CCS Classification Information

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关于巴黎备忘录和东京备忘录联合开展船舶救生艇降落设备集中大检查及我社对 CCS 级船舶进行救生设备专项检查的通知

各船公司：

一、巴黎备忘录（Paris MOU）和东京备忘录（Tokyo MOU）进行救生艇降落设备集中大检查（CIC）的通知

根据巴黎备忘录和东京备忘录网站近期发布的消息，两备忘录下的 43 个海事主管当局将联合开展集中大检查，该检查为期 3 个月：自 **2009 年 9 月 1 日**开始至 **2009 年 11 月 30 日**结束。预计以上两个备忘录将进行共约 **10,000** 次检查，检查结束后将对结果进行分析并递交两备忘录的管理机构后由其提交给 IMO。

此次检查旨在确保船舶满足 SOLAS 第 III 章—**救生设备和设施**对救生艇降落设备的要求。集中大检查（CIC）意味着在巴黎备忘录和东京备忘录覆盖区域进行的 PSC 检查中除检查常规项目外将更加细致地检查救生艇降落设备、维护保养记录以及其他适用文件是否符合 SOLAS 第 III 章的要求。

PSCO（港口国监督检查官）将使用包括 20 个检查项的清单以检查有关救生艇降落设备安全的重要区域，其中还包括对相关证书/记录、设备和操作熟练程度的检查。为此，PSCO 将运用覆盖检查项目的调查表。该调查表将于 **2009 年 8 月初**在巴黎备忘录（www.parismou.org）和东京备忘录（www.tokyo-mou.org）的网站上公布，**提醒各船公司及时下载该调查表作为船舶自查备检的参考依据。**

大检查中如发现缺陷，PSCO 将对船舶采取措施包括：记录缺陷并要求船长限期纠正，严重时滞留船舶直至缺陷消除。被滞留船舶信息将公布在巴黎备忘录和东京备忘录网站每月度发布的滞留船舶清单上。

二、我社对 CCS 级船舶救生艇降落设备进行专项检查的通知

借鉴前述巴黎备忘录和东京备忘录关于2009年救生艇降落设备集中大检查的计划，为对CCS级船舶的救生艇、艇架、绞车、承载释放装置和降落设备等的技术现状进行全面检查、消除安全隐患，我社决定自本2009年7月1日起至2010年12月31日期间对CCS级船舶结合最近一次入级、法定检验，进行一次针对救生艇及降落设备的专项检查（下简称“**专项检查**”）。**专项检查**不另向船公司收取费用，但检查发现缺陷而进行安全设备（SE）附加检验者除外。

我社对有关船舶实施专项检查时请船公司予以积极配合以达预期目的。专项检查仅作为检查船舶救生艇降落装置安全技术状况、排除安全隐患的一项辅助性措施，不代替船公司、船长及专业检修公司按国际公约、规则等要求所应履行的职责；本专项检查的结果与PSC大检查结果亦无必然联系。在此提醒船方在PSC大检查期间应特别注意加强对救生艇、艇架、承载释放及降落设备等的维护保养，发现缺陷时应尽快向公司、船级社或船旗国报告并安排解决方案。

如船舶在接受PSC大检查前无船级、法定检验计划，建议船公司参照所附专项检查项目表安排船长自查，自查中如发现问题应及时向我社申请安全设备（SE）的附加检验。

请各船公司对本通告予以关注！

中国船级社营运入级处

2009年6月22日

附件：

1. “救生艇及降落设备专项检查项目表（CCS）”
2. 2009救生艇释放装置大检查宣传片（供船公司及验船师培训自学用）
3. MSC.1/Circ.1205
4. MSC.1/Circ.1206

救生艇及降落设备专项检查项目表（CCS）

船名：		Class No.:		检验工作控制号：	

1. 封闭式救生艇的信息的提供（注：仅适用于封闭式救生艇）

序号	检查项目	检查内容	结果
1.1	封闭式救生艇的信息	船长应能提供含每一封闭式救生艇的制造厂名称及制造日期等信息的证明文件（如产品证书、安全设备详细记录等）	□

2. 检查维护保养情况

序号	检查项目	检查内容	结果
2.1	救生艇和救助艇、艇架、承载释放装置和降落设备外观检查。	救生艇和救助艇的艇体应无损坏和严重变形。 **特别提醒：对常见的玻璃钢救生艇油漆龟裂、起皮现象应引起重视，这种现象多为油漆脱落，但也有时是由于艇体变形或以前做过局部修理而导致表层漆皮破损，所以检查中对艇体油漆破损处有怀疑时应要求刨去该处油漆层彻底检查油漆破损处艇体的真实技术状况，以确认是否存在以前局部修理时留下的修补痕迹及是否有裂痕，确保救生艇技术状态的完好。当验船师认为艇体裂痕影响到艇的强度和稳性时，应要求厂家或有资质的检修机构对艇体的安全技术状况进行评价，以决定修理或换新。修理原则上应由专业厂家或检修机构进行。**	□
		救生艇/救助艇艇架和降落装置外观检查无严重腐蚀或损坏，滑轮和艇索保养良好。特别应关注穿过滑轮钢丝绳的损耗情况。	□
2.2	救生艇是否定期入水并进行操纵试验？	检查船上是否按照公约规定的周期进行了救生艇落水及操纵试验，并进行正确记录	□
2.3	救生艇绞车的刹车是否定期维护保养并进行负荷试验？	检查船上按照公约 Reg.III/36 的规定制定了维护保养须知，并正确的执行并记录	□
		检查救生艇绞车是否进行了年度全面检查并持有相关记录	□
		检查救生艇绞车及刹车是否按期进行了五年度试验并持有相关记录	□

备注：“□”内：填“×”正常或良好； 填“-”不适用； 填“o”有缺陷提出（用 RA 报告描述）

		检查是否按期对救生艇及其设备进行了周检查和月度检查，并正确得记录	☐
2.4	救生艇和艇架是否进行定期维护保养？	检查船上是否按照公约 Reg.III/36 的规定制定了维护保养须知，并正确的执行并记录	☐
		检查救生艇及艇架是否进行了年度全面检查并持有相关记录	☐
		检查是否按期对救生艇及其设备进行了周检查和月度检查，并正确得记录	☐
2.5	救生艇的钢丝绳是否进行定期维护保养？	应对救生艇钢丝绳进行定期维护保养并特别关注经过滑轮的部分，钢丝绳应在必要时（如损耗）进行更换，其最长间隔不得超过5年，相关检查和更换应有记录。 通过向船长询问如何执行这些检查及船旗国是否有特殊规定（根据船旗注意本社须知 III－K 内容）	☐
2.6	救生艇吊钩及其与救生艇连接的部件是否处于良好安全的状态？	检查艇钩及附连部件的腐蚀情况，应特别关注关节处的情况	☐
2.7	**典型滞留缺陷排查**	确认船舶不存在以下典型滞留缺陷（注：正常无缺陷则在“□”内填“×”）	
		救生艇绞车未进行定期维护保养： 如果救生艇绞车未按规定进行年度全面检查及试验（超出周年日后三个月，或当其与 SE 证书周年日不同时，距上次检查超过十二个月），可导致被滞留。	☐
		救生艇钢丝未进行定期维护保养： 当没有证据证明进行了维护保养，或钢丝绳的状况被 PSCO 认为没有进行合适的维护保养可能导致救生艇不能安全使用（如断丝、打结、腐蚀或钢丝松脱）时，可导致被滞留。	☐
		救生艇吊钩及其与救生艇连接的部件未处于良好安全的状态： 当艇钩的状况被 PSCO 认为可能导致救生艇不能安全使用时，如： 1. 当艇钩及其在甲板上和艇上的连接件腐蚀或损坏时； 2. 当艇钩显示出明显的损坏时； 3. 活动部件卡死，或损坏以至不能正常使用时。 可导致被滞留。	☐
		救生艇艇架、绞车未处于良好安全的状态，如： 1. 救生艇眼板锈蚀严重、减薄；	☐

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		2. 滑轮边缘减薄； 3. 艇架滑车座板锈蚀严重； 4. 艇架顶部锈蚀严重； 5. 救生艇绞车底座锈蚀严重等。 可导致被滞留。	
		被油漆覆盖的救生艇艇体裂痕： 艇体变形或以前做过局部修理而导致表层漆皮破损，虽经船员多次表面刷漆仍发现救生艇油漆龟裂、起皮现象，PSCO 有怀疑而要求船员刨去该处油漆层，结果发现艇体以前局部修理时留下的修补痕迹并存在裂痕。 可导致被滞留。	☐
		救生艇未处于良好安全的状态，如： 1. 救生艇释放空气管锈蚀； 2. 救生艇附件破损； 3. 救生艇淡水箱洞穿； 4. 救生艇油箱洞穿； 5. 救生艇底托锈蚀严重； 6. 救生艇舵叶洞穿； 7. 救生艇艇机无法正常启动，或运转故障； 8. 救生艇属具破损、不全。等 可导致被滞留。	☐

3. 检查船员是否熟悉如何安全释放救生艇

序号	检查项目	检查内容	结果
3.1	船上是否标示了救生艇释放和回收时可能出现的危险？	检查船上是否根据 MSC Circ.1206 的以下要求标示出相应的危险 **2.3 Lifeboats lowered by means of falls** 2.3.1 During drills, those responsible should be alert for potentially dangerous conditions and situations and should bring them to the attention of the responsible person for appropriate action. Feedback and	☐

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		improvement recommendations to the shipowner, the Administration and the system manufacturer are important elements of the marine safety system.	
		通过核实包括公司通函、SMS 信息及操作流程文本等在内的 SMS 文件来验证	☐
3.2	针对上述危险是否制定了流程和操作须知?	检查船上是否保存并张贴了相关的流程和操作须知	☐
3.3	所有关键人员是否熟悉这些流程?	向被指定在降落、操纵和回收救生艇的程序中负有职责的船员询问以验证熟悉情况	☐
3.4	船员是否熟悉 MSC Circ.1205 & 1206 中列出相关 IMO 文件和指南?	向有关船员抽查询问以验证熟悉情况，包括但不限于以下文件: 1. MSC.1/Circ. 1205 & MSC.1/Circ.1206 （包括附则） 2. SOLAS 第三章“救生设备和装置” 3. 救生设备规则（LSA）	☐
3.5	**典型滞留缺陷排查**	确认船舶不存在以下典型滞留缺陷（注：正常无缺陷则在“□”内填“×”）	
		有关关键人员不熟悉流程: 当被指定在降落、操纵和回收救生艇的程序中负有职责的船员不熟悉他们的任务时，可导致被滞留	☐

4. 检查承载释放装置（注：仅适用于配有承载释放装置的船舶）

序号	检查项目	检查内容	结果
4.1	船员是否熟悉包括互锁装置在内的承载释放装置的操作?	应在降落和释放之前询问船员，无须进行实操	☐
		询问应主要集中在如何使该装置复位并防止其在回收时意外脱开	☐
		询问对象主要应为负责操作该装置的船员	☐
		询问亦可参考艇内的操作和复位说明	☐
4.2	是否张贴有一份用工作语言写出的清晰的使用须知，	对 1998 年 7 月 1 日至 2008 年 7 月 1 日间安放龙骨的船舶，应在艇内提供使用船上工作语言的清晰的说明，并有对防止意外和过早脱开的警告标志;	☐

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	同时配有警告标语？	对 2008 年 7 月 1 日之后安放龙骨的船舶，应有使用包括颜色、图形或图号在内的明确的文字说明张贴在艇内（如果使用颜色标记，绿色代表正确的复位，红色代表错误），并有对防止意外和过早脱开的警告标志，及在每个钩子的位置张贴警告标志以提醒船员进行正确的复位。	☐
4.3	承载释放装置是否设计成能让艇内的船员清楚地看到该装置已经正确完全的复位并可以起吊？	对 1998 年 7 月 1 日至 2008 年 7 月 1 日间安放龙骨的船舶，释放装置应设计成艇内的船员能清晰地观察到该装置已正确复位并可以起吊；	☐
		对 2008 年 7 月 1 日之后安放龙骨的船舶，释放装置应设计成可以通过下述三种方式之一使得艇内的船员可以从内部清楚地确认该装置已适于起吊： 1. 能直接观察到每个钩子的可动部分或与可动部分连锁的部分已经处于正确的复位位置； 2. 能通过一个机械连接着钩子的可动部分的不可调指示器确认每个钩子都已经处于正确的复位位置； 3. 能通过易于操作的机械连接着钩子的可动部分的机械指示器来确认每个钩子都已经处于正确的复位位置。	☐
4.4	释放手柄是否被标记为与背景反差明显的颜色？	对 1998 年 7 月 1 日以后安放龙骨的船舶，释放手柄应被标记为与背景反差明显的颜色。	☐
4.5	包括互锁装置在内的钩子和释放装置是否处于正确的状态？	通过艇内检查的方式确认。	☐
4.6	承载释放装置是否得到了良好的维护保养？	检查船上是否按照公约 Reg.III/36 的规定制定了维护保养须知，并正确的执行并记录；	☐
		检查救生艇绞车是否“有资质的人员”进行了年度全面检查并持有相关记录；	☐
		检查救生艇绞车及刹车是否“有资质的人员”按期进行了五年度试验并持有相关记录；	☐
		检查船员是否按期对救生艇及其设备进行了周检查和月度检查，并正确得记录。	☐
4.7	**典型滞留缺陷排查**	确认船舶不存在以下典型滞留缺陷（注：正常无缺陷则在“□”内填“×”）	
		船员不熟悉包括互锁装置在内的承载释放装置的操作： 当被指定负责操作承载释放装置的船员不熟悉他们的任务时，可以给予滞留	☐

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		包括互锁装置在内的钩子和释放装置未处于正确的状态： 当有证据证明包括互锁装置在内的钩子和释放装置不能正确复位，如： 1. 凸轮和互锁不能正确复位，包括指示器不能正确指示时； 2. 动力模块锁死或不能操作时； 3. 当艇处于存放状态时，锁定装置不在正确位置时； 4. 操作柄等构成整个系统的部件损坏、不能正常运行或处于很差的状态时； 5. 有证据表明通过未授权的修理对装置进行了改动； 6. 有证据表明构成“认证”装置的部件（如盖子、护栏等）丢失时。 可导致被滞留。	☐
		对承载释放装置的定期检查和试验未按规定时限进行： 当公约规定的由“有资质人员”进行的全面检查和试验未正确进行时，如： 1. SE 证书的年度检验已完成，但该检查和试验尚未进行； 2. 当相关的 SE 证书检验已完成，但五年度的全面检查和承载试验未进行时； 3. 当五年度的全面检查已完成，但承载试验未进行时。 可导致被滞留。	☐
		承载释放装置控制/释放钢缆破损 外部护管的破损虽然可能暂时不影响功能，但将加速失去保护的控制/释放钢缆锈蚀和破损，最终导致承载释放功能的失效。 可导致被滞留。	☐

5. 检查艇架及绞车－至少进行一条救生艇的降落和回收以确认艇架和刹车的状况

序号	检查项目	检查内容	结果
5.1	艇架是否处于满意的状态？ 所有的滑轮及其他活动部	对艇架进行整体目视检查并适当考虑维护保养记录以进行评估。	☐
		对所有滑轮及其他活动部件进行整体目视检查并适当考虑维护保养记录以进行评估；	☐
		在降落和回收时观察滑轮及其他活动部件的运行情况；	☐

备注：“□”内：填“×”正常或良好； 填“-”不适用； 填“o”有缺陷提出（用 RA 报告描述）

	件，包括限位，是否运行良好？	确认限位能够正常运行。	☐
5.2	刹车是否能在自由降落时正常使用，当刹车松开时，艇是否能自动降落？	在救生艇降落时对刹车进行试验，验证其能有效运作；	☐
		当刹车松开时，救生艇能自动降落。	☐
		考虑到本次集中大检查的目的，一次空艇降落刹车试验已经足够。	☐
5.3	**典型滞留缺陷排查**	确认船舶不存在以下典型滞留缺陷（注：正常无缺陷则在“□”内填“×”）	
		艇架未处于满意的状态： 当艇架的状况被 PSCO 认为可能导致救生艇不能安全使用时（如艇架结构腐烂或减薄），可导致被滞留。	☐
		所有的滑轮及其他活动部件，包括限位，未处于运行良好状态： 当艇架的状况被 PSCO 认为可能导致救生艇不能安全使用时，如： 1.滑轮，滚轮或其他部件锁死、锈烂或减薄时； 2.限位器脱落或不能正常工作时； 3.绞车或刹车装置处于较差的状态时。 可导致被滞留。	☐
		刹车不能在自由降落时正常使用，或当刹车松开时，艇不能自动降落： 试验时刹车不能停止救生艇的降落时，或当刹车松开时，艇不能自由降落时（往往由于缺少必要的维护保养导致刹车装置内部锈蚀、变形等缺陷引起），可导致被滞留。	☐

6. 进行一次放艇演习（实际可行时）

序号	检查项目	检查内容	结果
6.1	如进行演习，确认演习得到了正确的完成。	虽然本次集中大检查并不要求每条船舶的检查都要进行完整的放艇演习，只需至少降落一条艇以验证艇架和刹车即可，但仍应尽实际可行进行一次放艇演习；	☐
		进行演习前，应告知船长任何演习或操作都将在他的指挥下进行；	☐
		进行演习前，先要求船长说明演习的步骤；	☐

备注：“□”内：填“×”正常或良好； 填“-”不适用； 填“o”有缺陷提出（用 RA 报告描述）

		当船长准备进行一次载人的放艇演习，要求船长先将空艇释放到水面再回收到登乘位置，在此过程中，当降落速度达到最大时试验绞车的刹车，并对限位进行效用试验；	☐
		如果船长准备对配有承载释放装置的救生艇进行载人释放时，要求船长说明他打算如何确保钩子能够正确复位并不会在回收时意外脱开。	☐
6.2	**典型滞留缺陷排查**	确认船舶不存在以下典型滞留缺陷（注：正常无缺陷则在“□”内填“×”）	
		船舶放艇或回收过程中出现救生艇非正常脱钩、坠落，可能原因有： 1. 放艇机械柄锈蚀，运转失灵，而其起吊挂钩正处于打开状态，结果造成救生艇自动脱落掉到船下。 2. 而由于疏忽，船员在起吊救生艇的时候没有遵照操作规程预先锁定救生艇释放机械柄。 3. 救生艇缺乏恰当保养维修，其艇架零部件严重锈蚀，运转不良。 将导致滞留	☐
		船舶放艇或回收过程中出人员伤亡事故： 当被指定负责操作救生艇的人员因不熟悉操作程序及安全保护而导致人员伤亡事故 将导致滞留	☐

7. 检查发现了缺陷并采取了相应整改措施 （应用 RA 报告描述： RA 报告编号：_____） ☐

8. 拍摄了反映救生艇、艇架、承载释放装置、降落设备等的典型技术状况，以及发现的缺陷、整改措施和整改后状况（适用时）的照片。 ☐

9. 其它说明（如有）： ☐

验船师签名/盖章： **检查地点：** **检查日期：** 年 月 日

备注：“□”内：填“×”正常或良好； 填“-”不适用； 填“o”有缺陷提出（用 RA 报告描述）

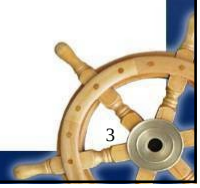
2009年救生艇降落设备PSC集中大检查
Lifeboat Launching Arrangements CIC

2009年9月1日至11月30日，PARIS MOU和TOKYO MOU将进行一次对救生艇降落装置的集中大检查(CIC)

2

集中大检查的目的

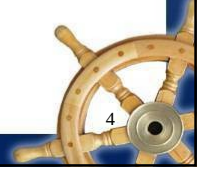
- 增进船舶对救生艇及相关设备的安全问题的重视
- 收集相关信息



3

集中大检查的依据

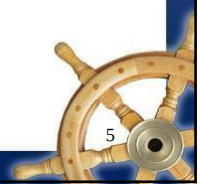
- SOLAS第III章“救生设备和装置”
- LSA (救生设备规则)
- MSC Circ.1205&1206（IMO通函）



4

集中大检查的执行者

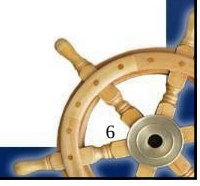
- PARIS MOU及TOKYO MOU
- 其他区域PSC组织可能会跟进（如India MOU）



5

集中大检查的内容

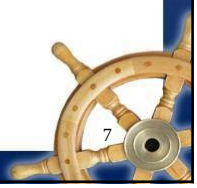
- 收集封闭式救生艇的信息
- 检查维护保养情况
- 检查船员是否熟悉如何安全释放救生艇
- 检查承载释放装置
- 检查艇架及绞车
- 每船至少验证一条救生艇的降落和回收以确认艇架和刹车的状况
- 如PSCO认为有必要，进行放艇演习



6

收集封闭式救生艇的信息

Ø如船舶配有封闭式救生艇，则应收集制造厂的名称和制造日期，填入检查表中。



7

检查维护保养情况

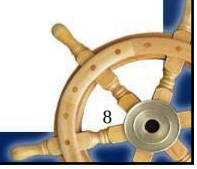
Ø救生艇是否定期入水并进行操纵试验？

Ø救生艇绞车的刹车是否定期维护保养并进行了负荷试验？

Ø救生艇和艇架是否进行了定期维护保养？

Ø救生艇的钢丝绳是否进行了定期维护保养？

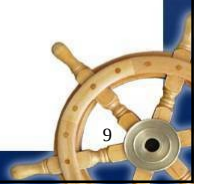
Ø救生艇吊钩及其与救生艇连接的部件是否处于良好安全的状态？



8

救生艇是否定期入水并进行操纵试验?

