

指导性文件  
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中国船级社

# 通过运河船舶构造与设备符合性检验指南

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## 出版说明

为了更系统性地开展相关工作，提升客户体验，我社特立项研究编制本指南，旨在为我社验船师开展船舶满足相关运河航行规则的符合性检验服务并为客户签发“符合相关运河构造和设备要求的检验声明”提供指导。

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# 第 1 章 通则

## 1.1 目的

1.1.1 本指南旨在为中国船级社（以下简称为“CCS”）开展船舶满足巴拿马或苏伊士《运河航行规则》（以下简称“规则”）的符合性检验服务提供指导。

## 1.2 应用范围

1.2.1 本指南适用于具有 CCS 船级的通过巴拿马或苏伊士运河船舶。

1.2.2 通过运河船舶除应满足 SOLAS 公约要求外，还应考虑“规则”中的要求<sup>①</sup>（详见本指南“附录 1”和“附录 2”）。

1.2.3 本指南仅包括“规则”中对船舶“构造”和“设备配备”的规定，对特定船舶过运河时，还应注意相关运河当局和船旗国主管机关的其他有关规定。

## 1.3 图纸资料

1.3.1 对申请签发“符合巴拿马运河船舶构造和设备要求检验声明”的船舶，应提交如下图纸资料供核查<sup>②</sup>：

- (1) 拖带、系泊布置图
- (2) 引航员平台和遮阳篷布置图
- (3) 桅杆和信号布置图
- (4) 驾驶室布置，包括但不限于下列内容：
  - VHF 无线电装置布置；
  - AIS 引航员接口；
  - 舵角指示器布置；
  - 螺旋桨转速指示器；
  - 本指南规定的甲板两翼的电气设备。
- (5) 引航员梯及登离船装置布置图（如需与舷梯组合使用，还应提交舷梯布置图）

<sup>①</sup>有关这些要求的细节，见巴拿马运河主管当局官方网站 <https://www.pancanal.com/eng/op/notices/index.html> 上颁布的《运河操作规则与过河须知》和苏伊士运河主管当局官方网站 <http://www.suezcanal.gov.eg/English/Navigation/Pages/RulesOfNavigation.aspx> 上颁布的《运河航行规则》

<sup>②</sup>对营运船，原船图纸若不满足运河主管当局要求，应对原图纸作相应修改以满足要求，则只需提交修改部分图纸。

(6) 证明“最大高度”不超“过运河水线”57.91m的图纸资料

1.3.2 对申请签发“符合苏伊士运河船舶构造和设备要求检验声明”的船舶，应提交如下图纸资料供核查<sup>③</sup>：

- (1) 总布置图/舱室设备布置图
- (2) 锚、系泊布置图
- (3) 桅杆和信号布置图

## 1.4 检验范围

就本指南而言，对申请签发“符合相关运河船舶构造和设备要求的检验声明”的检验范围详见本指南附录1、2的附件。

## 1.5 符合性检验声明的签发<sup>④</sup>

1.5.1 在1.3所要求图纸获得相关运河当局批准之前，应船厂或船东自愿申请，CCS进行船舶满足相关《运河航行规则》中对船舶构造和设备配备要求的符合性审图和检验，合格后签发“符合相关运河船舶构造和设备要求的检验声明”。

1.5.2 签发“符合相关运河船舶构造和设备要求的检验声明”的前提条件是1.3.1或1.3.2所列图纸资料已得到CCS的认可。

1.5.3 对非首次通过相关运河的船舶，除非有做过涉及相关《运河航行规则》对船舶构造和设备要求的改建或相关《运河航行规则》对船舶构造和设备要求有更新并有追溯性，否则不必签发“符合相关运河船舶构造和设备要求的检验声明”。

1.5.4 已向船舶签发的“符合相关运河船舶构造和设备要求的检验声明”将长期有效，除非船舶有经过不符合相关《运河航行规则》对船舶构造和设备要求的改建或相关《运河航行规则》对船舶构造和设备要求有更新并有追溯性。

