirements for  
Cargo Ships contained in Resolution A. 327 (IX) of November 12, 1975 as  
well as Resolution A. 417 (XI) of November 15, 1979 reproduced after the  
Convention.]  
       
     Regulation 51: General Requirements for Cargo Ships of 4,000 tonsGross Tonnage and Up-wards other than Tankers Covered by Part E of thisChapter  
  
    (a) The hull, superstructure, structural bulkheads, decks and  
deckhouses shall be constructed of steel, except where the Administration  
may sanction the use of other suitable material in special cases,  having  
in mind the risk of fire.  
    (b) In accommodation spaces, the corridor bulkheads shall be of steel  
or be constructed of "B" Class panels.  
    (c) Deck coverings within accommodation spaces on the decks forming  
the crown of machinery and cargo spaces shall be of a type which will not  
readily ignite.  
    (d) Interior stairways below the weather deck shall be of steel or  
other suitable material. Crew lift trunks within accommodation shall be of  
steel or equivalent material.  
    (e) Bulkheads of galleys, paint stores, lamp rooms, boatswain\'s stores  
when adjacent to accommodation spaces and emergency generator rooms if  
any, shall be of steel or equivalent material.  
    (f) In accommodation and machinery spaces, paints, varnishes and  
similar preparations having a nitrocellulose or other highly inflammable  
base shall not be used.  
    (g) Pipes conveying oil or combustible liquids shall be of a material  
approved by the Administration having regard to the fire risk. Materials  
readily rendered ineffective by heat shall not be used for overboard  
scuppers, sanitary discharges, and other outlets which are close to the  
water-line and where the failure of the material in the event of fire  
would give rise to danger of flooding.  
    (h) Power ventilation of machinery spaces shall be capable of being  
stopped from an easily accessible position outside the machinery spaces.  
       
     Regulation 52: Fire-Extinguishing Systems and Equipment  
  
    (a) Application  
    Where ships have a lower gross tonnage than those quoted in this  
Regulation the arrangements for the items covered in this Regulation shall  
be to the satisfaction of the Administration.  
    (b) Fire Pumps and Fire Main System  
    The ship shall be provided with fire pumps, fire main system, hydrants  
and hoses complying with Regulation 5 of this Chapter and with the  
following requirements:  
        (i) A ship of 1,000 tons gross tonnage and upwards shall be  
provided with two independently driven power pumps.  
        (ii) In a ship of 1,000 tons gross tonnage and upwards if a fire  
in any one compartment could put all the pumps out of action, there must  
be an alternative means of providing water for fire fighting. In s ship of  
2,000 tons gross tonnage and upwards this alternative means shall be a  
fixed emergency pump independently driven. This emergency pump shall be  
capable of supplying two jets of water to the satisfaction of the  
Administration.  
    (c) Fire Hydrants, Hoses and Nozzles  
        (i) In a ship of 1,000 tons gross tonnage and upwards the number  
of fire hoses to be provided, each complete with couplings and nozzles,  
shall be one for each 30 metres (100 feet) length of the ship and one  
spare but in no case less than five in all. This number does not include  
any hoses required in any engine or boiler room. The Administration may  
increase the number of the hoses required so as to ensure that hoses in  
sufficient number are available and accessible at all times, having regard  
to the type of the ship and the nature of the trade on which the ship is  
employed.  
        (ii) In accommodation, service and machinery spaces, the number  
and position of hydrants shall be such as to comply with the requirements  
of paragraph (d) of Regulation 5 of this Chapter.  
        (iii) In a ship the arrangements shall be such that at least two  
jets of water can reach any part of any cargo space when empty.  
        (iv) All required hydrants in the machinery spaces of ships with  
oil-fired boilers or internal combustion type propelling machinery shall  
be fitted with hoses having nozzles as required in paragraph (g) of  
Regulation 5 of this Chapter.  
    (d) International Shore Connexion  
        (i) A ship of 1,000 tons gross tonnage and upwards shall be  
provided with at least one international shore connexion, complying with  
paragraph (h) of Regulation 5 of this Chapter.  
        (ii) Facilities shall be available enabling such a connexion to be  
used on either side of the ship.  
    (e) Portable Fire Extinguishers in Accommodation and Service Spaces  
    The ship shall be provided in accommodation and service spaces with  
such approved portable fire extinguishers as the Administration may deem  
to be appropriate and sufficient;  in any case, their number shall not be  
less than five for ships of 1,000 tons gross tonnage and upwards.  
    (f) Fixed Fire-Extinguishing Arrangements in Cargo Spaces  
        (i) Cargo spaces of ships of 2,000 tons gross tonnage and upwards  
shall be protected by a fixed fire-extinguishing system complying with  
Regulation 8 of this Chapter.  
        (ii) The Administration may exempt from the requirements of  
sub-paragraph (i) of this paragraph the cargo holds of any ship (other  
than the tanks of a tanker):  
            (1) if they are provided with steel hatch covers and effective  
means of closing all ventilators and other openings leading to the holds;  
            (2) if the ship is constructed and intended solely for  
carrying such cargoes as ore,  coal or grain; or  
            (3) where it is shown to the satisfaction of the  
Administration that the ship is engaged on voyages of such short duration  
that it would be unreasonable to apply the requirement.  
        (iii) Every ship in addition to complying with the requirements of  
this Regulation shall,  while carrying explosives of such nature or in  
such quantity as are not permitted to be carried in passenger ships under  
Regulation 7 of Chapter VII of this Convention comply with the following  
requirements:  
            (1) Steam shall not be used in any compartment containing  
explosives. For the purpose of this sub-paragraph, "compartment" means all  
spaces contained between two adjacent permanent bulkheads and includes the  
lower hold and all cargo spaces above it.  
            (2) In addition, in each compartment containing explosives and  
in adjacent cargo compartments, there shall be provided a smoke or  
fire-detection system in each cargo space.  
    (g) Fire-Extinguishing Appliances in Boiler Rooms, etc.  
    Where main or auxiliary oil-fired boilers are situated, or in spaces  
containing oil fuel units or settling tanks, a ship of 1,000 tons gross  
tonnage and upwards shall be provided with the following arrangements:  
        (i) There shall be any one the following fixed fire-extinguishing  
installations:  
            (1) A pressure water-spraying system complying with Regulation  
11 of this Chapter.  
            (2) A fire-extinguishing installation complying with  
Regulation 8 of this Chapter.  
            (3) A fixed froth installation complying with Regulation 9 of  
this Chapter. (The Administration may require fixed or mobile arrangements  
by pressure water or froth spraying to fight fire above the floor plates.)  
            In each case if the engine and boiler rooms are not entirely  
separate, or if fuel oil can drain from the boiler room into the engine  
room bilges, the combined engine and boiler rooms shall be considered as  
one compartment.  
        (ii) There shall be at least two approved portable extinguishers  
discharging froth or other approved medium suitable for extinguishing oil  
fires in each firing space in each boiler room and each space in which a  
part of the oil fuel installation is situated. In addition, there shall be  
at least one extinguisher of the same description with a capacity of 9  
litres (2 gallons) for each burner, provided that the total capacity of  
the additional extinguisher,  or extinguishers need not exceed 45 litres  
(10 gallons) for any one boiler room.  
        (iii) In each firing space there shall be a receptacle containing  
sand, sawdust impregnated with soda, or other approved dry material in  
such quantity as may be required by the Administration. Alternatively an  
approved portable extinguisher may be substituted therefor.  
    (h) Fire-Fighting Appliances in Spaces containing Internal Combustion  
Type Machinery  
    Where internal combustion type engines are used, either for main  
propulsion machinery,  or for auxiliary purposes associated with a total  
power output of not less than 746 kW, a ship of 1,000 tons gross tonnage  
and upwards shall be provided with the following arrangements:  
        (i) There shall be one of the fixed arrangement required by  
sub-paragraph (g) (i) of this Regulation.  
        (ii) There shall be in each engine space one approved froth-type  
extinguisher of not less than 45 litres (10 gallons) capacity or  
equivalent and also one approved portable froth extinguisher for each 746  
kW of engine power output or part thereof; but the total number of  
portable extinguishers so supplied shall be not less than two and need not  
exceed six.  
    (i) Fire-Fighting Arrangements in Spaces containing Steam Turbines and  
not requiring any Fixed Installation  
    The Administration shall given special consideration to the  
fire-extinguishing arrangements to be provided in spaces containing steam  
turbines which are separated from boiler rooms by watertight bulkheads.  
    (j) Fireman\'s Outfits and Personal Equipment  
        (i) The ship, whether new or existing, shall carry at least two  
fireman\'s outfits complying with the requirements of Regulation 14 of this  
Chapter. Furthermore, Administrations may require in large ships  
additional sets of personal equipment and in tankers and special ships  
such as factory ships additional fireman\'s outfits.  
        (ii) For each fireman\'s outfit which includes a self-contained  
breathing apparatus as provided in paragraph (b) of Regulation 14 of this  
Chapter, spare charges shall be carried on a scale approved by the  
Administration.  
        (iii) The fireman\'s outfits and personal equipment shall be stored  
so as to be easily accessible and ready for use and, where more than one  
fireman\'s outfit and set of personal equipment are carried, they shall be  
stored in widely separated positions.  
       
     Regulation 53: Means of Escape  
  
    (a) In and from all crew and passenger spaces and spaces in which crew  
are normally employed, other than machinery spaces, stairways and ladders  
shall be arranged so as to provide ready means of escape to the lifeboat  
embarkation deck.  
    (b) In machinery spaces, two means of escape, one of which may be a  
watertight door,  shall be provided from each engine room, shaft tunnel  
and boiler room. In machinery spaces,  where no watertight door is  
available, the two means of escape shall be formed by two sets of steel  
ladders as widely separated as possible leading to doors in the casing  
similarly separated and from which access is provided to the embarkation  
deck. In the case of ships of less than 2,000 tons gross tonnage, the  
Administration may dispense with this requirement, due regard being paid  
to the width and the disposition of the casing. Regulation 54: Special  
Arrangements in Machinery Spaces  
    (a) Means shall be provided for stopping ventilating fans serving  
machinery and cargo spaces and for closing all doorways, ventilators,  
annular spaces around funnels and other openings to such spaces. These  
means shall be capable of being operated from outside such spaces in case  
of fire.  
    (b) Machinery driving forced and induced draught fans, oil fuel  
transfer pumps, oil fuel unit pumps and other similar fuel pumps shall be  
fitted with remote controls situated outside the space concerned so that  
they may be stopped in the event of a fire arising in the space in which  
they are located.  
    (c) Every oil fuel suction pipe from a storage, settling or daily  
service tank situated above the double bottom shall be fitted with a cock  
or valve capable of being closed from outside the space concerned in the  
event of a fire arising in the space in which such tanks are situated. In  
the special case of deep tanks situated in any shaft or pipe tunnel,  
valves on the tanks shall be fitted but control in event of fire may be  
effected by means of an additional valve on the pipeline or lines outside  
the tunnel or tunnels.  
       
     PART E FIRE SAFETY MEASURES FOR TANKERS   
  
       
  
     Regulation 55: Application  
  
    (a) This Part shall apply to all new tankers carrying crude oil and  
petroleum products having a flashpoint not exceeding 60 ℃ (140 °F)  
(closed cup test) as determined by an approved flashpoint apparatus and  
whose Reid vapour pressure is below that of atmospheric pressure, and  
other liquid products having a similar fire hazard.  
    (b) In addition, all ships covered by this Part shall comply with the  
requirements of Regulations 52, 53 and 54 of this Chapter, except that  
paragraph (f) of Regulation 52 need not apply to tankers complying with  
Regulation 60 of this Chapter.  
    (c) Where cargoes other than those referred to in paragraph (a) of  
this Regulation which introduce additional fire hazards are intended to be  
carried, additional safety measures shall be required to the satisfaction  
of the Administration.  
    (d) Combination carriers shall not carry solid cargoes unless all  
cargo tanks are empty of oil and gas freed or unless, in each case, the  
Administration is satisfied with the arrangements provided.  
       
     Regulation 56: Location and Separation of Spaces  
  
    (a) Machinery spaces of Category A shall be positioned aft of cargo  
tanks and slop tanks and shall be isolated from them by a cofferdam, cargo  
pump room or oil fuel bunker tank;  they shall also be situated aft of  
such cargo pump rooms and cofferdams, but not necessarily aft of the oil  
fuel bunker tanks. However, the lower portion of the pump room may be  
recessed into such spaces to accommodate pumps provided the deck head of  
the recess is in general not more than one-third of the moulded depth  
above the keel except that in the case of ships of not more than 25,000  
metric tons deadweight, where it can be demonstrated that for reasons of  
access and satisfactory piping arrangements this is impracticable, the  
Administration may permit a recess in excess of such height, but not  
exceeding one half of the moulded depth above the keel.  
    (b) Accommodation spaces, main cargo control stations, control  
stations and service spaces shall be positioned aft of all cargo tanks,  
slop tanks, cargo pump rooms and cofferdams which isolate cargo or slop  
tanks from machinery spaces of Category A. Any common bulkhead separating  
a cargo pump room, including the pump room entrance, from accommodation  
and service spaces and control stations shall be constructed to "A-60"  
Class. Where deemed necessary, accommodation spaces, control stations,  
machinery spaces other than those of Category A and service spaces may be  
permitted forward of all cargo tanks, slop tanks, cargo pump rooms and  
cofferdams subject to an equivalent standard of safety and appropriate  
availability of fire-extinguishing arrangements being provided to the  
satisfaction of the Administration.  
    (c) Where the fitting of a navigation position above the cargo tank  
area is shown to be necessary it shall be for navigation purposes only and  
it shall be separated from the cargo tank deck by means of an open space  
with a height of at least 2 metres. The fire protection of such navigation  
position shall in addition be as required for control spaces as set forth  
in paragraphs (a) and (b) of Regulation 57 and other provisions as  
applicable of this Part.  
    (d) Means shall be provided to keep deck spills away from the  
accommodation and service areas. This may be accomplished by provision of  
a permanent continuous coaming of a suitable height extending from side to  
side. Special consideration shall be given to the arrangements associated  
with stern loading.  
    (e) Exterior boundaries of superstructures and deckhouses enclosing  
accommodation and service spaces and including any overhanging decks which  
support such accommodation,  shall be insulated to "A-60" Class for the  
whole of the portions which face cargo oil tanks and for 3 metres aft of  
the front boundary. In the case of the sides of these superstructures and  
deckhouses, such insulation shall be carried as high as is deemed  
necessary by the Administration.  
    (f) In boundaries, facing cargo tanks, of superstructures and  
deckhouses containing accommodation and service spaces the following  
provisions shall apply:  
        (i) No doors shall be permitted in such boundaries, except that  
doors to those spaces not having access to accommodation and service  
spaces, such as cargo control stations, provision rooms,  and storerooms  
may be permitted by the Administration. Where such doors are fitted, the  
boundaries of the space shall be insulated to "A-60" Class. Bolted plates  
for removal of machinery may be fitted in such boundaries.  
        (ii) Portlights in such boundaries shall be of a fixed  
(non-opening) type. Pilot house windows may be non-fixed (opening).  
        (iii) Portlights in the first tier on the main deck shall be  
fitted with inside covers of steel or equivalent material.  
    The requirements of this paragraph, where applicable, except in the  
case of access to the navigating bridge spaces, shall also be applied to  
the boundaries of the superstructures and deckhouses for a distance of 5  
metres measured longitudinally from the forward end of such structures.  
       
     Regulation 57: Construction  
  
    (a) (i) The hull, superstructure, structural bulkheads, decks and  
deckhouses shall be constructed of steel or other equivalent material.  
        (ii) Bulkheads between cargo pump rooms, including their trunks  
and machinery spaces of Category A shall be "A" Class and shall have no  
penetrations which are less than "A-0" Class or equivalent in all  
respects, other than the cargo pump shaft glands and similar glanded  
penetrations.  
        (iii) Bulkheads and decks forming divisions separating machinery  
spaces of Category A and cargo pump rooms, including their trunks,  
respectively, from the accommodation and service spaces shall be of "A-60"  
Class. Such bulkheads and decks and any boundaries of machinery spaces of  
Category A and cargo pump rooms shall not be pierced for windows or  
portlights.  
        (iv) The requirements of sub-paragraphs (ii) and (iii) of this  
paragraph, however,  do not preclude the installation of permanent  
approved gas-tight lighting enclosures for illuminating the pump rooms  
provided that they are of adequate strength and maintain the integrity and  
gas-tightness of the bulkhead as "A" Class. Further, it does not preclude  
the use of windows in a control room located entirely within a machinery  
space.  
        (v) Control stations shall be separated from adjacent enclosed  
spaces by means of "A" Class bulkheads and decks. The insulation of these  
control station boundaries shall be to the satisfaction of the  
Administration having in mind the risk of fire in adjacent spaces.  
        (vi) Casing doors in machinery spaces of Category A shall be  
self-closing and comply with the related provisions of sub-paragraph (b)  
(vii) of this Regulation.  
        (vii) The surface of the insulation on interior boundaries of  
machinery spaces of Category A shall be impervious to oil and oil vapours.  
        (viii) Primary deck coverings, if applied, shall be of approved  
materials which will not readily ignite.\*  
    [\* Reference is made to Improved Provisional Guidelines on Test  
Procedures for Primary Deck Coverings adopted by the Organization by  
Resolution A.214 (VII).]  
        (ix) Interior stairways shall be of steel or other suitable  
material.  
        (x) When adjacent to accommodation spaces, bulkheads of galleys,  
paint stores,  lamp rooms and boatswain\'s stores shall be of steel or  
equivalent material.  
        (xi) Paints, varnishes and other finishes used on exposed interior  
surfaces shall not be of a nature to offer an undue fire hazard in the  
judgement of the Administration and shall not be capable of producing  
excessive quantities of smoke or other toxic properties.  
        (xii) Pipes conveying oil or combustible liquids shall be of a  
material approved by the Administration having regard to the fire risk.  
Materials readily rendered ineffective by heat shall not be used for  
overboard scuppers, sanitary discharges, and other outlets which are close  
to the water-line and where the failure of the material in the event of  
fire would give rise to danger of flooding.  
        (xiii) Power ventilation of machinery spaces shall be capable of  
being stopped from an easily accessible position outside the machinery  
spaces.  
        (xiv) Skylights to machinery spaces of Category A and cargo pump  
rooms shall comply with the provisions of sub-paragraph (a) (iii) of this  
Regulation in respect of windows and portlights and in addition shall be  
so arranged as to be capable of being readily closed from outside the  
spaces which they serve.  
    (b) Within the accommodation and service spaces and control stations  
the following conditions shall apply:  
        (i) Corridor bulkheads including doors shall be of "A" or "B"  
Class divisions extending from deck to deck. Where continuous "B" Class  
ceilings and/or linings are fitted on both sides of the bulkhead, the  
bulkhead may terminate at the continuous ceiling or lining. Doors of  
cabins and public spaces in such bulkheads may have a louvre in the lower  
half.  
        (ii) Air spaces enclosed behind ceilings, panelings, or linings  
shall be divided by close fitting draught stops spaced not more than 14  
metres apart.  
        (iii) Ceilings, linings, bulkheads and insulation except for  
insulation in refrigerated compartments shall be of non-combustible  
material. Vapour barriers and adhesives used in conjunction with  
insulation, as well as insulation of pipe fittings for cold service  
systems need not be non-combustible, but they shall be kept to the minimum  
quantity practicable and their exposed surfaces shall have resistance to  
propagation of flame to the satisfaction of the Administration.  
        (iv) The framing, including grounds and the joint pieces of  
bulkheads, linings,  ceilings and draught stops, if fitted, shall be of  
non-combustible material.  
        (v) All exposed surfaces in corridors and stairway enclosures and  
surfaces in concealed or inaccessible spaces shall have low flame-spread  
characteristics.\*\*  
    [\*\* Reference is made to Guidelines on the Evaluation of Fire Hazard  
Properties of Materials,  adopted by the Organization by Resolution A.166  
 (ES. IV).]  
        (vi) Bulkheads, linings and ceilings may have combustible veneer,  
provided that such veneer shall not exceed 2 millimetres within any such  
space except corridors, stairway enclosures and control stations where it  
shall not exceed 1.5 millimetres.  
        (vii) Stairways which penetrate only a single deck shall be  
protected at least at one level by "A" or "B" Class divisions and  
self-closing doors so as to limit the rapid spread of fire from one deck  
to another. Crew lift trunks shall be of "A" Class divisions. Stairways  
and lift trunks which penetrate more than a single deck shall be  
surrounded by "A" Class divisions and protected by self-closing steel  
doors at all levels. Self-Closing doors shall not be fitted with hold-back  
hooks. However, hold-back arrangements fitted with remote release fittings  
of the fail-safe type may be utilized.  
    (c) Ducts provided for ventilation of machinery spaces of Category "A"  
shall not in general pass through accommodation and service spaces or  
control stations, except that the Administration may permit relaxation  
from this requirement provided that:  
        (i) the ducts are constructed of steel and each is insulated to  
"A-60" Class; or  
        (ii) the ducts are constructed of steel and are fitted with an  
automatic fire damper close to the boundary penetrated and are insulated  
to "A-60" Class from the machinery space of Category A to a point at least  
5 metres beyond the fire damper.  
    (d) Ducts provided for ventilation of accommodation and service spaces  
or control stations shall not in general pass through machinery spaces of  
Category A except that the Administration may permit relaxation from this  
requirement provided that ducts are constructed of steel and an automatic  
fire damper is fitted close to the boundaries penetrated.  
       
     Regulation 58: Ventilation  
  
    (a) The arrangement and positioning of openings in the cargo tank deck  
from which gas emission can occur shall be such as to minimize the  
possibility of gas being admitted to enclosed spaces containing a source  
of ignition, or collecting in the vicinity of deck machinery and equipment  
which may constitute an ignition hazard. In every case the height of the  
outlet above the deck and the discharge velocity of the gas shall be  
considered in conjunction with the distance of any outlet from any  
deckhouse opening or source of ignition.  
    (b) The arrangement of ventilation inlets and outlets and other  
deckhouse and superstructure boundary space openings shall be such as to  
complement the provisions of paragraph (a) of this Regulation. Such vents  
especially for machinery spaces shall be situated as far aft as  
practicable. Due consideration in this regard should be given when the  
ship is equipped to load or discharge at the stern. Sources of ignition  
such as electrical equipment shall be so arranged as to avoid an explosion  
hazard.  
    (c) Cargo pump rooms shall be machanically ventilated and discharges  
from the exhaust fans shall be led to a safe place on the open deck. The  
ventilation of these rooms shall have sufficient capacity to minimize the  
possibility of accumulation of inflammable vapours. The number of changes  
of air shall be at least 20 times per hour, based upon the gross volume of  
the space. The air ducts shall be arranged so that all of the space is  
effectively ventilated. The ventilation shall be of the suction type.  
       
     Regulation 59: Means of Escape  
  
    In addition to the requirements of paragraph (a) of Regulation 53 of  
this Chapter, consideration shall be given by the Administration to the  
availability of emergency means of escape for personnel from each cabin.  
       
     Regulation 60: Cargo Tank Protection  
  
    (a) For tankers of 100,000 metric tons deadweight and upwards and  
combination carriers of 50,000 metric tons deadweight and upwards, the  
protection of the cargo tanks deck area and cargo tanks shall be achieved  
by a fixed deck froth system and a fixed inert gas system in accordance  
with the requirements of Regulation 61 and 62 of this Part except that in  
lieu of the above installations the Administration, after having given  
consideration to the ship arrangement and equipment, may accept other  
combinations of fixed installations if they afford protection equivalent  
to the above, in accordance with Regulation 5 of Chapter I of this  
Convention.  
    (b) To be considered equivalent, the system proposed in lieu of the  
deck froth system shall:  
        (i) be capable of extinguishing spill fires and also preclude  
ignition of spilled oil not yet ignited; and  
        (ii) be capable of combating fires in ruptured tanks.  
    (c) To be considered equivalent, the system proposed in lieu of the  
fixed inert gas system shall:  
        (i) be capable of preventing dangerous accumulations of explosive  
mixtures in intact cargo tanks during normal service throughout the  
ballast voyage and necessary in-tank operations; and  
        (ii) be so designed as to minimize the risk of ignition from the  
generation of static electricity by the system itself.  
    (d) In tankers of less than 100,000 metric tons deadweight and  
combination carriers of less than 50,000 metric tons deadweight the  
Administration, in applying the requirements of paragraph (f) of  
Regulation 52 of this Chapter, may accept a froth system, capable of  
discharging froth internally or externally, to the tanks. The details of  
such installation shall be to the satisfaction of the Administration.  
       
     Regulation 61: Fixed Deck Froth System  
  
    The Fixed deck froth system referred to in paragraph (a) of Regulation  
60 of this Chapter shall be designed as follows:  
    (a) The arrangements for providing froth shall be capable of  
delivering froth to the entire cargo tank area as well as into any cargo  
tank, the deck of which has been ruptured.  
    (b) The system shall be capable of simple and rapid operation. The  
main control station for the system shall be suitably located outside of  
the cargo tank area, adjacent to the accommodation spaces and readily  
accessible and operable in the event of fire in the areas protected.  
    (c) The rate of supply of froth solution shall be not less than the  
greater of the following:  
        (i) 0.6 litres per minute per square metre of the cargo deck area,  
where cargo deck area means the maximum breadth of the ship times the  
total longitudinal extent of the cargo tank spaces, or  
        (ii) 6 litres per minute per square metre of the horizontal  
sectional area of the single tank having the largest such area.  
    Sufficient froth concentrate shall be supplied to ensure at least 20  
minutes of froth generation when using solution rates stipulated in  
sub-paragraph (i) or (ii) of this paragraph, whichever is the greater. The  
froth expansion ratio (i.e., the ratio of the volume of froth produced to  
the volume of the mixture of water and froth-making concentrate supplied)  
shall not generally exceed 12 to 1. Where systems essentially produce low  
expansion froth but at an expansion ratio slightly in excess of 12 to 1,  
the quantity of froth solution available shall be calculated as for 12 to  
1 expansion ratio systems. When medium expansion ratio froth (between 50  
to 1 and 150 to 1 expansion ratio) is employed the application rate of the  
froth and the capacity of a monitor installation shall be to the  
satisfaction of the Administration.  
    (d) Froth from the fixed froth system shall be supplied by means of  
monitors and froth applicators. At least 50 per cent of the required froth  
rate shall be delivered from each monitor.  
    (e) (i) The number and position of monitors shall be such as to comply  
with paragraph (a) of this Regulation. The capacity of any monitor in  
litres per minute of froth solution shall be at least three times the deck  
area in square metres protected by that monitor, such area being entirely  
forward of the monitor.  
        (ii) The distance from the monitor to the farthest extremity of  
the protected area forward of that monitor shall not be more than 75 per  
cent of the monitor throw in still air conditions.  
    (f) A monitor and hose connexion for a froth applicator shall be  
situated both port and starboard at the poop front or accommodation spaces  
facing the cargo deck. Applicators shall be provided for flexibility of  
action during fire-fighting operations and to cover areas screened from  
the monitors.  
    (g) Valves shall be provided in both the froth main and the fire main  
immediately forward of every monitor position to isolate damaged sections  
of these mains.  
    (h) Operation of a deck froth system at its required output shall  
permit the simultaneous use of the minimum required number of jets of  
water at the required pressure from the fire main.  
       
     Regulation 62: Inert Gas System  
  
    The inert gas system referred to in paragraph (a) of Regulation 60 of  
this Chapter shall be capable of providing on demand a gas or mixture of  
gases to the cargo tanks so deficient in oxygen that the atmosphere within  
a tank may be rendered inert, i.e., incapable of propagating flame. Such a  
system shall satisfy the following conditions:  
    (a) The need for fresh air to enter a tank during normal operations  
shall be eliminated,  except when preparing a tank for entry by personnel.  
    (b) Empty tanks shall be capable of being purged with inert gas to  
reduce the hydrocarbon content of a tank after discharge of cargo.  
    (c) The washing of tanks shall be capable of being carried out in an  
inert atmosphere.  
    (d) During cargo discharge, the system shall be such as to ensure that  
the volume of gas referred to in paragraph (f) of this Regulation is  
available. At other times sufficient gas to ensure compliance with  
paragraph  (g) of this Regulation shall be continuously available.  
    (e) Suitable means for purging the tanks with fresh air as well as  
with inert gas shall be provided.  
    (f) The system shall be capable of supplying inert gas at a rate of at  
least 125 per cent of the maximum rated capacity of the cargo pumps.  
    (g) Under normal running conditions, when tanks are being filled or  
have been filled with inert gas, a positive pressure shall be capable of  
being maintained at the tank.  
    (h) Exhaust gas outlets for purging shall be suitable located in the  
open air and shall be to the same general requirements as prescribed for  
ventilating outlets of tanks, referred to in paragraph (a) of Regulation  
58 of this Chapter.  
    (i) A scrubber shall be provided which will effectively cool the gas  
and remove solids and sulphur combustion products.  
    (j) At least two fans (blowers) shall be provided which together shall  
be capable of delivering at least the amount of gas stipulated in  
paragraph (f) of this Regulation.  
    (k) The oxygen content in the inert gas supply shall not normally  
exceed 5 per cent by volume.  
    (l) Means shall be provided to prevent the return of hydrocarbon gases  
or vapours from the tanks to the machinery spaces and uptakes and prevent  
the development of excessive pressure or vacuum. In addition, an effective  
water lock shall be installed at the scrubber or on deck. Branch piping  
for inert gas shall be fitted with stop valves or equivalent means of  
control at every tank. The system shall be so designed as to minimize the  
risk of ignition from the generation of static electricity.  
    (m) Instrumentation shall be fitted for continuously indicating and  
permanently recording at all times when inert gas is being supplied the  
pressure and oxygen content of the gas in the inert gas supply main on the  
discharge side of the fan. Such instrumentation should preferably be  
placed in the cargo control room if fitted but in any case shall be easily  
accessible to the officer in charge of cargo operations. Portable  
instruments suitable for measuring oxygen and hydrocarbon gases or vapour  
and the necessary tank fittings shall be provided for monitoring the tank  
contents.  
    (n) Means for indicating the temperature and pressure of the inert gas  
main shall be provided.  
    (o) Alarms shall be provided to indicate:  
        (i) high oxygen content of gas in the inert gas main;  
        (ii) low gas pressure in the inert gas main;  
        (iii) low pressure in the supply to the deck water seal, if such  
equipment is installed;  
        (iv) high temperature of gas in the inert gas main; and  
        (v) low water pressure to the scrubber  
    and automatic shut-downs of the system shall be arranged on  
predetermined limits being reached in respect of sub-paragraphs (iii),  
(iv) and (v) of this paragraph.  
    (p) The master of any ship equipped with an inert gas system shall be  
provided with an instruction manual covering operational, safety and  
occupational health requirements relevant to the system.  
       
     Regulation 63: Cargo Pump Room  
  
    Each cargo pump room shall be provided with a fixed fire-fighting  
system operated from a readily accessible position outside the pump room.  
The system shall use water-spray or another suitable medium satisfactory  
to the Administration.  
       
     Regulation 64: Hose Nozzles  
  
    All hose water nozzles provided shall be of an approved dual purpose  
type (i.e. spray/jet type) incorporating a shut-off.  
       
     PART F SPECIAL FIRE SAFETY MEASURES FOR EXISTING PASSENGER SHIPS  
  
    (For the purposes of this Part of this Chapter, all references to  
Regulation... (1948) mean references to Regulations of Chapter II of the  
International Convention for the Safety of Life at Sea, 1948. and all  
references to Regulation...(1960) mean, unless otherwise stated,  
references to Regulations of Chapter II of the International Convention  
for the Safety of Life at Sea, 1960).  
       
     Regulation 65: application  
  
    Any passenger ship carrying more than 36 passengers shall at least  
comply as follows:  
    (a) A ship, the keel of which was laid before November 19, 1952, shall  
comply with the provisions of Regulations 66 to 85 inclusive of this Part.  
    (b) A ship, the keel of which was laid on or after November 19, 1952  
but before May 26, 1965, shall comply with the provisions of the  
International Convention for the Safety of Life at Sea, 1948, relating to  
the fire safety measures applicable in that Convention to new ships and  
shall also comply with the provisions of Regulations 68 (b) and (c), 75,  
77(b), 78,  80(b), 81(b) to (g), 84 and 85 of this Part.  
    (c) A ship, the keel of which was laid on or after May 26, 1965, but  
before the present Convention comes into force, shall, unless it complies  
with Parts A and B of this Chapter,  comply with the provisions of the  
International Convention for the Safety of Life at Sea, 1960 relating to  
the fire safety measures applicable in that Convention to new ships and  
shall also comply with Regulations 68(b) and (c), 80(b), 81(b), (c) and  
(d) and 85 of this Part.  
       
     Regulation 66: Structure  
  
    The structural components shall be of steel or other suitable material  
in compliance with Regulation 27 (1948), except that isolated deckhouses  
containing no accommodation and decks exposed to the weather may be of  
wood if structural fire protection measures are taken to the satisfaction  
of the Administration.  
       
     Regulation 67: Main Vertical Zones  
  
    The ship shall be subdivided by "A" Class divisions into main vertical  
zones in compliance with Regulation 28 (1948). Such divisions shall have  
as far as practicable adequate insulating value,  taking into account the  
nature of the adjacent spaces as provided for in Regulation 26 (c) (iv)  
(1948).  
       
     Regulation 68: Openings in Main Vertical Zone Bulkheads  
  
    (a) The ship shall comply substantially with Regulation 29 (1948).  
    (b) Fire doors shall be of steel or equivalent material with or  
without non-combustible insulation.  
    (c) In the case of ventilation trunks and ducts having a  
cross-sectional area of 0.02 square metres (31 square inches) or more  
which pass through main zone divisions, the following additional  
provisions shall apply:  
        (i) for trunks and ducts having cross-sectional areas between 0.02  
square metres (31 square inches) and 0.075 square metres (116 square  
inches) inclusive, fire dampers shall be of a fail-safe automatic closing  
type, or such trunks and ducts shall be insulated for at least 457  
millimetres (18 inches) on each side of the division to meet the  
applicable bulkhead requirements;  
        (ii) for trunks and ducts having a cross-sectional area exceeding  
0.075 square metres (116 square inches), fire dampers shall be of a  
fail-safe automatic closing type.  
       
     Regulation 69: Separation of Accommodation Spaces from Machinery,Cargo and Service Spaces  
  
    The ship shall comply with Regulation 31 (1948).  
       