- 检查船上是否按照公约规定的周期进行了救生艇入水及操纵试验，并进行正确记录



9

救生艇绞车的刹车是否定期维护保养并进行了负荷试验?

- 检查船上是否按照公约Reg.III/36的规定制定了维护保养须知，并正确的执行并记录；
- 检查救生艇绞车是否进行了年度全面检查并持有相关记录；
- 检查救生艇绞车及刹车是否按期进行了五年度试验并持有相关记录；
- 检查是否按期对救生艇及其设备进行了周检查和月度检查，并正确得记录。

10

救生艇和艇架是否进行了定期维护保养?

- 检查船上是否按照公约Reg.III/36的规定制定了维护保养须知，并正确的执行并记录；
- 检查救生艇及艇架是否进行了年度全面检查并持有相关记录；
- 检查是否按期对救生艇及其设备进行了周检查和月度检查，并正确得记录。

11

救生艇的钢丝绳是否进行了定期维护保养?

- 应对救生艇钢丝绳进行定期并特别关注经过滑轮的部分，钢丝绳应在必要时更换，其最长间隔不得超过5年，相关检查和更换应有记录；
- PSCO也可向船长询问如何执行这些检查及船旗国是否有其他规定。

12

救生艇吊钩及其与救生艇连接的部件是否处于良好安全的状态?

u 检查艇钩及附连部件的腐蚀情况，应特别关注关节处的情况

13

检查船员是否熟悉如何安全释放救生艇

Ø船上是否标示了救生艇释放和回收时可能出现的危险？

Ø是否针对上述危险制定了流程和操作须知？

Ø所有关键人员是否熟悉这些流程？

Ø船员是否熟悉MSC Circ.1205&1206中列出相关IMO文件和指南？

14

船上是否标示了救生艇释放和回收时可能出现的危险？

- 检查船上是否根据MSC Circ.1206的要求标示出相应的危险；
- PSCO将通过核实包括公司通函、SMS信息及操作流程文本等在内的SMS文件来验证。

15

是否针对上述危险制定了流程和操作须知?

- 检查船上是否保存并张贴了相关的流程和操作须知

16

所有关键人员是否熟悉这些流程?

17

船员是否熟悉MSC Circ.1205&1206
中列出相关IMO文件和指南?

- MSC Circ.1205
- MSC Circ.1206

18

检查承载释放装置

Ø是否配有承载释放装置？

Ø船员是否熟悉包括互锁装置在内的承载释放装置的操作？

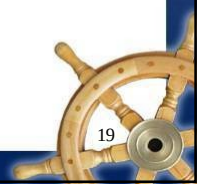
Ø是否张贴有一份用工作语言写出的清晰的使用须知，同时配有警告标语？

Ø承载释放装置是否设计成能让艇内的船员清楚地看到该装置已经正确完全的复位并可以起吊？

Ø释放手柄是否被标记为与背景反差明显的颜色？

Ø包括互锁装置在内的钩子和释放装置是否处于正确的状态？

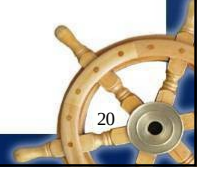
Ø承载释放装置是否得到了良好的维护保养？



19

是否配有承载释放装置?

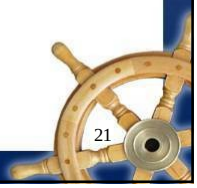
u 如无此设备，该部分后续检查不必进行。



20

船员是否熟悉包括互锁装置在内的承载释放装置的操作?

- 应在降落和释放之前询问船员，无须进行实操；
- 询问应主要集中在如何使该装置复位并防止其在回收时意外脱开；
- 询问对象主要应为负责操作该装置的船员；
- 询问亦可参考艇内的操作和复位说明。



21

是否张贴有一份用工作语言写出的清晰的使用须知，同时配有警告标语?

- 对1998年7月1日至2008年7月1日间安放龙骨的船舶，应在艇内提供使用船上工作语言的清晰的说明，并有对防止意外和过早脱开的警告标志；
- 对2008年7月1日之后安放龙骨的船舶，应有使用包括颜色、图形或图号在内的明确的文字说明张贴在艇内（如果使用颜色标记，绿色代表正确的复位，红色代表错误），并有对防止意外和过早脱开的警告标志，及在每个钩子的位置张贴警告标志以提醒船员进行正确的复位。

22

承载释放装置是否设计成能让艇内的船员清楚地看到该装置已经正确完全的复位并可以起吊?

- 对1998年7月1日至2008年7月1日间安放龙骨的船舶，释放装置应设计成艇内的船员能清晰地观察到该装置已正确复位并可以起吊；
- 对2008年7月1日之后安放龙骨的船舶，释放装置应设计成可以通过下述三种方式之一使得艇内的船员可以从内部清楚地确认该装置已适于起吊：

1.能直接观察到每个钩子的可动部分或与可动部分连锁的部分已经处于正确的复位位置；

2.能通过一个机械连接着钩子的可动部分的不可调指示器确认每个钩子都已经处于正确的复位位置；

3.能通过易于操作的机械连接着钩子的可动部分的机械指示器来确认每个钩子都已经处于正确的复位位置。

23

释放手柄是否被标记为与背景反差明显的颜色?

- 对1998年7月1日以后安放龙骨的船舶，释放手柄应被标记为与背景反差明显的颜色。

24

包括互锁装置在内的钩子和释放装置是否处于正确的状态?

- PSCO将通过艇内检查的方式确认。

25

承载释放装置是否得到了良好的维护保养?

- 检查船上是否按照公约Reg.III/36的规定制定了维护保养须知，并正确的执行并记录；
- 检查救生艇绞车是否进行了年度全面检查并持有相关记录；
- 检查救生艇绞车及刹车是否按期进行了五年度试验并持有相关记录；
- 检查是否按期对救生艇及其设备进行了周检查和月度检查，并正确得记录。

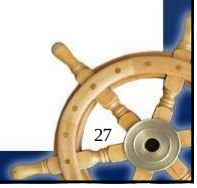
26

检查艇架及绞车

Ø艇架是否处于满意的状态？

Ø所有的滑轮及其他活动部件，包括限位，是否运行良好？

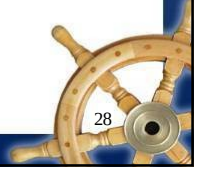
Ø刹车是否能在自由降落时正常使用，当刹车松开时，艇是否能自动降落？



27

艇架是否处于满意的状态?

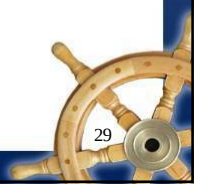
u 对艇架进行整体目视检查并适当考虑维护保养记录以进行评估。



28

所有的滑轮及其他活动部件，包括限位，是否运行良好？

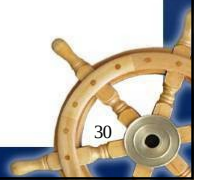
- 对所有滑轮及其他活动部件进行整体目视检查并适当考虑维护保养记录以进行评估；
- 在降落和回收时观察滑轮及其他活动部件的运行情况；
- 确认限位能够正常运行。



29

刹车是否能在自由降落时正常使用，当刹车松开时，艇是否能自动降落？

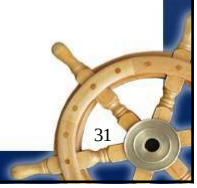
- 在救生艇降落时对刹车进行试验，验证其能有效运作；
- 当刹车松开时，救生艇能自动降落；
- 考虑到本次集中大检查的目的，一次空艇降落刹车试验已经足够。



30

如有必要，进行放艇演习

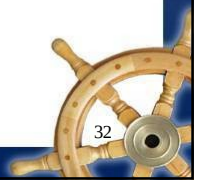
Ø如进行演习，确认演习得到了正确的完成。



31

如进行演习，确认演习得到了正确的完成?

- 本次集中大检查并不要求每条船舶的检查都要进行完整的放艇演习，但至少应降落一条艇以验证艇架和刹车；
- 当进行演习时，知会船长任何演习或操作都将在他的指挥下进行；
- 当PSCO打算观察一次演习时，先要求船长说明演习的步骤；



32

- 当船长准备进行一次载人的放艇演习，要求船长先将空艇释放到水面再回收到登乘位置，在此过程中，当降落速度达到最大时试验绞车的刹车，并对限位进行效用试验；
- 如果船长准备对配有承载释放装置的救生艇进行载人释放时，要求船长说明他打算如何确保钩子能够正确复位并不会在回收时意外脱开。

33

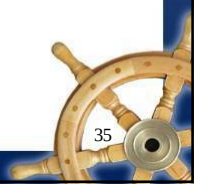
集中大检查导致的滞留

- PSCO应注意到并不是所有的缺陷都将导致滞留，当发生下述缺陷时同时考虑相关条件，可以予以滞留。

34

救生艇绞车是否进行了定期维护保养?

Ø如果救生艇绞车未按规定进行年度全面检查及试验（超出周年日后三个月，或当其与SE证书周年日不同时，距上次检查超过十二个月），可以给予滞留。



35

救生艇的钢丝绳是否进行了定期维护保养?

Ø当没有证据证明进行了维护保养，或钢丝绳的状况被PSCO认为没有进行合适的维护保养可能导致救生艇不能安全使用（如断丝、打结、腐蚀或钢丝松脱）时，可以给予滞留。

36

救生艇吊钩及其与救生艇连接的部件是否处于良好安全的状态?

Ø当艇钩的状况被PSCO认为可能导致救生艇不能安全使用时，如：

1.当艇钩及其在甲板上和艇上的连接件腐蚀或损坏时；

2.当艇钩显示出明显的损坏时；

3.活动部件卡死，或损坏以至不能正常使用时。

可以给予滞留。

37

所有关键人员是否熟悉流程?

Ø当被指定在降落、操纵和回收救生艇的程序中负有职责的船员不熟悉他们的任务时，可以给予滞留

38

船员是否熟悉包括互锁装置在内的承载释放装置的操作?

Ø当被指定负责操作承载释放装置的船员不熟悉他们的任务时，可以给予滞留

39

包括互锁装置在内的钩子和释放装置是否处于正确的状态?

Ø当有证据证明包括互锁装置在内的钩子和释放装置不能正确复位，如：

1.凸轮和互锁不能正确复位，包括指示器不能正确指示时；

2.动力模块锁死或不能操作时；

3.当艇处于存放状态时，锁定装置不在正确位置时；

4.操作柄等构成整个系统的部件损坏、不能正常运行或处于很差的状态时；

5.有证据表明通过未授权的修理对装置进行了改动；

6.有证据表明构成“认证”装置的部件（如盖子、护栏等）丢失时。

可以给予滞留。

40

承载释放装置是否得到了良好的维护保养?

Ø当公约规定的由“有资质人员”进行的全面检查和试验未正确进行时，如：

1.SE证书的年度检验已完成，但该检查和试验尚未进行；

2.当相关的SE证书检验已完成，但五年度的全面检查和承载试验未进行时；

3.当五年度的全面检查已完成，但承载试验未进行时。

可以给予滞留。

41

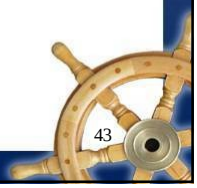
艇架是否处于满意的状态?

Ø当艇架的状况被PSCO认为可能导致救生艇不能安全使用时（如艇架结构腐烂或减薄），可以给予滞留。

42

所有的滑轮及其他活动部件，包括限位，是否运行良好?

Ø当艇架的状况被PSCO认为可能导致救生艇不能安全使用时，如：
1.滑轮，滚轮或其他部件锁死、锈烂或减薄时；
2.限位器脱落或不能正常工作时；
3.绞车或刹车装置处于较差的状态时。
可以给予滞留。



43

刹车是否能在自由降落时正常使用，当刹车松开时，艇是否能自动降落?

Ø当刹车不能停止救生艇的降落时，或当刹车松开时，艇不能自由降落时，可以给予滞留。

44

签发滞留令时的注意事项?

Ø本次集中大检查所导致的滞留依据应为违反了SOLAS Ch.III或LSA的条款，或是ISM规则下的某要素，例如维护保养或应急准备；
ØPSCO应避免对一个事项签发多个不同的滞留项；
ØPSCO应意识到不能对承载释放装置使用强制动作，如签发滞留令，PSCO应考虑是否需要外部技术人员提供专业的检查和修理。

45

附录I：救生艇架、绞车及承载释放装置常见缺陷举例(I)

救生艇眼板减薄

46

附录I：救生艇架、绞车及承载释放装置常见缺陷举例(2)

滑轮边缘减薄

47

附录I：救生艇架、绞车及承载释放装置常见缺陷举例(3)

艇架滑车座板锈蚀

48

附录I：救生艇架、绞车及承载释放装置常见缺陷举例(4)

艇架顶部锈蚀

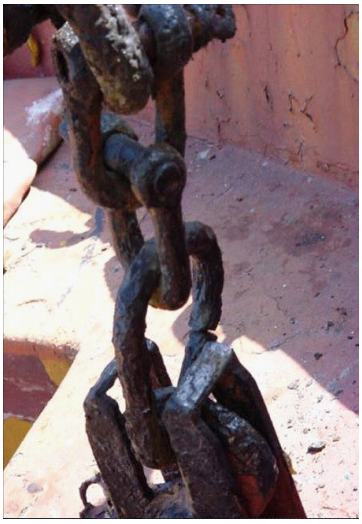
49

附录I：救生艇架、绞车及承载释放装置常见缺陷举例(5)

救生艇吊钩锈蚀

50

附录I：救生艇架、绞车及承载释放装置常见缺陷举例(6)



艇钩锈蚀

51

附录I：救生艇架、绞车及承载释放装置常见缺陷举例(7)

救生艇绞车底座锈蚀

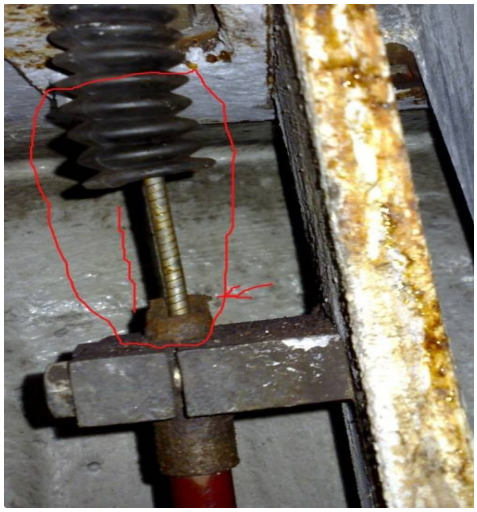
52

附录I：救生艇架、绞车及承载释放装置常见缺陷举例(8)

救生艇吊钩连接构件锈蚀严重

53

附录I：救生艇架、绞车及承载释放装置常见缺陷举例(9)



救生艇承载释放装置——控制 释放钢缆外部护管破损

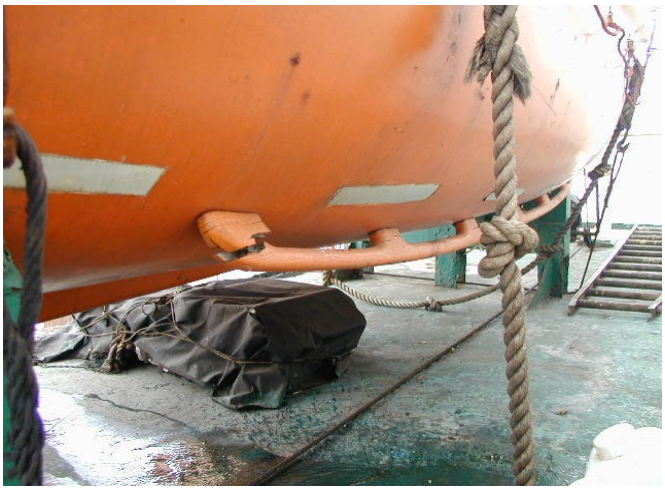
54

附录2：救生艇常见缺陷举例（1）

救生艇释放空气管锈蚀

55

附录2：救生艇常见缺陷举例（2）



救生艇 附件损坏

56

附录2：救生艇常见缺陷举例（3）

救生艇浆叉缺失

57

附录2：救生艇常见缺陷举例（4）

救生艇淡水箱洞穿

58

附录2：救生艇常见缺陷举例（5）

救生艇油箱破洞

59

附录2：救生艇常见缺陷举例（6）

救生艇底托锈蚀严重

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附录2：救生艇常见缺陷举例（7）

救生艇舵叶洞穿

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Ref. T4/4.01

MSC.1/Circ.1205
26 May 2006

GUIDELINES FOR DEVELOPING OPERATION AND MAINTENANCE MANUALS FOR LIFEBOAT SYSTEMS

1 The Maritime Safety Committee, at its eighty-first session (10 to 19 May 2006), taking into account the number of casualties with lifeboat systems, further recognizing the need to improve manuals for operation and maintenance of lifeboat systems, and having considered proposals by the Sub-Committee on Fire Protection at its fiftieth session, approved the Guidelines for developing operation and maintenance manuals for lifeboat systems, as set out in the annex.

2 Member Governments are invited to bring the annexed Guidelines to the attention of all parties concerned with their application, as appropriate.

***

ANNEX

GUIDELINES FOR DEVELOPING OPERATION AND MAINTENANCE MANUALS FOR LIFEBOAT SYSTEMS

1 Scope and purpose of the guidelines

Seafarers often change ships and sometimes are not familiar with the lifeboats on their ships. Casualties with lifeboat systems are often caused by poor understanding of the lifeboat systems, especially release gear systems. User-friendliness of manuals for lifeboat systems is, therefore, important to help prevent casualties.

The purpose of these guidelines is to encourage development of user-friendly manuals for operation and maintenance of lifeboat systems including launching appliances. These manuals should be easy to understand. The guidelines demonstrate the appropriate level of detail and use of illustrations in explaining the safe use of critical systems. Manufacturers of lifeboats and launching/recovery appliances are invited to make manuals easy to understand, taking into account these guidelines. The use of video materials in conjunction with printed manuals can be an effective tool for mariners who may not be inclined to read a manual.

These guidelines are not applicable to the emergency instructions required by SOLAS regulation III/8, operating instructions such as posters and signs required by SOLAS regulation III/9 or other brief instructions for operation of lifeboats.

These guidelines are for manuals to be carried on ships for use by seafarers, and accordingly the section on weekly and monthly inspection and maintenance does not refer to detailed maintenance/repair work. Detailed maintenance/repair work should be conducted by the manufacturer's representative or a person appropriately trained and certified by the manufacturer for the work in accordance with MSC.1/Circ.1206.

2 Collaboration of manufacturers of the lifeboat and the launching appliance

A manual for a lifeboat system including launching appliance should be developed with the collaboration of manufacturers of the lifeboat and the launching appliance and preferably be a single document. As a minimum, the use of different words for the same gear/parts of the lifeboat system should be eliminated by the collaboration of manufacturers of the lifeboat and the launching appliance to prevent misunderstanding by seafarers. Hereafter, these guidelines assume a manual for a lifeboat system includes the launching appliance as a minimum, but separate lifeboat, release gear, and launching appliance manuals may be effective if adequately co-ordinated and using the same style of presentation per these guidelines.

3 Contents of a manual for a lifeboat system

3.1 Items to be included

An operation and maintenance manual for a lifeboat system should include, as a minimum, the following items:

.1 overview and specification of the lifeboat system;

.2 explanation of the structure and working principle of the major parts of the lifeboat system including release gear systems;

.3 operation of the lifeboat system; and

.4 routine inspection and maintenance of the lifeboat system.