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<sup>③</sup>对营运船，原船图纸若不满足运河主管当局要求，应对原图纸作相应修改以满足要求，则只需提交修改部分图纸。对申请签发“符合苏伊士运河船舶构造和设备要求检验声明”的船舶，考虑到苏伊士《运河航行规则》对船舶的要求相对简单，相关图纸资料的核查可直接由现场验船师完成。

<sup>④</sup>详见图1 签发“符合相关运河船舶构造和设备要求的检验声明”流程图。

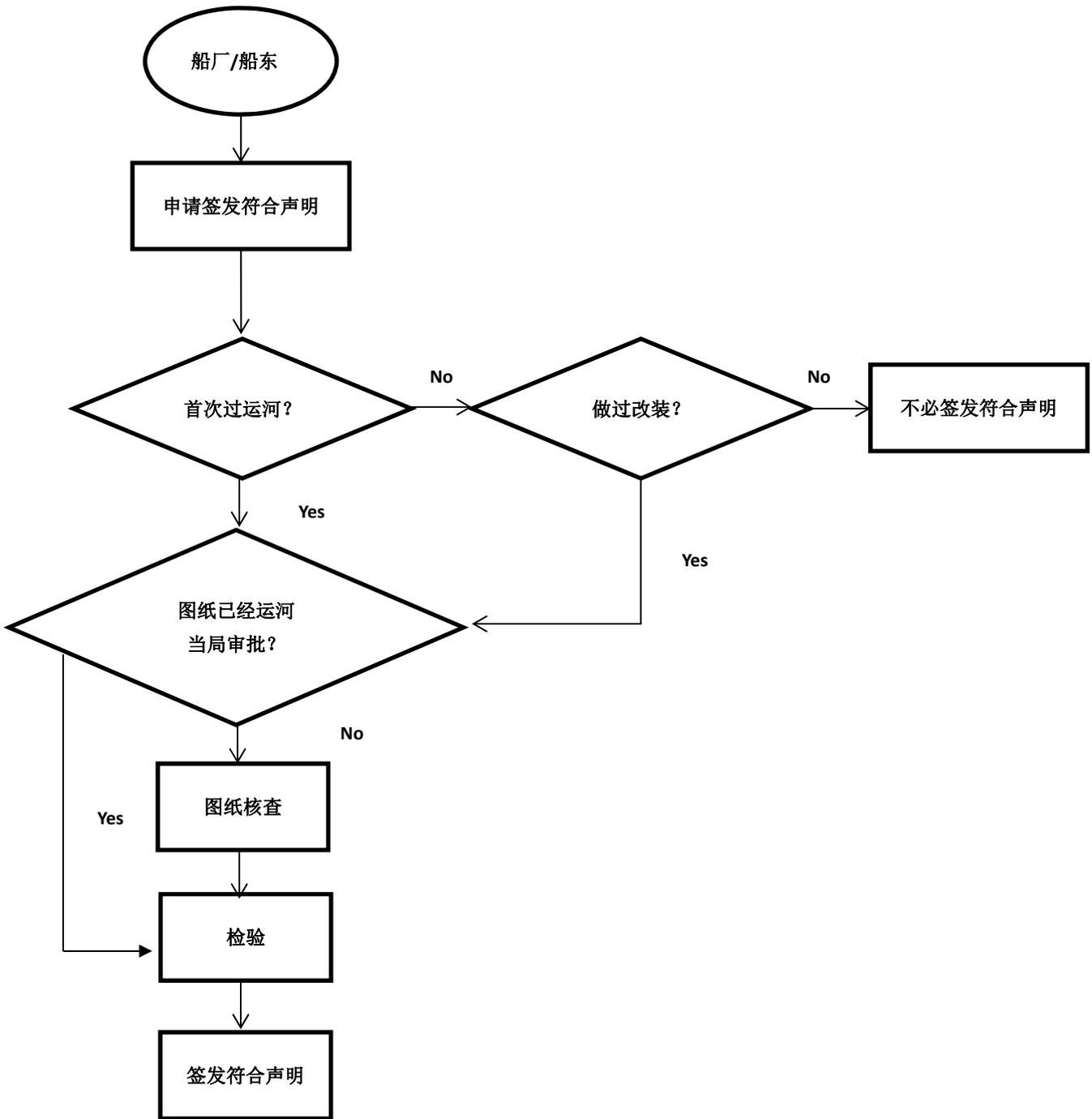


图 1 签发“符合相关运河船舶构造和设备要求的检验声明”流程图

## 1.6 各方责任

本社符合性检验声明不代表相关运河当局签发，仅表明符合 CCS 对其《运河航行规则》中有关通过运河船舶“构造”和“设备配备”要求的理解（详见本指南附录 1、2），并不

排除相关运河当局在船舶通过运河时提出附加检验或要求提供附加证据的可能性。

## 1.7 指南编写依据

1.7.1 本指南编写所依据的文件有：

- (1) 巴拿马《运河操作规则与过河须知》(<https://www.pancanal.com/eng/op/notices>)
- (2) 关于签发巴拿马运河当局《航行规则》船舶要求符合性检验声明的通告—CCS(2017年)  
技术通告第 15 号总第 263 号
- (3) 苏伊士运河当局《航行规则》  
(<http://www.suezcanal.gov.eg/English/Navigation/Pages/RulesOfNavigation.aspx>)