     Regulation 70: Application relative to Methods I, II and III  
  
    Each accommodation space and service space in a ship shall comply with  
all the provisions stipulated in one of the paragraphs (a), (b), (c) or  
(d) of this Regulation:  
    (a) When a ship is being considered for acceptance in the context of  
Method I, a network of non-combustible "B" Class bulkheads shall be  
provided in substantial compliance with Regulation 30 (a) (1948) together  
with maximum use of non-combustible materials in compliance with  
Regulation 39 (a) (1948).  
    (b) When a ship is being considered for acceptance in the context of  
Method II:  
        (i) an automatic sprinkler and fire alarm system shall be provided  
which shall be in substantial compliance with Regulations 42 and 48  
(1948), and  
        (ii) the use of combustible materials of all kinds shall be  
reduced as far as is reasonable and practicable.  
    (c) When a ship is being considered for acceptance in the context of  
Method III, a network of fire-retarding bulkheads shall be fitted from  
deck to deck in substantial compliance with Regulation 30(b) (1948),  
together with an automatic fire detection system in substantial compliance  
with Regulation 43 (1948). The use of combustible and highly inflammable  
materials shall be restricted as prescribed in Regulations 39(b) and 40  
(g) (1948). Departure form the requirements of Regulations 39(b) and 40(g)  
(1948) may be permitted if a fire patrol is provided at intervals not  
exceeding 20 minutes.  
    (d) When a ship is being considered for acceptance in the context of  
Method III:  
        (i) additional "A" Class divisions shall be provided within the  
accommodation spaces in order to reduce in these spaces the mean length of  
the main vertical zones to about 20 metres (65.5 feet); and  
        (ii) an automatic fire detection system shall be provided in  
substantial compliance with Regulation 43 (1948); and  
        (iii) all exposed surfaces, and their coatings, of corridor and  
cabin bulkheads in accommodation spaces shall be of limited  
flame-spreading power; and  
        (iv) the use of combustible materials shall be restricted as  
prescribed in Regulation 39 (b) (1948). Departure from the requirements of  
Regulation 39 (b) (1948) may be permitted if a fire patrol is provided at  
intervals not exceeding 20 minutes;  and  
        (v) additional non-combustible "B" Class divisions shall be fitted  
from deck to deck forming a network of fire-retarding bulkheads within  
which the area of any compartment, except public spaces, will in general  
not exceed 300 square metres (3,  200 square feet).  
       
     Regulation 71: Protection of Vertical Stairways  
  
    The stairways shall comply with Regulation 33 (1948) except that, in  
cases of exceptional difficulty, the Administration may permit the use of  
non-combustible "B" Class divisions and doors instead of "A" Class  
divisions and doors for stairway enclosures. Moreover,  the Administration  
may permit exceptionally the retention of a wooden stairway subject to its  
being sprinkler-protected and satisfactorily enclosed.  
       
     Regulation 72: Protection of Lifts (Passenger and Service), Verti-cal for Light and Air, etc.  
  
    The ship shall comply with Regulation 34 (1948).  
       
     Regulation 73: Protection of Control Stations  
  
    The ship shall comply with Regulation 35 (1948), except however that  
in cases where the disposition or construction of control stations is such  
as to preclude full compliance, e.g. timber construction of wheelhouse,  
the Administration may permit the use of free-standing non-combustible "B"  
Class divisions to protect the boundaries of such control stations. In  
such cases, where spaces immediately below such control stations  
constitute a significant fire hazard, the deck between shall be fully  
insulated as a "A" Class division.  
       
     Regulation 74: Protection of Store-rooms, etc.  
  
    The ship shall comply with Regulation 36 (1948).  
       
     Regulation 75: Windows and Sidescuttles  
  
    Skylights of engine and boiler spaces shall be capable of being closed  
from outside such spaces.  
       
     Regulation 76: Ventilation Systems  
  
    (a) All power ventilation, except cargo and machinery space  
ventilation, shall be fitted with master controls so located outside the  
machinery space and in readily accessible positions,  that it shall not be  
necessary to go to more than three stations in order to stop all the  
ventilation fans to spaces other than machinery and cargo spaces.  
Machinery space ventilation shall be provided with a master control  
operable from a position outside the machinery space.  
    (b) Efficient insulation shall be provided for exhaust ducts from  
galley ranges where the ducts pass through accommodation spaces.  
       
     Regulation 77: Miscellaneous Items  
  
    (a) The ship shall comply with Regulation 40 (a), (b) and (f) (1948),  
except that in Regulation 40 (a) (i) (1948), 20 metres (65.5 feet) may be  
substituted for 13.73 metres (45 feet).  
    (b) Fuel pumps shall be fitted with remote controls situated outside  
the space concerned so that they may be stopped in the event of a fire  
arising in the space in which they are located.  
       
     Regulation 78: Cinematograph Film  
  
    Cellulose-nitrate-based film shall not be used in cinematograph  
installations on board ship.  
       
     Regulation 79: Plans  
  
    Plans shall be provided in compliance with Regulation 44 (1948).  
       
     Regulation 80: Pumps, Fire Main Systems, Hydrants and Hoses  
  
    (a) The provisions of Regulation 45 (1948) shall be complied with.  
    (b) Water from the fire main shall, as far as practicable, be  
immediately available, such as by maintenance of pressure or by remote  
control of fire pumps, which control shall be easily operable and readily  
accessible.  
       
     Regulation 81: Fire Detection and Extinction Requirements  
  
    General  
    (a) The requirements of Regulation 50 (a) to (o) (1948) inclusive  
shall be complied with, subject to further provisions of this Regulation.  
    Patrols, Detection and Communication System  
    (b) Each member of any fire patrol required by this Part shall be  
trained to be familiar with the arrangements of the ship as well as the  
location and operation of any equipment he my be called upon to use.  
    (c) A special alarm to summon the crew shall be fitted which may be  
part of the ship\'s general alarm system.  
    (d) A public address system or other effective means of communication  
shall also be available throughout the accommodation, public and service  
spaces.  
    Machinery and Boiler Spaces  
    (e) The number, type and distribution of fire extinguishers shall  
comply with paragraphs (g) (ii), (g) (iii) and (h) (ii) of Regulation 64  
(1960).  
    Internationals Shore Connexion  
    (f) The provisions of Regulation 64 (d) (1960) shall be complied with.  
    Fireman\'s Outfits  
    (g) The provisions of Regulation 64 (j) (1960) shall be complied with.  
       
     Regulation 82: Ready Availability of Fire-Fighting Appliances  
  
    The provisions of Regulation 66 (1960) shall be complied with.  
       
     Regulation 83: Means of Escape  
  
    The provisions of Regulation 54 (1948) shall be complied with.  
       
     Regulation 84: Emergency Source of Electrical Power  
  
    The provisions of Regulation 22 (a), (b) and (c) (1948) shall be  
complied with except that the location of the emergency source of  
electrical power shall be in accordance with the requirements of  
Regulation 25 (a) (1960).  
       
     Regulation 85: Practice Musters and Drills  
  
    At the fire drills mentioned in Regulation 26 of Chapter III of the  
International Convention for the Safety of Life at Sea, 1960 each member  
of the crew shall be required to demonstrate his familiarity with the  
arrangements and facilities of the ship, his duties, and any equipment he  
may be called upon to use. Masters shall be required to familiarize and  
instruct the crews in this regard.  
       
     CHAPTER III LIFE-SAVING APPLIANCES, ETC.   
  
       
  
     Regulation 1: Application  
  
    (a) This Chapter, except where it is otherwise expressly provided,  
applies as follows to new ships engaged on international voyages:  
    Part A-Passenger ships and cargo ships.  
    Part B-Passenger ships.  
    Part C-Cargo ships.  
    (b) In the case of existing ships engaged on international voyages.,  
the keels of which were laid or which were at a similar stage of  
construction on or after the date of coming into force of the  
International Convention for the Safety of Life at Sea, 1960., the  
requirements of Chapter III of that Convention applicable to new ships as  
defined in that Convention shall apply.  
    (c) In the case of existing ships engaged on international voyages,  
the keels of which were laid or which were at a similar stage of  
construction before the date of coming into force of the International  
Convention for the Safety of Life at Sea, 1960, and which do not already  
comply with the provisions of Chapter III of that Convention relating to  
new ships, the arrangements in each ship shall be considered by the  
Administration with a view to securing,  so far as this is practicable and  
reasonable, and as early as possible, substantial compliance with the  
requirements of Chapter III of that Convention. The proviso to  
subparagraph (b)  (i) of Regulation 27 of this Chapter may, however, be  
applied to existing ships referred to in this paragraph only if:  
        (i) the provisions of Regulations 4,8,14,18, and 19 and paragraphs  
(a) and (b) of Regulation 27 of this Chapter are complied with;  
        (ii) the liferafts carried in accordance with the provisions of  
paragraph (b) of Regulation 27 comply with the requirements of either  
Regulation 15 or Regulation 16, and of Regulation 17 of this Chapter; and  
        (iii) the total number of persons on board shall not be increased  
as the result of the provision of liferafts unless the ship fully complies  
with the provisions of:  
            (1) Part B of Chapter II-1;  
            (2) sub-paragraphs (a) (iii) and (iv) of Regulation 21 or  
sub-paragraph (a) (iii) of Regulation 48 of Chapter II-2, as applicable;  
and  
            (3) Paragraphs (a), (b), (e) and (f) of Regulation 29 of this  
Chapter.  
       
     PART A GENERAL  
  
(Part A applies to both passenger ships and cargo ships)  
       
     Regulation 2: Definitions  
  
    For the purpose of this Chapter:  
    (a) "Short international voyage" means an international voyage in the  
course of which a ship is not more than 200 miles from a port or place in  
which the passengers and crew could be placed in safety, and which does  
not exceed 600 miles in length between the last port of call in the  
country in which the voyage begins and the final port of destination.  
    (b) "Liferaft" means a liferaft complying with either Regulation 15 or  
Regulation 16 of this Chapter.  
    (c) "Approved launching device" means a device approved by the  
Administration, capable of launching from the embarkation position a  
liferaft fullyloaded with the number of persons it is permitted to carry  
and with its equipment.  
    (d) "Certificated lifeboatman" means any member of the crew who holds  
a certificate of efficiency issued under the provisions of Regulation 32  
of this Chapter.  
    (e) "Buoyant apparatus" means flotation equipment (other than  
lifeboats, liferafts,  lifebuoys and life-jackets) designed to support a  
specified number of persons who are in the water and of such construction  
that it retains its shape and properties.  
       
     Regulation 3: Exemptions  
  
    (a) The Administration, if it considers that the sheltered nature and  
conditions of the voyage are such as to render the application of the full  
requirements of this Chapter unreasonable or unnecessary, may to that  
extent exempt from the requirements of this Chapter individual ships or  
classes of ships which, in the course of their voyage,  do not go more  
than 20 miles from the nearest land.  
    (b) In the case of passenger ships which are employed in special  
trades for the carriage of large numbers of special trade passengers, such  
as the pilgrim trade, the Administration,  if satisfied that it is  
impracticable to enforce compliance with the requirements of this Chapter,  
may exempt such ships, when they belong to its country, from those  
requirements, provided that they comply fully with the provisions of:  
        (i) the Rules annexed to the Special Trade Passenger Ships  
Agreement, 1971; and  
        (ii) the Rules annexed to the Protocol on Space Requirements for  
Special Trade Passenger Ships, 1973, when it enters into force.  
       
     Regulation 4: Ready Availability of Lifeboats, Liferafts and Buo-yant Apparatus  
  
    (a) The general principle governing the provision of lifeboats,  
liferafts and buoyant apparatus in a ship to which this Chapter applies is  
that they shall be readily available in case of emergency.  
    (b) To be readily available, the lifeboats, liferafts and buoyant  
apparatus shall comply with the following conditions:  
        (i) they shall be capable of being put into the water safely and  
rapidly even under unfavourable conditions of trim and of 15 degree of  
list;  
        (ii) it shall be possible to effect embarkation into the lifeboats  
and liferafts rapidly and in good order;  
        (iii) the arrangement of each lifeboat, liferaft and article of  
buoyant apparatus shall be such that it will not interfere with the  
operation of other boats, liferafts and buoyant apparatus.  
    (c) All the life-saving appliances shall be kept in working order and  
available for immediate use before the ship leaves port and at all times  
during the voyage.  
       
     Regulation 5: Construction of Lifeboats  
  
    (a) All lifeboats shall be properly constructed and shall be of such  
form and proportions that they shall have ample stability in a seaway, and  
sufficient freeboard when loaded with their full complement of persons and  
equipment. All lifeboats shall be capable of maintaining positive  
stability when open to the sea and loaded with their full complement of  
persons and equipment.  
    (b) (i) All lifeboats shall have rigid sides and internal buoyancy  
only. The Administration may approve lifeboats with a rigid shelter,  
provided that it may be readily opened from both inside and outside, and  
does not impede rapid embarkation and disembarkation or the launching and  
handling of the lifeboat.  
        (ii) Motor lifeboats may be fitted to the satisfaction of the  
Administration with a means for preventing the entry of water at the fore  
end.  
        (iii) All lifeboats shall be not less than 7.3 metres (24 feet) in  
length except where owing to the size of the ship, or for other reasons,  
the Administration considers the carriage of such lifeboats unreasonable  
or impracticable. In no ship shall the lifeboats be less than 4.9 metres  
(16 feet) in length.  
    (c) No lifeboat may be approved the weight of which when fully laden  
with persons and equipment exceeds 20,300 kilogrammes (20 tons) or which  
has a carrying capacity calculated in accordance with Regulation 7 of this  
Chapter of more than 150 persons.  
    (d) All lifeboats permitted to carry more than 60 persons but not more  
than 100 persons shall be either motor lifeboats complying with the  
requirements of Regulation 9 of this Chapter or be lifeboats fitted with  
an approved means of mechanical propulsion complying with Regulation 10 of  
this Chapter. All lifeboats permitted to carry more than 100 persons shall  
be motor lifeboats complying with the requirements of Regulation 9 of this  
Chapter.  
    (e) All lifeboats shall be of sufficient strength to enable them to be  
safely lowered into the water when loaded with their full complement of  
persons and equipment. All lifeboats shall be of such strength that they  
will not suffer residual deflection if subjected to an overload of 25 per  
cent.  
    (f) All lifeboats shall have a mean sheer at least equal to 4 per cent  
of their length. The sheer shall be approximately parabolic in form.  
    (g) In lifeboats permitted to carry 100 or more persons the volume of  
the buoyancy shall be increased to the satisfaction of the Administration.  
    (h) All lifeboats shall have inherent buoyancy, or shall be fitted  
with watertight air cases or other equivalent non-corrodible buoyant  
material which shall not be adversely affected by oil or oil products,  
sufficient to float the boat and its equipment when the boat is flooded  
and open to the sea. An additional volume of watertight air cases or other  
equivalent noncorrodible buoyant material, which shall not be adversely  
affected by oil or oil products, equal to at least one-tenth of the cubic  
capacity of the bo at shall also be provided. The Administration may  
permit the watertight air cases to be filled with a non-corrodible buoyant  
material which shall not be adversely affected by oil or oil products.  
    (i) All thwarts and side-seats shall be fitted as low in the lifeboat  
as practicable.  
    (j) The block coefficient of the cubic capacity as determined in  
accordance with Regulation 6 of this Chapter of all lifeboats, except  
wooden lifeboats made of planks, shall be not less than 0.64 provided that  
any such lifeboat may have a block coefficient of less than 0.64 if the  
Administration is satisfied with the sufficiency of the metacentric height  
and freeboard when the lifeboat is loaded with its full complement of  
persons and equipment.  
       
     Regulation 6: Cubic Capacity of Lifeboats  
  
    (a) The cubic capacity of a lifeboat shall be determined by Simpson\'s  
(Stirling\'s) Rule or by any other method giving the same degree of  
accuracy. The capacity of a square-sterned lifeboat shall be calculated as  
if the lifeboat had a pointed stern.  
    (b) For example, the capacity in cubic metres (or cubic feet) of a  
lifeboat, calculated by the aid of Simpson\'s Rule, may be considered as  
given by the following formula:  
                                         L  
                                Capacity=--(4A+2B+4C)  
                                         12  
    L being the length of the lifeboat in metres (or feet) from the inside  
of the planking or plating at the stem to the corresponding point at the  
stern post; in the case of a lifeboat with a square stern, the length is  
measured to the inside of the transom.  
    A, B, C denote respectively the areas of the cross-sections at the  
quarter-length forward,  amidships, and the quarter-length aft, which  
correspond to the three points obtained by dividing L into four equal  
parts. (The areas corresponding to the two ends of the lifeboat are  
considered negligible.)  
    The areas A, B, C shall be deemed to be given in square metres (or  
square feet) by the successive application of the following formula to  
each of the three cross-sections:  
                                     h  
                                Area=-- (a+4b+2c+4d+e)  
                                     12  
    h being the depth measured in metres (or in feet) inside the planking  
or plating from the keel to the level of the gunwale, or, in certain  
cases, to a lower level as determined hereafter.  
    a, b, c, d, e denote the horizontal breadths of the lifeboat measured  
in metres (or in feet)  at the upper and lower points of the depth and at  
the three points obtained by dividing h into four equal parts (a and e  
being the breadths at the extreme point, and c at the middle point of h).  
    (c) If the sheer of the gunwale, measured at the two points situated  
at a quarter of the length of the lifeboat from the ends, exceeds 1 per  
cent of the length of the lifeboat the depth employed in calculating the  
area of the cross-sections A or C shall be deemed to be the depth  
amidships plus 1 per cent of the length of the lifeboat.  
    (d) If the depth of the lifeboat amidships exceeds 45 per cent of the  
breadth, the depth employed in calculating the area of the amidship  
cross-section B shall be deemed to be equal to 45 per cent of the breadth,  
and the depth employed in calculating the areas of the quarterlength  
sections A and C is obtained by increasing this last figure by an amount  
equal to 1 per cent of the length of the lifeboat, provided that in no  
case shall the depths employed in the calculation exceed the actual depths  
at these points.  
    (e) If the depth of the lifeboat is greater than 1.22 metres (4 feet)  
the number of persons given by the application of this Rule shall be  
reduced in proportion to the ratio of 1.22 metres (4 feet) to the actual  
depth, until the lifeboat has been satisfactorily tested afloat with the  
number of persons on board, all wearing life-jackets.  
    (f) The Administration shall impose, by suitable formulae, a limit for  
the number of persons allowed in lifeboats with very fine ends and in  
lifeboats very full in form.  
    (g) The Administration may assign to a lifeboat constructed of wooded  
planks capacity equal to the product of the length, the breadth and the  
depth multiplied by 0.6 if it is evident that this formula does not give a  
greater capacity than that obtained by the above method. The dimensions  
shall then be measured in the following manner:  
    Length-Form the intersection of the outside of the planking with the  
stem to the corresponding point at the stern post or, in the case of a  
square-sterned boat, to the after side of the transom.  
    Breadth-from the outside of the planking at the point where the  
breadth of the boat is greatest.  
    Depth-Amidships inside the planking from the keel to the level of the  
gunwale, but the depth used in calculating the cubic capacity may not in  
any case exceed 45 per cent of the breadth.  
    In all cases the shipowner has the right to require that the cubic  
capacity of the lifeboat shall be determined by exact measurement.  
    (h) The cubic capacity of a motor lifeboat or a lifeboat fitted with  
other propelling gear shall be obtained from the gross capacity by  
deducting a volume equal to that occupied by the motor and its accessories  
or the gearbox of the other propelling gear, and, when carried, the  
radiotelegraph installation and searchlight with their accessories.  
       
     Regulation 7: Carrying Capacity of Lifeboats  
  
    The number of persons which a lifeboat shall be permitted to  
accommodate shall be equal to the greatest whole number obtained by  
dividing the capacity in cubic metres by:  
|-----------------------------------------------------------------------|  
|In the case of a lifeboat of 7.3                                       |  
|metres (24 feet) in length or over   0.283 (or where the capacity is   |  
|                                     measured in cubic feet 10):       |  
|-----------------------------------------------------------------------|  
|in the case of lifeboats of 4.9                                        |  
|metres (16 feet) in length           0.396 (or where the capacity is   |  
|                                     measured in cubic feet 14): and   |  
|-----------------------------------------------------------------------|  
|in the case of lifeboats of 4.9                                        |  
|metres (16 feet) in length or over                                     |  
|but under 7.3 metres (24 feet)       a number between 0.396 and 0.283  |  
|                                     (or where the capacity is measured|  
|                                     in cubic feet between 14 and 10), |  
|                                     to be obtained by interpolation;  |  
|-----------------------------------------------------------------------|  
    provided that the number shall in no case exceed the number of adult  
persons wearing lifejackets which can be seated without in any way  
interfering with the use of oars or the operation of other propulsion  
equipment.  
       
     Regulation 8: Number of Motor Lifeboats to be carried  
  
    (a) In every passenger ship there shall be carried on each side of the  
ship at least one motor lifeboat complying with the requirements of  
Regulation 9 of this Chapter.  
    Provided that in passenger ships in which the total number of persons  
which the ship is certified to carry, together with the crew, does not  
exceed 30, only one such motor lifeboat shall be required.  
    (b) In every cargo ship of 1,600 tons gross tonnage and upwards,  
except tankers, ships employed as whale factory ships, ships employed as  
fish processing or canning factory ships,  and ships engaged in the  
carriage of persons in the whaling, fish processing or canning industries,  
there shall be carried at least one motor lifeboat complying with the  
requirements of Regulation 9 of this Chapter.  
    (c) In every tanker of 1,600 tons gross tonnage and upwards, in every  
ship employed as a whale factory ships, in every ship employed as a fish  
processing or canning factory ship and in every ship engaged in the  
carriage of persons employed in the whaling, fish processing or canning  
industries, there shall be carried on each side at least one motor  
lifeboat complying with the requirements of Regulation 9 of this Chapter.  
       
     Regulation 9: Specification of Motor Lifeboats  
  
    (a) A motor lifeboat shall comply with the following conditions:  
        (i) It shall be fitted with a compression ignition engine and kept  
so as to be at all times ready for use; it shall be capable of being  
readily started in all conditions;  sufficient fuel for 24 hours  
continuous operation at the speed specified in subparagraph (iii) of this  
paragraph shall be provided.  
        (ii) The engine and its accessories shall be suitably enclosed to  
ensure operation under adverse weather conditions, and the engine casing  
shall be fire-resisting. Provision shall be made for going astern.  
        (iii) The speed ahead in smooth water when loaded with its full  
complement of persons and equipment shall be:  
            (1) In the case of motor lifeboats required by Regulation 8 of  
this Chapter to be carried in passenger ships, tankers, ships employed as  
whale factory ships,  ships employed as fish processing or canning factory  
ships and ships engaged in the carriage of persons employed in the  
whaling, fish processing or canning industries, at least six knots.  
            (2) In the case of any other motor lifeboat, at least four  
knots.  
    (b) The volume of the internal buoyancy appliances of a motor lifeboat  
shall be increased above that required by Regulation 5 of this Chapter by  
the amount, if any, by which the volume of the internal buoyancy  
appliances required to support the engine and its accessories,  and, if  
fitted, the searchlight and radiotelegraph installation and their  
accessories,  exceeds the volume of the internal buoyancy appliances  
required, at the rate of 0.0283 cubic metres (one cubic foot) per person,  
to support the additional persons which the lifeboat could accommodate if  
the motor and its accessories, and, if fitted, the searchlight and  
radiotelegraph installation and their accessories, were removed.  
       
     Regulation 10: Specification of Mechanically Propelled Lifeboatsother than Motor Lifeboats  
  
    A mechanically propelled lifeboat, other than a motor lifeboat, shall  
comply with the following conditions:  
    (a) The propelling gear shall be of an approved type and shall have  
sufficient power to enable the lifeboat to be readily cleared from the  
ship\'s side when launched and to be able to hold course under adverse  
weather conditions. If the gear is manually operated it shall be capable  
of being worked by persons untrained in its use and shall be capable of  
being operated when the lifeboat is flooded.  
    (b) A device shall be fitted by means of which the helmsman can cause  
the lifeboat to go astern at any time when the propelling gear is in  
operation.  
    (c) The volume of the internal buoyancy of a mechanically propelled  
lifeboat, other than a motor lifeboat, shall be increased to compensate  
for the weight of the propelling gear.  
       
     Regulation 11: Equipment of Lifeboats  
  
    (a) The normal equipment of every lifeboat shall consist of:  
        (i) a single banked complement of buoyant oars, two spare buoyant  
oars and a buoyant steering oar; one set and a half of those pins or  
crutches, attached to the lifeboat by lanyard or chain; a boat hook;  
        (ii) two plugs for each plug hole (plugs are not required when  
proper automatic valves are fitted) attached to the lifeboat by lanyards  
or chains; a baler, and two buckets of approved material;  
        (iii) a rudder attached to the lifeboat and a tiller;  
        (iv) two hatches, one at each end of the lifeboat;  
        (v) a lamp, with oil sufficient for 12 hours; two boxes of  
suitable matches in a watertight container;  
        (vi) a mast or masts, with galvanized wire stays together with  
sails (coloured orange);  
        (vii) an efficient compass in binnacle, to be luminised or fitted  
with suitable means of illumination;  
        (viii) a lifeline becketed round the outside of the lifeboat;  
        (ix) a sea-anchor of approved size;  
        (x) two painters of sufficient length. One shall be secured to the  
forward end of the lifeboat with strop and toggle so that it can be  
released, and the other shall be firmly secured to the stem of the  
lifeboat and be ready for use;  
        (xi) a vessel containing 4 1/2 litres (1 gallon) of vegetable,  
fish or animal oil. The vessel shall be so constructed that the oil can be  
easily distributed on the water, and so arranged that it can be attached  
to the sea-anchor;  
        (xii) a food ration, determined by the Administration, for each  
person the lifeboat is certified to carry. These rations shall be kept in  
airtight receptacles which are to be stowed in a watertight container;  
        (xiii) watertight receptacles containing 3 litres (6 pints) of  
fresh water for each person the lifeboat is certified to carry, or  
watertight receptacles containing 2 litres (4 pints) of fresh water for  
each person together with an approved de-salting apparatus capable of  
providing 1 litre (2 pints) of drinking water per person; a rustproof  
dipper with lanyard; a rustproof graduated drinking vessel;  
        (xiv) four parachute signals of approved type capable of giving a  
bright red light at a high altitude; six hand flares of an approved type  
giving a bright red light;  
        (xv) two buoyant smoke signals of an approved type (for day-time  
use) capable of giving off a volume of orange-coloured smoke;  
        (xvi) approved means to enable persons to cling to the boat should  
it be upturned, in the form of bilge keels or keel rails, together with  
grab lines secured from gunwale to gunwale under the keel, or other  
approved arrangements;  
        (xvii) an approved fist-aid outfit in a watertight case;  
        (xviii) a waterproof electric torch suitable for signalling in the  
Morse Code together with one spare set of batteries and one spare bulb in  
a waterproof container;  
        (xix) a daylight-signalling mirror of an approved type;  
        (xx) a jack-knife fitted with a tin-opener to be kept attached to  
the boat with a lanyard;  
        (xxi) two light buoyant heaving lines;  
        (xxii) a manual pump of an approved type;  
        (xxiii) a suitable locker for stowage of small items of equipment;  
        (xxiv) one whistle or equivalent sound signal;  
        (xxv) one set of fishing tackle;  
        (xxvi) one approved cover of a highly visible colour capable of  
protecting the occupants against injury by exposure; and  
        (xxvii) one copy of the illustrated table of life-saving signals  
referred to in Regulation 16 of Chapter V.  
    (b) In the case of ships engaged on voyages of such duration that in  
the opinion of the Administration the items specified in sub-paragraphs  
(vi), (xii), (xix), (xx) and (xxv) of paragraph (a) of this Regulation are  
unnecessary, the Administration may allow them to be dispensed with.  
    (c) Notwithstanding the provisions of paragraph (a) of this  
Regulation, motor lifeboats or other approved mechanically propelled  
lifeboats need not carry a mast or sails or more than half the complement  
of oars, but they shall carry two boat hooks.  
    (d) All lifeboats shall be fitted with suitable means to enable  
persons in the water to climb into the lifeboat.  
    (e) Every motor lifeboat shall carry portable fire-extinguishing  
equipment of an approved type capable of discharging froth or other  
suitable substance for extinguishing oil fires.  
       
     Regulation 12: Security of Lifeboat Equipment  
  
    All items of lifeboat equipment, with the exception of the boat hook  
which shall be kept free for fending off purposes, shall be suitably  
secured within the lifeboat. The lashing shall be carried out in such a  
manner as to ensure the security of the equipment and so as not to  
interfere with the lifting hooks or to prevent ready embarkation. All  
items of lifeboat equipment shall be as small and light in weight as  
possible and shall be packed in suitable and compact from.  
       
     Regulation 13: Portable Radio Apparatus for Survival Craft  
  
    (a) An approved portable radio apparatus for survival craft complying  
with the requirements set out in Regulation 14 of Chapter IV shall be  
carried in all ships except those on which there is carried on each side  
of the ship a motor lifeboat fitted with a radiotelegraph installation  
complying with the provisions of Regulation 14 of this Chapter and of  
Regulation 13 of Chapter IV. All this equipment shall be kept together in  
the chartroom or other suitable place ready to be moved to one or other of  
the lifeboats in the event of an emergency. However, in tankers of 3,000  
tons gross tonnage and upwards in which lifeboats are fitted amidships and  
aft this equipment shall be kept in a suitable place in the vicinity of  
those lifeboats which are furthest away from the ship\'s main transmitter.  
    (b) In the case of ships engaged on voyages of such duration that in  
the opinion of the Administration portable radio apparatus for survival  
craft is unnecessary, the Administration may allow such equipment to be  
dispensed with.  
       
     Regulation 14: Radio Apparatus and Searchlights in Motor Lifeboats  
  
    (a) (i) Where the total number of persons on board a passenger ship  
engaged on international voyages which are not short international  
voyages, a ship employed as a whale factory ship, a ship employed as a  
fish processing or canning factory ship or a ship engaged in the carriage  
of persons employed in the whaling, fish processing or canning industries,  
is more than 199 but less than 1,500, a radiotelegraph apparatus complying  
with the requirements set out in this Regulation and in Regulation 13 of  
Chapter IV shall be fitted in at least one of the motor lifeboats required  
under Regulation 8 of this Chapter to be carried in that ship.  
        (ii) Where the total number of persons on board such a ship is  
1,500 or more, such a radiotelegraph apparatus shall be fitted in every  
motor lifeboat required under Regulation 8 of this Chapter to be carried  
in that ship.  
    (b) The radio apparatus shall be installed in a cabin large enough to  
accommodate both the equipment and the persons using it.  
    (c) The arrangements shall be such that the efficient operation of the  
transmitter and receiver shall not be interfered with by the engine while  
it is running, whether a battery is on charge or not.  
    (d) The radio battery shall not be used to supply power to any engine  
starting motor or ignition system.  
    (e) The motor lifeboat engine shall be fitted with a dynamo for  
recharging the radio battery, and for other services.  
    (f) A searchlight shall be fitted in each motor lifeboat required to  
be carried under paragraph (a) of Regulation 8 of this Chapter in  
passenger ships and under paragraph (c) of that Regulation in ships  
employed as whale factory ships fish processing or canning factory ships  
and ships engaged in the carriage of persons employed in the whaling, fish  
processing or canning industries.  
    (g) The searchlight shall include a lamp of at least 80 watts, an  
efficient reflector and a source of power which will give effective  
illumination of a light-coloured object having a width of about 18 metres  
(60 feet) at a distance of 180 metres (200 yards) for a total period of  
six hours and shall be capable of working for at least three hours  
continuously.  
       
     Regulation 15: Requirements for Inflatable Liferafts  
  
    (a) Every inflatable liferaft shall be so constructed that, when fully  
inflated and floating with the cover uppermost, it shall be stable in a  
seaway.  
    (b) The liferaft shall be so constructed that if it is drooped into  
the water from a height of 18 metres (60 feet) neither the liferaft nor  
its equipment will be damaged. If the raft is to be stowed on the ship at  
a height above the water of more than 18 metres (60 feet), it shall be of  
a type which has been satisfactorily drop-tested from a height at least  
equal to the height at which it is to be stowed.  
    (c) The construction of the liferaft shall include a cover which shall  
automatically be set in place when the liferaft is inflated. This cover  
shall be capable of protecting the occupants against injury from exposure,  
and means shall be provided for collecting rain. The top of the cover  
shall be fitted with a lamp which derives its luminosity from a  
sea-activated cell and a similar lamp shall also be fitted inside the  
liferaft. The cover of the liferaft shall be of a highly visible colour.  
    (d) The Liferaft shall be fitted with a painter and shall have a line  
securely becketed round the outside. A lifeline shall also be fitted  
around the inside of the liferaft.  
    (e) The liferaft shall be capable of being readily righted by one  
person if it inflates in an inverted position.  
    (f) The liferaft shall be fitted at each opening with efficient means  
to enable persons in the water to climb on board.  
    (g) The liferaft shall be contained in a valise or other container so  
constructed as to be capable of withstanding hard wear under conditions  
met with at sea. The liferaft in its valise or other container shall be  
inherently buoyant.  
    (h) The buoyancy of the liferaft shall be so arranged as to ensure by  
a division into an even number of separate compartments, half of which  
shall be capable of supporting out of the water the number of persons  
which the liferaft is permitted to accommodate, or by some other equally  
efficient means, that there is a reasonable margin of buoyancy if the raft  
is damaged or partially fails to inflate.  
    (i) The total weight of the liferaft, its valise or other container  
and its equipment shall not exceed 180 kilogrammes (400 lbs.).  
    (j) The number of persons which an inflatable liferaft shall be  
permitted to accommodate shall be equal to:  
        (i) the greatest whole number obtained by dividing by 96 the  
volume measured in cubic decimetres (or by 3.4 the volume, measured in  
cubic feet) of the main buoyancy tubes (which for this purpose shall  
include neither the arches nor the thwart or thwarts if fitted) when  
inflated; or  
        (ii) the greatest whole number obtained by dividing by 3,720 the  
area measured in square centimetres (or by 4 the area, measured in square  
feet) of the floor (which for this purpose may include the thwart or  
thwarts if fitted) of the liferaft when inflated whichever number shall be  
the less.  
    (k) The floor of the liferaft shall be waterproof and shall be capable  
of being sufficiently insulated against cold.  
    (l) The liferaft shall be inflated by a gas which is not injurious to  
the occupants and the inflation shall take place automatically either on  
the pulling of a line or by some other equally simple and efficient  
method. Means shall be provided whereby the topping-up pump or bellows  
required by Regulation 17 of this Chapter may be used to maintain  
pressure.  
    (m) The liferaft shall be of approved material and construction, and  
shall be so constructed as to be capable of withstanding exposure for 30  
days afloat in all sea conditions.  
    (n) No liferaft shall be approved which has a carrying capacity  
calculated in accordance with paragraph (j) of this Regulation of less  
than six persons. The maximum number of persons calculated in accordance  
with that paragraph for which an inflatable liferaft may be approved shall  
be at the discretion of the Administration, but shall in no case exceed  
25.  
    (o) The liferaft shall be capable of operating throughout a  
temperature range of 66 ℃ to minus 30℃ (150 °F to minus 22 °F).  
    (p) (i) The liferaft shall be so stowed as to be readily available in  
case of emergency. It shall be stowed in such a manner as to permit it to  
float free from its stowage,  inflate and break free from the vessel in  
the event of sinking.  
        (ii) If used, lashings shall be fitted with an automatic release  
system of a hydrostatic or equivalent nature approved by the  
Administration.  
        (iii) The liferaft required by paragraph (c) of Regulation 35 of  
this Chapter may be securely fastened.  
    (q) The liferaft shall be fitted with arrangements enabling it to be  
readily towed.  
       