3.2 Organization, description and layout of manual

3.2.1 Outline

It is recommended that a manual for a lifeboat system be developed with the following major divisions:

1 General description of the whole lifeboat system.

2 Method of checking proper closure of release hooks.

3 Launching operation.

4 Recovery operation.

5 On-load/off-load release gear.

6 Inspection and maintenance.

3.2.2 Explanation of major components and their function

The structure and working principle of the lifeboat's major components, in particular the on-load/off-load release gear, should be explained using figures and preferably three-dimensional perspectives. In addition, the operation of the release gear should be described sequentially, using short phrases written in the active voice.

3.2.3 Operation of lifeboat system including release gear systems

The operation of the lifeboat system should be described using the following elements:

.1 flow of the operation should be explained;

.2 detail of operation should be explained with figures. Operation and relevant movement of the parts of the release gear should be described with illustrations/photos, preferably using annotations and arrows to show direction of movement; and

.3 hazards, precautions and notes should be identified with symbols specific to the level of risk. As an example of the various levels of risk and the appropriate associated symbols, the following are recommended:

.1 For the highest level of risk, such as in the explanation of "on-load release operation", the following symbol (red background) should be used with a warning statement similar to the following:

Warning

This operation releases the lifeboat and may result in the lifeboat dropping and causing death or serious injury if released too soon.

Note: International standard symbols (ISO 3864-1 and ISO 7010) are recommended where appropriate, but since marine use is excluded from the scope of these standards, and they fail to indicate different levels of risk, the "graduated" symbols are recommended.

.2 For the second highest level of risk, such as in the explanation of "davit arm stop release operation", the following symbol (yellow background) should be used with a caution statement similar to the following:

Caution

Incorrect or incomplete resetting may cause the lifeboat to drop resulting in death or serious injury.

.3 For less critical mandatory instructions the following symbol (blue background) should be used with appropriate instruction:

Mandatory

Place the manual gripe out of the way to prevent tangling round the lifeboat.

. . .

.4 Important notes may be emphasized with symbol and style of instructions similar to the following:

Note

In case the hook is not released by the above operations, confirm condition of each hook and whether the boat is waterborne or not. Even though the hooks cannot be released by the above mentioned off-load release operation, the on-load release procedure, described in the following pages, is possible.

.5 Prohibited actions should use the following symbol (coloured red) and style of instruction:

Never

Never enter lifeboat without ensuring complete closure of release hooks. Incomplete resetting of the release hooks can cause the lifeboat to drop and may result in the death of occupants.

3.2.4 Inspection and maintenance

The items for weekly and monthly inspection/maintenance and other inspection/maintenance should each be explained separately.

4 Improvement of user-friendliness of a manual

4.1 Use of figures/photographs

Figures, preferably coloured, or photographs should be used as far as practicable to make manuals easy to understand.

4.2 Use of standard wording

The following standard wording should be used to explain lifeboat systems where provided, and for each of the applicable items illustrations should be provided to show the items and their location in the lifeboat or on the ship. The use of alternative terms for variety should be avoided, except to further define or clarify a term so that the reader never has to guess what item or system is being discussed.

.1 Davit/winch:

- .1 Auto releasing gripe
- .2 Davit arm
- .3 Davit arm stop
- .4 Davit remote control wire handle
- .5 Frame
- .6 Maintenance (hanging off) pennant attachment points, if provided
- .7 Manual gripe, if provided
- .8 Remote control wire
- .9 Winch manual brake safety pin
- .10 Winch hand crank handle
- .11 Winch centrifugal or lowering brake
- .12 Winch hand brake or stop brake lever

.2 Freefall:

- .1 Roller or sliding pad
- .2 Sea lashing rope
- .3 Emergency release device

.3 Release gear:

- .1 Hook control cable
- .2 Hook retainer (lock piece)
- .3 Hydrostatic interlock
- .4 Hydrostatic interlock lever, if provided
- .5 Interlock (“mechanical protection” of on-load release)
- .6 Maintenance (hanging off) pennant attachment points, if provided
- .7 On-load release
- .8 Release handle

.9 Release handle “closed (locked)” and “open” positions
.10 Release handle “safety pin”
.11 Release hook (hook unit) (fore and aft hooks)
.12 Reset lever, if provided
.13 Safety latch (keeper)

.4 Suspension:

.1 Foul weather recovery strops
.2 Suspension block
.3 Suspension link (lifting ring)

.5 “Officer in charge” of lifeboat

5 Example of an operation and maintenance manual for a lifeboat system

An example of an operation and maintenance manual for a fire-protected lifeboat system is attached in the following pages just for reference. It demonstrates the suitable level of detail that should be expected for manuals. It should be noted that lifeboat systems are different from each other and some specifications in the example manual are not applicable to lifeboat systems of other types. The example attached at appendix is a model manual which is recommended as an example for developing specific manuals for lifeboat systems launched by falls, but the same general principles should be used for manuals for freefall lifeboat systems.

* * *

APPENDIX

EXAMPLE OPERATION AND MAINTENANCE MANUAL FOR A LIFEBOAT SYSTEM*

Table of contents

* Of a lifeboat being launched using falls and a winch, hereinafter referred to as a lifeboat.

1 General

The lifeboats are stored on the boat davits on both sides of the ship. In case of emergency, the crew can board the lifeboat and escaped with the lifeboat directly from its stowage position.

The launching appliance consists of a boat davit (davit arm, frame, platform, falls, suspension block, and gripes/lashing device) and a boat winch (reduction gears, hand brake and centrifugal brake).

Swinging out and lowering of the lifeboat can be controlled both from the inside of the lifeboat and at the ship's deck. The lowering speed of the lifeboat can be controlled by operating the remote control wire inside the lifeboat or by operating the remote control lever on the ship's deck. Moreover, it is possible to suspend the lowering operation of the lifeboat at any height.

Recovery of the lifeboat is performed by operating the boat winch with the push-button switch box. When the davit arm reaches a prescribed position, the boat winch is automatically stopped by the limit switch. After the activation of the limit switch, the boat winch is operated manually to wind up the lifeboat to its stowage position. The boat winch is provided with a safety device to prevent the reverse operation of the manual handle.

The lifeboat is equipped with on-load/off-load release gear which complies with the requirements of the IMO Life-Saving Appliance (LSA) Code. The release gear system is equipped with a hydrostatic interlock system so that it will normally not release the hooks until the boat is waterborne.

To avoid possible injury or death, read this manual carefully before using the boat davit, the boat winch, and the on-load/off-load release gear.

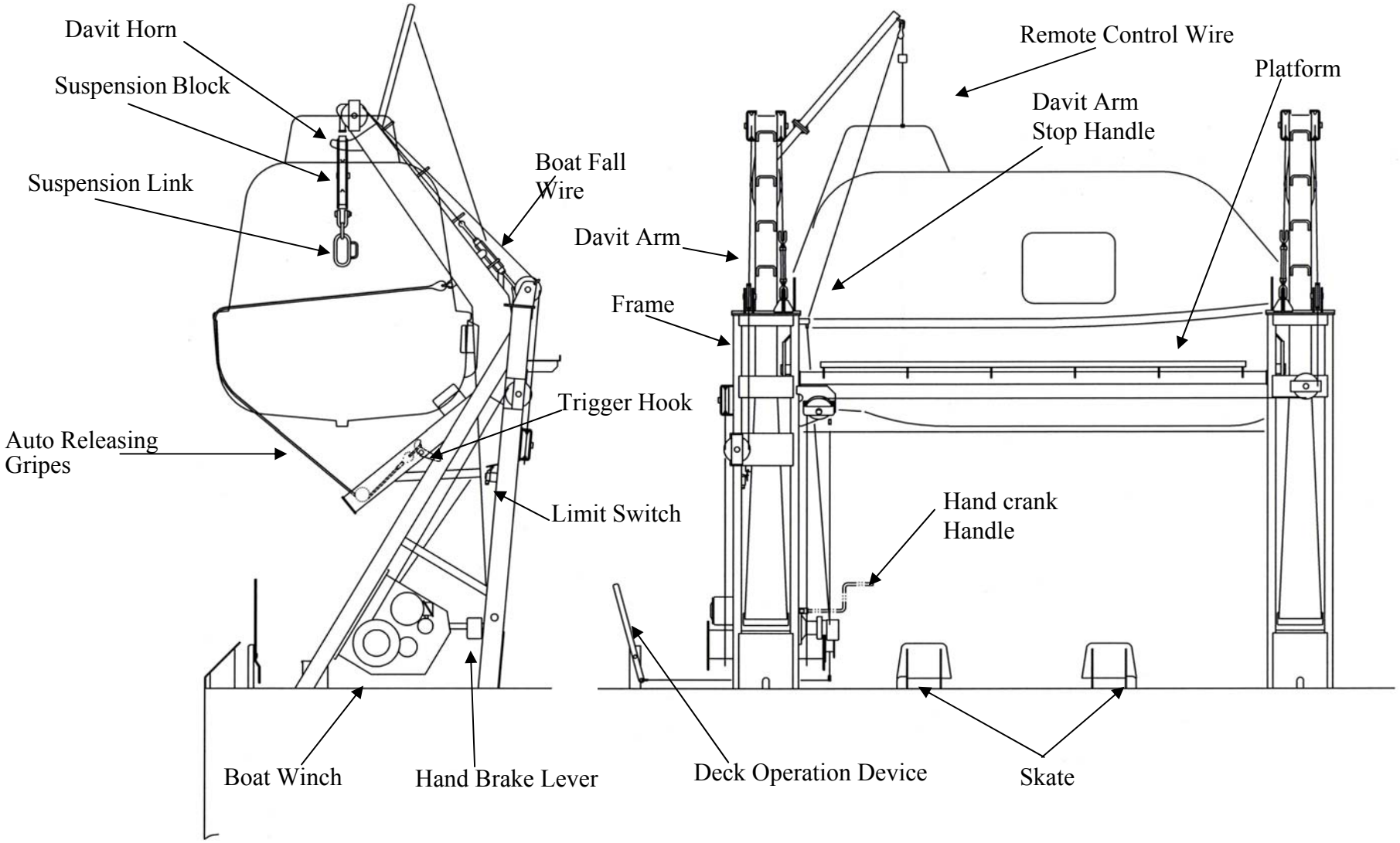


Fig. 1.1 Lifeboat davit arrangement

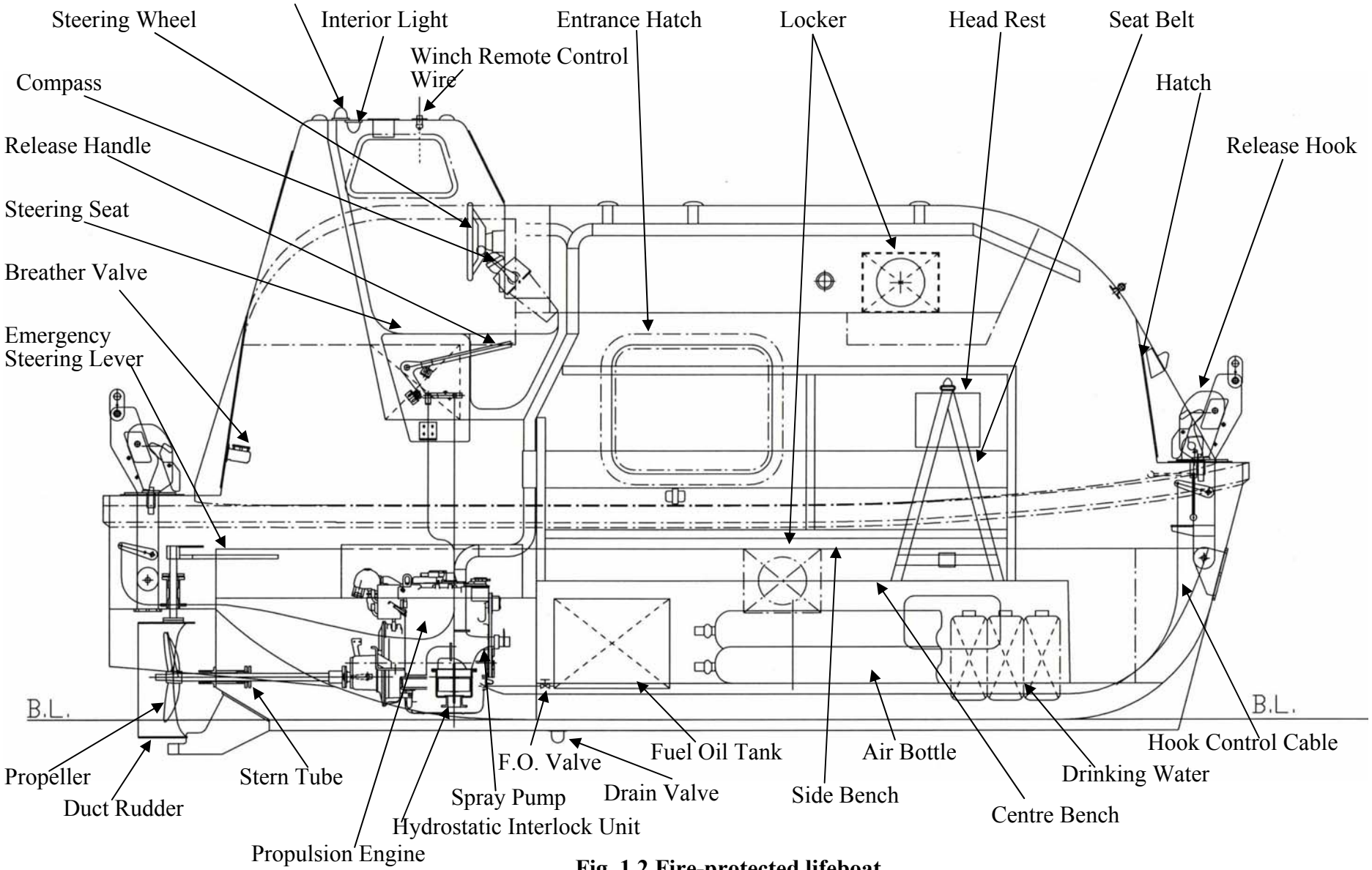


Fig. 1.2 Fire-protected lifeboat

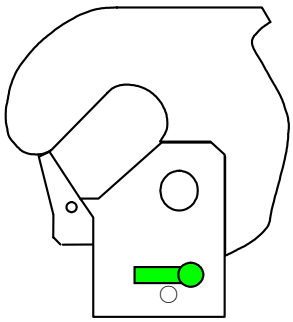
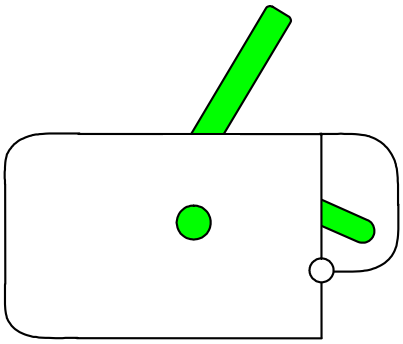
2 Method of checking proper closure of release hooks

2.1 Safe use and operation of lifeboats during drills and inspection and maintenance is dependent on knowing that the release gear is properly reset.

Never	**Never enter lifeboat without ensuring complete closure of release hooks. Incomplete resetting of the release hooks can cause the lifeboat to drop resulting in death.**

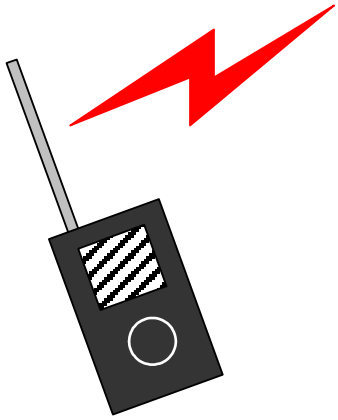
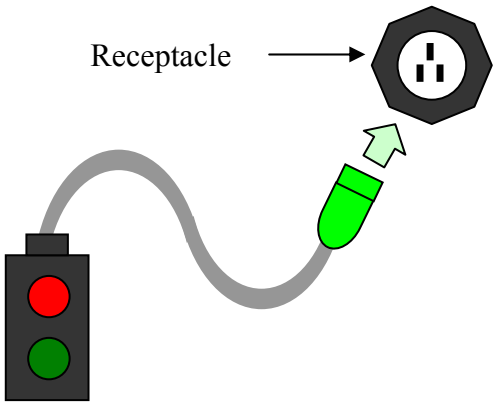
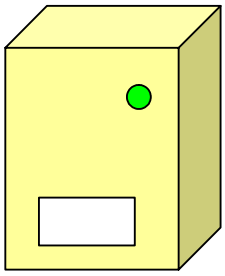
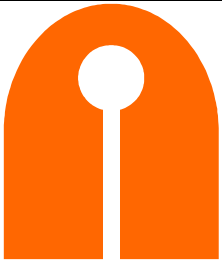
2.2 Purpose of on-load release. The IMO LSA Code requires, among other things, that the lifeboat be fitted with "***on-load release capability which will release the lifeboat with a load on the hooks. The release mechanism shall be so designed that crew members in the lifeboat can clearly observe when the release mechanism is properly and completely reset and ready for lifting.*** . . ." On-load release is needed for launching when there is a current, when the ship is making way, or potentially if there are waves which cause the hydrostatic interlock to only release intermittently. On-load release also allows an empty or fully loaded boat to drop from any height, which can kill or seriously injure the occupants. Therefore it is critical to know that the release gear is properly reset and the release handle secured.

2.3 Ensuring release hook closure. The first thing to check whenever entering the lifeboat when it is (or will be) supported by the falls is properly reset as follows:

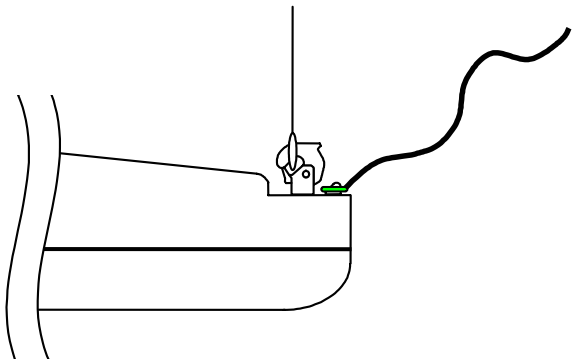
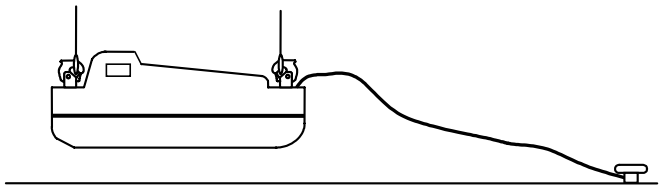
No.	Operation Guide	Schematic Diagram
1	Check that the reset lever on each hook is horizontal and in contact with its stop. <Activity in the lifeboat>	
2	Check that the release handle is in the closed (locked) position and safety pin is installed. <Activity in the lifeboat>	

3 Launching operation

3.1 Preparation before launching

No.	Operation Guide	Schematic Diagram
1	Prepare transceivers, and confirm the communication condition. <Activity on the ship>	
2	<In case of drill> Connect the push-button switch for recovering to the receptacle. <Activity on the ship>	
3	<In case of drill> Turn on the power switch of start panel. ✓ Detach the cable for the storage battery charge. <Activity on the ship>	
4	Don life jackets. <Activity on the ship>	

3.2 Setting of painter

No.	Operation Guide	Schematic Diagram
1	Confirm the connection of the painter on the painter release device of the lifeboat. <Activity on the lifeboat>	
2	Confirm the connection of the painter as far forward as practicable inboard of the falls but outboard of everything else. <Activity on the ship>	

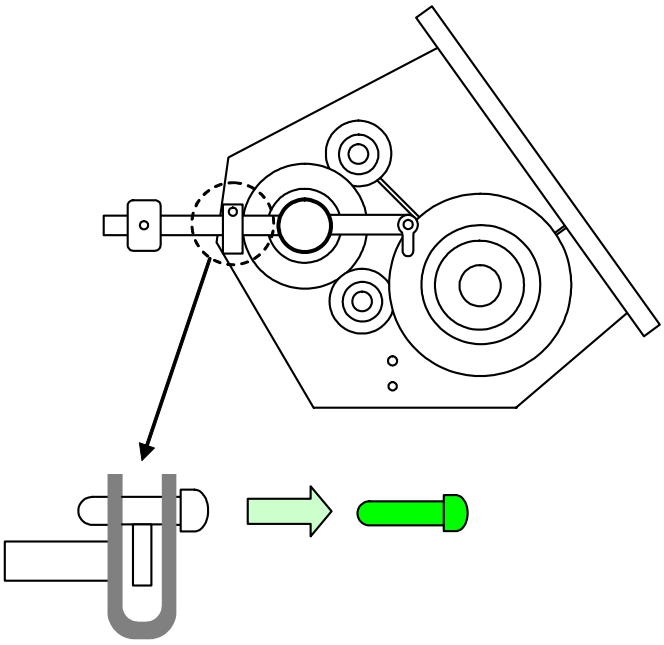
Caution

Ensure the painter is lead as far forward as practicable inboard of the lifeboat falls but outboard of everything else. Failure to do so will result in severe difficulties clearing the vessel during abandonment.