- (4) 关于签发苏伊士运河当局《航行规则》设备要求符合性检验声明的通告—CCS(2015年)  
通函第 15 号总第 176 号

# 附录 1 通过巴拿马运河船舶的构造和设备要求

## 定义

- a. 总长 ( $L_{0A}$ ): 船首和船尾最末端包括球鼻型船首和任何其他突出物间的距离 (又叫“最大长度”)。
- b. 最大船宽: 两舷外侧船壳板间的最大宽度。
- c. 最大宽度: 船舶最宽处, 包括突出物的最大宽度。
- d. 巴拿马型 (PANAMAX): 指主尺度满足现有实际船闸尺度和吃水限制的所有船舶; 名义上, 指船长不超过 965 英尺 (294.13m), 船宽不超过 106 英尺 (32.31m), 热带淡水载重线吃水不超过 39.50 英尺 (12.04m)。
- e. 超巴拿马型 (PANAMAX PLUS): 指热带淡水载重线吃水大于 39.50 英尺 (12.04m) 但不超过 49.87 英尺 (15.2m) 的可准许通过新船闸的所有巴拿马型船舶。
- f. 新巴拿马型 (Neo PANAMAX): 指主尺度大于巴拿马型或超巴拿马型但满足新船闸的尺度和吃水限制的所有船舶; 名义上, 指船长不超过 1200.48 英尺 (366m), 船宽不超过 160.72 英尺 (49m), 热带淡水载重线吃水不超过 49.87 英尺 (15.2m)。
- g. 突出物: 除主锚之外的永久性或者暂时性突出任何船壳部分之外的任何物体。
- h. 安全工作载荷 (SWL): SWL 不超过 80% 的设计载荷。