     Regulation 16: Requirements for Rigid Liferafts  
  
    (a) Every rigid liferaft shall be so constructed that if it is dropped  
into the water from its stowed position neither the liferaft nor its  
equipment will be damaged.  
    (b) The deck area of the liferaft shall be situated within that part  
of the liferaft which affords protection to its occupants. The area of  
that deck shall be at least 0.3720 square metres (4 square feet) for every  
person the liferaft is permitted to carry. The nature of the deck shall be  
such as to prevent so far as practicable the ingress of water and it shall  
effectively support the occupants out of the water.  
    (c) The liferaft shall be fitted with a cover or equivalent  
arrangement of a highly visible colour, which shall be capable of  
protecting the occupants against injury from exposure whichever way up the  
liferaft is floating.  
    (d) The equipment of the liferaft shall be so stowed as to be readily  
available whichever way up the liferaft is floating.  
    (e) The total weight of a liferaft and its equipment carried in  
passenger ships shall not exceed 180 kilogrammes (400 lbs.). Liferaft  
carried in cargo ships may exceed 180 kilogrammes (400 lbs.) in weight if  
they are capable of being launched from both side of the ship or if there  
are provided means for putting them into the water mechanically.  
    (f) The liferaft must at all times be effective and stable when  
floating either way up.  
    (g) The liferaft shall have at least 96 cubic decimetres (3.4 cubic  
feet) of air cases or equivalent buoyancy for each person it is permitted  
to carry which must be placed as near as possible to the sides of the  
raft.  
    (h) The liferaft shall have a painter attached and a lifeline securely  
becketed round the outside. A lifeline shall also be fitted around the  
inside of the raft.  
    (i) The liferaft shall be fitted at each opening with efficient means  
to enable persons in the water to climb on board.  
    (j) The liferaft shall be so constructed as not to be affected by oil  
or oil products.  
    (k) A buoyant light of the electric battery type shall be attached to  
the liferaft by a lanyard.  
    (l) The liferaft shall be fitted with arrangements enabling it to be  
readily towed.  
    (m) Liferafts shall be so stowed as to float free in the event of the  
ship sinking.  
       
     Regulation 17: Equipment of Inflatable and Rigid Liferafts  
  
    (a) The normal equipment of every liferaft shall consist of:  
        (i) One buoyant rescue quoit, attached to at least 30 metres (100  
feet) of buoyant line.  
        (ii) For liferafts which are permitted to accommodate not more  
than 12 persons: one knife and one baler; for liferafts which are  
permitted to accommodate 13 persons or more: two knives and two balers.  
        (iii) Two sponges.  
        (iv) Two sea-anchors, one permanently attached to the liferaft and  
one spare.  
        (v) Two paddles.  
        (vi) One repair outfit capable of repairing punctures in buoyance  
compartments.  
        (vii) One topping-up pump or bellows, unless the liferaft complies  
with Regulation 16 of this Chapter.  
        (viii) Three tin-openers.  
        (ix) One approved first-aid outfit in a waterproof case.  
        (x) One rustproof graduated drinking vessel.  
        (xi) One waterproof electric torch suitable for signalling in the  
Morse Code, together with one spare set of batteries and one spare bulb in  
a waterproof container.  
        (xii) One daylight-signalling mirror and one signalling whistle.  
        (xiii) Two parachute distress signals of an approved type, capable  
of giving a bright red light at a high altitude.  
        (xiv) Six hand flares of an approved type, capable of giving a  
bright red light.  
        (xv) One set of fishing tackle.  
        (xvi) A food ration, determined by the Administration, for each  
person the liferaft is permitted to accommodate.  
        (vii) Watertight receptacles containing 1 1/2 litres (3 pints) of  
fresh water for each person the liferaft is permitted to accommodate, of  
which 1/2 litre (1 pint) per person may be replaced by a suitable  
de-salting apparatus capable of producing an equal amount of fresh water.  
        (xviii) Six anti-seasickness tablets for each person the liferaft  
is deemed fit to accommodate.  
        (xix) Instructions on how to survive in the liferaft; and  
        (xx) One copy of the illustrated table of life-saving signals  
referred to in Regulation 16 of Chapter V.  
    (b) In the case of passenger ships engages on short international  
voyages of such duration that in the opinion of the Administration all the  
items specified in paragraph (a) of this Regulation are unnecessary, the  
Administration may allow one or more liferafts, not being less than  
one-sixth of the number of liferafts carried in any such ship, to be  
provided with the equipment specified in sub-paragraphs (i) to (vii)  
inclusive, (xi) and (xix) of paragraph (a) of this Regulation, and with  
one-half of the equipment specified in sub-paragraphs (viii)  and (xiv) of  
that paragraph and the remainder of the liferafts carried to be provided  
with the equipment specified in sub-paragraphs (i) to (vii) inclusive and  
(xix) of that paragraph.  
       
     Regulation 18: Training in the use of Liferafts  
  
    The Administration shall so far as is practicable and reasonable take  
steps with a view to ensuring that crews of ships in which liferafts are  
carried are trained in their launching and use.  
       
     Regulation 19: Embarkation into Lifeboats and Liferafts  
  
    (a) Suitable arrangements shall be made for embarkation into the  
lifeboats, which shall include:  
        (i) a ladder at each set of davits to afford access to the  
lifeboats when waterborne,  except that in passenger ships, ships employed  
as whale factory ships, ships employed as fish processing or canning  
factory ships and ships engaged in the carriage of persons employed in the  
whaling, fish processing or canning industries, the Administration may  
permit such ladders to be replaced by approved devices provided that there  
shall not be less than one ladder on each side of the ship;  
        (ii) means for illuminating the lifeboats and their launching gear  
during preparation for and the process of launching, and also for  
illuminating the water into which the lifeboats are launched until the  
process of launching is completed;  
        (iii) arrangements for warning the passengers and crew that the  
ship is about to be abandoned; and  
        (iv) means for preventing any discharge of water into the  
lifeboats.  
    (b) Suitable arrangements shall also be made for embarkation into the  
liferafts, which shall include:  
        (i) sufficient ladders to facilitate embarkation into the  
liferafts when waterborne except that in passenger ships, ships employed  
as whale factory ships, ships employed as fish processing or canning  
factory ships, and ships engaged in the carriage of persons employed in  
the whaling, fish processing or fish canning industries, the  
Administration may permit the replacement of some or all of such ladders  
by approved devices;  
        (ii) where there are carried liferafts for which approved  
launching devices are provided,  means for illuminating those liferafts  
and launching devices during the preparation for and the process of  
launching, and also for illuminating the water into which those liferafts  
are launched until the process of launching is completed;  
        (iii) means for illuminating the stowage position of liferafts for  
which approved launching devices are not provided;  
        (iv) arrangements for warning the passengers and crew that the  
ship is about to be abandoned; and  
        (v) means for preventing any discharge of water into the liferafts  
at fixed launching positions, including those under approved launching  
devices.  
       
     Regulation 20: Marking of Lifeboats, Liferafts and Buoyant Appa-ratus  
  
    (a) The dimensions of a lifeboat and the number of persons which it is  
permitted to carry shall be marked on it in clear permanent characters.  
The name and port of registry of the ship to which the lifeboat belongs  
shall be painted on each side of the bow.  
    (b) Buoyant apparatus shall be marked with the number of persons in  
the same manner.  
    (c) The number of persons shall be marked in the same manner on  
inflatable liferafts and also on the valise or container in which the  
inflatable liferaft is contained. Every inflatable liferaft shall also  
bear a serial number and the manufacturer\'s name so that the owner of the  
liferaft can be ascertained.  
    (d) Every rigid liferaft shall be marked with the name and port of  
registry of the ship in which it is carried, and with the number of  
persons it is permitted to carry.  
    (e) No lifeboat, liferaft or buoyant apparatus shall be marked for a  
greater number of persons than that obtained in the manner specified in  
this Chapter.  
       
     Regulation 21: Specification of a Lifebuoy  
  
    (a) A lifebuoy shall satisfy the following requirements:  
        (i) it shall be of solid cork or any other equivalent material;  
        (ii) it shall be capable of supporting in fresh water for 24 hours  
at least 14.5 kilogrammes (32 lbs.) of iron;  
        (iii) it shall not be adversely affected by oil or oil products;  
        (iv) it shall be of a highly visible colour;  
        (v) it shall be marked in block letters with the name and port of  
registry of the ship in which it is carried.  
    (b) Lifebuoys filled with rushes, cork shavings or granulated cork, or  
any other loose granulated material, or whose buoyancy depends upon air  
compartments which require to be inflated, are prohibited.  
    (c) Lifebuoys made of plastic or other synthetic compounds shall be  
capable of retaining their buoyant properties and durability in contact  
with sea water or oil products, or under variations of temperature or  
climatic changes prevailing in over sea voyages.  
    (d) Lifebuoys shall be fitted with beckets securely seized. At least  
one lifebuoy on each side of the ship shall be fitted with a buoyant  
lifeline of at least 27.5 metres (15 fathoms) in length.  
    (e) In passenger ships not less than one-half of the total number of  
lifebuoys, and in no case less than six, and in cargo ships at least  
one-half of the total number of lifebuoys, shall be provided with  
efficient self-igniting lights.  
    (f) The self-igniting lights required by paragraph (e) of this  
Regulation shall be such that they cannot be extinguished by water. They  
shall be capable of burning for not less than 45 minutes and shall have a  
luminous intensity of not less than 2 candelas in all directions of the  
upper hemisphere. The lights shall be kept near the lifebuoys to which  
they belong, with the necessary means of attachment. Self-igniting lights  
used in tankers shall be of an approved electric battery type.\*  
    [\* The following rangers of visibilities of the light might be  
expected in given atmospheric conditions.  
|------------------------------------------------------------------------------------------------  
|             Atmospheric             |    Meteorological range    |    Range of visibility     |  
|         transmissivity factor       |    of visibility (miles)   |   of the light (miles)     |  
|-------------------------------------|----------------------------|----------------------------|  
|                  0.3                |               2.4          |             0.96           |  
|                  0.4                |               3.3          |             1.05           |  
|                  0.5                |               4.3          |             1.15           |  
|                  0.6                |               5.8          |             1.24           |  
|                  0.7                |               8.4          |             1.34           |  
|                  0.8                |              13.4          |             1.45           |  
|                  0.9                |              28.9          |             1.57           |  
|------------------------------------------------------------------------------------------------]  
    (g) All Lifebuoys shall be so placed as to be readily accessible to  
the persons on board,  and at least two of the lifebuoys provided with  
self-igniting lights in accordance with paragraph (e) of this Regulation  
shall also be provided with an efficient self-activating smoke signal  
capable of producing smoke of a highly visible colour for at least 15  
minutes, and shall be capable of quick release from the navigating bridge.  
    (h) Lifebuoys shall always be capable of being rapidly cast loose and  
shall not be permanently secured in any way.  
       
     Regulation 22: Life-jackets  
  
    (a) Ships shall carry for every person on board a life-jacket of an  
approved type and, in addition, unless these life-jackets can be adapted  
for use by children, a sufficient number of life-jackets suitable for  
children. Each life-jacket shall be suitably marked showing that it has  
been approved by the Administration.  
    (b) In addition to the life-jackets required by paragraph (a) of this  
Regulation there shall be carried on passenger ships life-jackets for 5  
per cent of the total number of persons on board. These life-jackets shall  
be stowed in conspicuous place on deck.  
    (c) An approved life-jacket shall comply with the following  
requirements;  
        (i) it shall be constructed with proper workmanship and materials;  
        (ii) it shall be so constructed as to eliminate so far as possible  
all risk of its being put on incorrectly, except that it shall be capable  
of being worn inside out;  
        (iii) it shall be capable of lifting the face of an exhausted or  
unconscious person out of the water and holding it above the water with  
the body inclined backwards from its vertical position;  
        (iv) it shall be capable of turning the body in the water from any  
position to a safe floating position with the body inclined backwards from  
its vertical position;  
        (v) it shall not be adversely affected by oil or oil products;  
        (vi) it shall be of a highly visible colour;  
        (vii) it shall be fitted with an approved whistle, firmly secured  
by a cord;  
        (viii) the buoyancy of the life-jacket required to provide the  
foregoing performance shall not be reduced by more than 5 per cent after  
24 hours submergence in fresh water.  
    (d) A life-jacket, the buoyancy of which depends on inflation, may be  
permitted for use by the crews of all ships except passenger ships and  
tankers provided that:  
        (i) it has two separate inflatable compartments;  
        (ii) it is capable of being inflated both mechanically and by  
mouth; and  
        (iii) it complies with the requirements of paragraph (c) of this  
Regulation with either compartment inflated separately.  
    (e) Life-jackets shall be so places as to be readily accessible and  
their position shall be plainly indicated.  
       
     Regulation 23: Line-throwing Appliances  
  
    (a) Ships shall carry a line-throwing appliance of an approved type.  
    (b) The appliance shall be capable of carrying a line not less than  
230 metres (250 yards) with reasonable accuracy, and shall include not  
less than four projectiles and four lines.  
       
     Regulation 24: Ships\' Distress Signals  
  
    Ships shall be provided, to the satisfaction of the Administration,  
with means of making effective distress signals by day and by night,  
including at least twelve parachute signals capable of giving a bright red  
light at a high altitude.  
       
     Regulation 25: Muster List and Emergency Procedure  
  
    (a) Special duties to be undertaken in the event of an emergency shall  
be allotted to each member of the crew.  
    (b) The muster list shall show all the special duties and shall  
indicate, in particular, the station to which each member must go, and the  
duties that he has to perform.  
    (c) The muster list for each passenger ship shall be in a form  
approved by the Administration.  
    (d) Before the vessel sails, the muster list shall be completed.  
Copies shall be posted in several parts of the ship, and in particular in  
the crew\'s quarters.  
    (e) The muster list shall show the duties assigned to the different  
members of the crew in connexion with:  
        (i) the closing of the watertight doors, valves and closing  
mechanisms of scuppers,  ashshoots and fire doors;  
        (ii) the equipping of the lifeboats (including the portable radio  
apparatus for survival craft) and the other life-saving appliances;  
        (iii) the launching of the lifeboat;  
        (iv) the general preparation of the other life-saving appliances;  
        (v) the muster of the passengers; and  
        (vi) the extinction of fire, having regard to the ship\'s fire  
control plans.  
    (f) The muster list shall show the several duties assigned to the  
members of the stewards\' department in relation to the passengers in case  
of emergency. These duties shall include;  
        (i) warning the passengers;  
        (ii) seeing that they are suitable clad and have put on their  
life-jackets in a proper manner;  
        (iii) assembling the passengers at muster stations;  
        (iv) keeping order in the passages and on the stairways, and,  
generally, controlling the movements of the passengers; and  
        (v) ensuring that a supply of blankets is taken to the lifeboats.  
    (g) The duties shown by the muster list in relation to the extinction  
of fire pursuant to sub-paragraph (e) (vi) of this Regulation shall  
include particulars of;  
        (i) the manning of the fire parties assigned to deal with fires;  
        (ii) the special duties assigned in respect of the operation of  
fire-fighting equipment and installations.  
    (h) The muster list shall specify definite signals for calling all the  
crew to their boat,  liferaft and fire stations, and shall five full  
particulars of these signals. These signals shall be made on the whistle  
or siren and, except on passenger ships on short international voyages and  
on cargo ships of less than 45.7 metres (150 feet) in length, they shall  
be supplemented by other signals which shall be electrically operated. All  
these signals shall be operable from the bridge.  
       
     Regulation 26: Practice Musters and Drills  
  
    (a) (i) In passenger ships, musters of the crew for boat drill and  
fire drill shall take place weekly when practicable and there shall be  
such a muster when a passenger ship leaves the final port of departure on  
an international voyage which is not a short international voyage.  
        (ii) In cargo ships, a muster of the crew for boat drill and fire  
drill shall take place at intervals of not more than one month, provided  
that a muster of the crew for boat drill and fire drill shall take place  
within 24 hours of leaving a port if more than 25 per cent of the crew  
have been replaced at that port.  
        (iii) On the occasion of the monthly muster in cargo ships the  
boat\'s equipment shall be examined to ensure that it is complete.  
        (iv) The date upon which musters are held, and details of any  
training and drills in fire fighting which are carried out on board shall  
be recorded in such log book as may be prescribed by the Administration.  
If in any week (for passenger ships) or month (for cargo ships) no muster  
or a part muster only is held, an entry shall be made stating the  
circumstances and extent of the muster held. A report of the examination  
of the boat\'s equipment on cargo ships shall be entered in the log book,  
which shall also record the occasions on which the lifeboats are swung out  
and lowered in compliance with paragraph (c) of this Regulation.  
    (b) In passenger ships, except those engaged on short international  
voyages, a muster of the passengers shall be held within 24 hours after  
leaving port.  
    (c) Different groups of lifeboats shall be used in turn at successive  
boat drills and every lifeboat shall be swung out and, if practicable and  
reasonable, lowered at least once every four months. The musters and  
inspections shall be so arranged that the crew thoroughly understand and  
are practised in the duties they have to perform, including instructions  
in the handling and operation of liferafts where these are carried.  
    (d) The emergency signal for summoning passengers to muster stations  
shall be a succession of seven or more short blasts followed by one long  
blast on the whistle or siren. This shall be supplemented in passenger  
ships, except those engaged on short international voyages,  by other  
signals, which shall be electrically operated, throughout the ship  
operable from the bridge. The meaning of all signals affecting passengers,  
with precise instructions on what they are to do in an emergency, shall be  
clearly stated in appropriate languages on cards posted in their cabins  
and in conspicuous places in other passenger quarters.  
       
     PART B PASSENGER SHIPS ONLY   
  
       
  
     Regulation 27: Lifeboats, Liferafts and Buoyant Apparatus  
  
    (a) Passenger ships shall carry two boats attached to davits-one on  
each side of the ship-for use in an emergency. These boats shall be of an  
approved type and shall be not more than 8.5 metres (28 feet) in length.  
They may be counted for the purposes of paragraphs (b) and (c) of this  
Regulation, provided that they comply fully with the requirements for  
lifeboats of this Chapter, and for the purposes of Regulation 8 provided  
that in addition they comply fully with the requirements of Regulation 9  
and where appropriate Regulation 14 of this Chapter. They shall be kept  
ready for immediate use while the ship is at sea. In ships in which the  
requirements of paragraph (h) of Regulation 29 are met by means of  
appliances fitted to the sides of the lifeboats, such appliances shall not  
be required to be fitted to the two boats provided to meet the  
requirements of this Regulation.  
    (b) Passenger ships engaged on international voyages which are not  
short international voyages shall carry:  
        (i) Lifeboats on each side of such aggregate capacity as will  
accommodate half the total number of persons on board. Provided that the  
Administration may permit the substitution of lifeboats by liferafts of  
the same total capacity so however that there shall never be less than  
sufficient lifeboats on each side of the ship to accommodate 37 1/2 per  
cent of all on board.  
        (ii) Liferafts on sufficient aggregate capacity to accommodate 25  
per cent of the total number of persons on board, together with buoyant  
apparatus for 3 per cent of that number. Provided that ships which have a  
factor of subdivision of 0.33 or less shall be permitted to carry, in lieu  
of liferafts for 25 per cent of all on board and buoyant apparatus for 3  
per cent of all on board, buoyant apparatus for 25 per cent of that  
number.  
    (c) (i) A passenger ship engaged on short international voyages shall  
be provided with sets of davits in accordance with its length as specified  
in Column A of the Table in Regulation 28 of this Chapter. Each set of  
davits shall have a lifeboat attached to it and these lifeboats shall  
provide at least the minimum capacity required by Column C of the Table or  
the capacity required to provide accommodation for all on board if this is  
less.  
        Provided that when in the opinion of the Administration it is  
impracticable or unreasonable to place on a ship engaged on short  
international voyages the number of sets of davits required by Column A of  
the Table in Regulation 28, the Administration may authorize, under  
exceptional conditions, a smaller number of davits, except that this  
number shall never be less than the minimum number fixed by Column B of  
the Table, and that the total capacity of the lifeboats on the ship will  
be at least equal to the minimum capacity required by Column C or the  
capacity required to provide for all persons on board if this is less.  
        (ii) If the lifeboats so provided are not sufficient to  
accommodate all on board,  additional lifeboats under davits or liferafts  
shall be provided so that the accommodation provided in the lifeboats and  
the liferafts in the ship shall be sufficient for all on board.  
        (iii) Notwithstanding the provisions of sub-paragraph (ii) of this  
paragraph in any ship engaged on short international voyages the number of  
persons carried shall not exceed the total capacity of the lifeboats  
provided in accordance with subparagraphs (i) and (ii) of this paragraph  
unless the Administration considers that this is necessitated by the  
volume of traffic and then only if the ship complies with the provisions  
of paragraph (d) of Regulation 1 of Chapter II-1.  
        (iv) Where under the provisions of sub-paragraph (iii) of this  
paragraph the Administration has permitted the carriage of persons in  
excess of the lifeboat capacity and is satisfied that it is impracticable  
in that ship to stow the liferafts carried in accordance with  
sub-paragraph (ii) of this paragraph it may permit a reduction in the  
number of lifeboats.  
            Provided that:  
            (1) the number of lifeboats shall, in the case of ships of 58  
metres (190 feet) in length and over, never be less than four, two of  
which shall be carried on each side of the ship, and in the case of ships  
of less than 58 metres (190 feet) in length, shall never be less than two,  
one of which shall be carried on each side of the ship; and  
            (2) the number of lifeboats and liferafts shall always be  
sufficient to accommodate the total number of persons on board.  
        (v) Every passenger ship engaged on short international voyages  
shall carry in addition to the lifeboats and liferafts required by the  
provisions of this paragraph, liferafts sufficient to accommodate 10 per  
cent of the total number of persons for whom there is accommodation in the  
lifeboats carried in that ship.  
        (vi) Every passenger ship engaged on short international voyages  
shall also carry buoyant apparatus for at least 5 per cent of the total  
number of persons on board.  
        (vii) The Administration may permit individual ships or classes of  
ships with short international voyage certificates to proceed on voyages  
in excess of 600 miles but not exceeding 1,200 miles if such ships comply  
with the provisions of paragraph (d) of Regulation 1 of Chapter II-1, if  
they carry lifeboats which provide for 75 per cent of the persons on board  
and otherwise comply with the provisions of this paragraph.  
       
     Regulation 28: Table relating to Davits and Lifeboat Capacity forShips on Short International Voyages  
  
    The following table fixes according to the length of the ship:  
    (a) the minimum number of sets of davits to be provided on a ship  
engaged on short international voyages to each of which must be attached a  
lifeboat in accordance with Regulation 27 of this Chapter;  
    (b) the smaller number of sets of davits which may be authorized  
exceptionally on a ship engaged on short international voyages under  
Regulation 27 of this Chapter; and  
    (c) the minimum lifeboat capacity required for a ship engaged on short  
international voyages.  
|----------------------------------------------------------------------------------------------------------  
|                                              |                   |                 |  
|                                              |         (A)       |       (B)       |        (C)  
|                                              |                   |      Smaller    |     Minimum  
|            Registered length of ship         |    Minimum        |     number of   |    capacity of  
|                                              |     number        |      sets of    |     lifeboats  
|                                              |       of          |      davits     |  
|                                              |     sets of       |     authorized  |---------------------  
|----------------------------------------------|     davits        |    exceptionally|   Cubic   |  Cubic  
|         Metres         |         Feet        |                   |                 |   metres  |   feet  
|------------------------|---------------------|-------------------|-----------------|-----------|---------  
|     31 and under 37    | 100 and under 120   |         2         |    2            |      11   |    400  
|     37    "      43    |  120   "      140   |         2         |    2            |      18   |    650  
|     43    "      49    |  140   "      160   |         2         |    2            |      26   |    900  
|     49    "      53    |  160   "      175   |         3         |    3            |      33   |  1,150  
|     53    "      58    |  175   "      190   |         3         |    3            |      38   |  1,350  
|     58    "      63    |  190   "      205   |         4         |    4            |      44   |  1,550  
|     63    "      67    |  205   "      220   |         4         |    4            |      50   |  1,750  
|     67    "      70    |  220   "      230   |         5         |    4            |      52   |  1,850  
|     70    "      75    |  230   "      245   |         5         |    4            |      61   |  2,150  
|     75    "      78    |  245   "      255   |         6         |    5            |      68   |  2,400  
|     78    "      82    |  255   "      270   |         6         |    5            |      76   |  2,700  
|     82    "      87    |  270   "      285   |         7         |    5            |      85   |  3,000  
|     87    "      91    |  285   "      300   |         7         |    5            |      94   |  3,300  
|     91    "      96    |  300   "      315   |         8         |    6            |     102   |  3,600  
|     96    "     101    |  315   "      330   |         8         |    6            |     110   |  3,900  
|    101    "     107    |  330   "      350   |         9         |    7            |     122   |  4,300  
|    107    "     113    |  350   "      370   |         9         |    7            |     135   |  4,750  
|    113    "     119    |  370   "      390   |        10         |    7            |     146   |  5,150  
|    119    "     125    |  390   "      410   |        10         |    7            |     157   |  5,550  
|    125    "     133    |  410   "      435   |        12         |    9            |     171   |  6,050  
|    133    "     140    |  435   "      460   |        12         |    9            |     185   |  6,550  
|    140    "     149    |  460   "      490   |        14         |   10            |     202   |  7,150  
|    149    "     159    |  490   "      520   |        14         |   10            |     221   |  7,800  
|    159    "     168    |  520   "      550   |        16         |   12            |     238   |  8,400  
|---------------------------------------------------------------------------------------------------------  
        Note on (C): Where the length of the ship is under 31 metres (100  
feet) or over 168 metres (550 feet)  the minimum number of sets of davits  
and the cubic capacity of the lifeboats shall be prescribed by the  
Administration.  
       
     Regulation 29: Stowage and Handling of Lifeboats, Liferafts andBuoyant Apparatus  
  
    (a) Lifeboats and liferafts shall be stowed to the satisfaction of the  
Administration in such a way that:  
        (i) they can all be launched in the shortest possible time and in  
not more than 30 minutes;  
        (ii) they will not impede in any way the prompt handling of any of  
the other lifeboats,  liferafts or buoyant apparatus or the marshalling of  
the persons on board at the launching stations, or their embarkation;  
        (iii) the lifeboats, and the liferafts for which approved  
launching devices are required to be carried, shall be capable of being  
put into the water loaded with their full complement of persons and  
equipment even in unfavourable conditions of trim and of 15 degrees of  
list either way; and  
        (iv) the liferafts for which approved launching devices are not  
required to be carried,  and the buoyant apparatus, shall be capable of  
being put into the water even in unfavourable conditions of trim and of 15  
degrees of list either way.  
    (b) Every lifeboat shall be attached to a separate set of davits.  
    (c) Lifeboats may only be stowed on more than one deck if proper  
measures are taken to prevent lifeboats on a lower deck being fouled by  
those stowed on a deck above.  
    (d) Lifeboats, and liferafts for which approved launching devices are  
required to be carried,  shall not be placed in the bow of the ship. They  
shall be stowed in such positions as to ensure safe launching having  
particular regard to clearance from the propeller and steeply overhanging  
portions of the hull aft.  
    (e) Davits shall be of approved design and shall be suitably placed to  
the satisfaction of the Administration. They shall be so disposed on one  
or more decks that the lifeboats placed under them can be safely lowered  
without interference from the operation of any other davits.  
    (f) Davits shall be as follows:  
        (i) luffing or gravity type for operating lifeboats weighing not  
more than 2,300 kilogrammes (2 1/4 tons) in their turning out condition;  
        (ii) gravity type for operating lifeboats weighing more than 2,300  
kilogrammes (2 1/4 tons) in their turning out condition.  
    (g) Davits, falls, blocks and all other gear shall be of such strength  
that the lifeboats can be turned out manned by a launching crew and then  
safely lowered with the full complement of persons and equipment, with the  
ship listed to 15 degrees either way and with a 10 degrees trim.  
    (h) Skates or other suitable means shall be provided to facilitate  
launching the lifeboats against a list of 15 degrees.  
    (i) Means shall be provided for bringing the lifeboats against the  
ship\'s side and there holding them so that persons may be safely embarked.  
    (j) Lifeboats, together with the emergency boats required by  
Regulation 27 of this Chapter, shall be served by wire rope falls,  
together with winches of an approved type which, in the case of the  
emergency boats, shall be capable of quick recovery of those boats.  
Exceptionally, the Administration may allow manila rope falls or falls of  
another approved material with or without winches (except that the  
emergency boats shall be required to be served by winches which are  
capable of quick recovery of those boats) where they are satisfied that  
manila rope falls or falls of another approved material are adequate.  
    (k) At least two lifelines shall be fitted to the davit span, and the  
falls and lifelines shall be long enough to reach the water with the ship  
at its lightest sea-going draught and listed to 15 degrees either way.  
Lower fall blocks shall be fitted with a suitable ring or long link for  
attaching to the sling hooks unless an approved type of disengaging gear  
is fitted.  
    (l) Where mechanically-powered appliances are fitted for the recovery  
of the lifeboats,  efficient hand gear shall also be provided. Where  
davits are recovered by action of the falls by power, safety devices shall  
be fitted which will automatically cut off the power before the davits  
come against the stops in order to avoid overstressing the wire rope falls  
or davits.  
    (m) Lifeboats attached to davits shall have the falls ready for  
service and arrangements shall be made for speedily, but not necessarily  
simultaneously, detaching the lifeboats from the falls. The point of  
attachment of the lifeboats to the falls shall be at such height above the  
gunwale as to ensure stability when lowering the lifeboats.  
    (n) (i) In passenger ships engaged on international voyages which are  
not short international voyages in which there are carried lifeboats and  
liferafts in accordance with sub-paragraph (b) (i) of Regulation 27 of  
this Chapter, there shall be provided approved launching devices  
sufficient in number in the opinion of the Administration to enable that  
number of liferafts which, together with the lifeboats, is required in  
accordance with that sub-paragraph to provide accommodation for all on  
board, to be put into the water loaded with the number of persons they are  
permitted to accommodate, in not more than 30 minutes in calm conditions.  
Approved launching devices so provided shall, so far as practicable, be  
distributed equally on each side of the ship and there shall never be less  
than one such device on each side. No such devices need, however, be  
provided for the additional liferafts required to be carried by  
sub-paragraph (b) (ii)  of Regulation 27 of this Chapter for 25 per cent  
of all on board, but every liferaft carried in accordance with that  
sub-paragraph shall, where an approved launching device is provided in the  
ship, be of a type which is capable of being launched from such a device.  
        (ii) In passenger ships engaged on short international voyages,  
the number of approved launching devices to be provided shall be at the  
discretion of the Administration. The number of liferafts allocated to  
each such device carried shall not be more than the number which, in the  
opinion of the Administration, can be put into the water fully loaded with  
the number of persons they are permitted to carry by that device in not  
more than 30 minutes in calm conditions.  
       
     Regulation 30: Lighting for Decks, Lifeboats, Liferafts, etc.  
  
    (a) Provision shall be made for an electric or equivalent system of  
lighting sufficient for all the requirements of safety in the different  
parts of a passenger ship, and particularly for decks on which the  
lifeboats and liferafts are stowed. The self-contained emergency source of  
electric power required by Regulation 25 of Chapter II-1 shall be capable  
of supplying where necessary this lighting system and also the lighting  
required by sub-paragraphs (a) (ii), (b)  (ii) and (b) (iii) of Regulation  
19 of this Chapter.  
    (b) The exit from every main compartment occupied by passengers or  
crew shall be continuously lighted by an emergency lamp. The power for  
these emergency lamps shall be so arranged that they will be supplied from  
the emergency source of power referred to in paragraph (a) of this  
Regulation in the event of failure of the main generating plant.  
       
     Regulation 31: Manning of Lifeboats and Liferafts  
  
    (a) A deck officer or certified lifeboatman shall be placed in charge  
of each lifeboat and a second-in-command shall also be nominated. The  
person in charge shall have a list of the lifeboat\'s crew, and shall see  
that the men placed under his orders are acquainted with their several  
duties.  
    (b) A man capable of working the motor shall be assigned to each motor  
lifeboat.  
    (c) A man capable of working the radio and searchlight installations  
shall be assigned to each lifeboat carrying this equipment.  
    (d) A man practised in the handling and operation of liferafts shall  
be assigned to each liferaft carried, except where in ships engaged on  
short international voyages the Administration is satisfied that this is  
not practicable.  
       
     Regulation 32: Certificated Lifeboatmen  
  
    (a) In passenger ships there shall be, for every lifeboat carried in  
order to comply with this Chapter, a number of Lifeboatmen at least equal  
to that specified in the following table:  
|-------------------------------------------------------|  
|         Prescribed complement     The minimum number  |  
|           of lifeboat               of certificated   |  
|                                 lifeboatmen shall be  |  
|-------------------------------------------------------|  
|       Less than 41 persons               2            |  
|       From 41 to 61 persons              3            |  
|       From 62 to 85 persons              4            |  
|       Above 85 persons                   5            |  
|-------------------------------------------------------|  
    (b) The allocation of the certificated Lifeboatmen to each lifeboat  
remains within the discretion of the master.  
    (c) Certificates of efficiency shall be issued under the authority of  
the Administration. In order to obtain such a certificate an applicant  
shall prove that he has been trained in all the operations connected with  
launching lifeboats and other life-saving appliances and in the use of  
oars and propelling gear; that he is acquainted with the practical  
handling of lifeboats and of other life-saving equipment, and further,  
that he is capable of understanding and answering the orders relative to  
all kinds of life-saving appliances.  
       
     Regulation 33: Buoyant Apparatus  
  
    (a) No type of buoyant apparatus shall be approved unless it satisfies  
the following conditions:  
        (i) It shall be of such size and strength that it can be thrown  
from the place where it is stowed into the water without being damaged.  
        (ii) It shall not exceed 180 kilogrammes (400 1bs.) in weight  
unless suitable means to the satisfaction of the Administration are  
provided to enable it to be launched without lifting by hand.  
        (iii) It shall be of approved material and construction.  
        (iv) It shall be effective and stable when floating either way up.  
        (v) The air cases or equivalent buoyancy shall be placed as near  
as possible to the sides of the apparatus, and such buoyancy shall not be  
dependent upon inflation.  
        (vi) It shall be fitted with a painter and have a line securely  
becketed round the outside.  
    (b) The number of persons for which buoyant apparatus is certified  
shall be the number:  
        (i) ascertained by dividing the number of kilogrammes of iron  
which it is capable of supporting in fresh water by 14.5 (or the number of  
pounds divided by 32), or  
        (ii) equal to the number of millimetres in the perimeter divided  
by 305 (or the number of feet in the perimeter), whichever is the less.  
       