3.3 Release of safety pin (if fitted) for winch hand brake lever

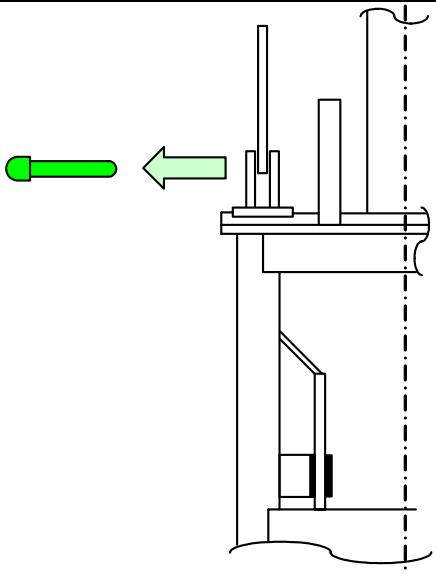
Caution

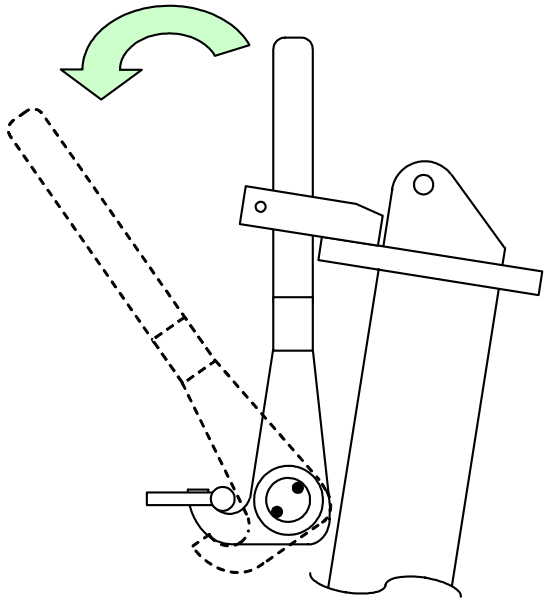
The safety pin of the winch hand brake should not be pulled out until the completion of the preparation described in paragraphs 3.1 and 3.2.

No.	Operation Guide	Schematic Diagram
1	Pull out the safety pin (if fitted). <Activity on the ship>	

3.4 Release of davit arm stopper

Go up to the platform of the davit system (platform for boarding the lifeboat).

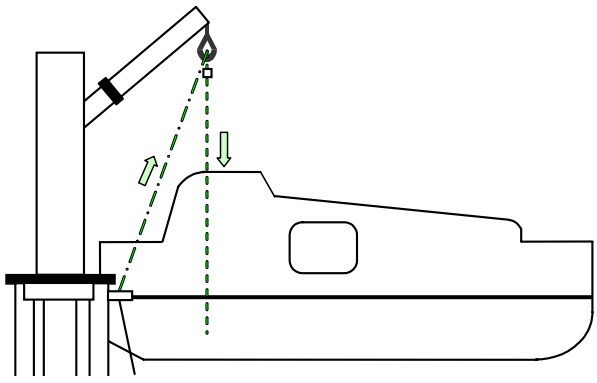
No.	Operation Guide	Schematic Diagram
1	Wind the boat fall manually to take off the slack. Pull out the safety pin of the davit arm stop, if fitted. <Activity on the ship> Note: Safety pins are generally intended only for use during maintenance or in port.	

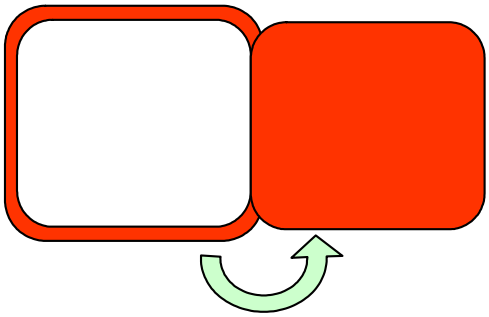
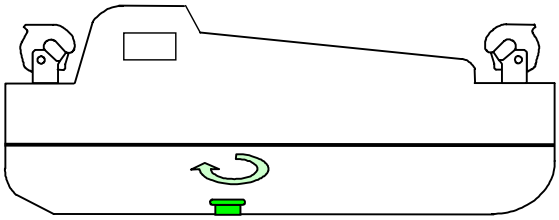
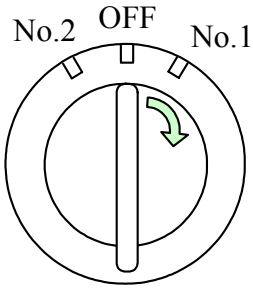
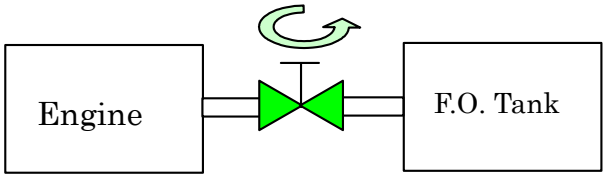
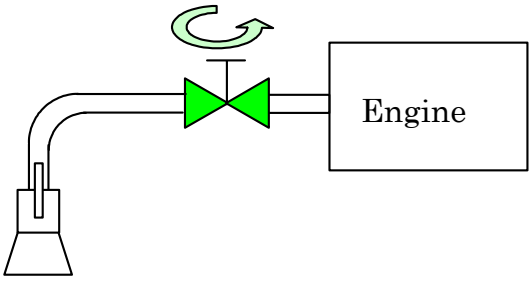
No.	Operation Guide	Schematic Diagram
2	Release the davit arm stop by operating the handle. <Activity on the ship>	

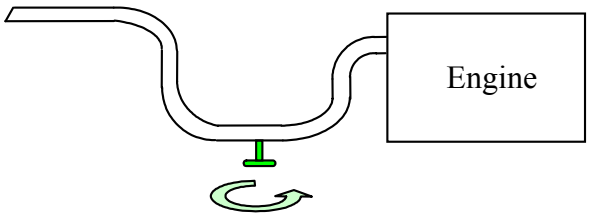
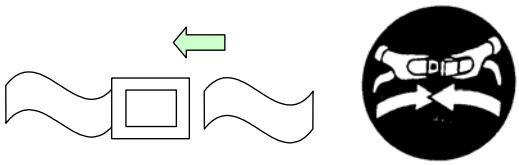
Caution

The handle should be fully operated to prevent the davit arm stop from being caught with the lock device.

3.5 Boarding the lifeboat

No.	Operation Guide	Schematic Diagram
1	Confirm that the remote control wire is drawn into the lifeboat. <Activity on the ship>	

No.	Operation Guide	Schematic Diagram
2	Open the lifeboat boarding door and board the lifeboat. <Activity on the ship> and <Activity in the lifeboat>	
3	Ensure the bottom plug is fitted and tight. <Activity in the lifeboat>	
4	Turn on the power supply switch. <Activity in the lifeboat>	
5	Open the fuel oil valve. <Activity in the lifeboat>	
6	Confirm that the cooling seawater valve is open. <Activity in the lifeboat>	

No.	Operation Guide	Schematic Diagram
7	Close the drain valve on exhaust pipe. <Activity in the lifeboat>	
8	Fasten seatbelt. <Activity in the lifeboat>	

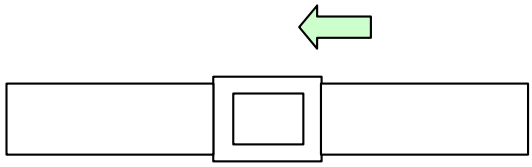
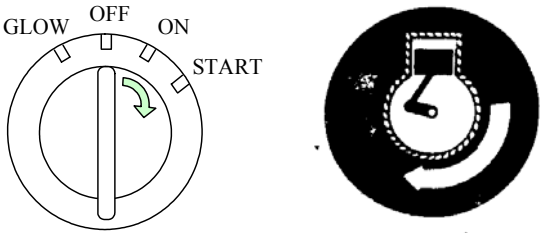
Caution

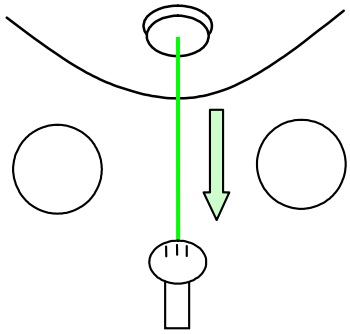
Seating positions of persons should be carefully selected to maintain a good trim of the lifeboat.

Warning

If the seat belt is not fastened, serious injury or death may occur.

3.6 Launching procedure

No.	Operation Guide	Schematic Diagram
1	Confirm that all crew boarded in the lifeboat are seated and their seatbelts are fastened. <Activity in the lifeboat>	
2	Start engine. <Activity in the lifeboat>	

No.	Operation Guide	Schematic Diagram
3	Pull down the winch remote control wire. <Activity in the lifeboat>	

Caution

- **Ensure that no gripe or lashing is tangled around the fore and aft hooks.**
- **Pull down the remote control wire gently and slowly during swinging out of the lifeboat.**
- **Only pull down the remote control wire fully to lower the boat after swing out is complete.**
- **The helmsman must tell the crew to standby for splashdown when the lifeboat reaches the vicinity of the water surface.**

Warning

- **When using remote control gear from within the boat never wind the cord or wire around fingers, hand or wrist as this may result in the cutting off of fingers/hand.**
- **Do not stop the swinging out operation at deck position. Stopping shakes the lifeboat and may cause casualties.**
- **A rapid swing out may cause dangerous impact on the boat when the davit arm reaches the deck position.**
- **Inching operation shakes the lifeboat and is dangerous.**

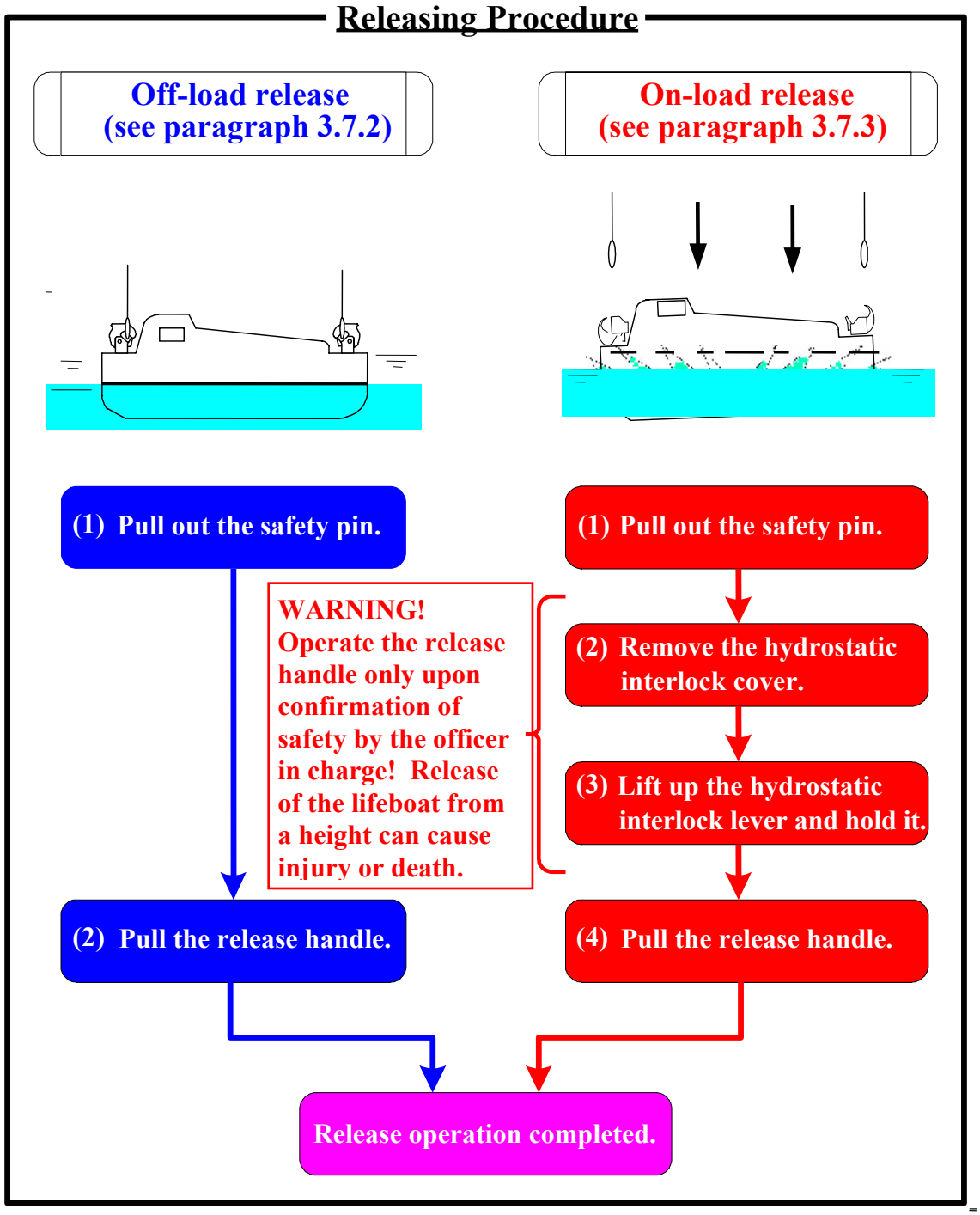
Note

During lifeboat drills, the above mentioned procedures may not be applicable because the lowering operation may be controlled from the ship's deck using the deck operation device.

3.7 Release gear operation

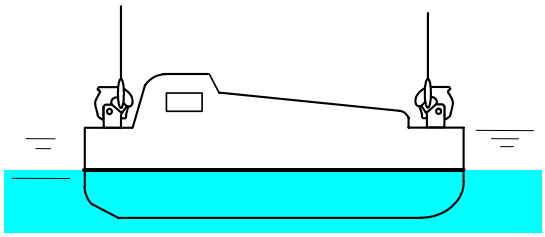
3.7.1 Releasing procedure

A flow chart of the off-load and on-load releasing procedures is shown in the following figure.



3.7.2 Off-load release

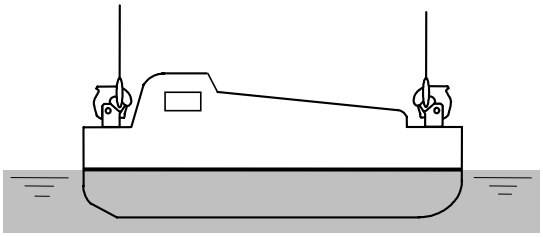
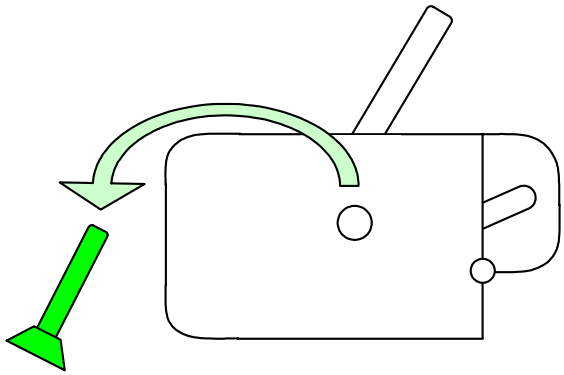
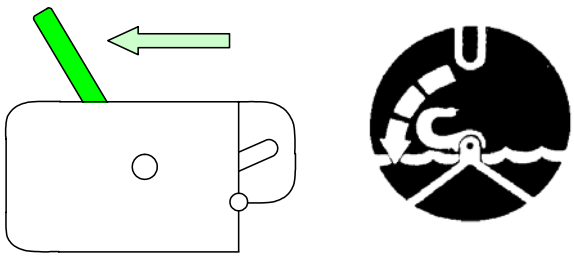
This operation is the normal method of launch and release and is conducted when the lifeboat is fully waterborne.



Caution

Confirm the following before the operation:

- **The lifeboat is fully waterborne.**
- **The engine is started.**
- **All crew are in their seats with their seatbelts fastened.**

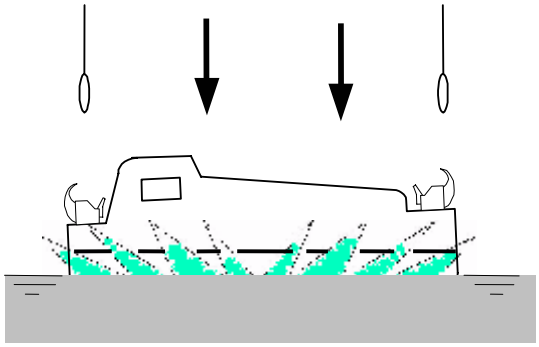
No.	Operation Guide	Schematic Diagram
1	Confirm that the lifeboat is waterborne. <Activity in the lifeboat>	
2	Pull out the release handle safety pin. <Activity in the lifeboat>	
3	Pull the release handle to the fully open position by one action. <Activity in the lifeboat>	

Note

In a case where the hook is not released by the above operations, confirm condition of each hook and whether the boat is waterborne or not. Even though the hooks cannot be released by the off-load release operation described above, on-load release procedure, described in the following pages, is possible.

3.7.3 On-load release

This operation is conducted when the lifeboat is not fully waterborne.



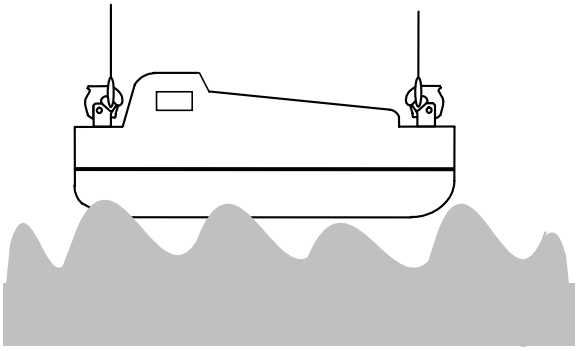
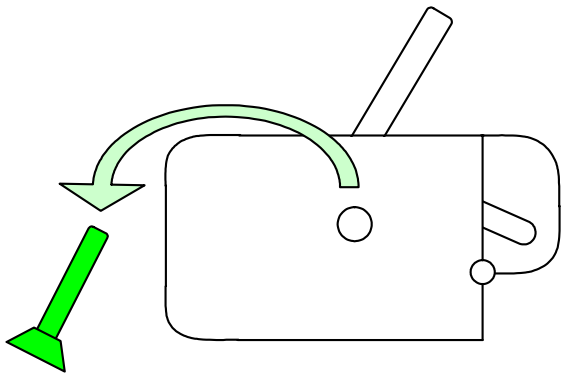
Warning

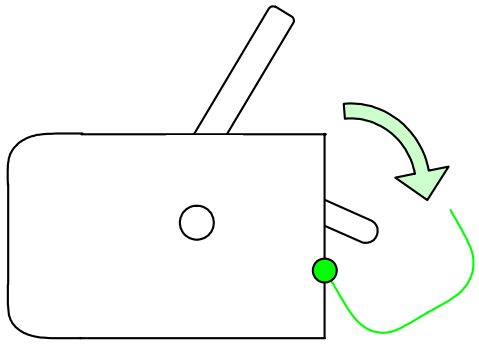
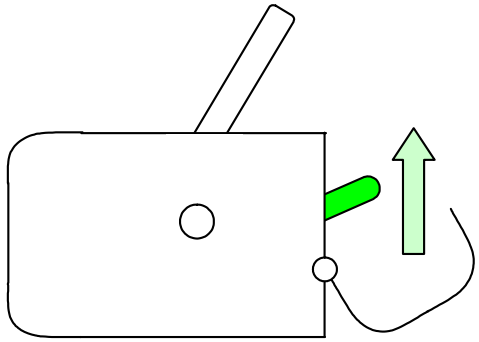
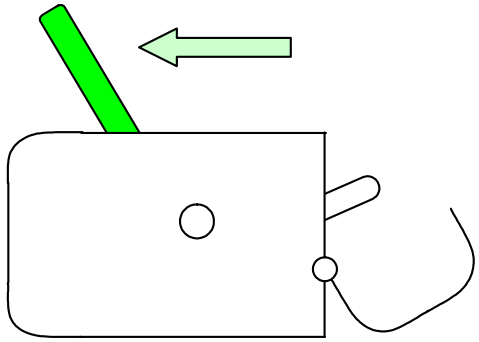
- **Pay due precautions and conduct the on-load release operation in accordance with orders of the officer in charge.**
- **Operation of the release handle upon insufficient confirmation of safety may result in death or injury due to dropping the lifeboat in the water from a height.**

Caution

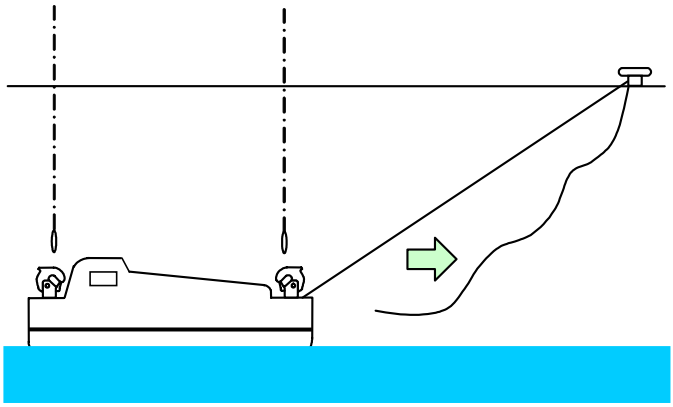
Confirm the following before the operation.