## 1 对驾驶桥楼的要求

### 1.1 驾驶室

- 1.1.1 驾驶室窗的尺寸和数量应足以提供清晰的视野。
- 1.1.2 具有清晰的安全玻璃。
- 1.1.3 如为有色玻璃窗, 应可以拆卸。
- 1.1.4 应设置正前窗。
- 1.1.5 正常桥楼驾驶位置 (位置 1/2/3/4/5) 的窗应设置机械操作雨刷。
- 1.1.6 驾驶位置 1 应位于驾驶室前中央窗户正后方且紧靠此窗户。
- 1.1.7 2 号和 3 号驾驶位置应分别位于 1 号驾驶位置的左右, 紧邻中央窗户的下一个窗户, 且在这个窗户的正后方。此窗户必须提供清晰且无障碍的视野。
- 1.1.8 4 号和 5 号驾驶位置应分别位于桥楼两翼的左右端, 且必须分别能提供船舶左舷 (4 号) 或右舷 (5 号) 自船首到船尾的清晰且无障碍的视野。接近 4 号和 5 号驾驶位置的通道

应具有安全保护措施。

1.1.9 通道与控制台或者障碍物至少有 1 m 的间隔。

1.1.10 就封闭的桥楼两翼而言：

1.1.10.1 桥楼两翼的朝向外侧的舱壁上应安装了开启型窗以便引航员看到船舶舷侧的水线，  
或

1.1.10.2 当船舶设有延伸至最大船宽处的步行道时，桥楼两翼的朝向外侧的围壁上应设有门  
(至少 0.915m 宽， 2.134m 高) 以便引航员能走到步道上并从栏杆上方眺望船舷的水线。