     Regulation 34: Number of Lifebuoys to be Provided  
  
    The minimum number of lifebuoys with which passenger ships are  
provided shall be fixed by the following table:  
|--------------------------------------------------------------|  
|                 Length of ship                Minimum number |  
|         in metres           in feet             of buoys     |  
|--------------------------------------------------------------|  
|         Under 61            Under 200              8         |  
|         61 and under 122    200 and under 400     12         |  
|         122 and under 183   400 and under 600     18         |  
|         183 and under 244   600 and under 800     24         |  
|         244 and over        800 and over          30         |  
|--------------------------------------------------------------|  
       
     PART C CARGO SHIPS ONLY   
  
       
  
     Regulation 35: Number and Capacity of Lifeboats and Liferafts  
  
    (a) (i) Every cargo ships, except ships employed as whale factory  
ships, fish processing or canning factory ships, and ships engaged in the  
carriage of persons employed in the whaling, fish processing or canning  
industries, shall carry lifeboats on each side of the ship of such  
aggregate capacity as will accommodate all persons on board, and in  
addition shall carry liferafts sufficient to accommodate half that number.  
            Provided that in the case of such cargo ships engaged on  
international voyages between near neighbouring countries, the  
Administration, if it is satisfied that the conditions of the voyage are  
such as to render the compulsory carriage of liferafts unreasonable or  
unnecessary, may to that extent exempt individual ships or classes of  
ships from this requirement.  
        (ii) (1) Subject to the provisions of sub-paragraph (ii) (2) of  
this paragraph, every tanker of 3,000 tons gross tonnage and upwards shall  
carry not less than four lifeboats, two of which shall be carried aft and  
two amidships, except that in tankers which have no amidships  
superstructure all lifeboats shall be carried aft.  
            (2) A tanker of 3,000 tons gross tonnage and upwards which has  
no amidships superstructure may be permitted by the Administration to  
carry two lifeboats only, provided that:  
                (aa) one lifeboat is carried aft on each side of the ship;  
                (bb) each such lifeboat shall not exceed 8.5 metres (28  
feet) in length;  
                (cc) each such lifeboat shall be stowed as far forward as  
practicable, but at least so far forward that the after end of the  
lifeboat is one-and-ahalf times the length of the lifeboat forward of the  
propeller; and  
                (dd) each such lifeboat shall be stowed as near sea level  
as is safe and practicable.  
    (b) (i) Every ship employed as a whale factory ship, every ship  
employed as a fish processing or canning factory ship and every ship  
engaged in the carriage of persons employed in the whaling, fish  
processing or canning industries shall carry:  
            (1) Lifeboats on each side of such aggregate capacity as will  
accommodate half the total number of persons on board; provided that the  
Administration may permit the substitution of lifeboats by liferafts of  
the same total capacity so however that there shall never be less than  
sufficient lifeboats on each side of the ship to accommodate 37 1/2 per  
cent of all on board.  
            (2) Liferafts of sufficient aggregate capacity to accommodate  
half the total number of persons on board; provided that, if in ships  
employed as fish processing or canning factory ships, it is impracticable  
to carry lifeboats which comply fully with the requirements of this  
Chapter, the Administration may permit instead the carriage of other  
boats, which shall however provide not less than the accommodation  
required by this Regulation and shall have at least the buoyancy and  
equipment required by this Chapter for lifeboats.  
        (ii) Every ship employed as a whale factory ship, every ship  
employed as a fish processing or canning factory ship and every ship  
engaged in the carriage of persons employed in the whaling, fish  
processing or canning industries shall carry two boats-one on each  
side-for use in an emergency. These boats shall be of an approved type and  
shall be not more than 8.5 metres (28 feet) in length. They may be counted  
for the purposes of this paragraph provided that they comply fully with  
the requirements for lifeboats of this Chapter and for the purposes of  
Regulation 8 provided that in addition they comply with the requirements  
of Regulation 9,  and, where appropriate, Regulation 14 of this Chapter.  
They shall be kept ready for immediate use while the ship is at sea. In  
ships in which the requirements of paragraph (g) of Regulation 36 of this  
Chapter are met by means of appliances fitted to the sides of the  
lifeboats, such appliances shall not be required to be fitted to the two  
boats provided to meet the requirements of this Regulation.  
    (c) Every cargo ship with no amidships superstructure having a  
registered length of 150 metres (492 feet) and upwards shall carry, in  
addition to the liferafts required under subparagraph (a) (i) of this  
Regulation, a liferaft capable of accommodating at least six persons which  
shall be stowed as far forward as is reasonable and practicable.  
       
     Regulation 36: Davits and Launching Arrangements  
  
    (a) In cargo ships lifeboats and liferafts shall be stowed to the  
satisfaction of the Administration.  
    (b) Every lifeboat shall be attached to a separate set of davits.  
    (c) Lifeboats and liferafts for which approved launching devices are  
required to be carried shall preferably be positioned as close to  
accommodation and service spaces as possible. They shall be stowed in such  
positions as to ensure safe launching, having particular regard to  
clearance from the propeller and steeply overhanging portions of the hull,  
with the object of ensuring so far as practicable that they can be  
launched down the straight side of the ship. If positioned forward they  
shall be stowed abaft the collision bulkhead in a sheltered position and  
in this respect the Administration shall give special consideration to the  
strength of the davits.  
    (d) Davits shall be of approved design and shall be suitably placed to  
the satisfaction of the Administration.  
    (e) In tankers of 1,600 tons gross tonnage and upwards, ship employed  
as whale factory ships, ships employed as fish processing or canning  
factory ships and ships engaged in the carriage of persons employed in the  
whaling, fish processing or canning industries, all davits shall be of the  
gravity type. In other ships, davits shall be as follows:  
        (i) luffing or gravity type for operating lifeboats weighing not  
more than 2,300 kilogrammes (2 1/4 tons) in their turning out condition;  
        (ii) gravity type for operating lifeboats weighing more than 2,300  
kilogrammes (2 1/4 tons) in their turning out condition.  
    (f) Davits, falls, blocks and all other gear shall be of such strength  
that the lifeboats can be turned out manned by a launching crew and then  
safely lowered with full complement of persons and equipment, with the  
ship listed to 15 degrees either way, and with a 10 degrees trim.  
    (g) Skates or other suitable means shall be provided to facilitate  
launching the lifeboats against a list of 15 degrees.  
    (h) Means shall be provided for bringing the lifeboats against the  
ship\'s side and there holding them so that persons may be safely embarked.  
    (i) Lifeboats, together with the emergency boats required by  
sub-paragraph (b) (ii) of Regulation 35 of this Chapter, shall be served  
by wire rope falls, together with winches of an approved type which, in  
the case of the emergency boats, shall be capable of quick recovery of  
those boats. Exceptionally, the Administration may allow manila rope falls  
or falls of another approved material with or without winches (except that  
the emergency boats shall be required to be served by winches which are  
capable of quick recovery of those boats) where they are satisfied that  
manila rope falls or falls of another approved material are adequate.  
    (j) At least two lifelines shall be fitted to the davit spans, and the  
falls and lifelines shall be long enough to reach the water with the ship  
at its lightest sea-going draught and listed to 15 degrees either way.  
Lower fall blocks shall be fitted with a suitable ring or long link for  
attaching to the sling hooks unless an approved type of disengaging gear  
is fitted.  
    (k) Where mechanically powered appliances are fitted for the recovery  
of the lifeboats,  efficient hand gear shall also be provided. Where  
davits are recovered by action of the falls by power, safety devices shall  
be fitted which will automatically cut off the power before the davits  
come against the stops in order to avoid overstressing the wire rope falls  
or davits.  
    (l) Lifeboats shall have the falls ready for service, and arrangements  
shall be made for speedily, but not necessarily simultaneously, detaching  
the lifeboats from the falls. The point of attachment of the lifeboats to  
the falls shall be at such height above the gunwale as to ensure stability  
when lowering the lifeboats.  
    (m) In ships employed as whale factory ships, ships employed as fish  
processing or canning factory ships and ships engaged in the carriage of  
persons employed in the whaling, fish processing or canning industries, in  
which there are carried lifeboats and liferafts in accordance with  
sub-paragraph (b) (i) (2) of Regulation 35 no approved launching devices  
need be provided for the liferafts, but there shall be provided such  
devices sufficient in number, in the opinion of the Administration, to  
enable the liferafts carried in accordance with subparagraph (b) (i) (1)  
of that Regulation to be put into the water loaded with the number of  
persons they are permitted to accommodate, in not more than 30 minutes in  
calm conditions. Approved launching devices so provided shall, so far as  
practicable, be distributed equally on each side of the ship. Every  
liferaft carried on ships in which an approved launching device is  
required to be provided shall be of a type which is capable of being  
launched by such a device.  
       
     Regulation 37: Number of Lifebuoys to be Provided  
  
    At least eight lifebuoys of a type which satisfies the requirements of  
Regulation 21 of this Chapter shall be carried.  
       
     Regulation 38: Emergency Lighting  
  
    The lighting required by sub-paragraphs (a) (ii), (b) (ii) and (b)  
(iii) of Regulation 19 of this Chapter shall be capable of being supplied  
for at least three hours by the emergency source of power required by  
Regulation 26 of Chapter II-1. In cargo ships of 1,600 tons gross tonnage  
and upwards the Administration shall ensure that the lighting of the  
alleyways, stairways and exits is such that the access of all persons on  
board to the launching stations and stowage positions of lifeboats and  
liferafts is not impeded.  
       
     CHAPTER IV RADIOTELEGRAPHY AND RADIOTELEPHONY   
  
       
  
     PART A APPLICATION AND DEFINITIONS   
  
       
  
     Regulation 1: Application  
  
    (a) Unless expressly provided otherwise, this Chapter applies to all  
ships to which the present Regulations apply.  
    (b) This Chapter does not apply to ships to which present Regulations  
would otherwise apply while such ships are being navigated within the  
Great Lakes of North America and their connecting and tributary waters as  
far east as the lower exit of the St. Lambert Lock at Montreal in the  
Province of Quebec, Canada.  
    (c) No provision in this Chapter shall prevent the use by a ship or  
survival craft in distress of any means at its disposal to attract  
attention,  make known its position and obtain help.  
       
     Regulation 2: Terms and Definitions  
  
    For the purpose of this Chapter the following terms shall have the  
meanings defined below. All other terms which are used in this Chapter and  
which are also defined in the Radio Regulations shall have the same  
meanings as defined in those Regulations:  
    (a) "Radio Regulations" means the Radio Regulation annexed to, or  
regarded as being annexed to, the most recent International  
Telecommunication Convention which may be in force at any time.  
    (b) "Radiotelegraph auto alarm" means an automatic alarm receiving  
apparatus which responds to the radiotelegraph alarm signal and has been  
approved.  
    (c) "Radiotelephone auto alarm" means an automatic alarm receiving  
apparatus which responds to the radiotelephone alarm signal and has been  
approved.  
    (d) "Radiotelephone station", "Radiotelephone installation" and  
"Watches-radiotelephone" shall be considered as relating to the medium  
frequency band, unless expressly provided otherwise.  
    (e) "Radio Officer" means a person holding at least a first or second  
class radiotelegraph operator\'s certificate, or a radiocommunication  
operator\'s general certificate for the maritime mobile service, complying  
with the provisions of the Radio Regulations, who is employed in the  
radiotelegraph station of a ship which is provided with such a station in  
compliance with the provisions of Regulation 3 or Regulation 4 of this  
Chapter.  
    (f) "Radiotelephone operator" means a person holding an appropriate  
certificate complying with the provisions of the Radio Regulations.  
    (g) "Existing installation" means:  
        (i) an installation wholly installed on board a ship before the  
date on which the present Convention enters into force irrespective of the  
date on which acceptance by the respective Administration takes effect;  
and  
        (ii) an installation part of which was installed on board a ship  
before the date of entry into force of the present Convention and the rest  
of which consists either of parts installed in replacement of identical  
parts, or parts which comply with the requirements of this Chapter.  
    (h) "New installation" means any installation which is not an existing  
installation.  
       
     Regulation 3 Radiotelegraph Station  
  
    Passenger ships irrespective of size and cargo ships of 1,600 tons  
gross tonnage and up-wards, unless exempted under Regulation 5 of this  
Chapter, shall be fitted with a radiotelegraph station complying with the  
provisions of Regulations 9 and 10 of this Chapter.  
       
     Regulation 4: Radiotelephone Station  
  
    Cargo ships of 300 tons gross tonnage and upwards but less than 1,600  
tons gross tonnage,  unless fitted with a radiotelegraph station complying  
with the provisions of Regulations 9 and 10 of this Chapter shall,  
provided they are not exempted under Regulation 5 of this Chapter, be  
fitted with a radiotelephone station complying with the provisions of  
Regulation 15 and 16 of this Chapter.  
       
     Regulation 5: Exemptions from Regulations 3 and 4  
  
    (a) The Contracting Governments consider it highly desirable not to  
deviate from the application of Regulations 3 and 4 of this Chapter;  
nevertheless the Administration may grant to individual passenger or cargo  
ships exemptions of a partial and/or conditional nature, or complete  
exemption from the requirements of Regulation 3 or Regulation 4 of this  
Chapter.  
    (b) The exemptions permitted under paragraph (a) of this Regulation  
shall be granted only to a ship engaged on a voyage where the maximum  
distance of the ship from the shore,  the length of the voyage, the  
absence of general navigational hazards, and other conditions affecting  
safety are such as to render the full application of Regulation 3 or  
Regulation 4 of this Chapter unreasonable or unnecessary. When deciding  
whether or not to grant exemptions to individual ships. Administration  
shall have regard to the effect that exemptions may have upon the general  
efficiency of the distress service for the safety of all ships.  
Administration should bear in mind the desirability of requiring ships  
which are exempted from the requirement of Regulation 3 of this Chapter to  
be fitted with a radiotelephone station which complies with the provisions  
of Regulations 15 and 16 of this Chapter as a condition of exemption.  
    (c) Each Administration shall submit to the Organization as soon as  
possible after the first of January in each year a report showing all  
exemptions granted under paragraphs (a)  and (b) of this Regulation during  
the previous calendar year and giving the reasons for granting such  
exemptions.  
       
     PART B WATCHES   
  
       
  
     Regulation 6: Watches-Radiotelegraph  
  
    (a) Each ship which in accordance with Regulation 3 or Regulation 4 of  
this Chapter is fitted with a radiotelegraph station shall, while at sea,  
carry at least one radio officer and, if not fitted with a radiotelegraph  
auto alarm shall, subject to the provisions of paragraph (d)  of this  
Regulation, listen continuously on the radiotelegraph distress frequency  
by means of a radio officer using headphones or a loudspeaker.  
    (b) Each passenger ship which in accordance with Regulation 3 of this  
Chapter is fitted with a radiotelegraph station, if fitted with a  
radiotelegraph auto alarm, shall, subject to the provisions of paragraph  
(d) of this Regulation, and while at sea, listen on the radiotelegraph  
distress frequency by means of a radio officer using headphones or a  
loudspeaker, as follows:  
        (i) if carrying or certificated to carry 250 passengers or less,  
at least 8 hours\' listening a day in the aggregate;  
        (ii) if carrying or certificated to carry more than 250 passengers  
and engaged on a voyage exceeding 16 hours\' duration between two  
consecutive ports, at least 16 hours\' listening a day in the aggregate. In  
this case the ship shall carry at least two radio officers;  
        (iii) if carrying or certificated to carry more than 250  
passengers and engaged on a voyage of less than 16 hours\' duration between  
two consecutive ports, at least 8 hours\' listening a day in the aggregate.  
    (c) (i) Each cargo ship which in accordance with Regulation 3 of this  
Chapter is fitted with a radiotelegraph station, if fitted with a  
radiotelegraph auto alarm, shall,  subject to the provisions of paragraph  
(d) of this Regulation, and while at sea,  listen on the radiotelegraph  
distress frequency by means of a radio officer using headphones or a  
loudspeaker, for at least 8 hours a day in the aggregate.  
        (ii) Each cargo ship of 300 tons gross tonnage and upwards but  
less than 1,600 tons gross tonnage which is fitted with a radiotelegraph  
station as a consequence of Regulation 4 of this Chapter, if fitted with a  
radiotelegraph auto alarm shall,  subject to the provisions of paragraph  
(d) of this Regulation, and while at sea,  listen on the radiotelegraph  
distress frequency by means of a radio officer using headphones or a  
loudspeaker, during such periods as may be determined by the  
Administration. Administration shall, however, have regard to the  
desirability of requiring, whenever practicable, a listening watch of at  
least 8 hours a day in the aggregate.  
    (d) (i) During the period when a radio officer is required by this  
Regulation to listen on the radiotelegraph distress frequency, the radio  
officer may discontinue such listening during the time when he is handling  
traffic on other frequencies, or performing other essential radio duties,  
but only if it is impracticable to listen by split headphones or  
loudspeaker. The listening watch shall always be maintained by a radio  
officer using headphones or a loudspeaker during the silence periods  
provided for by the Radio Regulations.  
            The term "essential radio duties" in this paragraph includes  
urgent repairs of:  
            (1) equipment for radiocommunication used for safety;  
            (2) radio navigational equipment by order of the master.  
        (ii) In addition to the provisions of sub-paragraph (i) of this  
paragraph, on ships other than multi-radio officer passenger ships, the  
radio officer may, in exceptional cases, i.e. when it is impractical to  
listen by split headphones or loudspeaker, discontinue listening by order  
of the master in order to carry out maintenance required to prevent  
imminent malfunction of:  
            -equipment for radiocommunication used for safety;  
            -radio navigational equipment;  
            -other electronic navigational equipment including its repair;  
provided that:  
            (1) the radio officer, at the discretion of the Administration  
concerned, is appropriately qualified to perform these duties; and  
            (2) the ship is fitted with a receiving selector which meets  
the requirements of the Radio Regulations;  
            (3) the listening watch is always maintained by a radio  
officer using headphones or loudspeaker during the silence periods  
provided for by the Radio Regulations.  
    (e) In all ships fitted with a radiotelegraph auto alarm this  
radiotelegraph auto alarm shall, while the ship is at sea, be in operation  
whenever there is no listening being kept under paragraphs (b), (c) or (d)  
of this Regulation and, whenever practicable, during direction-finding  
operations.  
    (f) The listening periods provided for by this Regulation, including  
those which are determined by the Administration, should be maintained  
preferably during periods prescribed for the radiotelegraph service by the  
Radio Regulations.  
       
     Regulation 7: Watches-Radiotelephone  
  
    (a) Each ship which is fitted with a radiotelephone station in  
accordance with Regulation 4 of this Chapter shall, for safety purposes,  
carry at least one radiotelephone operator (who may be the master, an  
officer or a member of the crew holding a certificate for radiotelephony)  
and shall, while at sea, maintain continuous watch on the radiotelephone  
distress frequency in the place on board from which the ship is usually  
navigated, by use of a radiotelephone distress frequency watch receiver,  
using a loudspeaker, a filtered loudspeaker or radiotelephone auto alarm.  
    (b) Each ship which in accordance with Regulation 3 or Regulation 4 of  
this Chapter is fitted with a radiotelegraph station shall, while at sea,  
maintain continuous watch on the radiotelephone distress frequency in a  
place to be determined by the Administration, by use of a radiotelephone  
distress frequency watch receiver, using a loudspeaker, a filtered  
loudspeaker or radiotelephone auto alarm.  
       
     Regulation 8: Watches-VHF Radiotelephone  
  
    Each ship provided with a Very High Frequency (VHF) radiotelephone  
station, in accordance with Regulation 18 of Chapter V, shall maintain a  
listening watch on the bridge for such periods and on such channels as may  
be required by the Contracting Government referred to in that Regulation.  
       
     PART C TECHNICAL REQUIREMENTS   
  
       
  
     Regulation 9: Radiotelegraph Stations  
  
    (a) The radiotelegraph station shall be so located that no harmful  
interference from extraneous mechanical or other noise will be caused to  
the proper reception of radio signals. The station shall be placed as high  
in the ship as is practicable, so that the greatest possible degree of  
safety may be secured.  
    (b) The radiotelegraph operating room shall be of sufficient size and  
of adequate ventilation to enable the main and reserve radiotelegraph  
installations to be operated efficiently, and shall not be used for any  
purpose which will interfere with the operation of the radiotelegraph  
station.  
    (c) The sleeping accommodation of at least one radio officer shall be  
situated as near as practicable to the radiotelegraph operating room. In  
new ships, this sleeping accommodation shall not be within the  
radiotelegraph operating room.  
    (d) There shall be provided between the radiotelegraph operating room  
and the bridge and one other place, if any, from which the ship is  
navigated, an efficient two-way system for calling and voice communication  
which shall be independent of the main communication system on the ship.  
    (e) The radiotelegraph installation shall be installed in such a  
position that it will be protected against the harmful effects of water or  
extremes of temperature. It shall be readily accessible both for immediate  
use in case of distress and for repair.  
    (f) A reliable clock with a dial not less than 12.5 centimetres (5  
inches) in diameter and a concentric seconds hand, the face of which is  
marked to indicate the silence periods prescribed for the radiotelegraph  
service by the Radio Regulations, shall be provided. It shall be securely  
mounted in the radiotelegraph operating room in such a position that the  
entire dial can be easily and accurately observed by the radio officer  
from the radiotelegraph operating position and from the position for  
testing the radiotelegraph auto alarm receiver.  
    (g) A reliable emergency light shall be provided in the radiotelegraph  
operating room,  consisting of an electric lamp permanently arranged so as  
to provide satisfactory illumination of the operating controls of the main  
and reserve radiotelegraph installations and of the clock required by  
paragraph (f) of this Regulation. In new installations, this lamp shall,  
if supplied from the reserve source of energy required by sub-paragraph  
(a) (iii) of Regulation 10 of this Chapter, be controlled by two-way  
switches placed near the main entrance to the radiotelegraph operating  
room and at the radiotelegraph operating position, unless the layout of  
the radiotelegraph operating room does not warrant it. These switches  
shall be clearly labelled to indicate their purpose.  
    (h) Either an electric inspection lamp, operated from the reserve  
source of energy required by sub-paragraph (a) (iii) of Regulation 10 of  
this Chapter and provided with a flexible lead of adequate length, or a  
flashlight shall be provided and kept in the radiotelegraph operating  
room.  
    (i) The radiotelegraph station shall be provided with such spare  
parts, tools and testing equipment as will enable the radiotelegraph  
installation to be maintained in efficient working condition while at sea.  
The testing equipment shall include an instrument or instruments for  
measuring A.C. volts, D.C. volts and ohms.  
    (j) If a separate emergency radiotelegraph operating room is provided  
the requirements of paragraphs (d), (e), (f), (g) and (h) of this  
Regulation shall apply to it.  
       
     Regulation 10: Radiotelegraph Installations  
  
    (a) Except as otherwise expressly provided in this Regulation:  
        (i) The radiotelegraph station shall include a main installation  
and reserve installation,  electrically separate and electrically  
independent of each other.  
        (ii) The main installation shall include a main transmitter, main  
receiver, radiotelephone distress frequency watch receiver, and main  
source of energy.  
        (iii) The reserve installation shall include a reserve  
transmitter, reserve receiver and reserve source of energy.  
        (iv) A main and a reserve antenna shall be provided and installed,  
provided that the Administration may except any ship from the provision of  
a reserve antenna if it is satisfied that the fitting of such an antenna  
is impracticable or unreasonable,  but in such case a suitable spare  
antenna completely assembled for immediate installation shall be carried.  
In addition, sufficient antenna wire and insulators shall in all cases be  
provided to enable a suitable antenna to be erected. The main antenna, if  
suspended between supports liable to whipping, shall be suitably protected  
against breakage.  
    (b) In installations on cargo ships (except those on cargo ships of  
1,600 tons gross tonnage and upwards installed on or after November  
19,1952),  if the main transmitter complies with all the requirements for  
the reserve transmitter, the latter is not obligatory.  
    (c) (i) The main and reserve transmitters shall be capable of being  
quickly connected with and tuned to the main antenna, and the reserve  
antenna if one is fitted.  
        (ii) The main and reserve receivers shall be capable of being  
quickly connected with any antenna with which they are required to be  
used.  
    (d) All parts of the reserve installation shall be placed as high in  
the ship as is practicable,  so that the greatest possible degree of  
safety may be secured.  
    (e) The main and reserve transmitters shall be capable of transmitting  
on the radiotelegraph distress frequency using a class of emission  
assigned by the Radio Regulations for that frequency. In addition, the  
main transmitter shall be capable of transmitting on at least two working  
frequencies in the authorized bands between 405 kHz and 535 kHz, using  
classes of emission assigned by the Radio Regulations for these  
frequencies. The reserve transmitter may consist of a ship\'s emergency  
transmitter, as defined in and limited in use by the Radio Regulations.  
    (f) The main and reserve transmitters shall, if modulated emission is  
prescribed by the Radio Regulations, have a depth of modulation of not  
less than 70 per cent and a note frequency between 450 and 1,350 Hz.  
    (g) The main and reserve transmitters shall, when connected to the  
main antenna, have a minimum normal range as specified below, that is to  
say, they must be capable of transmitting clearly perceptible signals from  
ship to ship by day and under normal conditions and circumstances over the  
specified ranges. \* (Clearly perceptible signals will normally be received  
if the R.M.S. value of the field strength at the receiver is at least 50  
microvolts per metre.)  
    [\* In the absence of a direct measurement of the field strength the  
following data may be used as a guide for approximately determining the  
normal range:  
|-------------------------------------------------------------------------  
|                       |              1 |                            2  |  
| Normal range in miles | Metre-amperes  | Total antenna power (watts)   |  
|-----------------------|----------------|-------------------------------|  
|            200        |       128      |              200              |  
|            175        |       102      |              125              |  
|            150        |        76      |               71              |  
|            125        |        58      |               41              |  
|            100        |        45      |               25              |  
|             75        |        34      |               14              |  
|-------------------------------------------------------------------------  
    1 This figure represents the product of the maximum height of the  
antenna above the deepest load water-line in metres and the antenna  
current in amperes (R.M.S. value).  
    The values given in the second column of the table correspond to an  
average value of the ratio  
                                  effective antenna height  
                                  ------------------------=0.47  
                                  maximum antenna height  
    This ratio varies with local conditions of the antenna and may vary  
between about 0.3 and 0.7.  
    2 The values given in the third column of the table correspond to an  
average value of the ratio  
                                  radiated antenna power  
                                  ----------------------=0.08  
                                    total antenna power  
    This ratio varies considerably according to the values of effective  
antenna height and antenna resistance.]  
|---------------------------------------------------------------------  
|                                   | Minimum normal range in miles  |  
|                                   |--------------------------------|  
|                                   |     Main      |       Reserve  |  
|                                   | transmitter   |     transmitter|  
|-----------------------------------|---------------|----------------|  
|All passenger ships, and cargo     |               |                |  
|ships of 1,600 tons gross tonnage  |     150       |          100   |  
|and upwards                        |               |                |  
|                                   |               |                |  
|Cargo ships below 1,600 tons       |               |                |  
|gross tonnage                      |     100       |           75   |  
|---------------------------------------------------------------------  
    (h) (i) The main and reserve receivers shall be capable of receiving  
the radiotelegraph distress frequency and the classes of emission assigned  
by the Radio Regulations for that frequency.  
        (ii) In addition, the main receiver shall permit the reception of  
such of the frequencies and classes of emission used for the transmission  
of time signals, meteorological messages and such other communications  
relating to safety of navigation as may be considered necessary by the  
Administration.  
        (iii) The radiotelephone distress frequency watch receiver shall  
be preset to this frequency. It shall be provided with a filtering unit or  
a device to silence the loudspeaker if on the bridge in the absence of a  
radiotelephone alarm signal. The device shall be capable of being easily  
switched in and out and may be used when,  in the opinion of the master,  
conditions are such that maintenance of the listening watch would  
interfere with the safe navigation of the ship.  
        (iv) (1) A radiotelephone transmitter, if provided, shall be  
fitted with an automatic device for generating the radiotelephone alarm  
signal, so designed as to prevent actuation by mistake,  and complying  
with the requirements of paragraph (e) of Regulation 16 of this Chapter.  
The device shall be capable of being taken out of operation at any time in  
order to permit the immediate transmission of a distress message.  
        (2) Arrangements shall be made to check periodically the proper  
functioning of the automatic device for generating the radiotelephone  
alarm signal on frequencies other than the radiotelephone distress  
frequency using a suitable artificial antenna.  
    (i) The main receiver shall have sufficient sensitivity to produce  
signals in headphones or by means of a loudspeaker when the receiver input  
is as low as 50 microvolts. The reserve receiver shall have sufficient  
sensitivity to produce such signals when the receiver imput is as low as  
100 microvolts.  
    (j) There shall be available at all times, while the ship is at sea, a  
supply of electrical energy sufficient to operate the main installation  
over a normal range required by paragraph (g) of this Regulation as well  
as for the purpose of charging any batteries forming part of the  
radiotelegraph station. The voltage of the supply for the main  
installation shall, in the case of new ships, be maintained within±10 per  
cent of the rated voltage. In the case of existing ships, it shall be  
maintained as near the rated voltage as possible and, if practicable,  
within ±10 per cent.  
    (k) The reserve installation shall be provided with a source of energy  
independent of the propelling power of the ship and of the ship\'s  
electrical system.  
    (l) (i) The reserve source of energy shall preferably consist of  
accumulator batteries,  which may be charged from the ship\'s electrical  
system, and shall under all circumstances be capable of being put into  
operation rapidly and of operating the reserve transmitter and receiver  
for at least six hours continuously under normal working conditions  
besides any of the additional loads mentioned in paragraphs (m) and (n) of  
this Regulation.\*  
    [\* For the purpose of determining the electrical load to be supplied  
by the reserve source of energy,  the following formula is recommended as  
a guide:  
    1/2 of the transmitter current consumption with the key down (mark)  
    +1/2 of the transmitter current consumption with the key up (space)  
    + current consumption of receiver and additional circuits connected to  
the reserve source of energy.]  
        (ii) The reserve source of energy is required to be of a capacity  
sufficient to operate simultaneously the reserve transmitter and the VHF  
installation, when fitted,  for at least six hours unless a switching  
device is fitted to ensure alternate operation only. VHF usage of the  
reserve source of energy shall be limited to distress, urgency and safety  
communications. Alternatively, a separate reserve source of energy may be  
provided for the VHF installation.  
    (m) The reserve source of energy shall be used to supply the reserve  
installation and the automatic alarm signal keying device specified in  
paragraph (r) of this Regulation if it is electrically operated.  
    The reserve source of energy may also be used to supply:  
        (i) the radiotelegraph auto alarm;  
        (ii) the emergency light specified in paragraph (g) of Regulation  
9 of this Chapter;  
        (iii) the direction-finder;  
        (iv) the VHF installation;  
        (v) the device for generating the radiotelephone alarm signal, if  
provided;  
        (vi) any device, prescribed by the Radio Regulations, to permit  
changeover from transmission to reception and vice versa.  
        Subject to the provisions of paragraph (n) of this Regulation, the  
reserve source of energy shall not be used other than for the purposes  
specified in this paragraph.  
    (n) Notwithstanding the provisions of paragraph (m) of this  
Regulation, the Administration may authorize the use in cargo ships of the  
reserve source of energy for a small number of low-power emergency  
circuits which are wholly confined to the upper part of the ship,  such as  
emergency lighting on the boat deck, on condition that these can be  
readily disconnected if necessary, and that the source of energy is of  
sufficient capacity to carry the additional load or loads.  
    (o) The reserve source of energy and its switchboard shall be as high  
as practicable in the ship and readily accessible to the radio officer.  
The switchboard shall, wherever possible, be situated in a radio room; if  
it is not, it shall be capable of being illuminated.  
    (p) While the ship is at sea, accumulator batteries, whether forming  
part of the main installation or reserve installation, shall be brought up  
to the normal fully charged condition daily.  
    (q) All steps shall be taken to eliminate so far as is possible the  
causes of, and to suppress, radio interference from electrical and other  
apparatus on board. If necessary, steps shall be taken to ensure that the  
antennae attached to broadcast receivers do not cause interference to the  
efficient or correct working of the radiotelegraph installation.  
Particular attention shall be paid to this requirement in the design of  
new ships.  
    (r) In addition to a means for manually transmitting the  
radiotelegraph alarm signal, an automatic radiotelegraph alarm signal  
keying device shall be provided, capable of keying the main and the  
reserve transmitters so as to transmit the radiotelegraph alarm signal.  
The device shall be capable of being taken out of operation at any time in  
order to permit immediate manual operation of the transmitter. If  
electrically operated, this keying device shall be capable of operation  
from the reserve source of energy.  
    (s) At sea, the reserve transmitter, if not used for communications,  
shall be tested daily using a suitable artificial antenna, and at least  
once during each voyage using the reserve antenna if installed. The  
reserve source of energy shall also be tested daily.  
    (t) All equipment forming part of the radiotelegraph installation  
shall be reliable, and shall be so constructed that it is readily  
accessible for maintenance purposes.  
    (u) Notwithstanding the provision of Regulation 4 of this Chapter, the  
Administration may, in the case of cargo ships of less than 1,600 tons  
gross tonnage, relax the full requirements of Regulation 9 of this Chapter  
and the present Regulation, provided that the standard of the  
radiotelegraph station shall in no case fall below the equivalent of that  
prescribed under Regulation 15 and Regulation 16 of this Chapter for  
radiotelephone stations, so far as applicable. In particular, in the case  
of cargo ships of 300 tons gross tonnage and upwards but less than 500  
tons gross tonnage, the Administration need not require:  
        (i) a reserve receiver;  
        (ii) a reserve source of energy in existing installations;  
        (iii) protection of the main antenna against breakage by whipping;  
        (iv) the means of communication between the radiotelegraph station  
and the bridge to be independent of the main communication system;  
        (v) the range of the transmitter to be greater than 75 miles.  
       