- **The lifeboat is as close as possible to the water surface.**
- **The engine is started.**
- **All crew are in their seats with their seatbelts fastened.**

No.	Operation Guide	Schematic Diagram
1	Confirm that the lifeboat is as close as possible to the water surface, but that the hydrostatic interlock is not triggered. <Activity in the lifeboat>	
2	Pull out the release handle safety pin. <Activity in the lifeboat>	

No.	Operation Guide	Schematic Diagram
3	Open the hydrostatic interlock cover. ✓ Unlock the latch of the interlock cover. <Activity in the lifeboat>	
4	Lift the hydrostatic interlock lever fully and hold it. <Activity in the lifeboat>	
5	Pull the release handle to the fully open position by one action. <Activity in the lifeboat>	

3.8 Painter release and lifeboat operation

No.	Operation Guide	Schematic Diagram
1	Release the painter. <Activity in the lifeboat>	
2	**Lifeboat operation** Ahead, astern, turning, spray, lighting of interior light and canopy light, and other performances. <Activity in the lifeboat>	

Caution

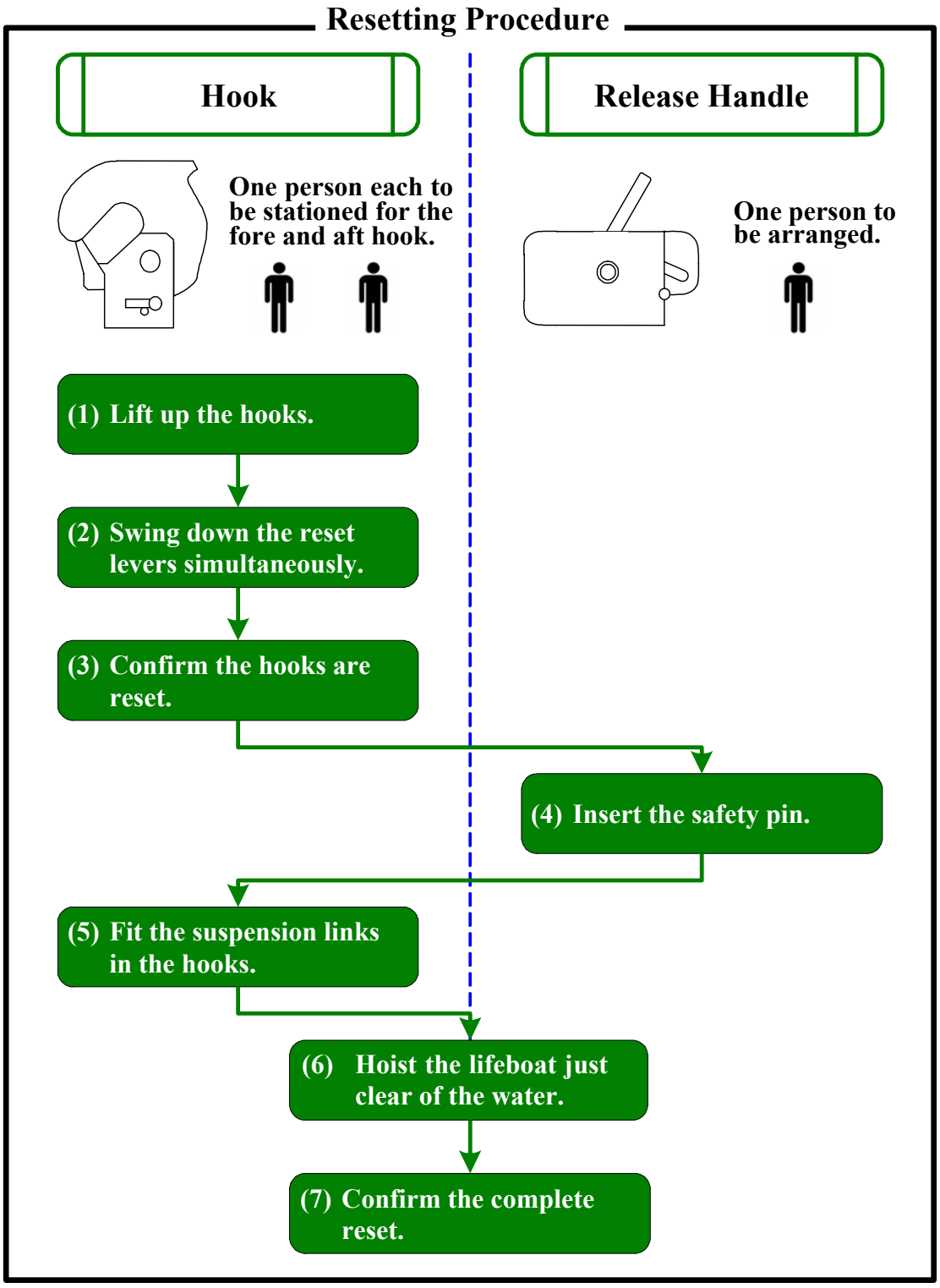
- **Do not operate the steering gear to turn the lifeboat while the painter is connected.**
- **The lifeboat should get clear of the ship promptly when the painter has been released.**

4 Recovery operation

Outline of the resetting procedures is shown in the following figure.

Warning

- **Incomplete resetting may result in death or serious injury due to dropping of the lifeboat in the water from a height.**

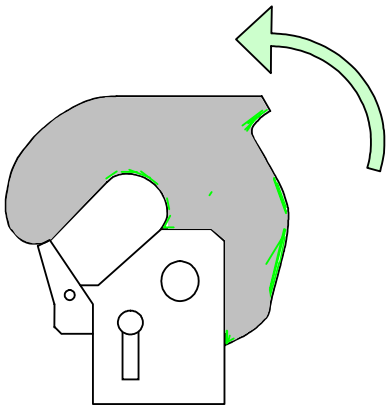
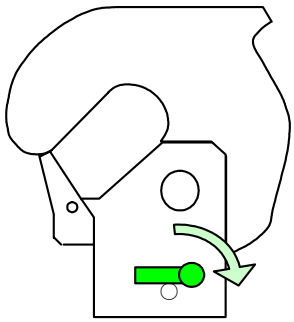
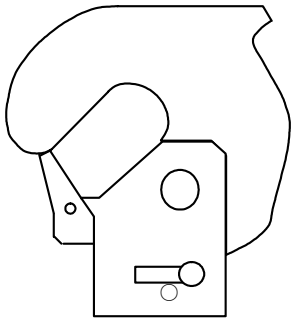


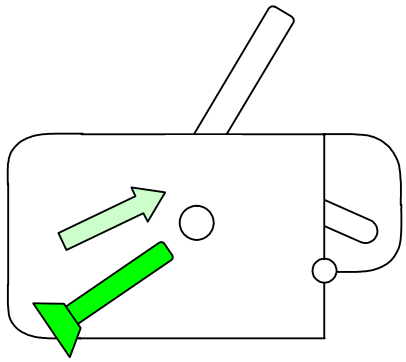
4.1 Resetting procedure of release hook

The resetting procedure is to be in accordance with the following steps.

Note

At least three people are required for the resetting of the hooks.

No.	Operation Guide	Schematic Diagram
1	Lift the fore and aft hooks and hold them closed. ✓ A strong effort may be required to lift the hook and force the internal lock piece to engage. <Activity in the lifeboat>	
2	Simultaneously swing down the reset levers on both fore and aft hooks in one continuous action to contact with the stop. ✓ The release handle returns to its closed (locked) position automatically when the reset levers are swung down. <Activity in the lifeboat>	
3	Confirm the fore and aft hooks are in the normal reset positions. ✓ Make sure that the reset lever is in contact with the stop. <Activity in the lifeboat>	

No.	Operation Guide	Schematic Diagram
4	Make sure that the release handle is in the closed (locked) position and insert the safety pin. ✓ If the release handle is not in its closed (locked) position, it is not possible to insert the safety pin. <Activity in the lifeboat>	

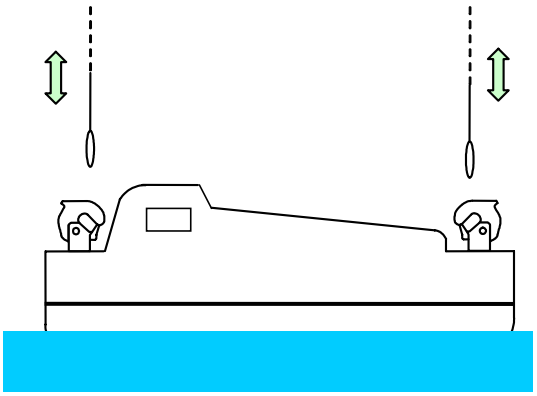
4.2 Recovery procedure

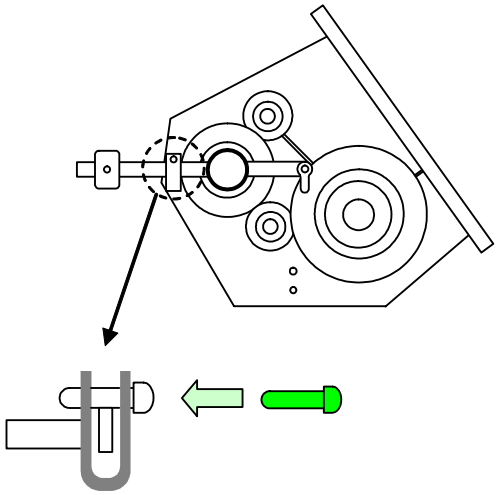
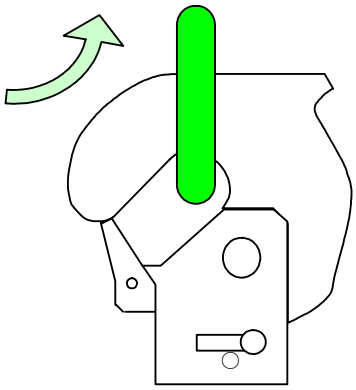
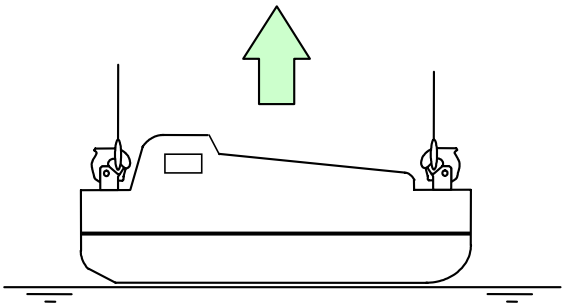
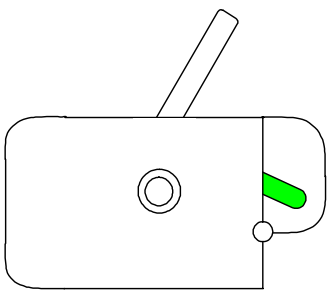
The recovery procedure is to be in accordance with the following steps only after completing the release gear resetting.

Warning

- **Great care must be exercised in reconnecting the hooks that hands and fingers are kept clear.**
- **Failure to confirm proper resetting or to follow all steps below may result in death or serious injury due to dropping the lifeboat in water from a height.**

4.2.1 Connection of the suspension link

No.	Operation Guide	Schematic Diagram
1	Manoeuvre the lifeboat to come under boat falls.	
2	Adjust the heights of the suspension links by raising or lowering the boat falls. <Activity on the ship> and <Activity in the lifeboat> under good communication.	

No.	Operation Guide	Schematic Diagram
3	Insert the safety pin of the boat winch handbrake. <Activity on the ship>	
4	Connect the suspension links of the davit simultaneously to both, fore and aft hooks. <Activity in the lifeboat>	
5	Hoist the lifeboat just clear of the water and stop hoisting. ✓ Confirm that the fore and aft hooks are properly connected. <Activity on the ship> and <Activity in the lifeboat>	
6	Confirm that the hydrostatic interlock lever has moved to the "locked" position for the lifeboat not being waterborne. <Activity in the lifeboat>	
7	Where the resetting is incomplete, return to the first step.	

Do not conduct recovery operation of the lifeboat unless the above procedures are fully completed.

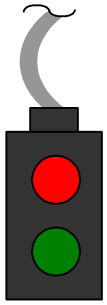
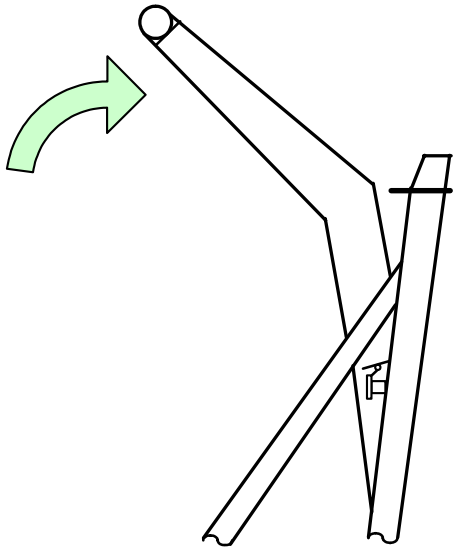
Caution

- ✓ **Do not connect the suspension link of the davit to the hooks until reset of the hooks has been fully completed. It is dangerous to connect the suspension link during the resetting operation of the hook and results an incomplete reset.**
- ✓ **In case of using recovery strops, it is required to connect the bottom link of the strops instead of the suspension link to the hooks.**

Warning

- ✓ **Both hooks should be connected simultaneously to prevent damage due to excessive load on one hook.**
- ✓ **If only one hook is connected, the lifeboat may be suspended by the single hook due to wave action resulting in injury or death.**

4.2.2 Hoisting the lifeboat

No.	Operation Guide	Schematic Diagram
1	Hoist the lifeboat by operating the winch using the push-button switch following the instruction by the officer in charge. <Activity on the ship>	
2	Hoist the lifeboat until the winch is stopped by the limit switch. <Activity on the ship>	

Caution

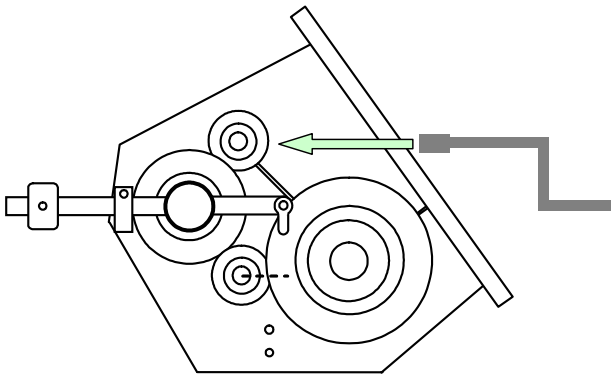
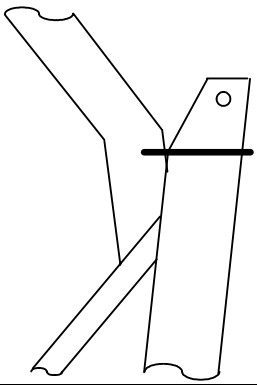
- **The boat winch stops automatically when the davit arm strikes the limit switch.**
- **Where the limit switch of boat winch does not work correctly, the winch operator should manually stop the hoisting operation immediately.**

No.	Operation Guide	Schematic Diagram
3	Disembark from the lifeboat. <Activity on the ship> and <Activity in the lifeboat>	

4.3 Stowage procedure

Note

Position two persons on davit platform to watch for proper stowage.

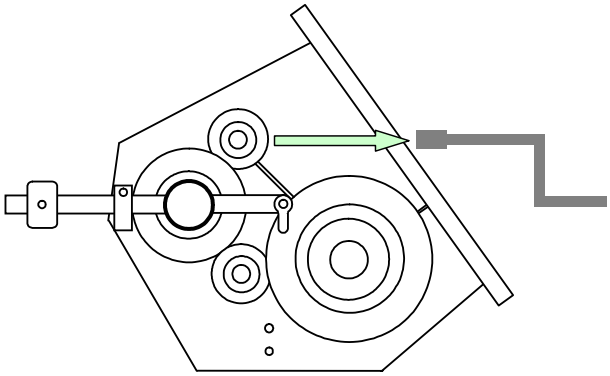
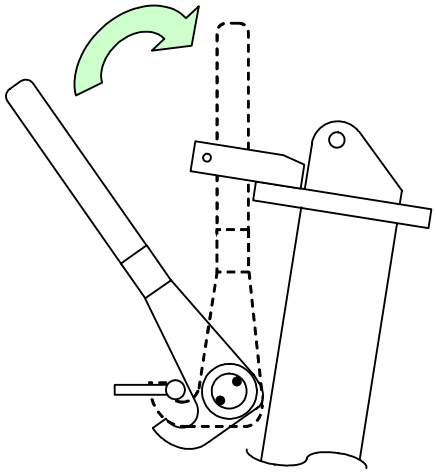
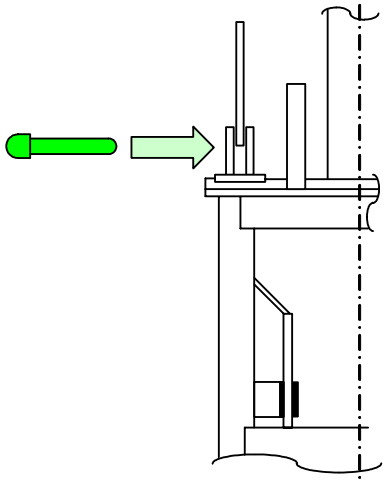
No.	Operation Guide	Schematic Diagram
1	Hoist the davit arm manually. <Activity on the ship>	
2	Confirm that the davit arm is in contact with the stop on platform. <Activity on the ship>	

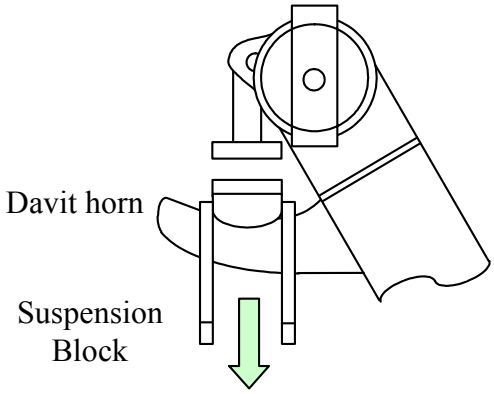
Caution

- **Each person on the platform should signal to the winch operator just when the davit arm reaches the stop on the frame.**
- **Confirm that the davit arm and the stops are in contact fore and aft.**

Warning

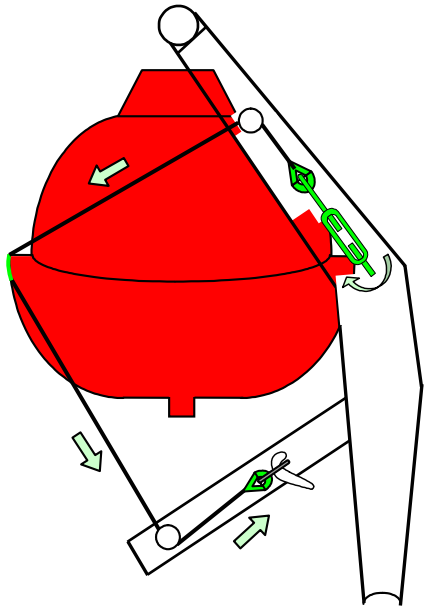
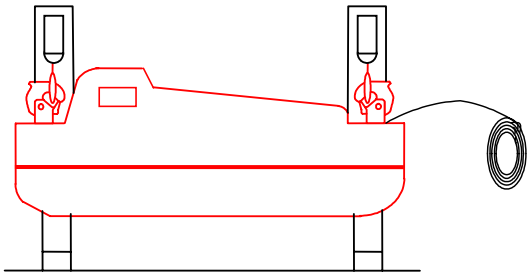
- **Stop the hoisting operation immediately when the signal from the watchman is received.**
- **Over hoisting by manual operation may have serious consequences due to damage of the boat fall and the davit.**

No.	Operation Guide	Schematic Diagram
3	Detach the manual hoisting handle. <Activity on the ship>	
4	Set the davit arm stop immediately. <Activity on the ship>	
5	Insert the safety pin to the davit arm stop handle. <Activity on the ship> Note: Safety pins are generally intended only for use during maintenance or in port.	