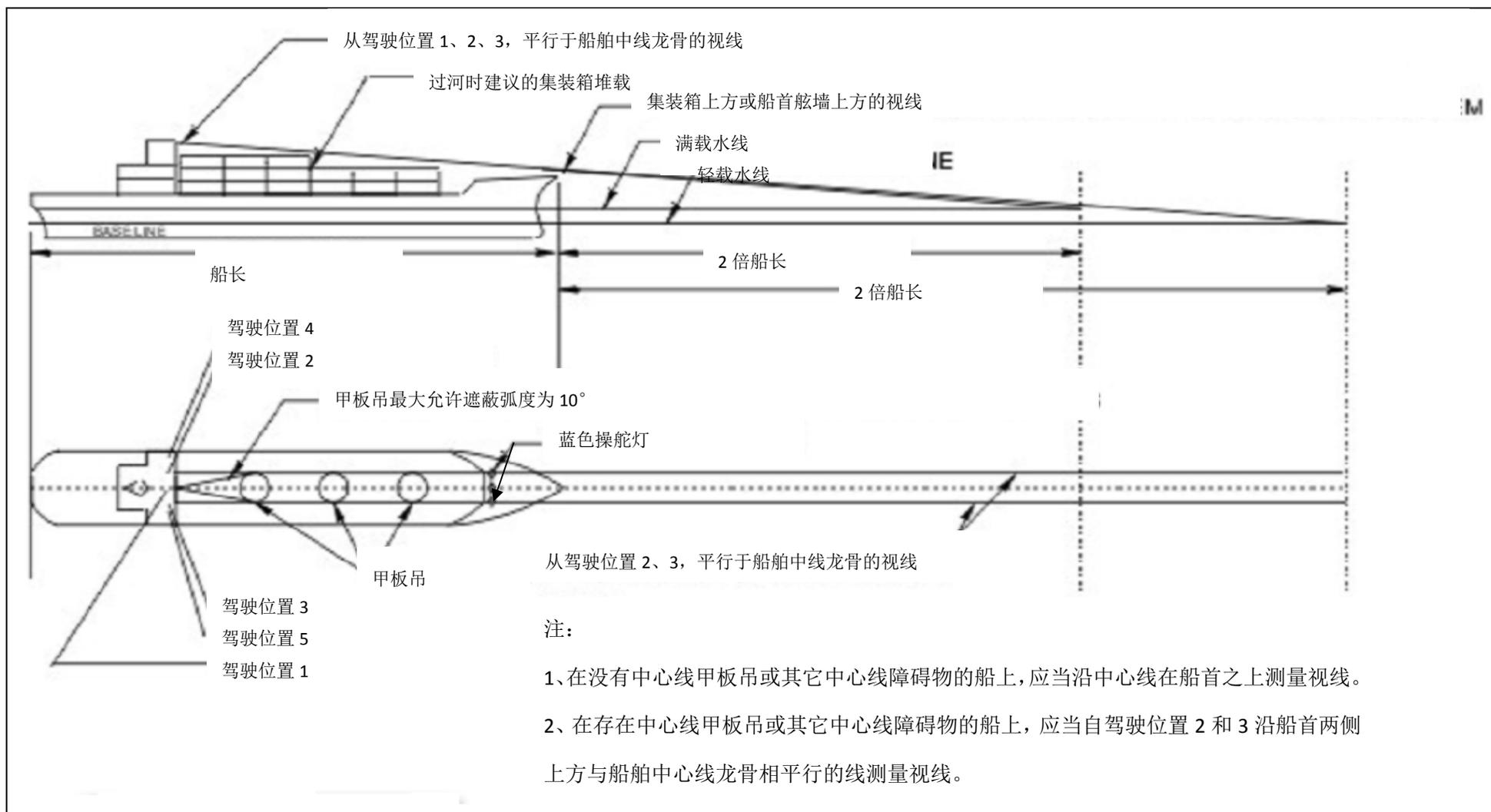


图 1.1 通常的驾驶位置

## 1.2 桥楼两翼

1.2.1 桥楼两翼应延伸至最大船宽处，并从驾驶室门到两翼末端应设置宽度至少为 1.2m 的无障碍的通道。

1.2.2 如果不是，则应设有便携式的或可外展的平台。

1.2.2.1 如设有便携式的或可外展的平台，则应延伸至最大船宽处，其尺寸、强度和刚度能满足 2 个人站立并设有水平栏杆和最小高度为 10cm 的挡护板。

## 1.3 电气装置

### 1.3.1 操舵灯

- (1) 船长 328 英尺（100 米）以上的所有船舶，应在船首位置或者靠近船首位置安装能从驾驶室沿着船舶中线看清的蓝灯操舵标。灯的高度应当尽量接近驾驶室的眼高。若如此安装的上述叠标和灯从驾驶位置 1 部分地或者全部地被遮挡，则应在驾驶位置 2 和 3 处安装两个这样的叠标和灯。操舵灯正后方的驾驶位置应在窗台上用一小薄片标识，以便在黑暗中可以摸到。
- (2) 所要求的灯应能由位于驾驶室或者首楼，或者驾驶室和首楼的合适的可变电阻器或者控制开关来点亮或者熄灭。

### 1.3.2 桥楼两翼聚光灯

在最大船宽为 98.4 英尺（30 米）及以上的船上，能够照亮水线处船舶侧面的聚光灯或者探照灯应安装在驾驶室每个侧翼平台的最外端。对于所有的船舶，这些灯应当是转轴式的并位于驾驶桥楼两翼的不靠前的位置，且在不用时能够旋转，以便让开驾驶室两翼的通道，或者如果安装在前部，则应不高于舷墙。当引航员在驾驶室两翼工作时，通常的工作位置为前部外侧的角落，往前、往后，往下以及往外侧均有很好的视野。灯具、电罗经方位复示器还有其他的设备均不得干扰引航员履行职责。

### 1.3.3 号笛控制

- (1) 驾驶桥楼的号笛控制应从 1 号、2 号和 3 号驾驶位置易于到达，最好位于前舱壁处。
- (2) 如果船宽超过 15m，在 4 号和 5 号驾驶位置处桥楼两翼最外端不超过 1.5m 应增设控制装置。

### 1.3.4 船首/船尾推进器控制装置

已设置首/尾推进器的船舶应在桥楼两翼外端和驾驶室安装控制装置。

## 1.4 通信设备

### 1.4.1 甚高频（VHF）无线电装置

- (1) VHF 无线电装置应至少能在国际频道 12 频道（156.00 兆赫），13 频道（156.650 兆赫）和 16 频道（156.800 兆赫）上工作。
- (2) VHF 无线电装置可从驾驶桥楼上操作并靠近 1 号驾驶位置。