     Regulation 11: Radiotelegraph Auto Alarms  
  
    (a) Any radiotelegraph auto alarm installed after May 26, 1965 shall  
comply with the following minimum requirements:  
        (i) In the absence of interference of any kind it shall be capable  
of being actuated,  without manual adjustment, by any radiotelegraph alarm  
signal transmitted on the radiotelegraph distress frequency by any coast  
station, ship\'s emergency or survival craft transmitter operating in  
accordance with the Radio Regulations, provided that the strength of the  
signal at the receiver input is greater than 100 microvolts and less than  
1 volt.  
        (ii) In the absence of interference of any kind, it shall be  
actuated by either three or four consecutive dashes when the dashes vary  
in length from 3.5 to as near 6 seconds as possible and the spaces vary in  
length between 1.5 seconds and the lowest practicable value, preferably  
not greater than 10 milliseconds.  
        (iii) It shall not be actuated by atmospherics or by any signal  
other than the radiotelegraph alarm signal, provided that the received  
signals do not in fact constitute a signal falling within the tolerance  
limits indicated in sub-paragraph (ii) above.  
        (iv) The selectivity of the radiotelegraph auto alarm shall be  
such as to provide a practically uniform sensitivity over a band extending  
not less than 4 kHz and not more than 8 kHz on each side of the  
radiotelegraph distress frequency and to provide outside this band a  
sensitivity which decreases as rapidly as possible in conformity with the  
best engineering practice.  
        (v) If practicable, the radiotelegraph auto alarm shall, in the  
presence of atmospherics or interfering signals, automatically adjust  
itself so that within a reasonably short time it approaches the condition  
in which it can most readily distinguish the radiotelegraph alarm signal.  
        (vi) When actuated by a radiotelegraph alarm signal, or in the  
event of failure of the apparatus,  the radiotelegraph auto alarm shall  
cause a continuous audible warning to be given in the radiotelegraph  
operating room, in the radio officer\'s sleeping accommodation and on the  
bridge. If practicable warning shall also be given in the case of failure  
of any part of the whole alarm receiving system. Only one switch for  
stopping the warning shall be provided and this shall be situated in the  
radiotelegraph operating room.  
        (vii) For the purpose of regularly testing the radiotelegraph auto  
alarm, the apparatus shall include a generator pre-tuned to the  
radiotelegraph distress frequency and a keying device by means of which a  
radiotelegraph alarm signal of the minimum strength indicated in  
sub-paragraph (i) above is produced. A means shall also be provided for  
attaching headphones for the purpose of listening to signals received on  
the radiotelegraph auto alarm.  
        (viii) The radiotelegraph auto alarm shall be capable of  
withstanding vibrations humidity and changes of temperature, equivalent to  
severe conditions experienced on board ships at sea, and shall continue to  
operate under such conditions.  
    (b) Before a new type of radiotelegraph auto alarm is approved, the  
Administration concerned shall be satisfied, by practical tests made under  
operating conditions equivalent to those obtaining in practice, that the  
apparatus complies with paragraph (a) of this Regulation.  
    (c) In ships fitted with a radiotelegraph auto alarm, its efficiency  
shall be tested by a radio officer at least once every 24 hours while at  
sea. If it is not in working order, the radio officer shall report that  
fact to the master or officer on watch on the bridge.  
    (d) A radio officer shall periodically check the proper functioning of  
the radiotelegraph auto alarm receiver, with its normal antenna connected,  
by listening to signals and by comparing them with similar signals  
received on the radiotelegraph distress frequency on the main  
installation.  
    (e) As far as practicable, the radiotelegraph auto alarm, when  
connected to an antenna shall not affect the accuracy of the  
direction-finder.  
       
     Regulation 12: Direction-Finders  
  
    (a) (i) The direction-finding apparatus required by Regulation 12 of  
Chapter V shall be efficient and capable of receiving signals with the  
minimum of receiver noise and of taking bearings from which the true  
bearing and direction may be determined.  
        (ii) It shall be capable of receiving signals on the  
radiotelegraph frequencies assigned by the Radio Regulations for the  
purposes of distress and direction-finding and for maritime radio beacons.  
        (iii) In the absence of interference the direction-finding  
apparatus shall have a sensitivity sufficient to permit accurate bearings  
being taken on a signal having a field strength as low as 50 microvolts  
per metre.  
        (iv) As far as is practicable, the direction-finding apparatus  
shall be so located that as little interference as possible from  
mechanical or other noise will be caused to the efficient determination of  
bearings.  
        (v) As far as is practicable, the direction-finding antenna system  
shall be erected in such a manner that the efficient determination of  
bearings will be hindered as little as possible by the close proximity of  
other antennae, derricks,  wire halyards or other large metal objects.  
        (vi) An efficient two-way means of calling and voice communication  
shall be provided between the direction-finder and the bridge.  
        (vii) All direction-finders shall be calibrated to the  
satisfaction of the Administration on first installation. The calibration  
shall be verified by check bearings or by a further calibration whenever  
any changes are made in the position of any antennae or of any structures  
on deck which might affect appreciably the accuracy of the  
direction-finder. The calibration particulars shall be checked at yearly  
intervals, or as near thereto as possible. A record shall be kept of the  
calibrations and of any checks made of their accuracy.  
    (b) (i) Radio equipment for homing on the radiotelephone distress  
frequency shall be capable of taking direction-finding bearings on that  
frequency without ambiguity of sense within an arc of 30 degrees on either  
side of the bow.  
        (ii) When installing and testing the equipment referred to in this  
paragraph due regard should be given to the relevant recommendation of the  
International Radio Consultative Committee (CCIR).  
        (iii) All reasonable steps shall be taken to ensure the homing  
capability required by this paragraph. In cases where due to technical  
difficulties the homing capability cannot be achieved, Administrations may  
grant to individual ships exemptions from the requirements of this  
paragraph.  
       
     Regulation 13: Radiotelegraph Installation for Fitting in MotorLifeboats  
  
    (a) The radiotelegraph installation required by Regulation 14 of  
Chapter III shall include a transmitter, a receiver and a source of  
energy. It shall be so designed that it can be used in an emergency by an  
unskilled person.  
    (b) The transmitter shall be capable of transmitting on the  
radiotelegraph distress frequency using a class of emission assigned by  
the Radio Regulations for that frequency. The transmitter shall also be  
capable of transmitting on the frequency, and of using a class of  
emission,  assigned by the Radio Regulations for use by survival craft in  
the bands between 4,000 kHz and 27,500 kHz.  
    (c) The transmitter shall, if modulated emission is prescribed by the  
Radio Regulations, have a depth of modulation of not less than 70 per cent  
and a note frequency between 450 and 1,350 Hz.  
    (d) In addition to a key for manual transmissions, the transmitter  
shall be fitted with an automatic keying device for the transmission of  
the radiotelegraph alarm and distress signals.  
    (e) On the radiotelegraph distress frequency the transmitter shall  
have a minimum normal range (as specified in paragraph (g) of Regulation  
10 of this Chapter) of 25 miles using the fixed antenna.\*  
    [\* In the absence of a measurement of the field strength, it may be  
assumed that this range will be obtained if the product of the height of  
the antenna above the water-line and the antenna current (R.M.S. value) is  
10 metre-amperes.]  
    (f) The receiver shall be capable of receiving the radiotelegraph  
distress frequency and the classes of emission assigned by the Radio  
Regulations for that frequency.  
    (g) The source of energy shall consist of an accumulator battery with  
sufficient capacity to supply the transmitter for four hours continuously  
under normal working conditions. If the battery is of a type that requires  
charging, means shall be available for charging it from the ship\'s power  
supply. In addition there shall be a means for charging it after the  
lifeboat has been launched.  
    (h) When the power for the radiotelegraph installation and the  
searchlight required by Regulation 14 of Chapter III are drawn from the  
same battery, it shall have sufficient capacity to provide for the  
additional load of the searchlight.  
    (i) A fixed-type antenna will be provided together with means for  
supporting it at the maximum practicable height. In addition an antenna  
supported by a kite or balloon shall be provided if practicable.  
    (j) At sea a radio officer shall at weekly intervals test the  
transmitter using a suitable artificial antenna, and shall bring the  
battery up to full charge if it is of a type which requires charging.  
       
     Regulation 14: Portable Radio Apparatus for Survival Craft  
  
    (a) The apparatus required by Regulation 13 of Chapter III shall  
include a transmitter,  a receiver, an antenna and a source of energy. It  
shall be so designed that it can be used in an emergency by an unskilled  
person.  
    (b) The apparatus shall be readily portable, watertight, capable of  
floating in sea water and capable of being dropped into the sea without  
damage. New equipment shall be as lightweight and compact as practicable  
and shall preferably be capable of use in both lifeboats and liferafts.  
    (c) The transmitter shall be capable of transmitting on the  
radiotelegraph distress frequency using a class of emission assigned by  
the Radio Regulations for that frequency, and,  in the bands between 4,000  
kHz and 27,500 kHz, of transmitting on the radiotelegraph frequency, and  
of using a class of emission assigned by the Radio Regulations for  
survival craft. However, the Administration may permit the transmitter to  
be capable of transmitting on the radiotelephone distress frequency, and  
of using a class of emission assigned by the Radio Regulations for that  
frequency, as an alternative or in addition to transmission on the  
radiotelegraph frequency assigned by the Radio Regulations for survival  
craft in the bands between 4,000 kHz and 27,500 kHz.  
    (d) The transmitter shall, if modulated emission is prescribed by the  
Radio Regulations, have a depth of modulation of not less than 70 per cent  
and in the case of radiotelegraph emission have a note frequency between  
450 and 1,350 Hz.  
    (e) In addition to a key for manual transmissions, the transmitter  
shall be fitted with an automatic keying device for the transmission of  
the radiotelegraph alarm and distress signals. If the transmitter is  
capable of transmitting on the radiotelephone distress frequency, it shall  
be fitted with an automatic device, complying with the requirements of  
paragraph (e) of Regulation 16 of this Chapter, for transmitting the  
radiotelephone alarm signal.  
    (f) The receiver shall be capable of receiving the radiotelegraph  
distress frequency and the classes of emission assigned by the Radio  
Regulations for that frequency. If the transmitter is capable of  
transmitting on the radiotelephone distress frequency the receiver shall  
also be capable of receiving that frequency and a class of emission  
assigned by the Radio Regulations for that frequency.  
    (g) The antenna shall be either self-supporting or capable of being  
supported by the mast of a lifeboat at the maximum practicable height. In  
addition it is desirable that an antenna supported by a kite or balloon  
shall be provided if practicable.  
    (h) The transmitter shall supply an adequate radio frequency power \*  
to the antenna required by paragraph (a) of this Regulation and shall  
preferably derive its supply from a hand generator. If operated from a  
battery, the battery shall comply with conditions laid down by the  
Administration to ensure that it is of a durable type and is of adequate  
capacity.  
    [\* It may be assumed that the purposes of this Regulation will be  
satisfied by the following performance: At least 10 watts input to the  
anode of the final stage o a radio-frequency output of at least 2.0 watts  
(A2 emission)  at 500 kHz into an artificial antenna having an effective  
                               |-----|  
                               |  -12|  
resistance of 15 ohms and 100×|10   |farads capacitance in series. The  
                               |-----|  
depth of modulation shall be at least 70 per cent.]  
    (i) At sea a radio officer or a radiotelephone operator, as  
appropriate, shall at weekly intervals test the transmitter, using a  
suitable artificial antenna and shall bring the battery up to full charge  
if it is of a type which requires charging.  
    (j) For the purpose of this Regulation, new equipment means equipment  
supplied to a ship after the date of entry into force of the present  
Convention.  
       
     Regulation 15: Radiotelephone Stations  
  
    (a) The radiotelephone station shall be in the upper part of the ship  
and so located that it is sheltered to the greatest possible extent from  
noise which might impair the correct reception of messages and signals.  
    (b) There shall be efficient communication between the radiotelephone  
station and the bridge.  
    (c) A reliable clock shall be securely mounted in such a position that  
the entire dial can be easily observed from the radiotelephone operating  
position.  
    (d) A reliable emergency light shall be provided, independent of the  
system which supplies the normal lighting of the radiotelephone  
installation, and permanently arranged so as to be capable of providing  
adequate illumination of the operating controls of the radiotelephone  
installation, of the clock required by paragraph (c)  of this Regulation  
and of the card of instructions required by paragraph (f).  
    (e) Where a source of energy consists of a battery or batteries, the  
radiotelephone station shall be provided with a means of assessing the  
charge condition.  
    (f) A card of instructions giving a clear summary of the  
radiotelephone distress procedure shall be displayed in full view of the  
radiotelephone operating position.  
       
     Regulation 16: Radiotelephone Installations  
  
    (a) The radiotelephone installation shall include transmitting and  
receiving equipment,  and appropriate sources of energy (referred to in  
the following paragraphs as "the transmitter",  "the receiver", "the  
radiotelephone distress frequency watch receiver", and "the source",  of  
energy" respectively).  
    (b) The transmitter shall be capable of transmitting on the  
radiotelephone distress frequency and on at least one other frequency in  
the bands between 1,605 kHz and 2,850 kHz,  using the classes of emission  
assigned by the Radio Regulations for these frequencies. In normal  
operation a double sideband transmission or a single sideband transmission  
with full carrier (i.e. A3H) shall have a depth of modulation of at least  
70 per cent at peak intensity. Modulation of a single sideband  
transmission with reduced or suppressed carrier (A3A,  A3J) shall be such  
that the intermodulation products shall not exceed the values given in the  
Radio Regulations.  
    (c) (i) In the case of cargo ships of 500 tons gross tonnage and  
upwards but less than 1,600 tons gross tonnage the transmitter shall have  
a minimum normal range of 150 miles, i.e. it shall be capable of  
transmitting clearly perceptible signals from ship to ship by day and  
under normal conditions and circumstances over this range. \* (Clearly  
perceptible signals will normally be received if the R.M.S. value of the  
field strength produced at the receiver by the unmodulated carrier is at  
least 25 microvolts per metre.)  
    [\* In the absence of field strength measurements, it may be assumed  
that this range will be obtained by a power in the antenna of 15 watts  
(unmodulated carrier) with an antenna efficiency of 27 per cent.]  
        (ii) In the case of cargo ships of 300 tons gross tonnage and  
upwards but less than 500 tons gross tonnage:  
            (1) for existing installations the transmitter shall have a  
minimum normal range of at least 75 miles; and  
            (2) for new installations the transmitter shall produce a  
power in the antenna of at least 15 watts (unmodulated carrier).  
    (d) The transmitter shall be fitted with a device for generating the  
radiotelephone alarm signal by automatic means so designed as to prevent  
actuation by mistake. The device shall be capable of being taken out of  
operation at any time in order to permit the immediate transmission of a  
distress message. Arrangements shall be made to check periodically the  
proper functioning of the device on frequencies other than the  
radiotelephone distress frequency using a suitable artificial antenna.  
    (e) The device required by paragraph (d) of this Regulation shall  
comply with the following requirements:  
        (i) The tolerance of the frequency of each tone shall be±1.5 per  
cent.  
        (ii) The tolerance on the duration of each tone shall be±50  
milliseconds.  
        (iii) The interval between successive tones shall not exceed 50  
milliseconds.  
        (iv) The ratio of the amplitude of the stronger tone to that of  
the weaker shall be within the range 1 to 1.2.  
    (f) The receiver required by paragraph (a) of this Regulation shall be  
capable of receiving the radiotelephone distress frequency and at least  
one other frequency available for maritime radiotelephone stations in the  
bands between 1,605 kHz and 2,850 kHz, using the classes of emission  
assigned by the Radio Regulations for these frequencies. In addition the  
receiver shall permit the reception of such other frequencies, using the  
classes of emission assigned by the Radio Regulations, as are used for the  
transmission by radiotelephony of meteorological messages and such other  
communications relating to the safety of navigation as may be considered  
necessary by the Administration. The receiver shall have sufficient  
sensitivity to produce signals by means of a loudspeaker when the receiver  
input is as low as 50 microvolts.  
    (g) The radiotelephone distress frequency watch receiver shall be  
preset to this frequency. It shall be provided with a filtering unit or a  
device to silence the loudspeaker in the absence of a radiotelephone alarm  
signal. The device shall be capable of being easily switched in and out  
and may be used when, in the opinion of the master, conditions are such  
that maintenance of the listening watch would interfere with the safe  
navigation of the ship.  
    (h) To permit rapid change-over from transmission to reception when  
manual switching is used, the control for the switching device shall,  
where practicable, be located on the microphone or the telephone handset.  
    (i) While the ship is at sea, there shall be available at all times a  
main source of energy sufficient to operate the installation over the  
normal range required by paragraph (c) of this Regulation. If batteries  
are provided they shall under all circumstances have sufficient capacity  
to operate the transmitter and receiver for at least six hours  
continuously under normal working conditions. \* In installations in cargo  
ships of 500 tons gross tonnage and upwards but less than 1,600 tons gross  
tonnage made on or after November 19,1952, a reserve source of energy  
shall be provided in the upper part of the ship unless the main source of  
energy is so situated.  
    [\* For the purpose of determining the electrical load to be supplied  
by batteries required to have six hours reserve capacity, the following  
formula is recommended as a guide:  
    1/2 of the current consumption necessary for speech transmission  
    + current consumption of receiver  
    + current consumption of all additional loads to which the batteries  
may supply energy in time of distress of emergency.]  
    (j) The reserve source of energy, if provided, may be used only to  
supply:  
        (i) the radiotelephone installation;  
        (ii) the emergency light required by paragraph (d) of Regulation  
15 of this Chapter;  
        (iii) the device required by paragraph (d) of this Regulation, for  
generating the radiotelephone alarm signal; and  
        (iv) the VHF installation.  
    (k) Notwithstanding the provisions of paragraph (j) of this  
Regulation, the Administration may authorize the use of the reserve source  
of energy,  if provided, for a direction-finder, if fitted, and for a  
number of low-power emergency circuits which are wholly confined to the  
upper part of the ship, such as emergency lighting on the boat deck, on  
condition that the additional loads can be readily disconnected, and that  
the source of energy is of sufficient capacity to carry them.  
    (l) While at sea, any battery provided shall be kept charged so as to  
meet the requirements of paragraph (i)  of this Regulation.  
    (m) An antenna shall be provided and installed and, if suspended  
between supports liable to whipping,  shall in the case of cargo ships of  
500 tons gross tonnage and upwards but less than 1,600 tons gross tonnage  
be protected against breakage. In addition, there shall be a spare antenna  
completely assembled for immediate replacement or, where this is not  
practicable, sufficient antenna wire and insulators to enable a spare  
antenna to be erected. The necessary tools to erect an antenna shall also  
be provided.  
       
     Regulation 17: VHF Radiotelephone Stations  
  
    (a) When a VHF radiotelephone station is provided in accordance with  
Regulation 18 of Chapter V, it shall be in the upper part of the ship and  
include a VHF radiotelephone installation complying with the provisions of  
this Regulation and comprising a transmitter and receiver, a source of  
power capable of actuating them at their rated power levels, and an  
antenna suitable for efficient radiating and receiving signals at the  
operating frequencies.  
    (b) Such a VHF installation shall conform to the requirements laid  
down in the Radio Regulations for equipment used in the VHF Maritime  
Mobile Radiotelephone Service and shall be capable of operation on those  
channels specified by the Radio Regulations and as may be required by the  
Contracting Government referred to in Regulation 18 of Chapter V.  
    (c) The Contracting Government shall not require the transmitter R.F.  
carrier power output to be greater than 10 watts. The antenna shall, in so  
far as is practicable, have an unobstructed view in all directions.\*  
    [\* For guidance purposes, it is assumed that each ship would be fitted  
with a vertically polarized unity gain antenna at a nominal height of 9.15  
metres (30 feet) above water, a transmitter R.F. power output of 10 watts,  
and a receiver sensitivity of 2 microvolts across the input terminals for  
20 db signal-to-noise ratio.]  
    (d) Control of the VHF channels required for navigational safety shall  
be immediately available on the bridge convenient to the conning position  
and, where necessary, facilities should also be available to permit  
radiocommunications from the wings of the bridge.  
       
     Regulation 18: Radiotelephone Auto Alarms  
  
    (a) The radiotelephone auto alarm shall comply with the following  
minimum requirements:  
        (i) the frequencies of maximum response of the tuned circuits, and  
other tone selecting devices, shall be subject to a tolerance of ±1.5 per  
cent in each instance; and the response shall not fall below 50 per cent  
of the maximum response for frequencies within 3 per cent of the frequency  
of maximum response;  
        (ii) in the absence of noise and interference, the automatic  
receiving equipment shall be capable of operating from the alarm signal in  
a period of not less than four and not more than six seconds;  
        (iii) the automatic receiving equipment shall respond to the alarm  
signal, under conditions of intermittent interference caused by  
atmospherics and powerful signals other than the alarm signal, preferably  
without any manual adjustment being required during any period of watch  
maintained by the equipment;  
        (iv) the automatic receiving equipment shall not be actuated by  
atmospherics or by strong signals other than the alarm signal;  
        (v) the automatic receiving equipment shall be effective beyond  
the range at which speech transmission is satisfactory;  
        (vi) the automatic receiving equipment shall be capable of  
withstanding vibration, humidity,  changes of temperature and variations  
in power supply voltage equivalent to the severe conditions experienced on  
board ships at sea, and shall continue to operated under such conditions;  
        (vii) the automatic receiving equipment should, as far as  
practicable, give warning of faults that would prevent the apparatus from  
performing its normal functions during watch hours.  
    (b) Before a new type of radiotelephone auto alarm is approved, the  
Administration concerned shall be satisfied by practical tests, made under  
operating conditions equivalent to those obtained in practice, that the  
apparatus complies with paragraph (a) of this Regulation.  
       
     PART D RADIO LOGS   
  
       
  
     Regulation 19: Radio Logs  
  
    (a) The radio log (diary of the radio service) required by the Radio  
Regulations for a ship which is fitted with a radiotelegraph station in  
accordance with Regulation 3 or Regulation 4 of this Chapter shall be kept  
in the radiotelegraph operating room during the voyage. Every radio  
officer shall enter in the log his name, the times at which he goes on and  
off watch, and all incidents connected with the radio service which occur  
during his watch which may appear to be of importance to safety of life at  
sea. In addition, there shall be entered in the log:  
        (i) the entries required by the Radio Regulations;  
        (ii) details of the maintenance, including a record of the  
charging of the batteries, in such form as may be prescribed by the  
Administration;  
        (iii) a daily statement that the requirement of paragraph (p) of  
Regulation 10 of this Chapter has been fulfilled;  
        (iv) details of the tests of the reserve transmitter and reserve  
source of energy made under paragraph (s) of Regulation 10 of this  
Chapter;  
        (v) in ships fitted with a radiotelegraph auto alarm details of  
tests made under paragraph (c) of Regulation 11 of this Chapter;  
        (vi) details of the maintenance of the batteries, including a  
record of the charging (if applicable) required by paragraph (j) of  
Regulation 13 of this Chapter, and details of the tests required by that  
paragraph in respect of the transmitters fitted in motor lifeboats;  
        (vii) details of the maintenance of the batteries, including a  
record of the charging (if applicable) required by paragraph (i) of  
Regulation 14 of this Chapter, and details of the tests required by that  
paragraph in respect of portable radio apparatus for survival craft;  
        (viii) the time at which the listening watch was discontinued in  
accordance with paragraph (d) of Regulation 6 of this Chapter, together  
with the reason and the time at which the listening watch was resumed.  
    (b) The radio log (diary of the radio service) required by the Radio  
Regulations for a ship which is fitted with a radiotelephone station in  
accordance with Regulation 4 of this Chapter shall be kept at the place  
where listening watch is maintained. Every qualified operator, and every  
master,  officer of crew member carrying out a listening watch in  
accordance with Regulation 7 of this Chapter, shall enter in the log, with  
his name, the details of all incidents connected with the radio service  
which occur during his watch which may appear to be of importance to  
safety of life at sea. In addition, there shall be entered in the log:  
        (i) the details required by the Radio Regulations;  
        (ii) the time at which listening watch begins when the ship leaves  
port, and the time at which it ends when the ship reaches port;  
        (iii) the time at which listening watch is for any reason  
discontinued, together with the reason, and the time at which listening  
watch is resumed;  
        (iv) details of the maintenance of the batteries (if provided),  
including a record of the charging required by paragraph (1) of Regulation  
16 of this Chapter;  
        (v) details of the maintenance of the batteries, including a  
record of the charging (if applicable) required by paragraph (i) of  
Regulation 14 of this Chapter, and details of the tests required by that  
paragraph in respect of portable radio apparatus for survival craft.  
    (c) Radio logs shall be available for inspection by the officers  
authorized by the Administration to make such inspection.  
       
     CHAPTER V SAFETY OF NAVIGATION   
  
       
  
     Regulation 1: Application  
  
    This Chapter, unless otherwise expressly provided in this Chapter,  
applies to all ships on all voyages, except ships of war and ships solely  
navigating the Great Lakes of North America and their connecting and  
tributary waters as far east as the lower exit of the St. Lambert Lock at  
Montreal in the Province of Quebec, Canada.  
       
     Regulation 2: Danger Messages  
  
    (a) The master of every ship which meets with dangerous ice, a  
dangerous derelict, or any other direct danger to navigation, or a  
tropical storm, or encounters sub-freezing air temperatures associated  
with gale force winds causing severe ice accretion on superstructures, or  
winds of force 10 or above on the Beaufort scale for which no storm  
warning has been received, is bound to communicate the information by all  
the means at his disposal to ships in the vicinity, and also to the  
competent authorities at the first point on the coast with which he can  
communicate. The form in which the information is sent is not obligatory.  
It may be transmitted either in plain language (preferably English) or by  
means of the International Code of Signals. It should be broadcast to all  
ships in the vicinity and sent to the first point on the coast to which  
communication can be made, with a request that it be transmitted to the  
appropriate authorities.  
    (b) Each Contracting government will take all steps necessary to  
ensure that when intelligence of any of the dangers specified in  
paragraph (a) of this Regulation is received, it will be promptly  
brought to the knowledge of those concerned and communicated to other  
interested Governments.  
    (c) The transmission of messages respecting the dangers specified is  
free of cost to the ships concerned.  
    (d) All radio messages issued under paragraph (a) of this Regulation  
shall be preceded by the Safety Signal, using the procedure as prescribed  
by the Radio Regulations as defined in Regulation 2 of Chapter IV.  
       
     Regulation 3: Information required in Danger Messages  
  
    The following information is required in danger messages:  
    (a) Ice, Derelicts and other Direct Dangers to Navigation  
        (i) The kind of ice, derelict of danger observed.  
        (ii) The position of the ice, derelict or danger when last  
observed.  
        (iii) The time and date (Greenwich Mean Time) when danger last  
observed.  
    (b) Tropical Storms (Hurricanes in the West Indies, Typhoons in the  
China Sea, Cyclones in Indian waters, and storms of a similar nature in  
other regions)  
        (i) A statement that a tropical storm has been encountered. This  
obligation should be interpreted in a broad spirit, and information  
transmitted whenever the master has good reason to believe that a tropical  
storm is developing or exists in his neighbourhood.  
        (ii) Time, date (Greenwich Mean Time) and position of ship when  
the observation was taken.  
        (iii) As much of the following information as is practicable  
should be included in the message:  
            -- barometric pressure, preferably corrected (stating  
millibars, millimetres, or inches, and whether corrected or uncorrected);  
            -- barometric tendency (the change in barometric pressure  
during the past three hours);  
            -- true wind direction;  
            -- wind force (Beaufort scale);  
            -- state of the sea (smooth, moderate, rough, high);  
            -- swell (slight, moderate, heavy) and the true direction from  
which it comes. Period or length of swell (short, average, long) would  
also be of value;  
            -- true course and speed of ship.  
    (c) Subsequent Observations  
    When a master has reported a tropical or other dangerous storm, it is  
desirable, but not obligatory, that further observations be made and  
transmitted hourly, if practicable, but in any case at intervals of not  
more than three hours, so long as the ship remains under the influence of  
the storm.  
    (d) Winds of force 10 or above on the Beaufort scale for which no  
storm warning has been received  
    This is intended to deal with storms other than the tropical storms  
referred to in paragraph (b) of this Regulation; when such a storm is  
encountered, the message should contain similar information to that listed  
under that paragraph but excluding the details concerning sea and swell.  
    (e) Sub-freezing air temperatures associated with gale force winds  
causing severe ice accretion on superstructures  
        (i) Time and date (Greenwich Mean Time).  
        (ii) Air temperature.  
        (iii) Sea temperature (if practicable).  
        (iv) Wind force and direction.  
            Examples  
    Ice  
    TTT Ice. Large berg sighted in 4605 N., 4410 W., at 0800 GMT. May 15.  
    Derelicts  
    TTT Derelict. Observed derelict almost submerged in 4006 N., 1243 W.,  
at 1630 GMT. April 21.  
    Danger to Navigation  
    TTT Navigation. Alpha lightship not on station. 1800 GMT. January 3.  
    Tropical Storm  
    TTT Storm. 0030 GMT. August 18. 2004 N., 11354 E. Barometer corrected  
994 millibars, tendency down 6 millibars. Wind NW., force 9, heavy  
squalls. Heavy easterly swell. Course 067, 5 knots.  
    TTT Storm. Appearances indicate approach of hurricane. 1300 GMT.  
September 14. 2200 N., 7236 W. Barometer corrected 29.64 inches, tendency  
down .015 inches. Wind NE., force 8, frequent rain squalls. Course 035, 9  
knots.  
    TTT Storm. Conditions indicate intense cyclone has formed. 0200 GMT.  
May 4. 1620 N., 9203 E. Barometer uncorrected 753 millimetres, tendency  
down 5 millimetres. Wind S. by W., force 5. Course 300, 8 knots.  
    TTT Storm. Typhoon to southeast. 0300 GMT. June 12. 1812 N., 12605 E.  
Barometer falling rapidly. Wind increasing from N.  
    TTT Storm. Wind force 11, no storm warning received. 0300 GMT. May 4.  
4830 N.,  30 W. Barometer corrected 983 millibars, tendency down 4  
millibars. Wind SW., force 11 veering. Course 260,6 knots.  
    Icing  
    TTT experiencing severe icing. 1400 GMT. March 2. 69 N., 10 W. Air  
temperature 18. Sea temperature 29. Wind NE., force 8.  
       
     Regulation 4: Meteorological Services  
  
    (a) The Contracting Governments undertake to encourage the collection  
of meteorological data by ships at sea and to arrange for their  
examination, dissemination and exchange in the manner most suitable for  
the purpose of aiding navigation. Administrations shall encourage the use  
of instruments of a high degree of accuracy, and shall facilitate the  
checking of such instruments upon request.  
    (b) In particular, the Contracting Governments undertake to co-operate  
in carrying out,  as far as practicable, the following meteorological  
arrangements:  
        (i) To warn ships of gales, storms and tropical storms, both by  
the issue of radio messages and by the display of appropriate signals at  
coastal points.  
        (ii) To issue daily, by radio, weather bulletins suitable for  
shipping, containing data of existing weather, waves and ice, forecasts  
and, when practicable, sufficient additional information to enable simple  
weather charts to be prepared at sea and also to encourage the  
transmission of suitable facsimile weather charts.  
        (iii) To prepare and issue such publications as may be necessary  
for the efficient conduct of meteorological work at sea and to arrange, if  
practicable, for the publication and making available of daily weather  
charts for the information of departing ships.  
        (iv) To arrange for selected ships to be equipped with tested  
instruments (such as a barometer, a barograph, a psychrometer, and  
suitable apparatus for measuring sea temperature) for use in this service,  
and to take meteorological observations at main standard times for surface  
synoptic observations (at least four times daily,  whenever circumstances  
permit) and to encourage other ships to take observations in a modified  
form, particularly when in areas where shipping is sparse; these ships to  
transmit their observations by radio for the benefit of the various  
official meteorological services, repeating the information for the  
benefit of ships in the vicinity. When in the vicinity of a tropical  
storm, or of a suspected tropical storm,  ships should be encouraged to  
take and transmit their observations at more frequent intervals whenever  
practicable, bearing in mind navigational preoccupations of ships\'  
officers during storm conditions.  
        (v) To arrange for the reception and transmission by coast radio  
stations of weather messages from and to ships. Ships which are unable to  
communicate direct with shore shall be encouraged to relay their weather  
messages through ocean weather ships or through other ships which are in  
contact with shore.  
        (vi) To encourage all masters to inform ships in the vicinity and  
also shore stations whenever they experience a wind speed of 50 knots or  
more (force 10 on the Beaufort scale).  
        (vii) To endeavour to obtain a uniform procedure in regard to the  
international meteorological services already specified, and, as far as is  
practicable, to conform to the Technical Regulations and recommendations  
made by the World Meteorological Organization, to which the Contracting  
Governments may refer for study and advice any meteorological question  
which may arise in carrying out the present Convention.  
    (c) The information provided for in this Regulation shall be furnished  
in form for transmission and transmitted in the order of priority  
prescribed by the Radio Regulations, and during transmission "to all  
stations" of meteorological information, forecasts and warnings,  all ship  
stations must conform to the provisions of the Radio Regulations.  
    (d) Forecasts, warnings, synoptic and other meteorological reports  
intended for ships shall be issued and disseminated by the national  
service in the best position to serve various zones and areas, in  
accordance with mutual arrangements made by the Contracting Governments  
concerned.  
       
     Regulation 5: Ice Patrol Service  
  
    (a) The Contracting Governments undertake to continue an ice patrol  
and a service for study and observation of ice conditions in the North  
Atlantic. During the whole of the ice season the south-eastern, southern  
and south-western limits of the regions of icebergs in the vicinity of the  
Grand Banks of Newfoundland shall be guarded for the purpose of informing  
passing ships of the extent of this dangerous region; for the study of ice  
conditions in general; and for the purpose of affording assistance to  
ships and crews requiring aid within the limits of operation of the patrol  
ships. During the rest of the year the study and observation of ice  
conditions shall be maintained as advisable.  
    (b) Ships and aircraft used for the ice patrol service and the study  
and observation of ice conditions may be assigned other duties by the  
managing Government, provided that such other duties do not interfere with  
their primary purpose or increase the cost of this service.  
       
     Regulation 6: Ice Patrol Management and Cost  
  
    (a) The Government of the United States of America agrees to continue  
the management of the ice patrol service and the study and observation of  
ice conditions, including the dissemination of information received  
therefrom. The Contracting Governments specially interested in these  
services undertake to contribute to the expense of maintaining and  
operating these services; each contribution to be based upon the total  
gross tonnage of the vessels of each contributing Government passing  
through the regions of icebergs guarded by the Ice Patrol; in particular,  
each Contracting Government specially interested undertakes to contribute  
annually to the expense of maintaining and operating these services a sum  
determined by the ratio which the total gross tonnage of that Contracting  
Government\'s vessels passing during the ice season through the regions of  
icebergs guarded by the Ice Patrol bears to the combined total gross  
tonnage of the vessels of all contributing Governments passing during the  
ice season through the regions of icebergs guarded by the Ice Patrol.  
Non-contracting Governments specially interested may contribute to the  
expense of maintaining and operating these services on the same basis. The  
managing Government will furnish annually to each contributing Government  
a statement of the total cost of maintaining and operating the Ice Patrol  
and of the proportionate share of each contributing Government.  
    (b) Each of the contributing Governments has the right to alter or  
discontinue its contribution,  and other interested Governments may  
undertake to contribute to the expense. The contributing Government which  
avails itself of this right will continue responsible for its current  
contribution up to September 1 following the date of giving notice of  
intention to alter or discontinue its contribution. To take advantage of  
the said right it must give notice to the managing Government at least six  
months before the said September 1.  
    (c) If, at any time, the United States Government should desire to  
discontinue these services, or if one of the contributing Governments  
should express a wish to relinquish responsibility for its pecuniary  
contribution, or to have its contribution altered, or another Contracting  
Government should desire to undertake to contribute to the expense, the  
contributing Governments shall settle the question in accordance with  
their mutual interests.  
    (d) The contributing Governments shall have the right by common  
consent to make from time to time such alterations in the provisions of  
this Regulation and of Regulation 5 of this Chapter as appear desirable.  
    (e) Where this Regulation provides that a measure may be taken after  
agreement among the contributing Governments, proposals made by any  
Contracting Government for effecting such a measure shall be communicated  
to the managing Government which shall approach the other contributing  
Governments with a view to ascertaining whether they accept such  
proposals, and the results of the enquiries thus made shall be sent to the  
other contributing Governments and the Contracting Government making the  
proposals. In particular,  the arrangements relating to contributions to  
the cost of the services shall be reviewed by the contributing Governments  
at intervals not exceeding three years. The managing Government shall  
initiate the action necessary to this end.  
       
     Regulation 7: Speed Near Ice  
  
    When ice is reported on or near his course the master of every ship at  
night is bound to proceed at a moderate speed or to alter his course so as  
to go well clear of the danger zone.  
       