No.	Operation Guide	Schematic Diagram
6	Lower the suspension block on the davit horn by releasing the handbrake of the winch. <Activity on the ship>	

Warning

- **If the suspension blocks are not on the davit horn, the boat falls remain in tension during sea going and the load may cause damage to the boat falls.**

No.	Operation Guide	Schematic Diagram
7	Install and tighten the auto release gripe, if fitted. ✓ Tighten the auto release gripe rope with the turnbuckle. <Activity on the ship>	
8	Connect the painter to the painter release hook on the bow of lifeboat. <Activity on the ship>	

5 On-load/off-load release gear system

5.1 General

This section describes the details of the release gear system. Read this section carefully for safe operation. This release gear system consists of fore and aft hooks, a release handle near the steering console, a hydrostatic unit and the associated cables (see Fig. 5.1).

The releasing operation of the hooks is conducted at the release handle near the steering console through the control cables terminating at the fore and aft hooks. The interlock system including the hydrostatic interlock unit is provided to prevent the release of the hooks when the boat is not waterborne.

The system also has an on-load release function which makes it possible to over-ride the interlock by the hydrostatic unit. Incorrect on-load release operation may cause fatalities and due precautions should be taken for this operation.

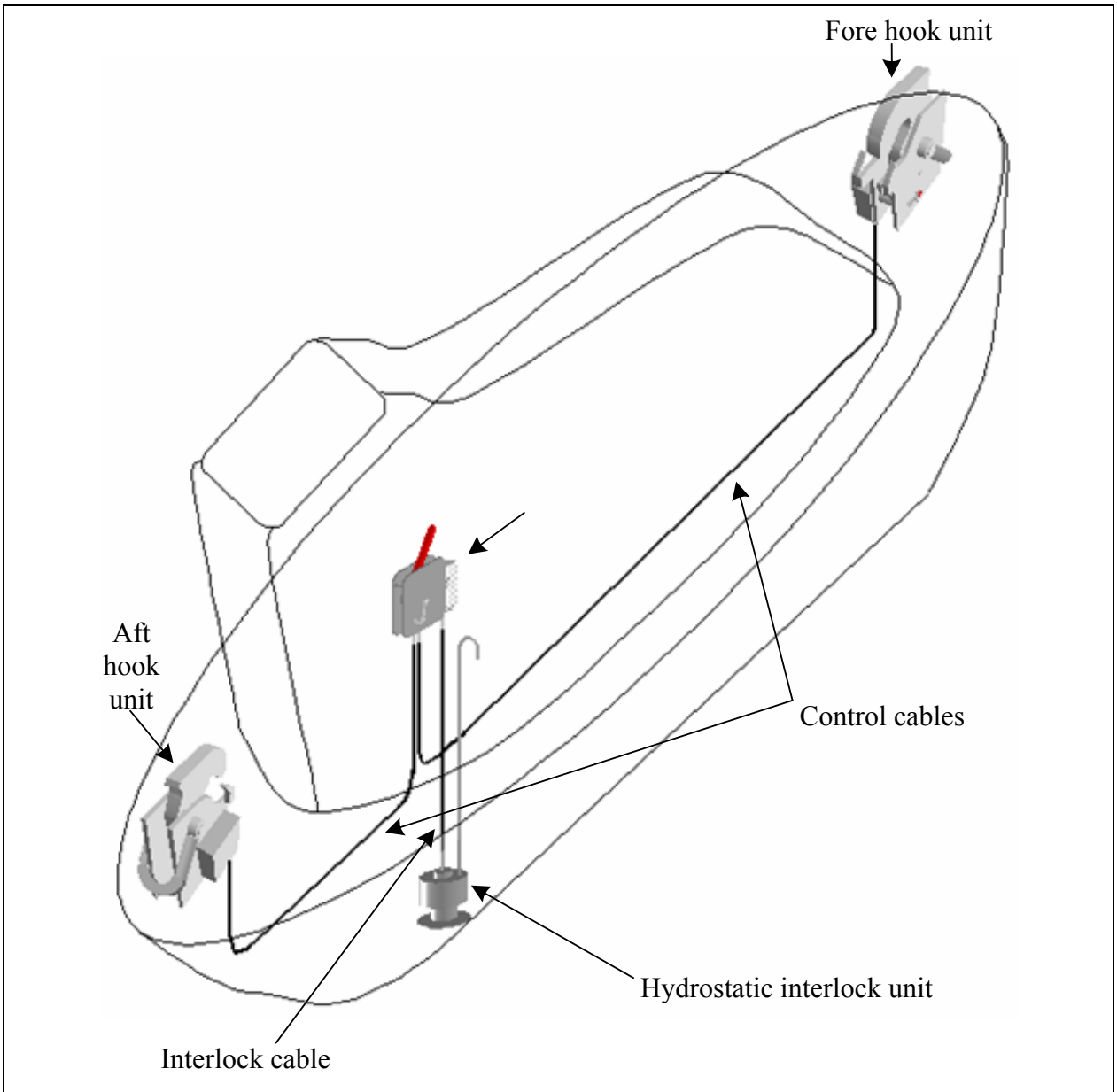


Fig. 5.1 Schematic of release gear system

5.2 Fore and aft hook units

5.2.1 Structure and parts names

The structure and parts names of the fore and aft hooks are shown in Figures 5.2.1.1 and 5.2.1.2. The fore and aft hooks are generally identical except for the direction of installation.

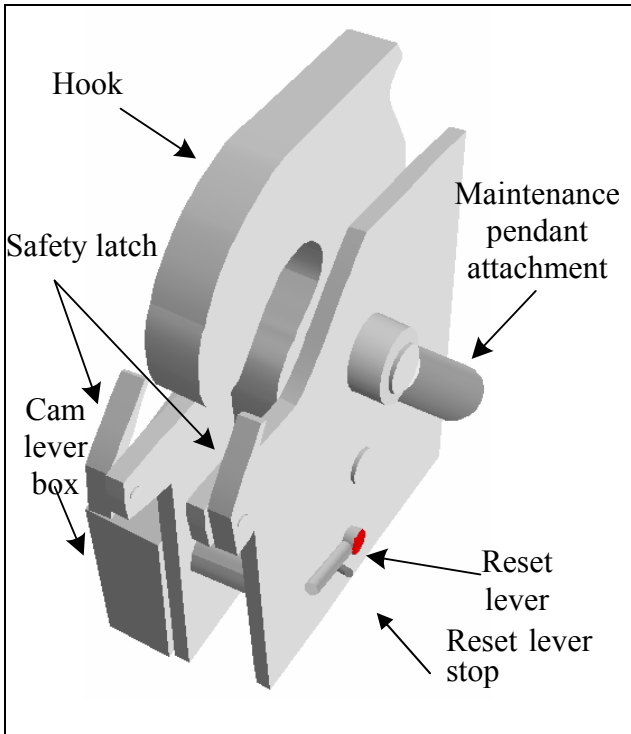


Fig. 5.2.1.1 Perspective of the hook unit

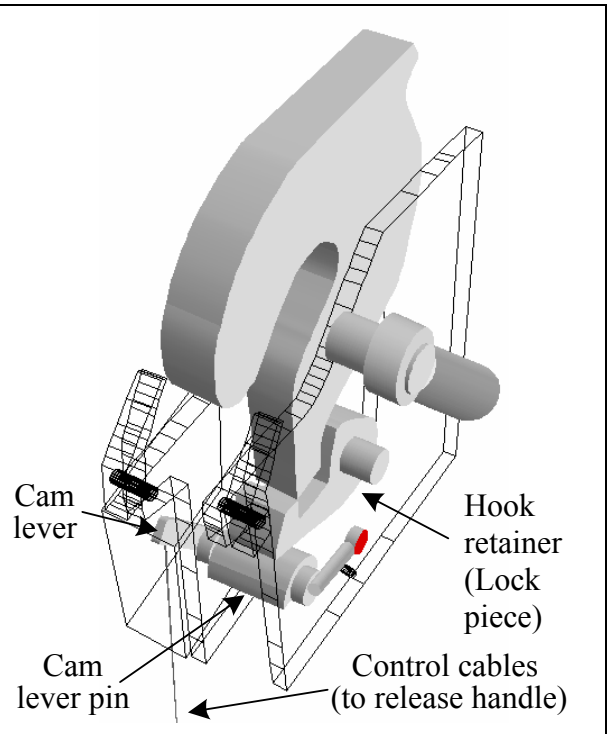


Fig. 5.2.1.2 Internal view of the hook unit

5.2.2 Releasing

When the release handle near the steering console is pulled, the cam lever pin is turned by the control cable and the lock piece is then made free. Finally the hook is turned and released (see figure 5.2.2).

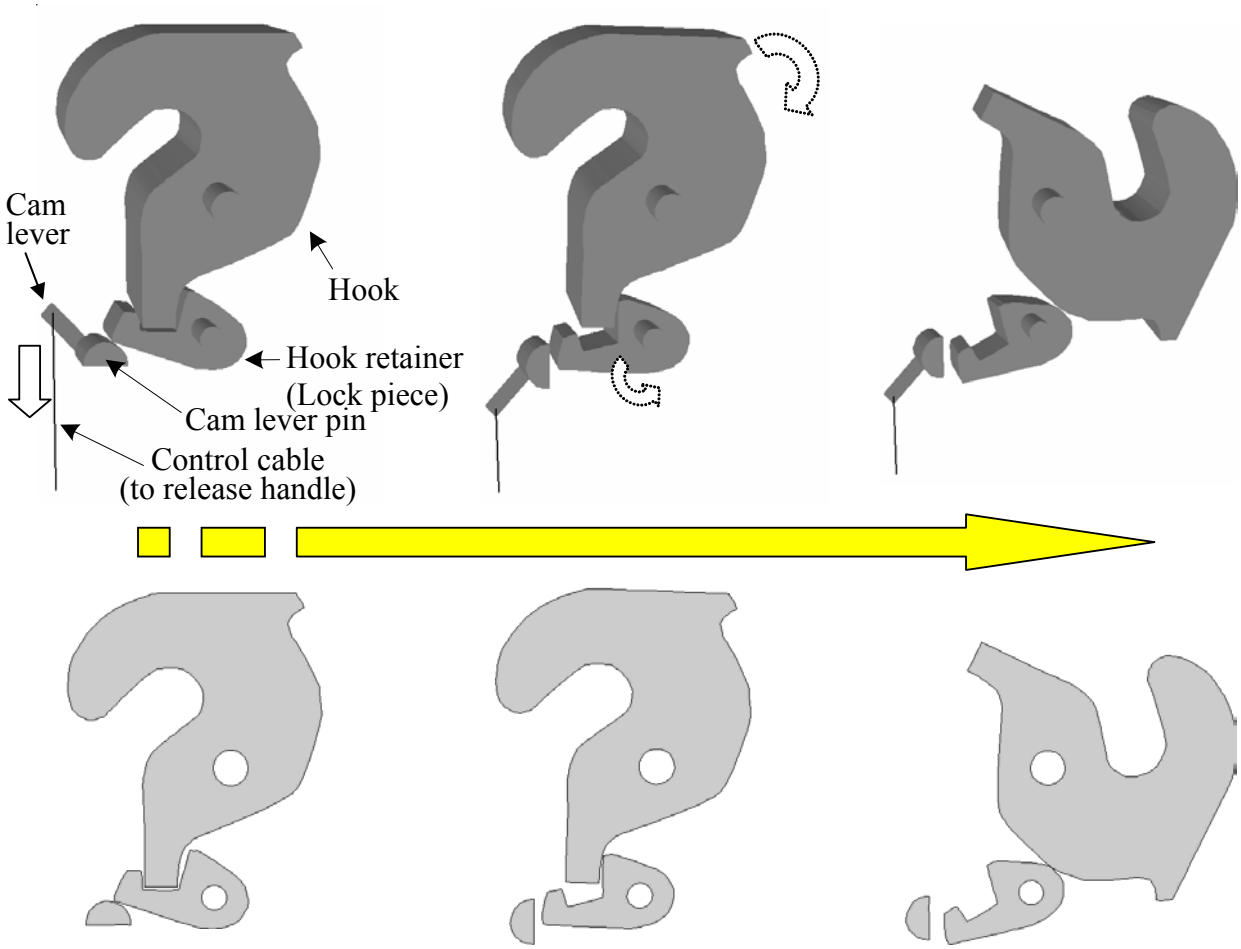


Fig. 5.2.2 Release principle of the hook unit

5.2.3 Resetting

After the resetting of hooks, the posture of each hook is held by the lock piece and the lock piece is locked by the cam lever pin with the reset lever. To ensure the proper resetting of the fore and aft hooks, the procedures described in paragraph 4.1 should be followed. The fore and aft reset levers must be operated simultaneously. After simultaneous resetting of the hooks, the release handle near the steering console also returns to the closed position (see figure 5.2.3).

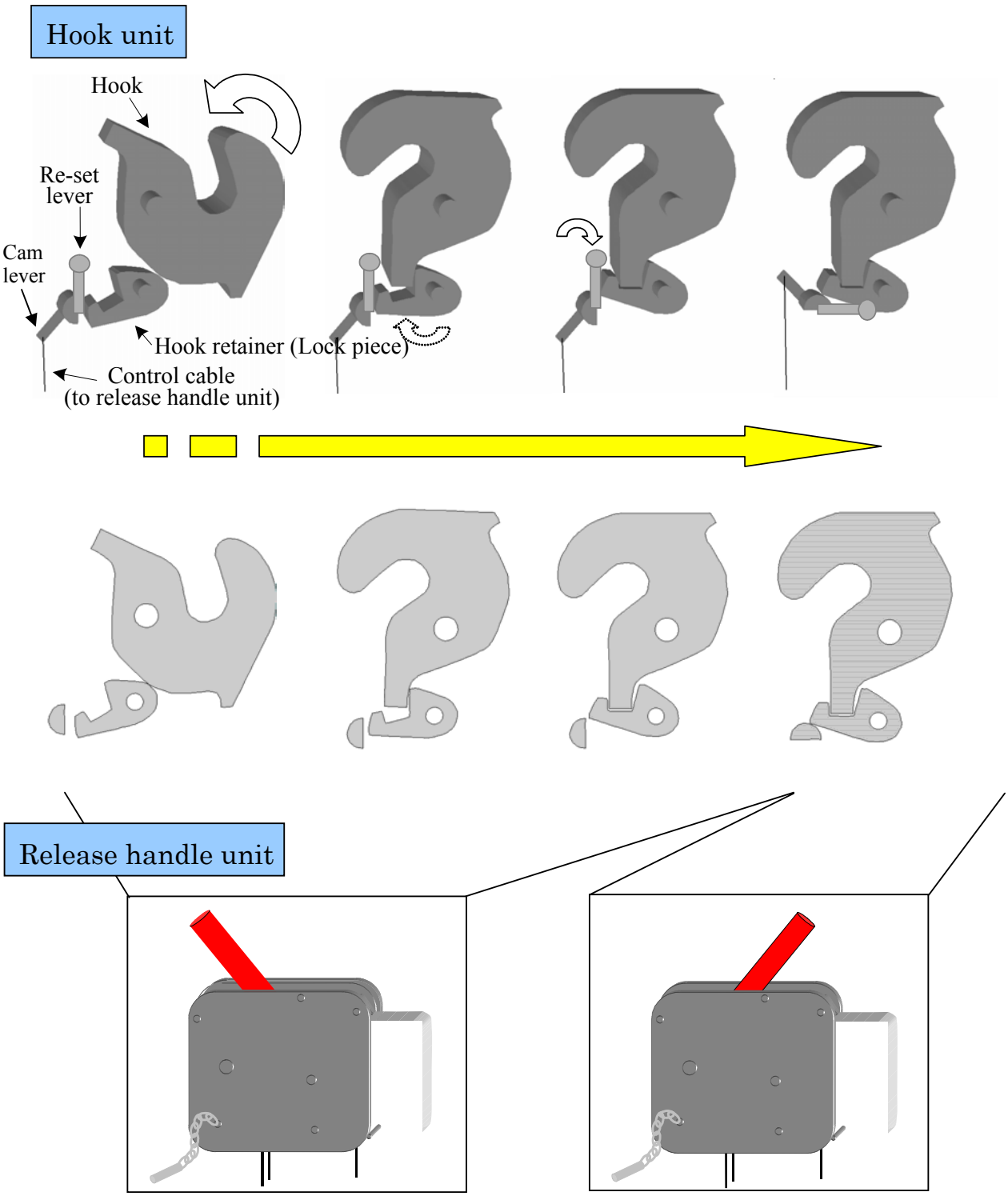


Fig. 5.2.3 Reset principle of the hook unit

5.3 Release handle unit

5.3.1 Structure and parts names

The structure and parts names of the release handle are shown in figures 5.3.1.1 and 5.3.1.2.

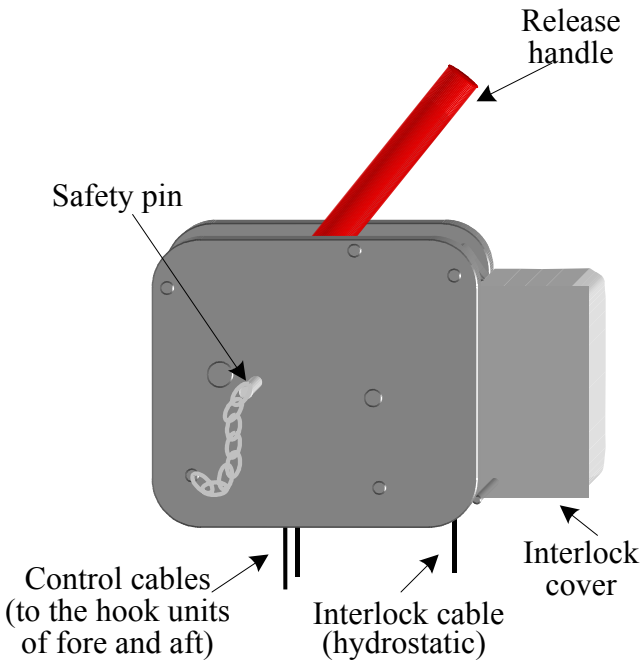


Fig.5.3.1.1 Perspective of the release handle unit

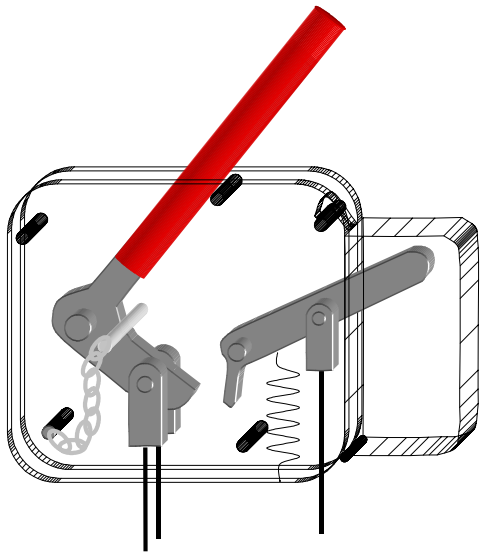


Fig.5.3.1.2 Internal view of the release handle unit

5.3.2 Operation

When the lifeboat is fully waterborne, the lifeboat can be released by removing the safety pin and then pulling the release handle fully and quickly to the open position (off-load release). The lifeboat can also be released by the same operation of the release handle even though the lifeboat is not fully waterborne, by opening the interlock cover and lifting up the interlock lever. This over-rides the interlock function of the hydrostatic interlock unit (on-load release).