## 1.5 航行设备

### 1.5.1 罗经

- (1) 150 总吨及以上的船舶应当配有标准磁罗经，除非在驾驶位置 1 的舵工能够获取并清楚地读取标准罗经提供的信息，否则还应配备一个操舵磁罗经。应校验磁罗经的剩余自差小于 7°。此校验必须在过去的 12 个月内由公认的校准机构完成且颁发了准确的校验表。150 总吨以下的船舶应当配有一个操舵磁罗经，并配有读取方位的手段。
- (2) 500 总吨及以上的船舶应配有电罗经。主电罗经或者电罗经复示器应能在主驾驶位置清晰地读取。1600 总吨及以上的船舶应配有一个或多个电罗经复示器且安置在适当位置以尽可能在水平 360° 弧度内读取方位。应为在驾驶位置 1 的引航员提供一个易见的可用的电罗经复示器。

### 1.5.2 自动识别系统（AIS）

- (1) 300 总吨以上的所有船舶或者总长 20 米以上的船舶，应配有符合 IMO 标准的自动识别系统。对于组合体或者多体组合（拖轮和被拖物），只要求拖轮配有自动识别系统。
- (2) AIS 设备应按照 IEC61993-2 标准进行型式认可。AIS 系统包括引航员接口应当按照国际海事组织“船载自动识别系统安装指南”进行安装。引航员接口应当靠近驾驶台上的驾驶位置 1。此接口应当标有“AIS 引航员接口”字样，同时附近应当有一个美国标准的（NEMA5-15R）120V 三孔交流电插座，给引航员的笔记本电脑提供电源。此插座应能由应急电源供电。
- (3) 此外，对于驾驶台上只有 100-110V 交流电而非所要求的 120V 交流电电源的旧船舶，以及只有两个插孔的美式标准插座而非所要求的三孔插座的船舶，巴拿马运河将可以例外接受。此低电压和插座类型（NEMA 1-15R）可以接受，但不接受 220-240V 交流电

的船舶。

### 1.5.3 舵角指示器

所有总长 150 英尺（45.72 米）以上的船舶，其所配备的舵角指示器还应满足下列要求：

- (1) 在船宽 80 英尺（24.38 米）以下的船舶上，至少配有一个舵角指示器；
- (2) 在船宽 80 英尺（24.38 米）及以上的船舶上，在驾驶室内和驾驶台两翼均应配有舵角指示器；
- (3) 舵角指示器应放置成在白天和晚上从任何通常的驾驶位置和操舵位置均能容易地看清。位于驾驶位置之后的舵角指示器被认为是不满足本条要求。此外，不接受架空舵角指示器放置在引航员驾驶位置之后，安装在架空面板上的舵角指示器必须尽量靠近前舱壁以便引航员观察。

### 1.5.4 螺旋桨转速指示器

所有总长超过 150 英尺（45.72 米）的船舶，其所配备的指示器还应满足下列要求：

- (1) 在船宽小于 80 英尺（24.38 米）的船舶上，每个螺旋桨必须配有一个此类指示器；
- (2) 在船宽为 80 英尺（24.38 米）或者更大的船舶上，在驾驶室内和驾驶台两翼均需有此类指示器；
- (3) 指示器应当能够清楚且准确的显示螺旋桨或者几个螺旋桨的每分钟转速以及方向。应当注意位于驾驶位置之后的指示器将被认为是不符合规定的。

### 1.5.5 可调螺距螺旋桨指示器

所有总长超过 150 英尺（45.72 米）的船舶，其所配备的指示器还应满足下列要求：

- (1) 在船宽小于 80 英尺（24.38 米）的船舶上，每个螺旋桨必须配有一个此类指示器；
- (2) 在船宽为 80 英尺（24.38 米）或者更大的船舶上，在驾驶室内和驾驶台两翼均需有此类指示器。