     Regulation 8: Routeing  
  
    (a) The practice of following, particularly in converging areas,  
routes adopted for the purpose of separation of traffic including  
avoidance of passage through areas designated as areas to be avoided by  
ships or certain classes of ships, or for the purpose of avoiding unsafe  
conditions, has contributed to the safety of navigation and is recommended  
for use by all ships concerned.  
    (b) The Organization is recognized as the only international body for  
establishing and adopting measures on an international level concerning  
routeing and areas to be avoided by ships or certain classes of ships. It  
will collate and disseminate to Contracting Governments all relevant  
information.  
    (c) The selection of the routes and the initiation of action with  
regard to them, and the delineation of what constitutes converging areas,  
will be primarily the responsibility of the Governments concerned. In the  
development of routeing schemes which impinge upon international waters,  
or such other schemes they may wish adopted by the Organization, they will  
give due consideration to relevant information published by the  
Organization.  
    (d) Contracting Governments will use their influence to secure the  
appropriate use of adopted routes and will do everything in their power to  
ensure adherence to the measures adopted by the Organization in connexion  
with routeing of ships.  
    (e) Contracting Governments will also induce all ships proceeding on  
voyages in the vicinity of the Grand Banks of Newfoundland to avoid, as  
far as practicable, the fishing banks of Newfoundland north of latitude 43  
°N and to pass outside regions known or believed to be endangered by ice.  
       
     Regulation 9: Misuse of Distress Signals  
  
    The use of an international distress signal, except for the purpose of  
indicating that a ship or aircraft is in distress, and the use of any  
signal which may be confused with an international distress signal, are  
prohibited on every ship or aircraft.  
       
     Regulation 10: Distress Message-Obligations and Procedures  
  
    (a) The master of a ship at sea, on receiving a signal from any source  
that a ship or aircraft or survival craft thereof is in distress, is bound  
to proceed with all speed to the assistance of the persons in distress  
informing them if possible that he is doing so. If he is unable or, in the  
special circumstances of the case, considers it unreasonable or  
unnecessary to proceed to their assistance, he must enter in the logbook  
the reason for failing to proceed to the assistance of the persons in  
distress.  
    (b) The master of a ship in distress, after consultation, so far as  
may be possible, with the masters of the ships which answer his call for  
assistance, has the right to requisition such one or more of those ships  
as he considers best able to render assistance, and it shall be the duty  
of the master or masters of the ship or ships requisitioned to comply with  
the requisition by continuing to proceed with all speed to the assistance  
of persons in distress.  
    (c) The master of a ship shall be released from the obligation imposed  
by paragraph (a)  of this Regulation when he learns that one or more ships  
other than his own have been requisitioned and are complying with the  
requisition.  
    (d) The master of a ship shall be released from the obligation imposed  
by paragraph (a) of this Regulation, and, if his ship has been  
requisitioned, from the obligation imposed by paragraph (b) of this  
Regulation, if he is informed by the persons in distress or by the master  
of another ship which has reached such persons that assistance is no  
longer necessary.  
    (e) The provisions of this Regulation do not prejudice the  
International Convention for the unification of certain rules with regard  
to Assistance and Salvage at Sea, signed at Brussels on September 23,  
1910, particularly the obligation to render assistance imposed by Article  
11 of that Convention.  
       
     Regulation 11: Signalling Lamps  
  
    All ships of over 150 tons gross tonnage, when engaged on  
international voyages, shall have on board an efficient daylight  
signalling lamp which shall not be solely dependent upon the ship\'s main  
source of electrical power.  
       
     Regulation 12: Shipborne Navigational Equipment  
  
    (a) All ships of 1,600 tons gross tonnage and upwards shall be fitted  
with a radar of a type approved by the Administration. Facilities for  
plotting radar readings shall be provided on the bridge in those ships.  
    (b) All ships of 1,600 tons gross tonnage and upwards, when engaged on  
international voyages, shall be fitted with radio direction-finding  
apparatus complying with the provisions of Regulation 12 of Chapter IV.  
The Administration may, in areas where it considers it unreasonable or  
unnecessary for such apparatus to be carried, exempt any ship of less than  
5,000 tons gross tonnage from this requirement, due regard being had to  
the fact that radio direction-finding apparatus is of value both as a  
navigational instrument and as an aid to locating ships,  aircraft or  
survival craft.  
    (c) All ships of 1,600 tons gross tonnage and upwards, when engaged on  
international voyages, shall be fitted with a gyro-compass in addition to  
the magnetic compass. The Administration,  if it considers it unreasonable  
or unnecessary to require a gyro-compass, may exempt any ship of less than  
5,000 tons gross tonnage from this requirement.  
    (d) All new ships of 500 tons gross tonnage and upwards, when engaged  
on international voyages,  shall be fitted with an echo-sounding device.  
    (e) Whilst all reasonable steps shall be taken to maintain the  
apparatus in an efficient condition, malfunction of the radar equipment,  
the gyro-compass or the echo-sounding device shall not be considered as  
making the ship unseaworthy or as a reason for delaying the ship in ports  
where repair facilities are not readily available.  
    (f) All new ships of 1,600 tons gross tonnage and upwards, when  
engaged on international voyages,  shall be fitted with radio equipment  
for homing on the radiotelephone distress frequency complying with the  
relevant provisions or paragraph (b) of Regulation 12 of Chapter IV.  
       
     Regulation 13: Manning  
  
    The Contracting Governments undertake, each for its national ships, to  
maintain, or, if it is necessary, to adopt, measures for the purpose of  
ensuring that, from the point of view of safety of life at sea, all ships  
shall be sufficiently and efficiently manned.  
       
     Regulation 14: Aids to Navigation  
  
    The Contracting Governments undertake to arrange for the establishment  
and maintenance of such aids to navigation, including radio beacons and  
electronic aids as, in their opinion, the volume of traffic justifies and  
the degree of risk requires, and to arrange for information relating to  
these aids to be made available to all concerned.  
       
     Regulation 15: Search and Rescue  
  
    (a) Each Contracting Government undertakes to ensure that any  
necessary arrangements are made for coast watching and for the rescue of  
persons in distress at sea round its coasts. These arrangements should  
include the establishment, operation and maintenance of such maritime  
safety facilities as are deemed practicable and necessary having regard to  
the density of the seagoing traffic and the navigational dangers and  
should, so far as possible,  afford adequate means of locating and  
rescuing such persons.  
    (b) Each Contracting Government undertakes to make available  
information concerning its existing rescue facilities and the plans for  
changes therein, if any.  
       
     Regulation 16: Life-Saving Signals  
  
    The following signals shall be used by life-saving stations and  
maritime rescue units when communicating with ships or persons in distress  
and by ships or persons in distress when communicating with life-saving  
stations and maritime rescue units. The signals used by aircraft engaged  
in search and rescue operations to direct ships are indicated in paragraph  
(d) below. An illustrated table describing the signals listed below shall  
be readily available to the officer of the watch of every ship to which  
this Chapter applies.  
    (a) Replies from life-saving stations or maritime rescue units to  
distress signals made by a ship or person:  
|-----------------------------------------------------------------------------------------  
|                  Signal                          Signification  
|By day-Orange smoke signal or  
|combined light and sound signal  
|(thunderlight) consisting of three              "You are seen-assistance will be  
|single signals which are fired at intervals     given as soon as possible."  
|of approximately one minute.                     (Repetition of such signals shall have  
|By night-White star rocket consisting            the same meaning.)  
| of three single signals which are  
|fired at intervals of approximately  
|one minute.  
|-----------------------------------------------------------------------------------------  
    If necessary the day signals may be given at night or the night signals by day.  
    (b) Landing signals for the guidance of small boats with crews or persons in distress:  
|-----------------------------------------------------------------------------------------  
|                      Signal                     Signification  
|-----------------------------------------------------------------------------------------  
|By day-Vertical motion of a white flag or the  
|arms or firing of a green star-signal or  
|signalling the code letter zx "K" (-.-) given  
|by light or sound-signal apparatus.  
|By night-Vertical motion of a white light        "This is the best place to land."  
|or flare, or firing of a green star-signal or  
|signalling the code letter "K" (-.-) given by  
|light or sound-signal apparatus, A range  
|(indication of direction) may be given  
|by placing a steady white light or flare at  
|a lower level and in line with the observer.  
|-----------------------------------------------------------------------------------------  
|By day-Horizontal motion of a  
|white flag or arms extended horizontally  
|or firing of a red star-signal or  
|signalling the code letter "S" (...)  
|given by light or sound-signal apparatus.        "Landing here highly dangerous."  
By night-Horizontal motion of a  
white light or flare or firing of a red  
star-signal or signalling the code  
letter "S" (...) given by light or sound  
signal apparatus.  
|-----------------------------------------------------------------------------------------  
|By day-Horizontal motion of a  
|white flag, followed by the placing of  
|the white flag in the ground and the  
|carrying of another white flag in the  
|direction to be indicated or firing of a  
|red star-signal vertically and a white  
|star-signal in the direction towards                     "Landing here highly dangerous. A  
|the better landing place or signalling                  more favourable location for landing  
|the code letter "S" (...) followed by                      is in the direction indicated."  
|the code letter "R" (.-.) if a better  
|landing place for the craft in distress  
|is located more to the right in the  
|direction of approach or the code  
|letter "L" (.-..) if a better landing  
|place for the craft in distress is  
|located more to the left in the direction of approach.  
|  
|-----------------------------------------------------------------------------------------  
|By night-Horizontal motion of a  
|white light or flare, followed by the  
|placing of the white light or flare on  
|the ground and the carrying of  
|another white light or flare in the  
|direction to be indicated or firing of a  
|red star-signal vertically and a white  
|star-signal in the direction towards          "Landing here highly dangerous. A  
|the better landing place or signalling       more favourable location for landing  
|the code letter "S" (...) followed by           is in the direction indicated."  
|code letter "R" (.-.) if a better  
|landing place for the craft in distress  
|is located more to the right in the  
|direction of approach or the code  
|letter "L" (.-..) if a better landing  
|place for the craft in distress is located  
|more to the left of the direction  
|of approach.  
|-----------------------------------------------------------------------------------------  
    (c) Signals to be employed in connexion with the use of shore  
life-saving apparatus:  
 ------------------------------------------------------------------------  
By day-Vertical motion of a white         In general-"Affirmative".  
flag or the arms or firing of a green     Specifically:  
star-signal                              "Rocket line is held."  
By night-Vertical motion of a white       "Tail block is made fast."  
light or flare of firing of a green       "Hawser is made fast."  
star-signal.                              "Man is in the breeches buoy."  
                                           "Haul away."  
 ------------------------------------------------------------------------  
By day-Horizontal motion of a white  
flag or arms extended horizontally         In general-"Negative."  
or firing of a red star-signal.            Specifically:  
By night-Horizontal motion of a           "Slack away."  
white light or flare or firing of a red    "A vast hauling."  
star-signal.  
 ------------------------------------------------------------------------  
    (d) Signals used by aircraft engaged on search and rescue operations  
to direct ships towards an aircraft, ship or person in distress (see  
explanatory Note below):  
        (i) The following procedures performed in sequence by an aircraft  
mean that the aircraft is directing a surface craft towards an aircraft or  
a surface craft in distress:  
            (1) circling the surface craft at least once;  
            (2) crossing the projected course of the surface craft close  
ahead at a low altitude,  opening and closing the throttle or changing the  
propeller pitch;  
            (3) heading in the direction in which the surface craft is to  
be directed.  
            Repetition of such procedures has the same meaning.  
        (ii) The following procedure performed by an aircraft means that  
the assistance of the surface craft to which the signal is directed is no  
longer required:  
            --crossing the wake of the surface craft close astern at a low  
altitude, opening and closing the throttle or changing the propeller  
pitch.  
    Note: Advance notification of changes in these signals will be given  
by the Organization as necessary.  
       
     Regulation 17: Pilot Ladders and Mechanical Pilot Hoists  
  
    Ships engaged on voyages in the course of which pilots are likely to  
be employed shall comply with the following requirements:  
    (a) Pilot Ladders  
        (i) The ladder shall be efficient for the purpose of enabling  
pilots to embark and disembark safely, kept clean and in good order and  
may be used by officials and other persons while a ship is arriving at or  
leaving a port.  
        (ii) The ladder shall be secured in a position so that it is clear  
from any possible discharges from the ship, that each step rests firmly  
against the ship\'s side, that it is clear so far as is practicable of the  
finer lines of the ship and that the pilot can gain safe and convenient  
access to the ship after climbing not less than 1.5 metres (5 feet) and  
not more than 9 metres (30 feet). A single length of ladder shall be used  
capable of reaching the water from the point of access to the ship;  in  
providing for this due allowance shall be made for all conditions of  
loading and trim of the ship and for an adverse list of 15 degrees.  
whenever the distance from sea level to the point of access to the ship is  
more than 9 metres (30 feet), access from the pilot ladder to the ship  
shall be by means of an accommodation ladder or other equally safe and  
convenient means.  
        (iii) The steps of the pilot ladder shall be:  
            (1) of hardwood, or other material of equivalent properties,  
made in one piece,  free of knots, having an efficient non-slip surface;  
the four lowest steps may be made of rubber of sufficient strength and  
stiffness or of other suitable material of equivalent characteristics;  
            (2) not less than 480 millimetres (19 inches) long, 115  
millimetres (4 1/2 inches) wide, and 25 millimetres (1 inch) in depth,  
excluding any non-slip device;  
            (3) equally spaced not less than 300 millimetres (12 inches)  
nor more than 380 millimetres (15 inches) apart and be secured in such a  
manner that they will remain horizontal.  
        (iv) No pilot ladder shall have more than two replacement steps  
which are secured in position by a method different from that used in the  
original construction of the ladder and any steps so secured shall be  
replaced as soon as reasonably practicable by steps secured in position by  
the method used in the original construction of the ladder. When any  
replacement step is secured to the side ropes of the ladder by means of  
grooves in the sides of the step, such grooves shall be in the longer  
sides of the step.  
        (v) The side ropes of the ladder shall consist of two uncovered  
manila ropes not less than 60 millimetres (2 1/4 inches) in circumference  
on each side. Each rope shall be continuous with no joints below the top  
step. Two man-ropes properly secured to the ship and not less than 65  
millimetres (2 1/2 inches) in circumference and a safety line shall be  
kept at hand ready for use if required.  
        (vi) Battens made of hardwood, or other material of equivalent  
properties, in one piece and not less than 1.80 metres (5 feet 10 inches)  
long shall be provided at such intervals as will prevent the pilot ladder  
from twisting. The lowest batten shall be on the fifth step from the  
bottom of the ladder and the interval between any batten and the next  
shall not exceed 9 steps.  
        (vii) Means shall be provided to ensure safe and convenient  
passage on to or into and off the ship between the head of the pilot  
ladder or of any accommodation ladder or other appliance provided. Where  
such passage is by means of a gateway in the rails or bulwark, adequate  
handholds shall be provided. Where such passage is by means of a bulwark  
ladder, such ladder shall be securely attached to the bulwark rail or  
platform and two handhold stanchions shall be fitted at the point of  
boarding or leaving the ship not less than 0.70 metre (2 feet 3 inches)  
nor more than 0.80 metre  (2 feet 7 inches) apart. Each stanchion shall be  
rigidly secured to the ship\'s structure at or near its base and also at a  
higher point, shall be not less than 40 millimetres (1 1/2 inches) in  
diameter and shall extend not less than 1.20 metres (3 feet 11 inches)  
above the top of the bulwark.  
        (viii) Lighting shall be provided at night such that both the  
pilot ladder overside and also the position where the pilot boards the  
ship shall be adequately lit. A lifebuoy equipped with a self-igniting  
light shall be kept at hand ready for use. A heaving line shall be kept at  
hand ready for use if required.  
        (ix) Means shall be provided to enable the pilot ladder to be used  
on either side of the ship.  
        (x) The rigging of the ladder and the embarkation and  
disembarkation of a pilot shall be supervised by a responsible officer of  
the ship.  
        (xi) Where on any ship constructional features such as rubbing  
bands would prevent the implementation of any of these provisions, special  
arrangements shall be made to the satisfaction of the Administration to  
ensure that persons are able to embark and disembark safely.  
    (b) Mechanical Pilot Hoists  
        (i) A mechanical pilot hoist, if provided, and its ancillary  
equipment shall be of a type approved by the Administration. It shall be  
of such design and construction as to ensure that the pilot can be  
embarked and disembarked in a safe manner including a safe access from the  
hoist to the deck and vice versa.  
        (ii) A pilot ladder complying with the provisions of paragraph (a)  
of this Regulation shall be kept on deck adjacent to the hoist and  
available for immediate use.  
       
     Regulation 18: VHF Radiotelephone Stations  
  
    When a Contracting Government requires ships navigating in an area  
under its sovereignty to be provided with a Very High Frequency (VHF)  
radiotelephone station to be used in conjunction with a system which it  
has established in order to promote safety of navigation,  such station  
shall comply with the provisions of Regulation 17 of Chapter IV and shall  
be operated in accordance with Regulation 8 of Chapter IV.  
       
     Regulation 19: Use of the Automatic Pilot  
  
    (a) In areas of high traffic density, in conditions of restricted  
visibility and in all other hazardous navigational situations where the  
automatic pilot is used, it shall be possible to establish human control  
of the ship\'s steering immediately.  
    (b) In circumstances as above, it shall be possible for the officer of  
the watch to have available without delay the services of a qualified  
helmsman who shall be ready at all times to take over steering control.  
    (c) The change-over from automatic to manual steering and vice versa  
shall be made by or under the supervision of a responsible officer.  
       
     Regulation 20: Nautical Publications  
  
    All ships shall carry adequate and up-to-date charts, sailing  
directions, lists of lights,  notices to mariners, tide tables and all  
other nautical publications necessary for the intended voyage.  
       
     Regulation 21: International Code of Signals  
  
    All ships which in accordance with the present Convention are required  
to carry a radiotelegraph or a radiotelephone installation shall carry the  
International Code of Signals. This publication shall also be carried by  
any other ship which in the opinion of the Administration has a need to  
use it.  
       
     CHAPTER VI CARRIAGE OF GRAIN  
  
  
       
     PART A GENERAL PROVISIONS   
  
       
  
     Regulation 1: Application  
  
    Unless expressly provided otherwise, this Chapter, including Parts A,  
B and C, applies to the carriage of grain in all ships to which the  
present Regulations apply.  
       
     Regulation 2: Definitions  
  
    (a) The term "grain" includes wheat, maize (corn), oats, rye, barley,  
rice, pulses,  seeds and processed forms thereof, whose behaviour is  
similar to that of grain in its natural state.  
    (b) The term "filled compartment" refers to any compartment in which,  
after loading and trimming as required under Regulation 3, the bulk grain  
is at its highest possible level.  
    (c) The term "partly filled compartment" refers to any compartment  
wherein bulk grain is not loaded in the manner prescribed in paragraph (b)  
of this Regulation.  
    (d) The term "angle of flooding" (θ ) means an angle of heel at which  
openings in the hull, superstructures or deckhouses, which cannot be  
closed weathertight, immerse. In applying this definition, small openings  
through which progressive flooding cannot take place need not be  
considered as open.  
       
     Regulation 3: Trimming of Grain  
  
    All necessary and reasonable trimming shall be performed to level all  
free grain surfaces and to minimize the effect of grain shifting.  
    (a) In any "filled compartment", the bulk grain shall be trimmed so as  
to fill all the spaces under the decks and hatch covers to the maximum  
extent possible.  
    (b) After loading, all free grain surfaces in "partly filled  
compartments" shall be level.  
    (c) The Administration issuing the document of authorization may,  
under Regulation 9 of this Chapter, grant dispensation from trimming in  
those cases where the underdeck void geometry resulting from free flowing  
grain into a compartment, which may be provided with feeding ducts,  
perforated decks or other similar means, is taken into account to its  
satisfaction when calculating the void depths.  
       
     Regulation 4: Intact Stability Requirements  
  
    (a) The calculations required by this Regulation shall be based upon  
the stability information provided in accordance with Regulation 19 of  
Chapter II-1, of the present Convention, or with the requirements of the  
Administration issuing the document of authorization under Regulation 10  
of this Chapter.  
    (b) The intact stability characteristics of any ship carrying bulk  
grain shall be shown to meet, throughout the voyage, at least the  
following criteria after taking into account in the manner described in  
Part B, the heeling moments due to grain shift:  
        (i) the angle of heel due to the shift of grain shall be not  
greater than 12 degrees except that an Administration giving authorization  
in accordance with Regulation 10 of this Chapter may require a lesser  
angle of heel if it considers that experience shows this to be necessary.\*  
    [\* For example, the permissible angle of heel might be limited to the  
angle of heel at which the edge of the weather deck would be immersed in  
still water.]  
        (ii) in the statical stability diagram, the net or residual area  
between the heeling arm curve and the righting arm curve up to the angle  
of heel of maximum difference between the ordinates of the two curves, or  
40 degrees or the "angle of flooding"  
 (θ ), whichever is the least, shall in all conditions of loading be not  
   f less than 0.075 metre-radians; and  
        (iii) the initial metacentric height, after correction for the  
free surface effects of liquids in tanks, shall be not less than 0.30  
metre.  
    (c) Before loading bulk grain the master shall, if so required by the  
Contracting Government of the country of the port of loading, demonstrate  
the ability of the ship at all stages of any voyage to comply with the  
stability criteria required by paragraph (b) of this Regulation using the  
information approved and issued under Regulations 10 and 11 of this  
Chapter.  
    (d) After loading, the master shall ensure that the ship shall be  
upright before proceeding to sea.  
       
     Regulation 5: Longitudinal Divisions and Saucers  
  
    (a) In both "filled compartments" and "partly filled compartments",  
longitudinal divisions may be provided as a device either to reduce the  
adverse heeling effect of grain shift or to limit the depth of cargo used  
for securing the grain surface. Such divisions shall be fitted grain-tight  
and constructed in accordance with the provisions of Section I of Part C  
of this Chapter.  
    (b) In a "filled compartment", a division, if fitted to reduce the  
adverse effects of grain shift, shall:  
        (i) in a \'tween-deck compartment extend from deck to deck; and  
        (ii) in a hold extend downwards from the underside of the deck or  
hatch covers as described in Section II of Part B of this Chapter.  
    Except in the case of linseed and other seeds having similar  
properties, a longitudinal division beneath a hatchway may be replaced by  
a saucer formed in the manner described in Section I of Part C of this  
Chapter.  
    (c) In a "partly filled compartment", a division, if fitted, shall  
extend from one-eighth of the maximum breadth of the compartment above the  
level of the grain surface and to the same distance below the grain  
surface. When used to limit the depth of overstowing, the height of the  
centreline division shall be at least 0.6 metre above the level grain  
surface.  
    (d) Furthermore, the adverse heeling effects of grain shift may be  
reduced by tightly stowing the wings and ends of a compartment with bagged  
grain or other suitable cargo adequately restrained from shifting.  
       
     Regulation 6: Securing  
  
    (a) Unless account is taken of the adverse heeling effect due to grain  
shift in accordance with these Regulations, the surface of the bulk grain  
in any "partly filled compartment" shall be level and topped off with  
bagged grain tightly stowed and extending to a height of not less than  
one-sixteenth of the maximum breadth of the free grain surface or 1.2  
metres, whichever is the greater. Instead of bagged grain, other suitable  
cargo exerting at least the same pressure may be used.  
    (b) The bagged grain or such other suitable cargo shall be supported  
in the manner described in Section II of Part C of this Chapter.  
Alternatively, the bulk grain surface may be secured by strapping or  
lashing as described in that Section.  
       
     Regulation 7: Feeders and Trunks  
  
    If feeders or trunks are fitted, proper account shall be taken of the  
effects thereof when calculating the heeling moments as described in  
Section III of Part B of this Chapter. The strength of the divisions  
forming the boundaries of such feeders shall conform with the provisions  
of Section I of Part C of this Chapter.  
       
     Regulation 8: Combination Arrangements  
  
    Lower holds and \'tween-deck spaces in way thereof may be loaded as one  
compartment provided that, in calculating transverse heeling moments,  
proper account is taken of the flow of grain into the lower spaces.  
       
     Regulation 9: Application of Parts B and C  
  
    An Administration or a Contracting Government on behalf of an  
Administration may authorize departure from the assumptions contained in  
Parts B and C of this Chapter in those cases where it considers this to be  
justified having regard to the provisions for loading or the structural  
arrangements, provided the stability criteria in paragraph (b) of  
Regulation 4 of this Chapter are met. Where such authorization is granted  
under this Regulation, particulars shall be included in the document of  
authorization or grain loading data.  
       
     Regulation 10: Authorization  
  
    (a) A document of authorization shall be issued for every ship loaded  
in accordance with the Regulations of this Chapter either by the  
Administration of an organization recognized by it or by a Contracting  
Government on behalf of the Administration. It shall be accepted as  
evidence that the ship is capable of complying with the requirements of  
these Regulations.  
    (b) The document shall accompany and refer to the grain loading  
stability booklet provided to enable the master to meet the requirements  
of paragraph (c) of Regulation 4 of this Chapter. This booklet shall meet  
the requirements of Regulation 11 of this Chapter.  
    (c) Such a document, grain loading stability data and associated plans  
may be drawn up in the official language or languages of the issuing  
country. If the language used is neither English nor French, the text  
shall include a translation into one of these languages.  
    (d) A copy of such a document, grain loading stability data and  
associated plans shall be placed on board in order that the master, if so  
required, shall produce them for the inspection of the Contracting  
Government of the country of the port of loading.  
    (e) A ship without such a document of authorization shall not load  
grain until the master demonstrates to the satisfaction of the  
Administration or the Contracting Government of the port of loading on  
behalf of the Administration that the ship in its proposed loaded  
condition will comply with the requirements of these Regulations.  
       
     Regulation 11: Grain Loading Information  
  
    This information shall be sufficient to allow the master to determine  
in all reasonable loading conditions the heeling moments due to grain  
shift calculated in accordance with Part B of this Chapter. It shall  
include the following:  
    (a) Information which shall be approved by the Administration or by a  
Contracting Government on behalf of the Administration:  
        (i) curves or tables of grain heeling moments for every  
compartment, filled or partly filled, or combination thereof, including  
the effects of temporary fittings;  
        (ii) tables of maximum permissible heeling moments or other  
information sufficient to allow the master to demonstrate compliance with  
the requirements of paragraph (c) of Regulation 4 of this Chapter;  
        (iii) details of the scantlings of any temporary fittings and  
where applicable the provisions necessary to meet the requirements of  
Section I (E) of Part C of this Chapter;  
        (iv) typical loaded service departure and arrival conditions and  
where necessary,  intermediate worst service conditions;  
        (v) a worked example for the guidance of the master;  
        (vi) loading instructions in the form of notes summarizing the  
requirements of this Chapter.  
    (b) Information which shall be acceptable to the Administration or to  
a Contracting Government on behalf of the Administration:  
        (i) ship\'s particulars;  
        (ii) lightship displacement and the vertical distance from the  
intersection of the moulded base line and midship section to the centre of  
gravity (KG);  
        (iii) table of free surface corrections;  
        (iv) capacities and centres of gravity.  
       
     Regulation 12: Equivalents  
  
    Where an equivalent accepted by the Administration in accordance with  
Regulation 5 of Chapter I of this Convention is applied, particulars shall  
be included in the document of authorization or grain loading data.  
       
     Regulation 13: Exemptions for Certain Voyages  
  
    The Administration, or a Contracting Government on behalf of the  
Administration may,  if it considers that the sheltered nature and  
conditions of the voyage are such as to render the application of any of  
the requirements of Regulations 3 to 12 of this Chapter unreasonable or  
unnecessary, exempt from those particular requirements individual ships or  
classes of ships.  
       
     PART B CALCULATION OF ASSUMED HEELING MOMENTS   
  
       
  
     SECTION I-DESCRIPTION OF THE ASSUMED VOIDS AND METHOD OF CALCULA-TING INTACT STABILITY  
  
(A) General  
    (a) For the purpose of calculating the adverse heeling moment due to a  
shift of cargo surface in ships carrying bulk grain it shall be assumed  
that:  
        (i) In "filled compartments" which have been trimmed in accordance  
with Regulation 3 of this Chapter a void exists under all boundary  
surfaces having an inclination to the horizontal less than 30 degrees and  
that the void is parallel to the boundary surface having an average depth  
calculated according to the formula:  
|----------------------------------|  
|            Vd=Vd +0.75(d-600)mm  |  
|                 1                |  
|----------------------------------|  
    Where:  
             Vd= Average void depth in mm;  
|---------------------------------------------------------|  
|            Vd =Standard void depth from Table I below;  |  
|              1                                          |  
|---------------------------------------------------------|  
              d= Actual girder depth in mm.  
    In no case shall Vd be assumed to be less than 100 mm.  
    TABLE I  
|----------------------------------------------------------------------|  
|   Distance from hatchend or                 Standard void depth Vd   |  
|                                                                   1  |  
|   hatchside to boundary of                                           |  
|             compartment                                              |  
|                metres                                      mm        |  
|                 0.5                                       570        |  
|                 1.0                                       530        |  
|                 1.5                                       500        |  
|                 2.0                                       480        |  
|                 2.5                                       450        |  
|                 3.0                                       440        |  
|                 3.5                                       430        |  
|                 4.0                                       430        |  
|                 4.5                                       430        |  
|                 5.0                                       430        |  
|                 5.5                                       450        |  
|                 6.0                                       470        |  
|                 6.5                                       490        |  
|                 7.0                                       520        |  
|                 7.5                                       550        |  
|                 8.0                                       590        |  
|----------------------------------------------------------------------|  
    Notes on Table I:                                             |---|  
    For distances greater than 8.0 metres the standard void depth |Vd |  
                                                                  |  1|  
                                                                  |---|  
shall be linearly extrapolated at 80 mm increase for each 1.0 metre  
increase in distance. Where there is a difference in depth between the  
hatchside girder of its continuation and the hatchend beam the greater  
depth shall be used except that:  
        (1) when the hatchside girder or its continuation is shallower  
than the hatchend beam the voids abreast the hatchway may be calculated  
using the lesser depth; and  
        (2) when the hatchend beam is shallower than the hatchside girder  
or its continuation the voids fore and aft of the hatchway inboard of the  
continuation of the hatchside girder may be calculated using the lesser  
depth;  
        (3) where there is a raised deck clear of a hatchway the average  
void depth measured from the underside of the raised deck shall be  
calculated using the standard void depth in association with a girder  
depth of the hatchend beam plus the height of the raised deck.  
        (ii) In "filled compartments" which are not trimmed in accordance  
with Regulation 3 of this Chapter and where the boundary surface has an  
inclination to the horizontal which is less than 30 degrees, the cargo  
surface has an inclination of 30 degrees to the horizontal after loading.  
        (iii) Within filled hatchways and in addition to any open void  
within the hatch cover there is a void of average depth of 150 mm measured  
down to the grain surface from the lowest part of the hatch cover or the  
top of the hatchside coaming,  whichever is the lower.  
    (b) The description of the pattern of grain surface behaviour to be  
assumed in "partly filled compartments" is shown in Section IV of this  
Part.  
    (c) For the purpose of demonstrating compliance with the stability  
criteria in paragraph (b) of Regulation 4 of this Chapter (see Figure 1),  
the ship\'s stability calculations shall be normally based upon the  
assumption that the centre of gravity of cargo in a "filled compartment"  
is at the volumetric centre of the whole cargo space. In those cases where  
the Administration authorizes account to be taken of the effect of assumed  
underdeck voids on the vertical position of the centre of gravity of the  
cargo in "filled compartments" it will be necessary to compensate for the  
adverse effect of the vertical shift of grain surfaces by increasing the  
assumed heeling moment due to the transverse shift of grain as follows:  
        total heeling moment=1.06 ×calculated transverse heeling moment.  
    In all cases the weight of cargo in a "filled compartment" shall be  
the volume of the whole cargo space divided by the stowage factor.  
    (d) In "partly filled compartments" the adverse effect of the vertical  
shift of grain surfaces shall be taken into account as follows:  
        total heeling moment=1.12 ×calculated transverse heeling moment.  
    (e) Any other equally effective method may be adopted to make the  
compensation required in paragraphs (c) and (d) above. Figure 1  
    Notes on Figure 1:  
    (1) Where:  
    |----|    Assumed Volumetric Heeling Moment due to Transverse Shift  
    | λ |=  ----------------------------------------------------------  
    |   0|  
    |----|                 Stowage Factor ×Displacement  
      |-----|          |----|  
      | λ  |=   0.8× |λ  | ;  
      |   40|          |  0 |  
      |-----|          |----|  
        Stowage factor = Volume per unit weight of grain cargo;  
        Displacement = Weight of ship, fuel, fresh water, stores etc. and  
cargo.  
    (2) The righting arm curve shall be derived from cross-curves which  
are sufficient in number to accurately define the curve for the purpose of  
these requirements and shall include cross-curves at 12 degrees and 40  
degrees.  
       