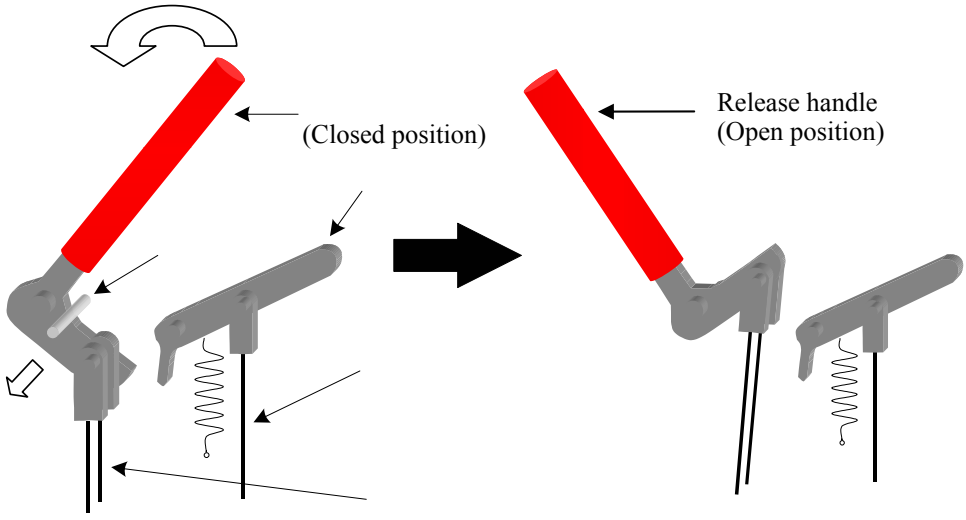


Fig. 5.3.2 Operation procedure of the release handle

5.4 Hydrostatic interlock unit

5.4.1 Structure and parts name

Structure and parts names of the hydrostatic interlock unit are shown in figures 5.4.1.1 and 5.4.1.2.

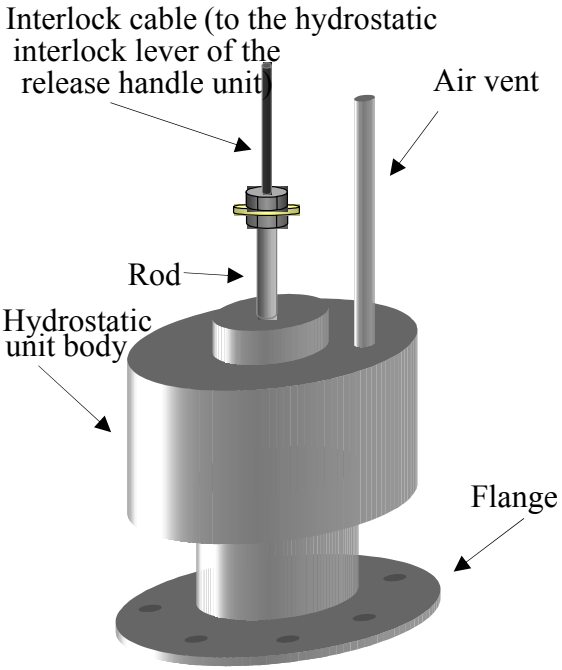


Fig. 5.4.1.1 Perspective of the hydrostatic interlock unit

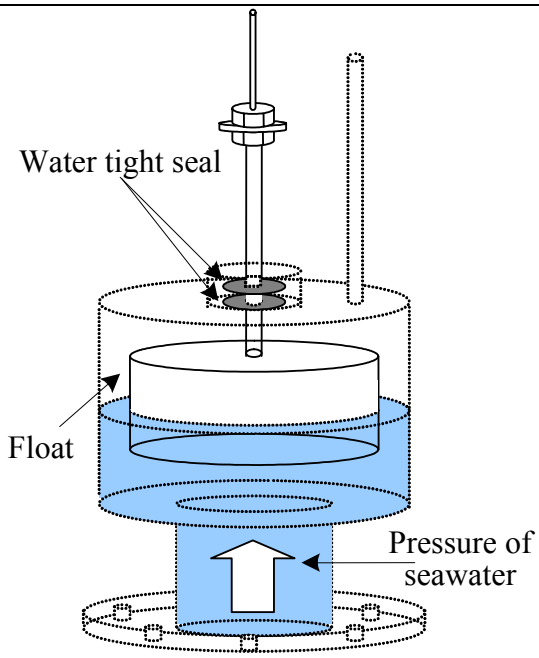


Fig. 5.4.1.2 Internal view of the hydrostatic interlock unit

5.4.2 Operation

When the lifeboat is fully waterborne, the hydrostatic interlock unit pushes up the interlock lever through the interlock cable by the water lifting the float and thus allowing the release handle to be operated. Contrary to this, operation of the release handle is not allowed by the hydrostatic interlock unit when the lifeboat is not fully waterborne.

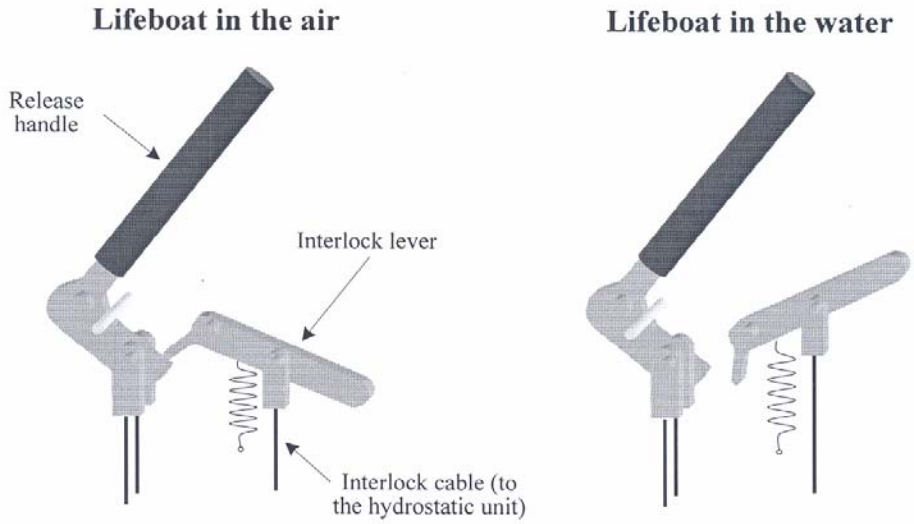


Fig. 5.4.2 Schematic diagram of the interlock

6 Inspection and maintenance

6.1 General precautions

SOLAS regulation III/20 requires that all life-saving appliances shall be in working order and ready for immediate use before the ship leaves port and at all times during the voyage. Lifeboats, launching appliances and release gear are required by SOLAS regulation III/20 to be inspected weekly and monthly according to the instructions for on-board maintenance complying with the requirements of SOLAS regulation III/36. Also, MSC.1/Circ.1206 describes more detailed procedures for periodic servicing and maintenance of lifeboats, launching appliances and release gear.

This manual includes only the weekly and monthly inspection and maintenance, which are conducted on board under the direct supervision of a senior ship's officer.

6.2 Inspection and maintenance of lifeboat and release gear system

6.2.1 Inspection and maintenance plan

Lifeboats should be inspected and maintained weekly and monthly in accordance with the following tables. The tables list the items to checked, the method of inspection, the procedures to be followed, and the frequency at which the items are to be attended to.

Table 6.2.1.1 covers the basic lifeboat (including release gear).
Table 6.2.1.2 covers the lifeboat engine.
Table 6.2.1.3 covers the electric parts.
Table 6.2.1.4 covers the lifeboat equipment.

Table 6.2.1.1 - Inspection procedure and maintenance plan for boat

Items		Method	Inspection procedure	Maintenance plan	
				Weekly	Monthly
Outside hull		Visual	Inspect for deformation or other defects. Inspect for peeling or any damage of retro-reflective material.	X	X
Outside canopy		Visual	Inspect for deformation or other defects.	X	X
Buoyant lifeline		Visual	Inspect for any damage.	X	X
Foldable canopy*1		Visual	Inspect for any damage to canopy.	X	X
Inside boat	GRP	Visual	Inspect for deformation or other defects.	X	X
	Wood	Visual	Inspect for crack or rot.	X	X
	Metal	Visual	Inspect for corrosion.	X	X
Drain valve		Visual	Inspect for any damage.	X	X
Release gear		Visual	Check resetting condition. Remove any dirt on moving parts.	X	X
Painter release device		Visual	Check resetting condition. Remove any dirt on moving parts.	X	X
All hatches		Visual Operation	Inspect for easy operation and good condition of gasket.	X	X
Window		Visual	Inspect for any crack on glass. Clean both sides of glass.		X
Steering gear		Visual	Inspect for any damage of rudder, tiller and emergency tiller.	X	X
		Operation	Inspect for good operation of main steering and connecting emergency tiller.	X	X
Stern tube		Visual	Inspect gasket and check for leakage of seawater.	*2	*2
Propeller and guard		Visual	Inspect for any damage.	X	X
Breather valve		Operation	Inspect operation of valve.		X
Water spray system	Clutch V-belt	Visual	Inspect for proper tension of V-belt. Inspect for any damage of belt.		X
		Operation	Inspect for proper operation.		X
	Spray pipe	Visual	Inspect for corrosion or any damage.		X
	Spray nozzle	Visual	Remove any deposit.		X
Air support system	High pressure pipe	Visual	Inspect for any damage.		X
	Regulator	Visual	Inspect for any damage.		X
	Air cylinder	Visual	Inspect for corrosion or any damage.		X

Note: 1 Applicable only to partially enclosed lifeboats.
2 When waterborne.

Table 6.2.1.2 - Inspection procedure and maintenance plan for engine

Items	Method	Inspection procedure	Maintenance plan	
			Weekly	Monthly
Engine	Visual	Check in good condition.		X
	Operation	Start and operate the engine. Check operation of throttle. Check operation of clutch.	X	X
Lubricating oil	Visual	Check an amount of oil.		X
	Visual	Check viscosity of oil with finger and ensure it's not dirty.		X
Fuel oil tank	Visual	Check securing condition of the tank (corrosion or leakage and connecting parts). Check an amount of fuel oil.		X
Fuel oil pipe	Visual	Check any leakage on connecting parts.		X
Water cooler	Visual	Check an amount of fresh water.		X
Cooling water pipe	Visual	Check any leakage on pipe.		X
Starter switch	Operation	Check operating properly.	X	X
Glow lamp	Operation	Check light on when pre-heating.	X	X
Tachometer	Operation	Check proper indication of revolution.	X	X
Oil pressure warning lamp, Charge lamp	Operation	Check proper light on or light off condition.	X	X
Stop wire	Operation	Stop the engine.	X	X

Table 6.2.1.3 - Inspection procedure and maintenance plan for electric parts

Items	Method	Inspection procedure	Maintenance plan	
			Weekly	Monthly
Battery	Visual	Check lead wire.		X
	Measure	Measure voltage of battery. When voltage is low, charge battery.		X
Inside lamp	Operation	Check light on.		X
Canopy lamp	Operation	Check light on.		X
Search light	Operation	Check light on.		X
Electric wiring	Visual	Check any defects on wiring.		X

Table 6.2.1.4 - Inspection procedure and maintenance plan for lifeboat equipment

Check for condition, quantity and expiry date where applicable

No.	Items	Maintenance plan	
		Weekly	Monthly
1	Oars		X
2	Thole pins or crutches		X
3	Boat hooks		X
4	Buoyant bailer		X
5	Buckets		X
6	Survival manual	X	X
7	Compass		X
8	Sea-anchor		X
9	Painters		X
10	Hatchets		X
11	Watertight receptacle and fresh water		X
12	Dipper with lanyard		X
13	Graduated drinking vessel		X
14	Food ration in watertight container		X
15	Rocket parachute flare		X
16	Hand flare		X
17	Buoyant smoke signal		X
18	Waterproof electric torch		X
19	One daylight signalling mirror		X
20	One copy of life-saving signals	X	X
21	One whistle		X
22	A first-aid kit		X
23	Anti-seasickness medicine		X
24	One seasickness bag for each person		X
25	A jack knife		X
26	Three tin openers		X
27	Two buoyant rescue quoits		X
28	A manual pump	X	X
29	One set of fishing tackle		X
30	Portable fire-extinguishing equipment		X
31	A radar reflector		X
32	Thermal protective aids		X
33	Compartments for storage		X
34	A means for collecting rainwater		X
35	A boarding ladder		X
36	Seat belts		X
37	Instructions of immediate action	X	X
38	Water resistant instructions	X	X

6.2.2 On board maintenance procedures

6.2.2.1 General

As a result of inspection, any defective parts should be repaired in accordance with following procedures. Any shortage of quantity should be supplemented to the correct number. Defective parts other than the following should be recorded along with their details and ordered for maintenance and repair by the manufacturers.

6.2.2.2 Boat

6.2.2.2.1 Rust on metal parts

Give anti-rusting treatment according to degree of damage, or replace if significantly wasted.

6.2.2.2.2 Damage of fabric

Repair fabric products by same material according to degree of damage.

6.2.2.2.3 Gasket

Repair with adhesive sealant according to degree of damage.

6.2.2.2.4 Drain valve

Remove any dirt and check correct operation.

6.2.2.2.5 Water spray system

Remove any deposit from spray nozzles. Tighten up pipe connecting parts when any leakage was noted. Adjust to proper tension on V-belt.

6.2.2.3 Engine

6.2.2.3.1 Oil coating and filling

When any rust exists, remove rust and coat with machine oil. Rotating parts should be filled with lubricating oil.

6.2.2.3.2 Operating test

An operational test of the engine should be carried out on board the ship and in the afloat condition after launching at an appropriate opportunity to check the running condition. After the operational test, ensure that the valves for the cooling water line are opened and flushed with fresh water and drained completely.

6.2.2.4 Electric parts

6.2.2.4.1 Battery

Fill up battery with electrolyte if level is below the designated position. Tighten up electric terminal if it is loose.

6.3 Inspection and maintenance of launching appliances (davits and winches)

6.3.1 Inspection and maintenance plan

Launching appliances should be inspected and maintained weekly and monthly in accordance with the following tables. The tables list the items to checked, the method of inspection, the procedure to be followed, and the frequency at which the items are to be attended to.

Table 6.3.1.1 covers the davit.
Table 6.3.1.2 covers the winch.
Table 6.3.1.3 covers the electric parts.

Table 6.3.1.1 - Inspection procedure and maintenance plan for davit

Items	Method	Inspection procedure	Maintenance plan	
			Weekly	Monthly
Frame	Visual	Check corrosion, deformation and depression.	X	X
Davit arms	Visual	Check corrosion, deformation and depression.	X	X
	Operation	Moving out from stowed position.	X	
	Operation	Turning out from stowed position.		X
Sheave, suspension block	Visual	Check wear and corrosion.		X
	Operation	Check moving condition.	X	X
	Lubricate	Lubricate/grease.		X
Hinge pin, sheave pin	Lubricate	Lubricate/grease.		X
Davit arm stopper and trigger hook	Visual	Check wear and corrosion.	X	X
	Operation	Check moving condition.	X	X
	Lubricate	Lubricate/grease.		X
Boat fall, Turn buckle	Visual	Check wear, breakage of wire and corrosion.		X
	Lubricate	Lubricate/grease.		X
	Turn ends	Turn ends of boat fall (2.5 years).		
	Replacing	Replacing boat fall (5 years).		
Lashing wire rope	Visual	Check wear, corrosion and looseness.	X	X
Deck operation device	Operation	Check moving condition.		X
	Lubricate	Lubricate/grease.		X
Remote control wire	Visual	Check wear and corrosion.	X	X
	Operation	Check moving condition.		X
	Lubricate	Lubricate/grease.		X
Boat chock	Visual	Check wear and corrosion.	X	X

Table 6.3.1.2 - Inspection procedure and maintenance plan for winch

Items	Method	Inspection procedure	Maintenance plan	
			Weekly	Monthly
Gear box, gear, bearing, oil seal	Visual	Check level and deterioration of lubricating oil.		X
	Operation	Check unusual noise.		X
Brake system, Centrifugal brake	Visual	Check corrosion or any defects.	X	X
Wire end cotter	Visual	Check looseness.		X
Brake lever	Visual	Check corrosion or any defects.	X	X
	Operation	Check operating condition.	X	X
Speed change lever	Lubricate	Lubricate/grease.	X	X

Table 6.3.1.3 - Inspection procedure and maintenance plan for electric parts

Items	Method	Inspection procedure	Maintenance plan	
			Weekly	Monthly
Electric motor	Visual	Check wiring.	X	X
	Operation	Check normal operation.		X
Limit switch	Visual	Check wiring.	X	X
	Operation	Check normal operation.		X
	Lubricate	Lubricate/grease.		X
Push-button switch box and cable	Visual	Check wiring and other defects.	X	X
	Operation	Check normal operation.		X
Start panel	Visual	Check wiring and other defects.	X	X
	Operation	Check normal operation.		X

6.3.2 On-board maintenance procedure

6.3.2.1 General

As a result of inspection, any defective parts should be repaired in accordance with following procedures. Any shortage of quantity should be supplemented to correct number. Defective parts other than the followings should be recorded along with their details and ordered for maintenance and repair by the manufacturers.

6.3.2.2 Wire rope

6.3.2.2.1 Wire ropes should be changed in the following cases:

.1 break of elemental wire was observed;

.2 7% reduction of nominal diameter was observed;

.3 kink or looseness of ply was observed; or

.4 erosion/corrosion was observed.

6.3.2.2.2 Check fixing condition of wire ropes.

6.3.2.2.3 Change the boat falls within an appropriate period.

6.3.2.2.4 Adjust the length of boat falls as necessary so that the clearances between the davit arm and davit arm stopper at fore and aft are almost the same.

6.3.2.2.5 Ensure that material and diameter of suspension links are as specified by the release gear manufacturer.

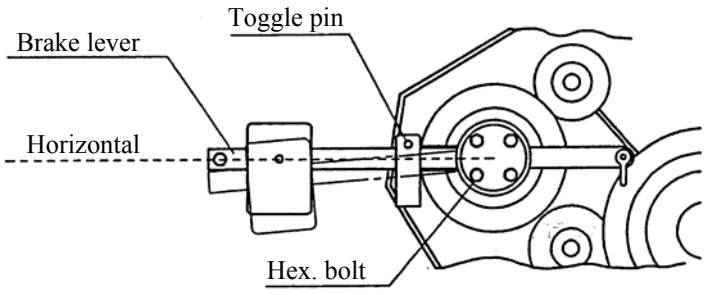
6.3.2.3 Boat winch

6.3.2.3.1 Prior to commencement of the maintenance work for the winch, the boat should be secured to prevent movement.

6.3.2.3.2 Oil should be checked and changed if discoloured. In case that oil level is low, oil should be added until the its surface comes to the designated level in the oil gauge.

6.3.2.3.3 Surfaces of each gear inside the gear box should be checked. In case that a defect is found on a surface of gear, the gear box should be replaced or repaired.

6.3.2.3.4 In case that the angle of brake lever has dropped due to abrasion of the brake lining, the angle of the brake lever should be adjusted by loosening the bolts, adjusting the angle and tightening the bolts again.



6.3.2.4 Greasing

6.3.2.4.1 Lubrication is essential for the function of the davit and winch and regular checking is necessary. Greasing also should be regularly conducted. For appropriate greasing, the detailed structure of the davit and winch and the functions of their parts should be understood.

6.3.2.4.2 All grease nipples of the davit should be greased at least once a month.

6.3.2.4.3 Gear oil inside the boat winch should regularly be checked regarding amount, change of colour and mixture of moisture.

6.3.2.4.4 Wire rope oil/grease should be regularly checked to prevent loss of oil/grease. Wire rope should be oiled or greased every two months in general.

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MEASURES TO PREVENT ACCIDENTS WITH LIFEBOATS

1 The Maritime Safety Committee, at its eighty-first session 10 to 19 May 2006, recalled that at its seventy-fifth session (15 to 24 May 2002), it had considered the issue of the unacceptably high number of accidents with lifeboats in which crew were being injured, sometimes fatally, while participating in lifeboat drills and/or inspections, and noted that most accidents fell under the following categories:

.1 failure of on-load release mechanism;

.2 inadvertent operation of on-load release mechanism;

.3 inadequate maintenance of lifeboats, davits and launching equipment;

.4 communication failures;

.5 lack of familiarity with lifeboats, davits, equipment and associated controls;

.6 unsafe practices during lifeboat drills and inspections; and

.7 design faults other than on-load release mechanisms.