## 2 导缆孔和系缆柱的构造、数目和位置

### 2.1 船长小于 60.96m，船宽不超过 15.24 m 的船舶

( $L < 60.96 \text{ m} \& B \leq 15.24 \text{ m}$ )

2.1.1 船首和船尾具有双式导缆孔。或船首和船尾具有两个单式导缆孔，导缆孔应当放置在左右两舷、船首之后不超过 2.5m 或者船尾之前不超过 3 m，并且离中线不超过 3 m。

## 2.2 船长 60.96m 至 121.92m 之间，船宽不超过 22.86 m 的船舶

( $60.96\text{ m} \leq L < 121.92\text{ m} \& B \leq 22.86\text{ m}$ )

2.2.1 船首和船尾具有双式导缆孔。或船首和船尾具有两个单式导缆孔，导缆孔应当放置在左右两舷、船首之后不超过 2.5m 或者船尾之前不超过 3 m，并且离中线不超过 3 m。

2.2.2 有两个额外的单式导缆孔装置在左右两舷，在船首之后 9~16 m、船尾之前 9~16 m。

## 2.3 船长 121.92m 至 173.74m 之间，船宽不超过 22.86 m 的船舶

( $121.92 \leq L < 173.74\text{ m} \& B \leq 22.86\text{ m}$ )

2.3.1 船首和船尾设有双式导缆孔。或船首和船尾左右两舷装有两个单式导缆孔，在船首之后不超过 2.5 m 或者船尾之前不超过 3 m 以及离中线不超过 3 m。

2.3.2 额外地在左右两舷各有一个双式导缆孔，在船首之后 12~16 m；在左右两舷各有一个单式导缆孔，在船首之后 24 ~28 m。

2.3.3 各有一个单式导缆孔装置在左右两舷，在船尾之前 12 ~16 m。

## 2.4 船长大于 173.74m，或者船宽等于或大于 22.86 m 的船舶

( $L \geq 173.74\text{ m} / B \geq 22.86\text{ m}$ )

2.4.1 船首和船尾设有双式导缆孔。或者在船首和船尾左右两舷位置设置两个双式导缆孔，在船首之后不超过 2.5 m 或者在船尾之前不超过 3 m 并且离中线不超过 3 m。

2.4.2 在左右两舷各装有一个双式导缆孔，在船首之后 12 ~16 m；左右两舷各一个单式导缆孔，在船首之后 24~28 m。

2.4.3 在左右两舷各装有一个双式导缆孔，在船尾之前 12~16 m；左右两舷各一个单式导缆孔，在船尾之前 24 ~28 m。

2.4.4 拥有大型外展船首和/或船尾的船舶、或者干舷异常高的船舶，例如集装箱船或者汽车运输船，将被要求提供比上述要求还要靠后的单式闭合导缆孔以便正确设置辅助拖轮，或者可能被要求设置凹式系缆柱。

## 2.5 所有最大船宽为 27.73 m 或者更大的船舶

( $B \geq 27.73\text{ m}$ )

2.5.1 在船尾必须额外装有两个单式导缆孔。一个导缆孔位于中线的左舷，另外一个位于中线的右舷。这些单式导缆孔应当对称设置，离中线不能少于 3 m 也不能超过 6 m。

## **2.6 长度超过 274.32 m 最大船宽为 27.73 m 或者更大且这一宽度延伸到船体尾部的船舶**

( $L > 274.32 \text{ m} \& B \geq 27.73 \text{ m}$ )

2.6.1 左右两舷在船尾之前 12 ~16 m 需装置的双式导缆孔 (SET 4)，应当位于船舶的最大巴拿马运河淡水吃水水线之上至少 13 m。

## **2.7 单式导缆孔和双式导缆孔应为经过认可的专为过巴拿马运河使用的类型**

2.7.1 单式导缆孔喉部开口不小于  $650\text{cm}^2$ ，最佳尺寸为  $12 \times 9$  英寸 ( $305 \times 230 \text{ mm}$ )，其安全工作负荷为 45.36t/445kN。