     SECTION II-ASSUMED VOLUMETRIC HEELING MOMENT OF A FILLED COMPART-MENT  
  
(A) General  
    (a) The pattern of grain surface movement relates to a transverse  
section across the portion of the compartment being considered and the  
resultant heeling moment should be multiplied by the length to obtain the  
total moment for that portion.  
    (b) The assumed transverse heeling moment due to grain shifting is a  
consequence of final changes of shape and position of voids after grain  
has moved from the high side to the low side.  
    (c) The resulting grain surface after shifting shall be assumed to be  
at 15 degrees to the horizontal.  
    (d) In calculating the maximum void area that can be formed against a  
longitudinal structural member, the effects of any horizontal surfaces,  
e.g. flanges or face bars, shall be ignored.  
    (e) The total areas of the initial and final voids shall be equal.  
    (f) A discontinuous longitudinal division shall be considered  
effective over its full length.  
(B) Assumptions  
    In the following paragraphs it is assumed that the total heeling  
moment for a compartment is obtained by adding the results of separate  
considerations of the following portions:  
    (a) Before and abaft hatchways:  
        (i) If a compartment has two or more main hatchways through which  
loading may take place the depth of the underdeck void for the portion (s)  
between such hatchways shall be determined using the fore and aft distance  
to the midpoint between the hatchways.  
        (ii) After the assumed shift of grain the final void pattern shall  
be as shown in Figure 2 below: Figure 2  
    Notes on Figure 2:  
    (1) If the maximum void area which can be formed against the girder at  
B is less than the initial area of the void under AB, i.e. AB×Vd, the  
excess area shall be assumed to transfer to the final void on the high  
side.  
    (2) If the longitudinal division at C is one which has been provided  
in accordance with sub-paragraph (b) (ii) of Regulation 5 of this Chapter  
it shall extend to at least 0.6 metre below D or E whichever gives the  
greater depth.  
    (b) In and abreast hatchways:  
    After the assumed shift of grain the final void pattern shall be as  
shown in the following Figure 3 or figure 4. Figure 3  
    Notes on Figure 3:  
    (1) AB Any area in excess of that which can be formed against the  
girder at B shall transfer to the final void area in the hatchway.  
    (2) CD Any area in excess of that which can be formed against the  
girder at E shall transfer to the final void area on the high side.  
Figure 4: ommited.  
    Notes on Figure 4:  
    (1) If the centreline division is one which has been provided in  
accordance with sub-paragraph (b)  (ii) of Regulation 5 of this Chapter it  
shall extend to at least 0.6 metre below H or J whichever gives the  
greater depth.  
    (2) The excess void area from AB shall transfer to the low side half  
of the hatchway in which two separate final void areas will be formed viz.  
one against the centreline division and the other against the hatchside  
coaming and girder on the high side.  
    (3) If a bagged saucer or bulk bundle is formed in a hatchway it shall  
be assumed, for the purpose of calculating transverse heeling moment, that  
such a device is at least equivalent to the centreline division.  
(C) Compartments Loaded in Combination  
    The following paragraphs describe the pattern of void behaviour which  
shall be assumed when compartments are loaded in combination:  
    (a) Without effective centreline divisions:  
        (i) Under the upper deck-as for the single deck arrangement  
described in Section II (B) of this Part.  
        (ii) Under the second deck-the area of void available for transfer  
from the low side,  i.e. original void area less area against the  
hatchside girder, shall be assumed to transfer as follows:  
            one half to the upper deck hatchway and one quarter each to  
the high side under the upper and second deck.  
        (iii) Under the third and lower decks-the void areas available for  
transfer from the low side of each of these decks shall be assumed to  
transfer in equal quantities to all the voids under the decks on the high  
side and the void in the upper deck hatchway.  
    (b) With effective centreline divisions which extend into the upper  
deck hatchway:  
        (i) At all deck levels abreast the division the void areas  
available for transfer from the low side shall be assumed to transfer to  
the void under the low side half of the upper deck hatchway.  
        (ii) At the deck level immediately below the bottom of the  
division the void area available for transfer from the low side shall be  
assumed to transfer as follows:  
            one half to the void under the low side half of the upper deck  
hatchway and the remainder in equal quantities to the voids under the  
decks on the high side.  
        (iii) At deck levels lower than those described in sub-paragraphs  
(i) and (ii) of this paragraph the void area available for transfer from  
the low side of each of those decks shall be assumed to transfer in equal  
quantities to the voids in each of the two halves of the upper deck  
hatchway on each side of the division and the voids under the decks on the  
high side.  
    (c) With effective centreline divisions which do not extend into the  
upper deck hatchway:  
    Since no horizontal transfer of voids may be assumed to take place at  
the same deck level as the division the void area available for transfer  
from the low side at this level shall be assumed to transfer above the  
division to voids on the high sides in accordance with the principles of  
paragraphs (a) and (b) above.  
       
     SECTION III-ASSUMED VOLUMETRIC HEELING MOMENT OF FEEDERS ANDTRUNKS  
  
(A) Suitably Placed Wing Feeders (See Figure 5)  
    It may be assumed that under the influence of ship motion underdeck  
voids will substantially filled by the flow of grain from a pair of  
longitudinal feeders provided that:  
    (a) the feeders extend for the full length of the deck and that the  
perforations therein are adequately spaced;  
    (b) the volume of each feeder is equal to the volume of the underdeck  
void outboard of the hatchside girder and its continuation. Figure 5  
(B) Trunks Situated over Main Hatchways  
    After the assumed shift of grain the final void pattern shall be as  
shown in Figure 6. Figure 6  
    Note on Figure 6:  
    If the wing spaces in way of the trunk cannot be properly trimmed in  
accordance with Regulation 3 of this Chapter it shall be assumed that a 25  
degree surface shift takes place.  
       
     SECTION IV-ASSUMED VOLUMETRIC HEELING MOMENT OF PARTLY FILLED COM-PARTMENTS  
  
(A) General  
    When the free surface of the bulk grain has not been secured in  
accordance with Regulation 6 of this Chapter it shall be assumed that the  
grain surface after shifting shall be at 25 degrees to the horizontal.  
(B) Discontinuous Longitudinal Divisions  
    In a compartment in which the longitudinal divisions are not  
continuous between the transverse boundaries, the length over which any  
such divisions are effective as devices to prevent full width shifts of  
grain surfaces shall be taken to be the actual length of the portion of  
the division under consideration less two-sevenths of the greater of the  
transverse distances between the division and its adjacent division or  
ship\'s side.  
    This correction does not apply in the lower compartments of any  
combination loading in which the upper compartment is either a "filled  
compartment" or a "partly filled compartment".  
       
     SECTION V-ALTERNATIVE LOADING ARRANGEMENTS FOR EXISTING SHIPS  
  
(A) General  
    A ship loaded in accordance with either Sub-Section (B) of Sub-Section  
(C) below shall be considered to have intact stability characteristics at  
least equivalent to the requirements of paragraph (b) of Regulation 4 of  
this Chapter. Documents of authorization permitting such loadings shall be  
accepted under the provisions of paragraph (e) of Regulation 10 of this  
Chapter.  
    For the purpose of this Part, the term "Existing Ship" means a ship,  
the keel of which is laid before the date of coming into force of this  
Chapter.  
(B) Stowage of Specially Suitable Ships  
    (a) Notwithstanding anything contained in Part B of this Chapter, bulk  
grain may be carried without regard to the requirements specified therein  
in ships which are constructed with two or more vertical or sloping  
grain-tight longitudinal divisions suitably disposed to limit the effect  
of any transverse shift of grain under the following conditions:  
        (i) as many holds and compartments as possible shall be full and  
trimmed full;  
        (ii) for any specified arrangement of stowage the ship will not  
list to an angle greater than 5 degrees at any stage of the voyage where:  
            (1) in holds or compartments which have been trimmed full the  
grain surface settled 2 per cent by volume from the original surface and  
shifts to an angle of 12 degrees with that surface under all boundaries of  
these holds and compartments which have an inclination of less than 30  
degrees to the horizontal;  
            (2) in "partly filled compartments or holds" free grain  
surfaces settle and shift as in sub-paragraph (ii) (1) of this paragraph  
or to such larger angle as may be deemed necessary by the Administration,  
or by a Contracting Government on behalf of the Administration, and grain  
surfaces if overstowed in accordance with Regulation 5 of this Chapter  
shift to an angle of 8 degrees with the original levelled surfaces. For  
the purpose of sub-paragraph (ii) of this paragraph shifting boards, if  
fitted,  will be considered to limit the transverse shift of the surface  
of the grain;  
        (iii) the master is provided with a grain loading plan covering  
the stowage arrangements to be adopted and a stability booklet, both  
approved by the Administration, or by a Contracting Government on behalf  
of the Administration, showing the stability conditions upon which the  
calculations given in sub-paragraph (ii) of this paragraph are based.  
    (b) The Administration, or a Contracting Government on behalf of the  
Administration,  shall prescribe the precautions to be taken against  
shifting in all other conditions of loading of ships designed in  
accordance with paragraph (B) (a) of this Section which meet the  
requirements of sub-paragraphs (ii) and (iii) of that paragraph.  
(C) Ships Without Documents of Authorization  
    A ship not having on board documents of authorization issued in  
accordance with Regulations 4 and 10 of this Chapter may be permitted to  
load bulk grain under the requirements of Sub-Section (B) of this Section  
or provided that:  
    (a) All "filled compartments" shall be fitted with centreline  
divisions extending for the full length of such compartments which extend  
downwards from the underside of the deck or hatch covers to a distance  
below the deck line of at least one-eighth of the maximum breadth of the  
compartment or 2.4 metres, whichever is the greater except that saucers  
constructed in accordance with Section II of Part C may be accepted in  
lieu of a centreline division in and beneath a hatchway.  
    (b) All hatches to "filled compartments" shall be closed and covers  
secured in place.  
    (c) All free grain surfaces in "partly filled compartments" shall be  
trimmed level and secured in accordance with Section II of Part C.  
    (d) Throughout the voyage the metacentric height after correction for  
the free surface effects of liquids in tanks shall be 0.3 metre or that  
given by the following formula,  whichever is the greater:  
       |------------------------------|  
       |                         \_\_\_  |  
       |       LBVd(0.25B-0.645 √VdB |  
       |  GM =----------------------- |  
       |    R                         |  
       |          SF×△×0.0875      |  
       |------------------------------|  
    Where:  
        L= total combined length of all full compartments;  
        B= moulded breadth of vessel;  
        SF= stowage factor;  
        Vd= calculated average void depth as per paragraph (a) (i) of  
Section I (A) of this Part;  
        △= displacement.  
       
     PART C GRAIN FITTINGS AND SECURING   
  
       
  
     SECTION I-STRENGTH OF GRAIN FITTINGS  
  
 (A) General  
    (a) Timber  
    All timber used for grain fittings shall be of good sound quality and  
of a type and grade which has been proved to be satisfactory for this  
purpose. The actual finished dimensions of the timber shall be in  
accordance with the dimensions hereinafter specified in this Part. Plywood  
of an exterior type bonded with waterproof glue and fitted so that the  
direction of the grain in the face plies is perpendicular to the  
supporting uprights or binder may be used provided that its strength is  
equivalent to that of solid timber of the appropriate scantlings.  
    (b) Working Stresses  
    When calculating the dimensions of divisions loaded on one side, using  
the Tables in paragraph (a) and (b) of Sub-Section (C) of this Section,  
the following working stresses should be adopted:  
    For divisions of steel ................ 2000 kg per square cm  
    For divisions of wood .................. 160 kg per square cm  
    (c) Other Materials  
    Materials other than wood or steel may be approved for such divisions  
provided that proper regard has been paid to their mechanical properties.  
    (d) Uprights  
        (i) Unless means are provided to prevent the ends of uprights  
being dislodged from their sockets, the depth of housing at each end of  
each upright shall be not less than 75 mm. If an upright is not secured at  
the top, the uppermost shore or stay shall be fitted as near thereto as is  
practicable.  
        (ii) The arrangements provided for inserting shifting boards by  
removing a part of the cross-section of an upright shall be such that the  
local level of stresses is not unduly high.  
        (iii) The maximum bending moment imposed upon an upright  
supporting a division loaded on one side shall normally be calculated  
assuming that the ends of the up-rights are freely supported. However, if  
an Administration is satisfied that any degree of fixity assumed will be  
achieved in practice, account may be taken of any reduction in the maximum  
bending moment arising from any degree of fixity provided at the ends of  
the upright.  
    (e) Composite Section  
    Where uprights, binders or any other strength members are formed by  
two separate sections,  one fitted on each side of a division and  
inter-connected by through bolts at adequate spacing, the effective  
section modules shall be taken as the sum of the two modules of the  
separate sections.  
    (f) Partial Division  
    Where divisions do not extend to the full depth of the hold such  
divisions and their up-rights shall be supported or stayed so as to be as  
efficient as those which do extend to the full depth of the hold.  
 (B) Divisions Loaded on Both Sides  
    (a) Shifting Boards  
        (i) Shifting boards shall have a thickness of not less than 50 mm  
and shall be fitted grain-tight and where necessary supported by uprights.  
        (ii) The maximum unsupported span for shifting boards of various  
thicknesses shall be as follows:  
          Thickness                       Maximum Unsupported Span  
            50mm                                  2.5metres  
            60mm                                  3.0metres  
            70mm                                  3.5metres  
            80mm                                  4.0metres  
            If thicknesses greater than these are provided the maximum  
unsupported span will vary directly with the increase in thickness.  
        (iii) The ends of all shifting boards shall be securely housed  
with 75 mm minimum bearing length.  
    (b) Other Materials  
    Divisions formed by using materials other than wood shall have a  
strength equivalent to the shifting boards required in paragraph (a) of  
this Sub-Section.  
    (c) Uprights  
        (i) Steel uprights used to support divisions loaded on both sides  
shall have a section modulus given by  
                         |--------------|  
                         |     W=a×W   |  
                         |           1  |  
                         |--------------|  
        Where:  
        W=section modulus in cubic cm ;  
        a= horizontal span between uprights in metres.  
                                          |--|  
        The section modulus per metre span|W | shall be not less than that  
                                          | 1|  
                                          |--|  
given by the formula:  
     |------------------------------------|  
     |  W =14.8(h -1.2)cubic cm per metre;|  
     |   1       1                        |  
     |------------------------------------|  
        Where:  
        h is the vertical unsupported span in metres and shall be taken as  
the maximum  
         1 value of the distance between any two adjacent stays or between  
the stay or either end of the upright. Where this distance is less than  
2.4 metres the respective modulus shall be calculated as if the actual  
value was 2.4 metres.  
        (ii) The module of wood uprights shall be determined by  
multiplying by 12.5 the corresponding module for steel uprights. If other  
materials are used their module shall be at least that required for steel  
increased in proportion to the ratio of the permissible stresses for steel  
to that of the material used. In such cases attention shall be paid also  
to the relative rigidity of each upright to ensure that the deflection is  
not excessive.  
        (iii) The horizontal distance between uprights shall be such that  
the unsupported spans of the shifting boards do not exceed the maximum  
span specified in sub-paragraph (ii) of paragraph (a) of this Sub-Section.  
    (d) Shores  
        (i) Wood shores, when used, shall be in a single piece and shall  
be securely fixed at each end and heeled against the permanent structure  
of the ship except that they shall not bear directly against the side  
plating of the ship.  
        (ii) Subject to the provisions of sub-paragraphs (iii) and (iv)  
below, the minimum size of wood shores shall be as follows:  
             Length of Shore               Rectangular        Diameter of  
             in metres                      Section       Circular Section  
                                               mm                 mm  
         Not exceeding 3 m                  150 ×100             140  
         Over 3 m but not exceeding 5 m     150 ×150             165  
         Over 5 m but not exceeding 6 m     150 ×150             180  
         Over 6 m but not exceeding 7 m     200 ×150             190  
         Over 7 m but not exceeding 8 m     200 ×150             200  
         Exceeding 8 m                      200 ×150             215  
        Shores of 7 metres or more in length shall be securely bridged at  
approximately mid-length.  
        (iii) When the horizontal distance between the uprights differs  
significantly from 4 metres, the moments of inertia of the shores may be  
changed in direct proportion.  
        (iv) Where the angle of the shore to the horizontal exceeds 10  
degrees the next larger shore to that required by sub-paragraph (ii) of  
this paragraph shall be fitted provided that in no case shall the angle  
between any shore and the horizontal exceed 45 degrees.  
    (e) Stays  
    Where stays are used to support divisions loaded on both sides, they  
shall be fitted horizontally or as near thereto as practicable, well  
secured at each end and formed of steel wire rope. The sizes of the wire  
rope shall be determined assuming that the divisions and upright  
                                                        2 which the stay  
supports are uniformly loaded at 500 kg/m . The workings load so assumed  
in the stay shall not exceed one-third of its breaking load.  
(C) Divisions Loaded on One Side Only  
    (a) Longitudinal Divisions  
    The load in kg per metre length of the division shall be taken to be  
as follows: TABLE I\*  
    [\* For the purpose of converting the above loads into British units  
(ton/ft) 1 Kg per metre length shall be taken to be equivalent to 0.0003  
ton per foot length.]  
       
     TABLE I\*  
  
                             B (m)  
|---------------------------------------------------------------------------------------  
|h  
|            2         3        4          5        6         7         8        10  
|(m)  
|---------------------------------------------------------------------------------------  
| 1.5       850       900      1010      1225      1500      1770     2060      2645  
| 2.0      1390      1505      1710      1985      2295      2605     2930      3590  
| 2.5      1985      2160      2430      2740      3090      3435     3800      4535  
| 3.0      2615      2845      3150      3500      3885      4270     4670      5480  
| 3.5      3245      3525      3870      4255      4680      5100     5540      6425  
| 4.0      3890      4210      4590      5015      5475      5935     6410      7370  
| 4.5      4535      4890      5310      5770      6270      6765     7280      8315  
| 5.0      5185      5570      6030      6530      7065      7600     8150      9260  
| 6.0      6475      6935      7470      8045      8655      9265     9890     11150  
| 7.0      7765      8300      8910      9560     10245     10930    11630     13040  
| 8.0      9055      9665     10350     11075     11835     12595    13370     14930  
| 9.0     10345     11030     11790     12590     13425     14260    15110     16820  
|10.0     11635     12395     13230     14105     15015     15925    16850     18710  
|                        h= height of grain in metres from the bottom of the division \*  
|                        B= transverse extent of the bulk grain in metres  
|---------------------------------------------------------------------------------------  
    [\* where the distance from a division to a feeder or hatchway is 1  
metre or less, the height -h- shall be taken to the level of the grain  
within that hatchway or feeder. In all cases the height shall be taken to  
the overhead deck in way of the division.]  
    For other values of h or B the loads shall be determined by linear  
interpolation or extrapolation as necessary.  
    (b) Transverse Divisions  
    The load in kg per metre length of the division shall be taken to be  
as follows: TABLE II\*\*  
    [\*\* For the purpose of converting the above loads into British units  
(ton/ft) 1 Kg per metre length shall be taken to be equivalent to 0.0003  
ton per foot length.]  
       
     TABLE II\*  
  
           L (m)  
|-------------------------------------------------------------------------------------------------------------------  
|h  
|            2         3        4          5        6         7         8        10        12        14        16  
|(m)  
|-------------------------------------------------------------------------------------------------------------------  
| 1.5        670       690       730       780       835       890     935      1000      1040      1050      1050  
| 2.0       1040      1100      1170      1245      1325      1400    1470      1575      1640      1660      1660  
| 2.5       1460      1565      1675      1780      1880      1980    2075      2210      2285      2305      2305  
| 3.0       1925      2065      2205      2340      2470      2590    2695      2845      2925      2950      2950  
| 3.5       2425      2605      2770      2930      3075      3205    3320      3480      3570      3595      3595  
| 4.0       2950      3160      3355      3535      3690      3830    3950      4120      4210      4235      4240  
| 4.5       3495      3725      3940      4130      4295      4440    4565      4750      4850      4880      4885  
| 5.0       4050      4305      4535      4735      4910      5060    5190      5385      5490      5525      5530  
| 6.0       5175      5465      5720      5945      6135      6300    6445      6655      6775      6815      6825  
| 7.0       6300      6620      6905      7150      7365      7445    7700      7930      8055      8105      8115  
| 8.0       7425      7780      8090      8360      8590      8685    8950      9200      9340      9395      9410  
| 9.0       8550      8935      9275      9565      9820      9930   10205     10475     10620     10685     10705  
|10.0       9680     10095     10460     10770     11045     11270   11460     11745     11905     11975     11997  
|                        h= height of grain in metres from the bottom of the division \*\*\*  
|                        L= longitudinal extent of the bulk grain in metres  
|-------------------------------------------------------------------------------------------------------------------  
    [\*\*\* Where the distance from a division to a feeder or hatchway is 1  
metre or less, the height -h- shall be taken to the level of the grain  
within that hatchway or feeder. In all cases the height shall be taken to  
the overhead deck in way of the division.]  
    For other values of h or L the loads shall be determined by linear  
interpolation or extrapolation as necessary.  
    (c) Vertical Distribution of the Loads  
    The total load per unit length of divisions shown in the Table I and  
II above may, if considered necessary, be assumed to have a trapezoidal  
distribution with height. In such cases,  the reaction loads at the upper  
and lower ends of a vertical member or upright are not equal. The reaction  
loads at the upper end expressed as percentages of the total load  
supported by the vertical member or upright shall be taken to those shown  
in Tables III and IV below.  
       
     TABLE III LONGITUDINAL DIVISIONS LOADED ON ONE SIDE ONLY  
  
    Bearing Reaction at the Upper End of Upright as Percentage of Load  
                                                         (Table I)  
                                B (m)  
|---------------------------------------------------------------------------------------  
|h  
|            2         3        4          5        6         7         8        10  
|(m)  
|---------------------------------------------------------------------------------------  
|1.5      43.3      45.1      45.9      46.2      46.2      46.2      46.2     46.2  
|2        44.5      46.7      47.6      47.8      47.8      47.8      47.8     47.8  
|2.5      45.4      47.6      48.6      48.8      48.8      48.8      48.8     48.8  
|3        46.0      48.3      49.2      49.4      49.4      49.4      49.4     49.4  
|3.5      46.5      48.8      49.7      49.8      49.8      49.8      49.8     49.8  
|4        47.0      49.1      49.9      50.1      50.1      50.1      50.1     50.1  
|4.5      47.4      49.4      50.1      50.2      50.2      50.2      50.2     50.2  
|5        47.7      49.4      50.1      50.2      50.2      50.2      50.2     50.2  
|6        47.9      49.5      50.1      50.2      50.2      50.2      50.2     50.2  
|7        47.9      49.5      50.1      50.2      50.2      50.2      50.2     50.2  
|8        47.9      49.5      50.1      50.2      50.2      50.2      50.2     50.2  
|9        47.9      49.5      50.1      50.2      50.2      50.2      50.2     50.2  
|10       47.9      49.5      50.1      50.2      50.2      50.2      50.2     50.2  
|                        B= transverse extent of the bulk grain in metres  
|---------------------------------------------------------------------------------------  
    For other values of h or B the reaction loads shall be determined by  
linear interpolation or extrapolation as necessary.  
       
     TABLE IV TRANSVERSE DIVISIONS LOADED ON ONE SIDE ONLY  
  
    Bearing Reaction at the Upper End of Upright as Percentage of Load  
                                                    (Table II)  
                                 L (m)  
|-------------------------------------------------------------------------------------------------------------------  
|h  
|            2         3        4          5        6         7         8        10        12        14        16  
|(m)  
|-------------------------------------------------------------------------------------------------------------------  
|1.5      37.3      38.7      39.7      40.6      41.4      42.1      42.6     43.6      44.3      44.8      45.0  
|2        39.6      40.6      41.4      42.1      42.7      43.1      43.6     44.3      44.7      45.0      45.2  
|2.5      41.0      41.8      42.5      43.0      43.5      43.8      44.2     44.7      45.0      45.2      45.2  
|3        42.1      42.8      43.3      43.8      44.2      44.5      44.7     45.0      45.2      45.3      45.3  
|3.5      42.9      43.5      43.9      44.3      44.6      44.8      45.0     45.2      45.3      45.3      45.3  
|4        43.5      44.0      44.4      44.7      44.9      45.0      45.2     45.4      45.4      45.4      45.4  
|5        43.9      44.3      44.6      44.8      45.0      45.2      45.3     45.5      45.5      45.5      45.5  
|6        44.2      44.5      44.8      45.0      45.2      45.3      45.4     45.6      45.6      45.6      45.6  
|7        44.3      44.6      44.9      45.1      45.3      45.4      45.5     45.6      45.6      45.6      45.6  
|8        44.3      44.6      44.9      45.1      45.3      45.4      45.5     45.6      45.6      45.6      45.6  
|9        44.3      44.6      44.9      45.1      45.3      45.4      45.5     45.6      45.6      45.6      45.6  
|10       44.3      44.6      44.9      45.1      45.3      45.4      45.5     45.6      45.6      45.6      45.6  
|                        L= longitudinal extent of the bulk grain in metres  
|-------------------------------------------------------------------------------------------------------------------  
    For other values of h or L the reaction loads shall be determined by  
linear interpolation or extrapolation as necessary.  
    The strength of the end connexions of such vertical members or  
uprights may be calculated on the basis of the maximum load likely to be  
imposed at either end. These loads are as follows:  
    Longitudinal Divisions  
        Maximum load at the top .........50% of the appropriate total load  
from Table I  
        Maximum load at the bottom ......55% of the appropriate total load  
from Table I  
    Transverse Divisions  
        Maximum load at the top.......45% of the appropriate total load  
from Table II  
        Maximum load at the bottom....60% of the appropriate total load  
from Table II  
    The thickness of horizontal wooden boards may also be determined  
having regard to the vertical distribution of the loading represented by  
Tables III and IV above and in such cases  
                                  \_\_\_\_\_\_\_\_  
                           t=10a√ p×k  
                                  ---------  
                                  h ×213.3  
    Where:  
    t= thickness of board in mm;  
    a= horizontal span of the board, i.e. distance between uprights in  
metres;  
    h= head of grain to the bottom of the division in metres;  
    p= total load per unit length derived from Table I or II in  
kilogrammes;  
    k= factor dependent upon vertical distribution of the loading;  
    When the vertical distribution of the loading is assumed to be  
uniform, i.e. rectangular,  k shall be taken as equal to 1.0. For a  
trapezoidal distribution  
                   k=1.0+0.06(50-R)  
    Where:  
        R is the upper end bearing reaction taken from Table III or IV.  
    (d) Stays of Shores  
    The sizes of stays and shores shall be so determined that the loads  
derived from Tables I and II in the preceding paragraphs (a) and (b) shall  
not exceed one-third of the breaking loads.  
(D) Saucers  
    When a saucer is used to reduce the heeling moments in a "filled  
compartment", its depth, measured from the bottom of the saucer to the  
deck line, shall be as follows:  
        For ships with a moulded breadth of up to 9.1 metres, not less  
than 1.2 metres.  
        For ships with a moulded breadth of 18.3 metres or more, not less  
than 1.8 metres.  
        For ships with a moulded breadth between 9.1 metres and 18.3  
metres, the minimum depth of the saucer shall be calculated by  
interpolation.  
    The top (mouth) of the saucer shall be formed by the underdeck  
structure in the way of the hatchway, i.e. hatchside girders or coamings  
and hatchend beams. The saucer and hatchway above shall be completely  
filled with bagged grain or other suitable cargo laid down on a separation  
cloth or its equivalent and stowed tightly against adjacent structures and  
the portable hatchway beams if the latter are in place.  
(E) Bundling of Bulk  
    As an alternative to filling the saucer with bagged grain or other  
suitable cargo a bundle of bulk grain may be used provided that:  
    (a) The saucer is lined with a material acceptable to the  
Administration having a tensile strength of not less than 274 kg per 5 cm  
strip and which is provided with suitable means for securing at the top.  
    (b) As an alternative to paragraph (a) above a material acceptable to  
the Administration having a tensile strength of not less than 137 kg per 5  
cm strip may be used if the saucer is constructed as follows:  
        A thwartship lashings acceptable to the Administration shall be  
placed inside the saucer formed in the bulk grain at intervals of not more  
than 2.4 metres. These lashings shall be of sufficient length to permit  
being drawn up tight and secured at the top of the saucer.  
        Dunnage not less than 25 mm in thickness or other suitable  
material of equal strength and between 150 to 300 mm in width shall be  
placed fore and aft over these lashings to prevent the cutting or chafing  
of the material which shall be placed thereon to line the saucer.  
    (c) The saucer shall be filled with bulk grain and secured at the top  
except that when using material approved under paragraph (b) above further  
dunnage shall be laid on top after lapping the material before the saucer  
is secured by setting up the lashings.  
    (d) If more than one sheet of material is used to line the saucer they  
shall be joined at the bottom either by sewing or a double lap.  
    (e) The top of the saucer shall be coincidental with the bottom of the  
beams when these are in place and suitable general cargo or bulk grain may  
be placed between the beams on top of the saucer.  
(F) Securing Hatch Covers of Filled Compartments  
    If there is no bulk grain or other cargo above a "filled compartment"  
the hatch covers shall be secured in an approved manner having regard to  
the weight and permanent arrangements provided for securing such covers.  
    The documents of authorization issued under Regulation 10 of this  
Chapter shall include reference to the manner of securing considered  
necessary by the Administration issuing such documents.  
       
     SECTION II-SECURING OF PARTLY FILLED COMPARTMENTS  
  
(A) Strapping or Lashing  
    (a) When, in order to eliminate heeling moments in "partly filled  
compartments",  strapping or lashing is utilized, the securing shall be  
accomplished as follows:  
        (i) The grain shall be trimmed and levelled to the extent that it  
is very slightly crowned and covered with burlap separation cloths,  
tarpaulins or the equivalent.  
        (ii) The separation cloths and/or tarpaulins shall overlap at  
least 1.8 metres.  
        (iii) Two solid floors of rough 25 mm by 150 mm to 300 mm lumber  
shall be laid with the top floor running longitudinally and nailed to an  
athwartships bottom floor. Alternatively, one solid floor of 50 mm lumber,  
running longitudinally and nailed over the top of a 50 mm bottom bearer  
not less than 150 mm wide, may be used. The bottom bearers shall extend  
the full breadth of the compartment and shall be spaced not more than 2.4  
metres apart. Arrangements utilizing other materials and deemed by an  
Administration to be equivalent to the foregoing may be accepted.  
        (iv) Steel wire rope (19 mm diameter or equivalent), doubled steel  
strapping (50mm×1.3 mm and having a breaking load of at least 5000 kg),  
or chain of equivalent strength, each of which shall be set tight by means  
of a 32 mm turnbuckle, may be used for lashings. A winch tightener, used  
in conjunction with a locking arm, may be substituted for the 32 mm  
turnbuckle when steel strapping is used, provided suitable wrenches are  
available for setting up as necessary. When steel strapping is used, not  
less than three crimp seals shall be used for securing the ends. When wire  
is used, not less than four clips shall be used for forming eyes in the  
lashings.  
        (v) Prior to the completion of loading the lashing shall be  
positively attached to the framing at a point approximately 450 mm below  
the anticipated final grain surface by means of either a 25 mm shackle or  
beam clamp of equivalent strength.  
        (vi) The lashings shall be spaced not more than 2.4 metres apart  
and each shall be supported by a bearer nailed over the top of the fore  
and all floor. This bearer shall consist of not less than 25 mm by 150 mm  
lumber or its equivalent and shall extend the full breadth of the  
compartment.  
        (vii) During the voyage the strapping shall be regularly inspected  
and set up where necessary.  
(B) Overstowing Arrangements  
    Where bagged grain or other suitable cargo is utilized for the purpose  
of securing "partly filled compartments", the free grain surface shall be  
covered with a separation cloth or equivalent or by a suitable platform.  
Such platforms shall consist of bearers spaced not more than 1.2 metres  
apart and 25 mm boards laid thereon spaced not more than 100 mm apart.  
Platforms may be constructed of other materials provided they are deemed  
by an Administration to be equivalent.  
(C) Bagged Grain  
    Bagged grain shall be carried in sound bags which shall be well filled  
and securely closed.  
       
     CHAPTER VII CARRIAGE OF DANGEROUS GOODS   
  
       
  
     Regulation 1: Application  
  
    (a) Unless expressly provided otherwise, this Chapter applies to the  
carriage of dangerous goods in all ships to which the present Regulations  
apply.  
    (b) The provisions of this Chapter do not apply to ship\'s stores and  
equipment or to particular cargoes carried in ships specially built or  
converted as a whole for that purpose, such as tankers.  
    (c) The carriage of dangerous goods is prohibited except in accordance  
with the provisions of this Chapter.  
    (d) To supplement the provisions of this Chapter each Contracting  
Government shall issue,  or cause to be issued, detailed instructions on  
the safe packing and stowage of specific dangerous goods or categories of  
dangerous goods which shall include any precautions necessary in their  
relation to other cargo.  
       
     Regulation 2: Classification  
  
    Dangerous goods shall be divided into the following classes:  
    Class 1-Explosives.  
    Class 2-Gases: compressed, liquefied or dissolved under pressure.  
    Class 3-Inflammable \*liquids.  
    [\* "inflammable" has the same meaning as "flammable."]  
    Class 4.1-Inflammable solids.  
    Class 4.2-Inflammable solids, or substances, liable to spontaneous  
combustion.  
    Class 4.3-Inflammable solids, or substances, which in contact with  
water emit inflammable gases.  
    Class 5.1-Oxidizing substances.  
    Class 5.2-Organic peroxides.  
    Class 6.1-Poisonous (toxic) substances.  
    Class 6.2-Infectious substances.  
    Class 7-Radioactive substances.  
    Class 8-Corrosives.  
    Class 9-Miscellaneous dangerous substances, that is any other  
substance which experience has shown, or may show, to be of such a  
dangerous character that the provisions of this Chapter should apply to  
it.  
       
     Regulation 3: Packing  
  
    (a) The packing of dangerous goods shall be:  
        (i) well made and in good condition;  
        (ii) of such a character that any interior surface with which the  
contents may come in contact is not dangerously affected by the substance  
being conveyed; and  
        (iii) capable of withstanding the ordinary risks of handling and  
carriage by sea.  
    (b) Where the use of absorbent or cushioning material is customary in  
the packing of liquids in receptacles that material shall be:  
        (i) capable of minimizing the dangers to which the liquid may give  
rise;  
        (ii) so disposed as to prevent movement and ensure that the  
receptacle remains surrounded; and  
        (iii) where reasonably possible of sufficient quantity to absorb  
the liquid in the event of breakage of the receptacle.  
    (c) Receptacles containing dangerous liquids shall have an ullage at  
the filling temperature sufficient to allow for the highest temperature  
during the course of normal carriage.  
    (d) Cylinders or receptacles for gases under pressure shall be  
adequately constructed,  tested, maintained and correctly filled.  
    (e) Empty receptacles which have been used previously for the carriage  
of dangerous goods shall themselves be treated as dangerous goods unless  
they have been cleaned and dried or, when the nature of the former  
contents permit with safety, have been closed securely.  
       
     Regulation 4: Marking and Labelling  
  
    Each receptacle containing dangerous goods shall be marked with the  
correct technical name (trade names shall not be used) and identified with  
a distinctive label or stencil of the label so as to make clear the  
dangerous character. Each receptacle shall be so labelled except  
receptacles containing chemicals packed in limited quantities and large  
shipments which can be stowed, handled and identified as a unit.  
       
     Regulation 5: Documents  
  
    (a) In all documents relating to the carriage of dangerous goods by  
sea where the goods are named the correct technical name of the goods  
shall be used (trade names shall not be used) and the correct description  
given in accordance with the classification set out in Regulation 2 of  
this Chapter.  
    (b) The shipping documents prepared by the shipper shall include, or  
be accompanied by, a certificate or declaration that the shipment offered  
for carriage is properly packed,  marked and labelled and in proper  
condition for carriage.  
    (c) Each ship carrying dangerous goods shall have a special list or  
manifest setting forth, in accordance with Regulation 2 of this Chapter,  
the dangerous goods on board and the location thereof. A detailed stowage  
plan which identifies by class and sets out the location of all dangerous  
goods on board may be used in place of such special list or manifest.  
       
     Regulation 6: Stowage Requirements  
  
    (a) Dangerous goods shall be stowed safely and appropriately according  
to the nature of the goods. Incompatible goods shall be segregated from  
one another.  
    (b) Explosives (except ammunition) which present a serious risk shall  
be stowed in a magazine which shall be kept securely closed while at sea.  
Such explosives shall be segregated from detonators. Electrical apparatus  
and cables in any compartment in which explosives are carried shall be  
designed and used so as to minimize the risk of fire or explosion.  
    (c) Goods which give off dangerous vapours shall be stowed in a well  
ventilated space or on deck.  
    (d) In ships carrying inflammable liquids or gases special precautions  
shall be taken where necessary against fire or explosion.  
    (e) Substances which are liable to spontaneous heating or combustion  
shall not be carried unless adequate precautions have been taken to  
prevent the outbreak of fire.  
       