2 Pending further consideration of the problem, the Committee approved MSC/Circ.1049 on Accidents with lifeboats, to draw the attention of manufacturers, shipowners, crews and classification societies to the personal injury and loss of life that may follow inadequate attention to the design, construction, maintenance and operation of lifeboats, davits and associated equipment and urged all concerned to take necessary action to prevent further accidents with lifeboats. It invited Member Governments to:

.1 bring the circular to the attention of their maritime Administrations, relevant industry organizations, manufacturers, shipowners, crews and classification societies;

.2 take the necessary action to prevent further accidents with lifeboats pending the development of appropriate IMO guidance;

.3 ensure that:

.3.1 on-load release equipment used on ships flying their flag is in full compliance with the requirements of paragraphs 4.4.7.6.2.2 to 4.4.7.6.5 of the LSA Code;

.3.2 all appropriate documentation for the maintenance and adjustment of lifeboats, launching appliances and associated equipment is available on board;

.3.3 personnel undertaking inspections, maintenance and adjustment of lifeboats, launching appliances and associated equipment are fully trained and familiar with these duties;

.3.4 maintenance of lifeboats, launching appliances and associated equipment is carried out in accordance with approved established procedures;

.3.5 lifeboat drills are conducted in accordance with SOLAS regulation III/19.3.3 for the purpose of ensuring that ship's personnel will be able to safely embark and launch the lifeboats in an emergency;

.3.6 the principles of safety and health at work apply to drills as well;

.3.7 personnel undertaking maintenance and repair activities are appropriately qualified;

.3.8 hanging-off pennants should only be used for maintenance purposes and not during training exercises;

.3.9 all tests required for the design and approval of life-saving appliances are conducted rigorously, according to the guidelines developed by the Organization, in order to identify and rectify any design faults at an early stage;

.3.10 the equipment is easily accessible for inspections and maintenance and is proven durable in harsh operational conditions, in addition to withstanding prototype tests; and

.3.11 the approving authorities or bodies pay close attention to proper workmanship and state-of-the-art possibilities when assessing equipment for approval; and

.4 encourage shipowners, when undertaking maintenance and repair activities, to employ qualified personnel, preferably certified by the manufacturer.

3 Member Governments were further invited, while enforcing the provisions of SOLAS regulation IX/4.3, to ensure that the above issues are addressed through the Safety Management System of the company, as appropriate.

4 The Committee further recalled that, at its seventy-seventh session (28 May to 6 June 2003), recognizing the experience gained since the approval of the Guidelines on inspection and maintenance of lifeboat on-load release gear (MSC/Circ.614) at its sixty-second session (24 to 28 May 1993), and that the implementation of expanded and improved guidelines could contribute towards a reduction of the incidence of accidents with lifeboats, it had approved the Guidelines for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear (MSC/Circ.1093), superseding MSC/Circ.614. Taking into account subsequent amendments to SOLAS chapter III and the LSA Code, and having considered proposals by the fiftieth session of the Sub-Committee on Fire Protection, the Committee approved amendments to

the Guidelines as set out in annex 1. The Committee further noted that the guidance developed for lifeboats could also apply to the periodic servicing and maintenance of liferafts, rescue boats and fast rescue boats and their launching appliances and on-load release gear.

5 The Committee further recalled that, at its seventy-ninth session (1 to 10 December 2004), it had endorsed the intention of the Sub-Committee on Ship Design and Equipment, in co-operation with the Sub-Committee on Standards of Training and Watchkeeping, to develop further IMO guidance as envisioned in MSC/Circ.1049, and accordingly, approved the Guidance on safety during abandon ship drills using lifeboats (MSC/Circ.1136), as set out in annex 2. The Committee further recalled that the Guidance developed for lifeboats has relevance, in general, for emergency drills with other life-saving systems and should be taken into account when such drills are conducted. In connection with MSC/Circ.1136, and recognizing the need to provide a basic outline of essential steps to safely carry out simulated launching of free-fall lifeboats in accordance with SOLAS regulation III/19.3.3.4, and having considered proposals by the forty-seventh session of the Sub-Committee on Design and Equipment, the Committee further approved the Guidelines for simulated launching of free-fall lifeboats (MSC/Circ.1137), as set out in the appendix to annex 2.

6 Having considered the need to update several of the circulars discussed above, and having considered proposals by the fiftieth session of the Sub-Committee on Fire Protection to consolidate the numerous circulars on the subject of measures to prevent accidents with lifeboats in order to better serve the mariner, the Committee approved the annexed Guidelines for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear (annex 1) and Guidelines on safety during abandon ship drills using lifeboats (annex 2).

7 Member Governments are invited to give effect to the annexed Guidelines as soon as possible and to bring them to the attention of shipowners, ship operators, ship-vetting organizations, ship personnel, surveyors, manufacturers and all others concerned with the inspection and maintenance of lifeboats, liferafts, rescue boats and fast rescue boats and their launching appliances and on-load release gear.

8 This circular supersedes MSC/Circ.1049, MSC/Circ.1093, MSC/Circ.1136 and MSC/Circ.1137.

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ANNEX 1

GUIDELINES FOR PERIODIC SERVICING AND MAINTENANCE OF LIFEBOATS, LAUNCHING APPLIANCES AND ON-LOAD RELEASE GEAR

General

1 The objective of these Guidelines is to establish a uniform, safe and documented performance of periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear.

2 These Guidelines relate to the application of the ISM Code to periodic servicing and maintenance of lifeboat arrangements and should therefore be reflected in procedures developed for a ship under that Code.

3 The general principle in these Guidelines may also be applied for the periodic servicing and maintenance of liferafts, rescue boats and fast rescue boats and their launching appliances and release gear.

4 Detailed guidance regarding some procedures covered by these Guidelines is provided in the appendix.

SOLAS regulations

5 These Guidelines relate to the requirements contained in:

.1 SOLAS regulation III/20 – Operational readiness, maintenance and inspections; and

.2 SOLAS regulation III/36 – Instructions for on-board maintenance.

Responsibility

6 The company* is responsible for servicing and maintenance onboard its ships in accordance with SOLAS regulation III/20 and for the establishment and implementation of health, safety and environment (HSE) procedures covering all activities during servicing and maintenance.

7 The personnel carrying out servicing and maintenance are responsible for the performance of the work as authorized in accordance with the system specified in paragraph 10.

8 The above personnel are also responsible for complying with HSE instructions and procedures.

9 Where satisfied with an organization's ability to carry out these functions, the Administration may authorize such organization and its personnel to perform the functions of the manufacturer and manufacturer's certified personnel as assigned under these Guidelines, if manufacturer certified facilities are not available.

* For the purpose of these Guidelines, company is as defined in SOLAS regulation IX/1.2.

Authorization

10 Where these Guidelines require certification of servicing personnel, such certification should be issued by the manufacturer in accordance with an established system for training and authorization.

Qualification levels

11 Weekly and monthly inspections, and routine maintenance as defined by the manufacturer, should be conducted under the direct supervision of a senior ship's officer in accordance with the instructions provided by the manufacturer.

12 All other inspections, servicing and repair should be conducted by the manufacturer's representative or a person appropriately trained and certified by the manufacturer for the work to be done.

Reports and records

13 All reports and checklists should be correctly filled out and signed by the person who carries out the inspection and maintenance work and should also be signed by the company's representative or the ship's master.

14 Records of inspections, servicing, repairs and maintenance should be updated and filed onboard the ship.

15 When repairs, thorough servicing and annual servicing are completed, a statement confirming that the lifeboat arrangements remain fit for purpose should be issued by the manufacturer's representative or by the person certified by the manufacturer for the work.

* * *

APPENDIX

SPECIFIC PROCEDURES FOR MAINTENANCE AND SERVICING

1 GENERAL

1.1 Any inspection, servicing and repair should be carried out according to the system for inspection and services developed by the manufacturer.

1.2 A full set of maintenance manuals and associated documentation issued by the manufacturer should be available on board for use in all operations involved in the inspection, maintenance, adjustment and re-setting of the lifeboat and associated equipment, such as davits and release gear.

1.3 The manufacturer's system for inspection and services should include the following items as a minimum.

2 ANNUAL THOROUGH EXAMINATION

2.1 As items listed in checklists for the weekly/monthly inspections also form the first part of the annual thorough examination, when carrying out this examination the inspection of these items should be performed by the ship's crew in the presence of the manufacturer's representative or a person appropriately trained and certified by the manufacturer for the work to be done.

2.2 Inspection and maintenance records of inspections and routine maintenance carried out by the ship's crew and the applicable certificates for the launching appliances and equipment should be available.

2.3 Repairs and replacement of parts should be carried out in accordance with the manufacturer's requirements and standards.

Lifeboats

2.4 The following items should be examined and checked for satisfactory condition and operation:

.1 condition of lifeboat structure including fixed and loose equipment;

.2 engine and propulsion system;

.3 sprinkler system, where fitted;

.4 air supply system, where fitted;

.5 manoeuvring system;

.6 power supply system; and

.7 bailing system.

Release gear

2.5 The following should be examined for satisfactory condition and operation after the annual winch brake test with the empty boat, as required by paragraph 3.1:

.1 operation of devices for activation of release gear;

.2 excessive free play (tolerances);

.3 hydrostatic interlock system, where fitted;

.4 cables for control and release; and

.5 hook fastening.

Notes:

1 The setting and maintenance of release gear are critical operations with regard to maintaining the safe operation of the lifeboat and the safety of personnel in the lifeboat. All inspection and maintenance operations on this equipment should therefore be carried out with the utmost care.

2 No maintenance or adjustment of the release gear should be undertaken while the hooks are under load.

3 Hanging-off pennants may be used for this purpose but should not remain connected at other times, such as when the lifeboat is normally stowed and during training exercises.

4 The release gear is to be examined prior to its operational test. The release gear is to be re-examined after its operational test and the dynamic winch brake test. Special consideration should be given to ensure that no damage has occurred during the winch brake test, especially the hook fastening.

2.6 Operational test of on-load release function:

.1 position the lifeboat partially into the water such that the mass of the boat is substantially supported by the falls and the hydrostatic interlock system, where fitted, is not triggered;

.2 operate the on-load release gear;

.3 reset the on-load release gear; and

.4 examine the release gear and hook fastening to ensure that the hook is completely reset and no damage has occurred.

2.7 Operational test of off-load release function:

.1 position the lifeboat fully waterborne;

.2 operate the off-load release gear;

.3 reset the on-load release gear; and

.4 recover the lifeboat to the stowed position and prepare for operational readiness.

Note:

Prior to hoisting, check that the release gear is completely and properly reset. The final turning-in of the lifeboat should be done without any persons on board.

2.8 Operational test of free-fall lifeboat release function:

.1 engage the simulated launching arrangements as specified in the manufacturer's operating instructions;

.2 the operator should be properly seated and secured in the seat location from which the release mechanism is to be operated;

.3 operate the release mechanism to release the lifeboat;

.4 reset the lifeboat in the stowed configuration;

.5 repeat procedures .2 to .4 above, using the back-up release mechanism, when applicable.

.6 remove the simulated launching arrangements; and

.7 verify that the lifeboat is in the ready to launch stowed configuration.

Davit

2.9 The following items should be examined for satisfactory condition and operation:

.1 davit structure, in particular with regard to corrosion, misalignments, deformations and excessive free play;

.2 wires and sheaves, possible damages such as kinks and corrosion;

.3 lubrication of wires, sheaves and moving parts;

.4 functioning of limit switches;

.5 stored power systems; and

.6 hydraulic systems.

Winch

2.10 The following items should be examined for satisfactory condition and operation:

.1 open and inspect brake mechanism;

.2 replace brake pads, if necessary;

.3 remote control system;

.4 power supply system; and

.5 winch foundation.

3 DYNAMIC WINCH BRAKE TEST

3.1 Annual operational testing should preferably be done by lowering the empty boat. When the boat has reached its maximum lowering speed and before the boat enters the water, the brake should be abruptly applied.

3.2 The five-year operational test should be done by lowering the boat loaded to a proof load equal to 1.1 times the weight of the survival craft or rescue boat and its full complement of persons and equipment, or equivalent load. When the boat has reached its maximum lowering speed and before the boat enters the water, the brake should be abruptly applied.

3.3 Following these tests, the brake pads and stressed structural parts should be re-inspected.

Note:

In loading the boat for this test, precautions should be taken to ensure that the stability of the boat is not adversely affected by free surface effects or the raising of the centre of gravity.

4 OVERHAUL OF ON-LOAD RELEASE GEAR

Overhaul of on-load release gear includes:

.1 dismantling of hook release units;

.2 examination with regard to tolerances and design requirements;

.3 adjustment of release gear system after assembly;

.4 operational test as per above and with a load according to SOLAS regulation III/20.11.2.3; and

.5 examination of vital parts with regard to defects and cracks.

Note:

Non-destructive examination (NDE) techniques, such as dye penetrants (DPE), may be suitable.

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ANNEX 2

GUIDELINES ON SAFETY DURING ABANDON SHIP DRILLS USING LIFEBOATS

1 GENERAL

1.1 Introduction

1.1.1 It is essential that seafarers are familiar with the life-saving systems on board their ships and that they have confidence that the systems provided for their safety will work and will be effective in an emergency. Frequent periodic shipboard drills are necessary to achieve this.

1.1.2 Crew training is an important component of drills. As a supplement to initial shore-side training, on board training will familiarize crew members with the ship systems and the associated procedures for use, operation and drills. On these occasions, the objective is to develop appropriate crew competencies, enabling effective and safe utilization of the equipment required by the 1974 SOLAS Convention. The time limits set out in SOLAS for ship abandonment should be considered as a secondary objective when conducting drills.

1.2 Drill frequency

Experience has shown that holding frequent drills furthers the goals of making the crew familiar with the life-saving systems on board their ships and increasing their confidence that the systems will work and will be effective in an emergency. Drills give the crew opportunity to gain experience in the use of the safety equipment and in co-operation. The ability to cope with an emergency and handle the situation, if the ship needs to be abandoned, needs to be well rehearsed. However, frequent crew changes sometimes make it difficult to assure that all on board have had the opportunity to participate in drills if only the minimum required drills are conducted. Therefore, consideration needs to be given to scheduling drills as necessary to ensure all on board have an early opportunity to become familiar with the systems on board.

1.3 Drills must be safe

1.3.1 Abandon ship drills should be planned, organized and performed so that the recognized risks are minimized and in accordance with relevant shipboard requirements of occupational safety and health.

1.3.2 Drills provide an opportunity to verify that the life-saving system is working and that all associated equipment is in place and in good working order, ready for use.

1.3.3 Before conducting drills, it should be checked that the lifeboat and its safety equipment have been maintained in accordance with the manufacturer's instructions, as well as noting all the precautionary measures necessary. Abnormal conditions of wear and tear or corrosion should be reported to the responsible officer immediately.

1.4 Emphasis on learning

Drills should be conducted with an emphasis on learning and be viewed as a learning experience, not just as a task to meet a regulatory requirement to conduct drills. Whether they are emergency drills

required by SOLAS or additional special drills conducted to enhance the competence of the crew members, they should be carried out at safe speed. During drills, care should be taken to ensure that everybody familiarizes themselves with their duties and with the equipment. If necessary, pauses should be made during the drills to explain especially difficult elements. The experience of the crew is an important factor in determining how fast a drill or certain drill elements should be carried out.

1.5 Planning and organizing drills

1.5.1 The 1974 SOLAS Convention requires that drills shall, as far as practicable, be conducted as if there was an actual emergency.* This means that the entire drill should, as far as possible, be carried out. The point is that, at the same time, it should be ensured that the drill can be carried out in such a way that it is safe in every respect. Consequently, elements of the drill that may involve unnecessary risks need special attention or may be excluded from the drill.

1.5.2 In preparing for a drill, those responsible should review the manufacturer's instruction manual to assure that a planned drill is conducted properly. Those responsible for the drill should assure that the crew is familiar with the guidance provided in the life-saving system instruction manual.

1.5.3 Lessons learned in the course of a drill should be documented and made a part of follow-up shipboard training discussions and planning the next drill session.

1.5.4 The lowering of a boat with its full complement of persons is an example of an element of a drill that may, depending on the circumstances, involve an unnecessary risk. Such drills should only be carried out if special precautions are observed.

2 ABANDON SHIP DRILLS

2.1 Introduction

It is important that the crew who operate safety equipment on board are familiar with the functioning and operation of such equipment. The 1974 SOLAS Convention requires that sufficiently detailed manufacturers' training manuals and instructions be carried on board, which should be easily understood by the crew. Such manufacturers' manuals and instructions should be accessible for everyone on board and observed and followed closely during drills.

2.2 Guidance to the shipowner

2.2.1 The shipowner should ensure that new safety equipment on board the company's ships has been approved and installed in accordance with the provisions of the 1974 SOLAS Convention and the International Life-Saving Appliances (LSA) Code.

2.2.2 Procedures for holding safe drills should be included in the Safety Management System (SMS) of the shipping companies. Detailed procedures for elements of drills that involve a special risk should be evident from workplace assessments adjusted to the relevant life-saving appliance.

* Refer to SOLAS regulation III/19.3.1.

2.2.3 Personnel carrying out maintenance and repair work on lifeboats should be qualified accordingly.*

2.3 Lifeboats lowered by means of falls

2.3.1 During drills, those responsible should be alert for potentially dangerous conditions and situations and should bring them to the attention of the responsible person for appropriate action. Feedback and improvement recommendations to the shipowner, the Administration and the system manufacturer are important elements of the marine safety system.

2.3.2 Before placing persons onboard a lifeboat, it is recommended that the boat first be lowered and recovered without persons on board to ascertain that the arrangement functions correctly. The boat should then be lowered into the water with only the number of persons on board necessary to operate the boat.

2.3.3 To prevent lashings or gripes from getting entangled, proper release should be checked before swinging out the davit.

2.4 Free-fall lifeboats

2.4.1 The monthly drills with free-fall lifeboats should be carried out according to the manufacturer's instructions, so that the persons who are to enter the boat in an emergency are trained to embark the boat, to take their seats in a correct way and to use the safety belts; and also are instructed on how to act during launching into the sea.

2.4.2 When the lifeboat is free-fall launched as part of a drill, this should be carried out with the minimum personnel required to manoeuvre the boat in the water and to recover it. The recovery operation should be carried out with special attention, bearing in mind the high risk level of this operation. Where permitted by SOLAS, simulated launching should be carried out in accordance with the manufacturer's instructions, taking due note of the Guidelines for simulated launching of free-fall lifeboats at appendix.

* * *

* Refer to the Guidelines for periodic servicing and maintenance of lifeboats, launching appliances and on-load release gear (see annex 1).

APPENDIX

GUIDELINES FOR SIMULATED LAUNCHING OF FREE-FALL LIFEBOATS

1 Definition

Simulated launching is a means of training the crew in the free-fall release procedure of free-fall lifeboats and in verifying the satisfactory function of the free-fall release system without allowing the lifeboat to fall into the sea.

2 Purpose and scope

The purpose of these Guidelines is to provide a basic outline of essential steps to safely carry out simulated launching. These Guidelines are general; the lifeboat manufacturer's instruction manual should always be consulted before conducting simulated launching. Simulated launching should only be carried out with lifeboats and launching appliances designed to accommodate it, and for which the manufacturer has provided instructions. Simulated launching should be carried out under the supervision of a responsible person who should be an officer experienced in such procedures.

3 Typical simulated launching sequence

3.1 Check equipment and documentation to ensure that all components of the lifeboat and launching appliance are in good operational condition.

3.2 Ensure that the restraining device(s) provided by the manufacturer for simulated launching are installed and secure and that the free-fall release mechanism is fully and correctly engaged.

3.3 Establish and maintain good communication between the assigned operating crew and the responsible person.

3.4 Disengage lashings, gripes, etc. installed to secure the lifeboat for sea or for maintenance, except those required for simulated free-fall.

3.5 Participating crew board the lifeboat and fasten their seatbelts under the supervision of the responsible person.

3.6 All crew, except the assigned operating crew, disembark the lifeboat. The assigned operating crew fully prepares the lifeboat for free-fall launch and secures themselves in their seats for the release operation.

3.7 The assigned operating crew activates the release mechanism when instructed by the responsible person. Ensure that the release mechanism operates satisfactorily and, if applicable, the lifeboat travels down the ramp to the distance specified in the manufacturer's instructions.

3.8 Resecure the lifeboat to its stowed position, using the means provided by the manufacturer and ensure that the free-fall release mechanism is fully and correctly engaged.

3.9 Repeat procedures from 3.7 above, using the back-up release mechanism when applicable.

3.10 The assigned operating crew disembarks the lifeboat.

3.11 Ensure that the lifeboat is returned to its normal stowed condition. Remove any restraining and/or recovery devices used only for the simulated launch procedure.

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