     Regulation 7: Explosives in Passenger Ships  
  
    (a) In passenger ships the following explosives only may be carried:  
        (i) safety cartridges and safety fuses;  
        (ii) small quantities of explosives not exceeding 9 kilogrammes  
(20 pounds) total net weight;  
        (iii) distress signals for use in ships or aircraft, if the total  
weight of such signals does not exceed 1,016 kilogrammes (2,240 pounds);  
        (iv) except in ships carrying unberthed passengers, fireworks  
which are unlikely to explode violently.  
    (b) Notwithstanding the provisions of paragraph (a) of this Regulation  
additional quantities or types of explosives may be carried in passenger  
ships in which there are special safety measures approved by the  
Administration.  
       
     CHAPTER VIII NUCLEAR SHIPS   
  
       
  
     Regulation 1: Application  
  
    This Chapter applies to all nuclear ships except ships of war.  
       
     Regulation 2: Application of other Chapters  
  
    The Regulations contained in the other Chapters of the present  
Convention apply to nuclear ships except as modified by this Chapter.  
       
     Regulation 3: Exemptions  
  
    A nuclear ship shall not, in any circumstances, be exempted from  
compliance with any Regulations of this Convention.  
       
     Regulation 4: Approval of Reactor Installation  
  
    The design, construction and standards of inspection and assembly of  
the reactor installation shall be subject to the approval and satisfaction  
of the Administration and shall take account of the limitations which will  
be imposed on surveys by the presence of radiation.  
       
     Regulation 5: Suitability of Reactor Installation for Service onBoard Ship  
  
    The reactor installation shall be designed having regard to the  
special conditions of service on board ship both in normal and exceptional  
circumstances of navigation.  
       
     Regulation 6: Radiation Safety  
  
    The Administration shall take measures to ensure that there are no  
unreasonable radiation or other nuclear hazards, at sea or in port, to the  
crew, passengers or public, or to the waterways or food or water  
resources.  
       
     Regulation 7: Safety Assessment  
  
    (a) A Safety Assessment shall be prepared to permit evaluation of the  
nuclear power plant and safety of the ship to ensure that there are no  
unreasonable radiation or other hazards,  at sea or in port, to the crew,  
passengers or public, or to the waterways or food or water resources. The  
Administration, when satisfied, shall approve such Safety Assessment which  
shall always be kept up-to-date.  
    (b) The Safety Assessment shall be made available sufficiently in  
advance to the Contracting Governments of the countries which a nuclear  
ship intends to visit so that they may evaluate the safety of the ship.  
       
     Regulation 8: Operating Manual  
  
    A fully detailed Operating Manual shall be prepared for the  
information and guidance of the operating personnel in their duties on all  
matters relating to the operation of the nuclear power plant and having an  
important bearing on safety. The Administration, when satisfied,  shall  
approve such Operating Manual and a copy shall be kept on board the ship.  
The Operating Manual shall always be kept up-to-date.  
       
     Regulation 9: Surveys  
  
    Survey of nuclear ships shall include the applicable requirements of  
Regulation 7 of Chapter I, or of Regulations 8, 9 and 10 of Chapter I,  
except in so far as surveys are limited by the presence of radiation. In  
addition, the surveys shall include any special requirements of the Safety  
Assessment. They shall in all cases, notwithstanding the provisions of  
Regulations 8 and 10 of Chapter I, be carried out not less frequently than  
once a year.  
       
     Regulation 10: Certificates  
  
    (a) The provisions of paragraph (a) of Regulation 12 of chapter I and  
of Regulation 14 of Chapter I shall not apply to nuclear ships.  
    (b) A Certificate, called a Nuclear Passenger Ship Safety Certificate  
shall be issued after inspection and survey to a nuclear passenger ship  
which complies with the requirements of Chapters II-1, II-2, III, IV and  
VIII and any other relevant requirements of the present Regulations.  
    (c) A Certificate, called a Nuclear Cargo Ship Safety Certificate  
shall be issued after inspection and survey to a nuclear cargo ship which  
satisfies the requirements for cargo ships on survey set out in Regulation  
10 of Chapter I, and complies with the requirements of Chapters II-1,  
II-2, III, IV and VIII and any other relevant requirements of the present  
Regulations.  
    (d) Nuclear Passenger Ship Safety Certificates and Nuclear Cargo Ship  
Safety Certificates shall state: "That the ship, being a nuclear ship,  
complied with all requirements of Chapter VIII of the Convention and  
conformed to the Safety Assessment approved for the ship."  
    (e) Nuclear Passenger Ship Safety Certificates and Nuclear Cargo Ship  
Safety Certificates shall be valid for a period of not more than 12  
months.  
    (f) Nuclear Passenger Ship Safety Certificates and Nuclear Cargo Ship  
Safety Certificates shall be issued either by the Administration or by any  
person or organization duly authorized by it. In every case, that  
Administration assumes full responsibility for the certificate.  
       
     Regulation 11: Special Control  
  
    In addition to the control established by Regulation 19 of Chapter I,  
nuclear ships shall be subject to special control before entering the  
ports and in the ports of Contracting Governments,  directed towards  
verifying that there is on board a valid Nuclear Ship Safety Certificate  
and that there are no unreasonable radiation or other hazards at sea or in  
port, to the crew, passengers or public, or to the waterways or food or  
water resources.  
       
     Regulation 12: Casualties  
  
    In the event of any accident likely to lead to an environmental hazard  
the master of a nuclear ship shall immediately inform the Administration.  
The master shall also immediately inform the competent Governmental  
authority of the country in whose waters the ship may be, or whose waters  
the ship approaches in a damaged condition.  
       
     APPENDIX   
  
       
  
     Form of Safety Certificate for Passenger Ships  
  
        PASSENGER SHIP SAFETY CERTIFICATE  
   (Official Seal)                                     (Country)  
       an  
for-------international voyage.  
    a short  
           Issued under the provisions of the  
   INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974  
|---------------------------------------------------------------------------------------------------  
|                  |                  |             |           |                    |             |  
|                  |                  |             |           |  Particulars of    |  Date on    |  
|                  |   Distinctive    |   Port of   |   Gross   |  voyages, if any,  | which keel  |  
|   Name of Ship   |                  |             |           |  sanctioned under  |  was laid   |  
|                  |Number or Letters |   Registry  |  Tonnage  |  Regulation 27 (c) | (see NOTE   |  
|                  |                  |             |           |(vii) of Chapter III|   below)    |  
|                  |                  |             |           |                    |             |  
|------------------|------------------|-------------|-----------|--------------------|-------------|  
|                  |                  |             |           |                    |             |  
|                  |                  |             |           |                    |             |  
|                  |                  |             |           |                    |             |  
|                  |                  |             |           |                    |             |  
|                  |                  |             |           |                    |             |  
|---------------------------------------------------------------------------------------------------  
        The                                (Name) Government certifies  
 ------------------                        ---------------------------  
I, the undersigned                              (Name) certify  
    I. That the above-mentioned ship has been duly surveyed in accordance  
with the provisions of the Convention referred to above.  
    II. That the survey showed that the ship complied with the  
requirements of the Regulations annexed to the said Convention as regards:  
    (1) the structure, main and auxiliary boilers and other pressure  
vessels and machinery;  
    (2) the watertight subdivision arrangements and details;  
    (3) the following subdivision load lines:  
|----------------------------------------------------------------------------------------------------------  
|                                           |                        |                                    |  
|   Subdivision load lines assigned and     |                        |    To apply when the spaces in     |  
|  marked on the ship\'s side at amidships   |       Freeboard        |    which passengers are carried    |  
|    (Regulation 11 of Chapter II-1)        |                        |  include the following alternative |  
|                                           |                        |           spaces                   |  
|                                           |                        |                                    |  
|-------------------------------------------|------------------------|------------------------------------|  
|                                           |                        |                                    |  
|               C.1                         |        ......          |           .......                  |  
|               C.2                         |        ......          |           .......                  |  
|               C.3                         |        ......          |           .......                  |  
|                                           |                        |                                    |  
|----------------------------------------------------------------------------------------------------------  
    III. That the life-saving appliances provide for a total number of  
......... persons and no more, viz.:  
    ...... lifeboats (including ...... motor lifeboats) capable of  
accommodating ...... persons, and ...... motor lifeboats fitted with  
radiotelegraph installation and searchlight (included in the total  
lifeboats shown above) and ...... motor lifeboats fitted with searchlight  
only (also included in the total lifeboats shown above), requiring ......  
certificated lifeboatmen;  
    ...... liferafts, for which approved launching devices are required,  
capable of accommodating ...... persons; and  
    ...... liferafts, for which approved launching devices are not  
required, capable of accommodating ...... persons;  
    ...... buoyant apparatus capable of supporting ...... persons;  
    ...... lifebuoys;  
    ...... life-jackets.  
    IV. That the lifeboats and liferafts were equipped in accordance with  
the provisions of the Regulations.  
    V. That the ship was provided with a line-throwing appliance and  
portable radio apparatus for survival craft in accordance with the  
provisions of the Regulations.  
    VI. That the ship complied with the requirements of the Regulations as  
regards radiotelegraph installations, viz.:  
|-----------------------------------------------------------------------------------------------------------------------------  
|                                                                           |                        |                       |  
|                                                                           |    Requirements of     |        Actual         |  
|                                                                           |                        |                       |  
|                                                                           |      Regulations       |       provision       |  
|                                                                           |                        |                       |  
|---------------------------------------------------------------------------|------------------------|-----------------------|  
|                                                                           |                        |                       |  
| Hours of listening by operator ........................................   |    ...............     |    ...............    |  
| Number of operators ...................................................   |    ...............     |    ...............    |  
| whether auto alarm fitted .............................................   |    ...............     |    ...............    |  
| Whether main installation fitted ......................................   |    ...............     |    ...............    |  
| Whether reserve installation fitted ...................................   |    ...............     |    ...............    |  
| Whether main and reserve transmitters electrically                        |                        |                       |  
|    separated or combined ..............................................   |    ...............     |    ...............    |  
| Whether direction-finder fitted .......................................   |    ...............     |    ...............    |  
| Whether radio equipment for homing on the radio                           |                        |                       |  
|    telephone distress frequency fitted ................................   |    ...............     |    ...............    |  
| Whether radar fitted ..................................................   |    ...............     |    ...............    |  
| Number of passengers for which certificated ...........................   |    ...............     |    ...............    |  
|                                                                           |                        |                       |  
|-----------------------------------------------------------------------------------------------------------------------------  
    VII. That the functioning of the radiotelegraph installations for  
motor lifeboats and/or the portable radio apparatus for survival craft, if  
provided, complied with the provisions of the Regulations.  
    VIII. That the ship complied with the requirements of the Regulations  
as regards fire-detecting and fire-extinguishing appliances, radar,  
echo-sounding device and gyro-compass and was provided with navigation  
lights and shapes, pilot ladder, and means of making sound signals, and  
distress signals in accordance with the provisions of the Regulations and  
also the International Regulations for Preventing Collisions at Sea in  
force.  
    IX. That in all other respects the ship complied with the requirements  
of the Regulations, so far as these requirements apply thereto.  
    This certificate is issued under the authority of \_\_\_\_\_\_\_\_ Government.  
It will remain in force until  
    Issued at        the         day of           19  
    Here follows the seal or signature of the authority entitled to issue  
the certificate.  
                                                           (Seal)  
    If signed, the following paragraph is to be added:  
    The undersigned declares that he is duly authorized by the said  
Government to issue this certificate.  
                                                          (Signature)  
  -----------------------------------------------------------------------  
    NOTE: It will be sufficient to indicate the year in which the keel was  
laid or when the ship was at a similar stage of construction except for  
1952, 1965 and the year of the coming into force of the International  
Convention for the Safety of Life at Sea, 1974, in which cases the actual  
date should be given.  
    In the case of a ship which is converted as provided in Regulation  
1(b)(i) of Chapter II-1 or Regulations 1 (a) (i) of Chapter II-2 of the  
Convention, the date on which the work of conversion was begun should be  
given.  
       
     Form of Safety Construction Certificate for Cargo Ships  
  
            CARGO SHIP SAFETY CONSTRUCTION CERTIFICATE  
 (Official Seal)  (Country)  
Issued under the provisions of the  
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974  
|----------------------------------------------------------------------------------------------  
|                |               |                        |          |                        |  
|                |  Distinctive  |                        |  Gross   |     Date on which      |  
|  Name of ship  |  Number or    |    Port of Registry    |          |   keel was laid (see   |  
|                |   Letters     |                        | Tonnage  |     NOTE below)        |  
|                |               |                        |          |                        |  
|----------------|---------------|------------------------|----------|------------------------|  
|                |               |                        |          |                        |  
|                |               |                        |          |                        |  
|                |               |                        |          |                        |  
|----------------------------------------------------------------------------------------------  
        The                                (Name) Government certifies  
 ------------------                        ---------------------------  
I, the undersigned                              (Name) certify  
    That the above-mentioned ship has been duly surveyed in accordance  
with the provisions of Regulation 10 of Chapter I of the Convention  
referred to above, and that the survey showed that the condition of the  
hull, machinery and equipment, as defined in the above Regulation, was in  
all respects satisfactory and that the ship complied with the applicable  
requirements of Chapter II-1 and Chapter II-2 (other than that relating to  
fire-extinguishing appliances and fire control plans).  
    This certificate is issued under the authority of the \_\_\_\_\_\_  
Government. It will remain in force until  
    Issued at            the           day of               19  
    Here follows the seal or signature of the authority entitled to issue  
the certificate.  
                                                         (Seal)  
    If signed, the following paragraph is to be added:  
    The undersigned declares that he is duly authorized by the said  
Government to issue this certificate.  
                                                         (Signature)  
  -------------------------------------------------------------------  
    NOTE: It will be sufficient to indicate the year in which the keel was  
laid or when the ship was at a similar stage of construction except for  
1952, 1965 and the year of the coming into force of the International  
Convention for the Safety of Life at Sea, 1974, in which cases the actual  
date should be given.  
       
     Form of Safety Equipment Certificate for Cargo Ships  
  
                    CARGO SHIP SAFETY EQUIPMENT CERTIFICATE  
 (Official Seal)                                           (Country)  
Issued under the provisions of the  
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974  
|----------------------------------------------------------------------------------------------  
|                |               |                        |          |                        |  
|                |  Distinctive  |                        |  Gross   |     Date on which      |  
|  Name of ship  |  Number or    |    Port of Registry    |          |   keel was laid (see   |  
|                |   Letters     |                        | Tonnage  |     NOTE below)        |  
|                |               |                        |          |                        |  
|----------------|---------------|------------------------|----------|------------------------|  
|                |               |                        |          |                        |  
|                |               |                        |          |                        |  
|                |               |                        |          |                        |  
|----------------------------------------------------------------------------------------------  
        The                                  (Name) Government certifies  
 ------------------                          ---------------------------  
I, the undersigned                                (Name) certify  
    I. That the above-mentioned ship has been duly inspected in accordance  
with the provisions of the Convention referred to above.  
    II. That the inspection showed that the life-saving appliances  
provided for a total number of ...... persons and no more, viz.:  
    ...... lifeboats on port side capable of accommodating ...... persons;  
    ...... lifeboats on starboard side capable of accommodating ......  
persons;  
    ...... motor lifeboats (included in the total lifeboats shown above),  
including ...... motor lifeboats fitted with radiotelegraph installation  
and searchlight, and ...... motor lifeboats fitted with searchlight only;  
    ...... liferafts, for which approved launching devices are required,  
capable of accommodating ...... persons; and  
    ...... liferafts, for which approved launching devices are not  
required, capable of accommodating ...... persons;  
    ...... lifebuoys;  
    ...... life-jackets.  
    III. That the lifeboats and liferafts were equipped in accordance with  
the provisions of the Regulations annexed to the Convention.  
    IV. That the ship was provided with a line-throwing apparatus and  
portable radio apparatus for survival craft in accordance with the  
provisions of the Regulations.  
    V. That the inspection showed that the ship complied with the  
requirements of the said Convention as regards fire-extinguishing  
appliances and fire control plans, echo-sounding device and gyro-compass  
and was provided with navigation lights and shapes, pilot ladder, and  
means of making sound signals and distress signals, in accordance with the  
provisions of the Regulations and the International Regulations for  
Preventing Collisions at Sea in force.  
    VI. That in all other respects the ship complied with the requirements  
of the Regulations so far as these requirements apply thereto.  
    This certificate is issued under the authority of the \_\_\_\_\_\_  
Government. It will remain in force until  
    Issued at          the            day of            19  
    Here follows the seal or signature of the authority entitled to issue  
the certificate.  
                                                     (Seal)  
    If signed, the following paragraph is to be added:  
    The undersigned declares that he is duly authorized by the said  
Government to issue this certificate.  
                                                     (Signature)  
    NOTE: It will be sufficient to indicate the year in which the keel was  
laid or when the ship was at a similar stage of construction except for  
1952, 1965 and the year of the coming into force of the International  
Convention for the Safety of Life at Sea, 1974,  in which cases the actual  
date should be given.  
       
     Form of Safety Radiotelegraph Certificate for Cargo Ships  
  
            CARGO SHIP SAFETY RADIOTELEGRAPHY  
CERTIFICATE  
 (Official Seal)                                              (Country)  
Issued under the provisions of the  
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974  
|----------------------------------------------------------------------------------------------  
|                |               |                        |          |                        |  
|                |  Distinctive  |                        |  Gross   |     Date on which      |  
|  Name of ship  |  Number or    |    Port of Registry    |          |   keel was laid (see   |  
|                |   letters     |                        | Tonnage  |     NOTE below)        |  
|                |               |                        |          |                        |  
|----------------|---------------|------------------------|----------|------------------------|  
|                |               |                        |          |                        |  
|                |               |                        |          |                        |  
|----------------------------------------------------------------------------------------------  
        The                                (Name) Government certifies  
 ------------------                         ---------------------------  
I, the undersigned                             (Name) certify  
    I. That the above-mentioned ship complies with the provisions of the  
Regulations annexed to the Convention referred to above as regards  
radiotelegraphy and radar:  
|----------------------------------------------------------------------------------------------------------------------------  
|                                                                           |                        |                       |  
|                                                                           |    Requirements of     |        Actual         |  
|                                                                           |                        |                       |  
|                                                                           |      Regulations       |       provision       |  
|                                                                           |                        |                       |  
|---------------------------------------------------------------------------|------------------------|-----------------------|  
|                                                                           |                        |                       |  
| Hours of listening by operator ........................................   |    ...............     |    ...............    |  
| Number of operators ...................................................   |    ...............     |    ...............    |  
| whether auto alarm fitted .............................................   |    ...............     |    ...............    |  
| Whether main installation fitted ......................................   |    ...............     |    ...............    |  
| Whether reserve installation fitted ...................................   |    ...............     |    ...............    |  
| Whether main and reserve transmitters electrically                        |                        |                       |  
|    separated or combined ..............................................   |    ...............     |    ...............    |  
| Whether direction-finder fitted .......................................   |    ...............     |    ...............    |  
| Whether radio equipment for homing on the radio                           |                        |                       |  
|    telephone distress frequency fitted ................................   |    ...............     |    ...............    |  
| Whether radar fitted ..................................................   |    ...............     |    ...............    |  
|                                                                           |                        |                       |  
|----------------------------------------------------------------------------------------------------------------------------  
    II. That the functioning of the radiotelegraphy installation for motor  
lifeboats and/or the portable radio apparatus for survival craft, if  
provided, complies with the provisions of the said Regulations.  
    This certificate is issued under the authority of the \_\_\_\_\_  
Government. It will remain in force until  
    Issued at           the            day of       19  
    Here follows the seal or signature of the authority entitled to issue  
the certificate.  
                                                             (Seal)  
    If signed, the following paragraph is to be added:  
    The undersigned declares that he is duly authorized by the said  
Government to issue this certificate.  
                                                             (Signature)  
    NOTE: It will be sufficient to indicate the year in which the keel was  
laid or when the ship was at a similar stage of construction except for  
1952, 1965 and the year of the coming into force of the International  
Convention for the Safety of Life at Sea, 1974,  in which cases the actual  
date should be given.  
       
     Form of Safety Radiotelegraph Certificate for Cargo Ships  
  
                CARGO SHIP SAFETY RADIOTELEPHONY  
CERTIFICATE  
 (Official Seal)                                    (Country)  
Issued under the provisions of the  
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974  
|----------------------------------------------------------------------------------------------  
|                |               |                        |          |                        |  
|                |  Distinctive  |                        |  Gross   |     Date on which      |  
|  Name of ship  |  Number or    |    Port of Registry    |          |   keel was laid (see   |  
|                |   Letters     |                        | Tonnage  |     NOTE below)        |  
|                |               |                        |          |                        |  
|----------------|---------------|------------------------|----------|------------------------|  
|                |               |                        |          |                        |  
|                |               |                        |          |                        |  
|                |               |                        |          |                        |  
|----------------------------------------------------------------------------------------------  
        The                                   (Name) Government certifies  
 ------------------                           ---------------------------  
I, the undersigned                                 (Name) certify  
    I. That the above-mentioned ship complies with the provisions of the  
Regulations annexed to the Convention referred to above as regards  
Radiotelephony:  
|----------------------------------------------------------------------------------------------------------------------------  
|                                                                           |                        |                       |  
|                                                                           |    Requirements of     |        Actual         |  
|                                                                           |                        |                       |  
|                                                                           |      Regulations       |       provision       |  
|                                                                           |                        |                       |  
|---------------------------------------------------------------------------|------------------------|-----------------------|  
|                                                                           |                        |                       |  
| Hours of listening by operator ........................................   |    ...............     |    ...............    |  
| Number of operators ...................................................   |    ...............     |    ...............    |  
|                                                                           |                        |                       |  
|-----------------------------------------------------------------------------------------------------------------------------  
    II. That the functioning of the portable radio apparatus for survival  
craft, if provided,  complies with the provisions of the said Regulations.  
    This certificate is issued under the authority of the \_\_\_\_\_\_  
Government. It will remain in force until  
    Issued at          the           day of    19  
    Here follows the seal or signature of the authority entitled to issue  
the certificate.  
                                                       (Seal)  
    If signed, the following paragraph is to be added:  
    The undersigned declares that he is duly authorized by the said  
Government to issue this certificate.  
                                                      (Signature)  
    NOTE: It will be sufficient to indicate the year in which the keel was  
laid or when the ship was at a similar stage of construction except for  
1952, 1965 and the year of the coming into force of the International  
Convention for the Safety of Life at Sea, 1974 in which cases the actual  
date should be given.  
       
     Form of Exemption Certificate  
  
                    EXEMPTION CERTIFICATE  
 (Official Seal)                                        (Country)  
Issued under the provisions of the  
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974  
|----------------------------------------------------------------------  
|                 |                |                      |           |  
|                 |  Distinctive   |                      |   Gross   |  
|   Name of Ship  |  Number or     |   Port of Registry   |           |  
|                 |   Letters      |                      |  Tonnage  |  
|                 |                |                      |           |  
|-----------------|----------------|----------------------|-----------|  
|                 |                |                      |           |  
|                 |                |                      |           |  
|                 |                |                      |           |  
|----------------------------------------------------------------------  
        The                                 (Name) Government certifies  
 ------------------                         ---------------------------  
I, the undersigned                               (Name) certify  
    That the above-mentioned ship is, under the authority conferred by  
Regulation ........ of Chapter ........ of the Regulations annexed to the  
Convention referred to above,  exempted from the requirements of ①  
.................................. of the Convention on the voyages  
.................................. to ...................  
    ①Insert here the conditions, if any, on which the exemption  
certificate is granted.  
    This certificate is issued under the authority of the \_\_\_\_\_\_  
Government. It will remain in force until  
    Issued at         the          day of           19  
    Here follows the seal or signature of the authority entitled to issue  
the certificate.  
                                                         (Seal)  
    If signed, the following paragraph is to be added:  
    The undersigned declares that he is duly authorized by the said  
Government to issue this certificate.  
    Insert here references  
    to Chapters and Regulations,  
    specifying particular paragraphs.  
                                                       (Signature)  
       
     Form of Safety Certificate for Nuclear Passenger Ships  
  
                NUCLEAR PASSENGER SHIP SAFETY CERTIFICATE  
 (Official Seal)                                           (Country)  
Issued under the provisions of the  
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974  
|---------------------------------------------------------------------------------------------------  
|                  |                  |             |           |                    |             |  
|                  |                  |             |           |  Particulars of    |  Date on    |  
|                  |   Distinctive    |   Port of   |   Gross   |  voyages, if any,  | which keel  |  
|   Name of Ship   |   Number or      |             |           |  sanctioned under  |  was laid   |  
|                  |    Letters       |   Registry  |  Tonnage  |  Regulation 27 (c) | (see NOTE   |  
|                  |                  |             |           |(vii) of Chapter III|   below)    |  
|                  |                  |             |           |                    |             |  
|------------------|------------------|-------------|-----------|--------------------|-------------|  
|                  |                  |             |           |                    |             |  
|                  |                  |             |           |                    |             |  
|                  |                  |             |           |                    |             |  
|                  |                  |             |           |                    |             |  
|                  |                  |             |           |                    |             |  
|---------------------------------------------------------------------------------------------------  
        The                             (Name) Government certifies  
 ------------------                     ---------------------------  
I, the undersigned                           (Name) certify  
    I. That the above-mentioned ship has been duly surveyed in accordance  
with the provisions of the Convention referred to above.  
    II. That the ship, being a nuclear ship, complied with all  
requirements of Chapter VIII of the Convention and conformed to the Safety  
Assessment approved for the ship.  
    III. That the survey showed that the ship complied with the  
requirements of the Regulations annexed to the said Convention as regards:  
    (1) the structure, main and auxiliary boilers and other pressure  
vessels and machinery;  
    (2) the watertight subdivision arrangements and details;  
    (3) the following subdivision load lines:  
|----------------------------------------------------------------------------------------------------------  
|                                           |                        |                                    |  
|   Subdivision load lines assigned and     |                        |    To apply when the spaces in     |  
|  marked on the ship\'s side at amidships   |       Freeboard        |    which passengers are carried    |  
|    (Regulation 11 of Chapter II-1)        |                        |  include the following alternative |  
|                                           |                        |           spaces                   |  
|                                           |                        |                                    |  
|-------------------------------------------|------------------------|------------------------------------|  
|                                           |                        |                                    |  
|               C.1                         |        ......          |           .......                  |  
|               C.2                         |        ......          |           .......                  |  
|               C.3                         |        ......          |           .......                  |  
|                                           |                        |                                    |  
|----------------------------------------------------------------------------------------------------------  
    IV. That the life-saving appliances provided for a total number of  
...... persons and no more, viz.:  
    ...... lifeboats (including ...... motor lifeboats) capable of  
accommodating ...... persons, and ...... motor lifeboats fitted with  
radiotelegraph installation and searchlight (included in the total  
lifeboats shown above) and ...... motor lifeboats fitted with searchlight  
only (also included in the total lifeboats shown above), requiring ......  
certificated lifeboatmen;  
    ...... liferafts, for which approved launching devices are required,  
capable of accommodating ...... persons; and  
    ...... liferafts, for which approved launching devices are not  
required, capable of accommodating ...... persons;  
    ...... buoyant apparatus capable of supporting ...... persons;  
    ...... lifebuoys;  
    ...... life-jackets.  
    V. That the lifeboats and liferafts were equipped in accordance with  
the provisions of the Regulations.  
    VI. That the ship was provided with a line-throwing appliance and  
portable radio apparatus for survival craft, in accordance with the  
provisions of the Regulations.  
    VII. That the ship complied with the requirements of the Regulations  
as regards radiotelegraph installations, viz.:  
|-----------------------------------------------------------------------------------------------------------------------------  
|                                                                           |                        |                       |  
|                                                                           |    Requirements of     |        Actual         |  
|                                                                           |                        |                       |  
|                                                                           |      Regulations       |       provision       |  
|                                                                           |                        |                       |  
|---------------------------------------------------------------------------|------------------------|-----------------------|  
|                                                                           |                        |                       |  
| Hours of listening by operator ........................................   |                        |                       |  
| Number of operators ...................................................   |    ...............     |    ...............    |  
| whether auto alarm fitted .............................................   |    ...............     |    ...............    |  
| Whether main installation fitted ......................................   |    ...............     |    ...............    |  
| Whether reserve installation fitted ...................................   |    ...............     |    ...............    |  
| Whether main and reserve transmitters electrically                        |    ...............     |    ...............    |  
|    separated or combined ..............................................   |                        |                       |  
| Whether direction-finder fitted .......................................   |    ...............     |    ...............    |  
| Whether radio equipment for homing on the                                 |    ...............     |    ...............    |  
|    radiotelephone distress frequency fitted ...........................   |                        |                       |  
| Whether radar fitted ..................................................   |    ...............     |    ...............    |  
| Number of passengers for which certificated ...........................   |    ...............     |    ...............    |  
|                                                                           |                        |                       |  
|-----------------------------------------------------------------------------------------------------------------------------  
    VIII. That the functioning of the radiotelegraph installations for  
motor lifeboats and/or the portable radio apparatus for survival craft, if  
provided, complied with the provisions of the Regulations.  
    IX. That the ship complied with the requirements of the Regulations as  
regards fire-detecting and fire-extinguishing appliances, radar  
echo-sounding device and gyro-compass and was provided with navigation  
lights and shapes, pilot ladder, and means of making sound signals and  
distress signals in accordance with the provisions of the Regulations and  
also the International Regulations for Preventing Collisions at Sea in  
force.  
    X. That in all other respects the ship complied with the requirements  
of the Regulations,  so far as these requirements apply thereto.  
    This certificate is issued under the authority of the \_\_\_\_\_\_  
Government. It will remain in force until  
    Issued at           the           day of          19  
    Here follows the seal or signature of the authority entitled to issue  
the certificate.  
                                                               (Seal)  
    If signed, the following paragraph is to be added:  
    The undersigned declares that he is duly authorized by the said  
Government to issue this certificate.  
                                                            (Signature)  
    NOTE: It will be sufficient to indicate the year in which the keel was  
laid or when the ship was at a similar stage of construction except for  
1965 and the year of the coming into force of the International Convention  
for the Safety of Life at Sea, 1974,  in which cases the actual date  
should be given.  
    In the case of a ship which is converted as provided in Regulation 1  
(b) (i) of Chapter II-1 or Regulation 1 (a) (i) of Chapter II-2, the date  
on which the work of conversion was begun should be given.  
       
     Form of Safety Certificate for Nuclear Cargo Ships  
  
                    NUCLEAR CARGO SHIP SAFETY CERTIFICATE  
 (Official Seal)                                         (Country)  
Issued under the provisions of the  
INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974  
|----------------------------------------------------------------------------------------------  
|                |               |                        |          |                        |  
|                |  Distinctive  |                        |  Gross   |     Date on which      |  
|  Name of ship  |  Number or    |    Port of Registry    |          |   keel was laid (see   |  
|                |   Letters     |                        | Tonnage  |     NOTE below)        |  
|                |               |                        |          |                        |  
|----------------|---------------|------------------------|----------|------------------------|  
|                |               |                        |          |                        |  
|                |               |                        |          |                        |  
|                |               |                        |          |                        |  
|----------------------------------------------------------------------------------------------  
        The                               (Name) Government certifies  
 ------------------                       ---------------------------  
I, the undersigned                             (Name) certify  
    I. That the above-mentioned ship has been duly surveyed in accordance  
with the provisions of the Convention referred to above.  
    II. That the ship, being a nuclear ship, complied with all  
requirements of Chapter VIII of the Convention and conformed to the Safety  
Assessment approved for the ship.  
    III. That the survey showed that the ship satisfied the requirements  
set out in Regulation 10 of Chapter I of the Convention as to hull,  
machinery and equipment, and complied with the relevant requirements of  
Chapter II-1 and Chapter II-2.  
    IV. That the life-saving appliances provide for a total number of  
...... persons and no more, viz.:  
    ...... lifeboats on port side capable of accommodating ...... persons;  
    ...... lifeboats on starboard side capable of accommodating ......  
persons;  
    ...... motor lifeboats (included in the total lifeboats shown above)  
including ...... motor lifeboats fitted with radiotelegraph installation  
and searchlight and ...... motor lifeboats fitted with searchlight only;  
    ...... liferafts, for which approved launching devices are required,  
capable of accommodating ...... persons; and  
    ...... liferafts for which approved launching devices are not  
required, capable of accommodating ...... persons;  
    ...... lifebuoys;  
    ...... life-jackets.  
    V. That the lifeboats and liferafts were equipped in accordance with  
the provisions of the Regulations annexed to the Convention.  
    VI. That the ship was provided with a line-throwing apparatus and  
portable radio apparatus for survival craft in accordance with the  
provisions of the Regulations.  
    VII. That the ship complied with the requirements of the Regulations  
as regards radiotelegraph installations, viz.:  
|-----------------------------------------------------------------------------------------------------------------------------  
|                                                                           |                        |                       |  
|                                                                           |    Requirements of     |        Actual         |  
|                                                                           |                        |                       |  
|                                                                           |      Regulations       |       provision       |  
|                                                                           |                        |                       |  
|---------------------------------------------------------------------------|------------------------|-----------------------|  
|                                                                           |                        |                       |  
| Hours of listening by operator ........................................   |    ...............     |    ...............    |  
| Number of operators ...................................................   |    ...............     |    ...............    |  
| Whether auto alarm fitted .............................................   |    ...............     |    ...............    |  
| Whether main installation fitted ......................................   |    ...............     |    ...............    |  
| Whether reserve installation fitted ...................................   |    ...............     |    ...............    |  
| Whether main and reserve transmitters electrically                        |                        |                       |  
|    separated or combined ..............................................   |    ...............     |    ...............    |  
| Whether direction-finder fitted .......................................   |    ...............     |    ...............    |  
| Whether radio equipment for homing on the                                 |                        |                       |  
|    radiotelephone distress frequency fitted ...........................   |    ...............     |    ...............    |  
| Whether radar fitted ..................................................   |    ...............     |    ...............    |  
|                                                                           |                        |                       |  
|-----------------------------------------------------------------------------------------------------------------------------  
    VIII. That the functioning of the radiotelegraph installations for  
motor lifeboats, and/ or the portable radio apparatus for survival craft,  
if provided, complied with the provisions of the Regulations.  
    IX. That the inspection showed that the ship complied with the  
requirements of the said Convention as regards fire-extinguishing  
appliances, radar, echo-sounding device and gyro-compass and was provided  
with navigation lights and shapes, pilot ladder, and means of making sound  
signals and distress signals in accordance with the provisions of the  
Regulations and the International Regulations for Preventing Collisions at  
Sea in force.  
    X. That in all other respects the ship complied with the requirements  
of the Regulations so far as these requirements apply thereto.  
    This certificate is issued under the authority of the \_\_\_\_\_  
Government. It will remain in force until  
    Issued at       the        day of           19  
    Here follows the seal or signature of the authority entitled to issue  
the certificate.  
                                                          (Seal)  
    If signed, the following paragraph is to be added:  
    The undersigned declares that he is duly authorized by the said  
Government to issue this certificate.  
                                                        (Signature)  
  --------------------------------------------------------------------  
    NOTE: It will be sufficient to indicate the year in which the keel was  
laid or when the ship was at a similar stage of construction except for  
the year 1965 and the year of the coming into force of the International  
Convention for the Safety of Life at Sea, 1974, in which cases the actual  
date should be given.