2.7.2 双式导缆孔喉部开口不小于  $900\text{cm}^2$ ，最佳尺寸为  $14 \times 10$  英寸 ( $355 \times 255 \text{ mm}$ )，其安全工作负荷为 64t/628kN。

## **2.8 每个单式导缆孔系缆柱的配备**

2.8.1 必须配有一个系缆柱 (最佳直径为 356mm)，能够承受 45.36t/445kN 的拉力。

## **2.9 按要求设立在船首和船尾的每个双式导缆孔系缆柱的配备**

2.9.1 必须有两对配对的重型系缆柱，且每对的每个系缆柱 (最佳直径为 406mm) 应能够承受 64t/628kN 的拉力。

## **2.10 其他的双式导缆孔系缆柱的配备**

2.10.1 应当有一对配对的重型系缆柱，每个系缆柱能承受 64t/628kN 的拉力。

## **2.11 用于拖索的导缆孔**

2.11.1 都应是重型闭式，并且凸形承磨面的半径应不小于 180mm，凸形承磨面应进行延伸，以便由带缆桩或曳引机来的拖索 (与通过导缆孔直线的交角最大可达  $90^\circ$ ) 在通过导缆孔时能与 180mm 的半径相切。

2.11.2 可能以任何角度与钢丝绳接触的船体部分的半径均不应小于 180 mm。

## 2.12 如果船体装有凹式系缆柱。

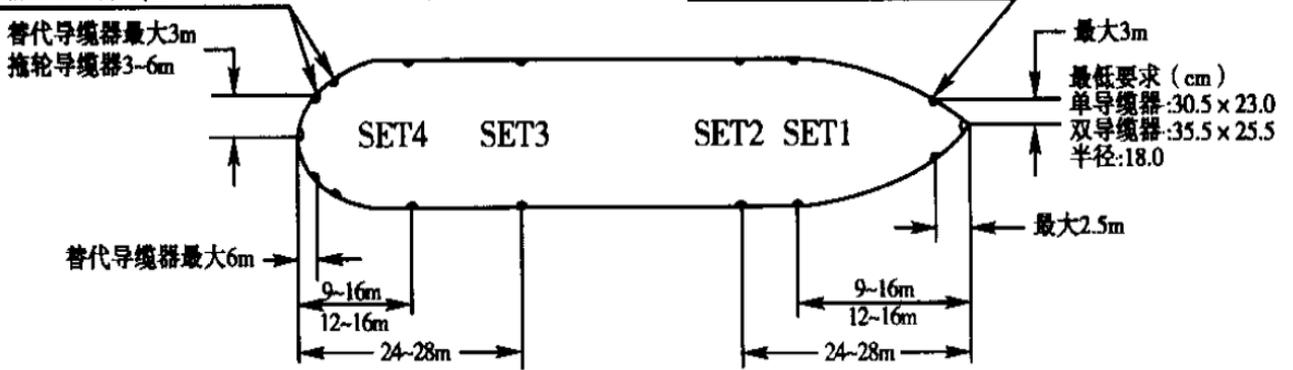
2.12.1 系缆柱的安装位置应当超过水线不少于 3.7 m 并且不超过 4.6 m。

2.12.2 凹式系缆柱的安装在船壳上的位置应尽可能靠前，左右两舷都要安装，安装位置的艏部外飘应不超过 25°，从船的侧面垂直线开始算起。

2.12.3 吃水有明显变化的船舶要求装置两套凹式系缆柱，一套在另外一套的上方。

若无中线船尾导缆器，则需替代导缆器（在船尾之前最大3.0m，左右两舷，离中线最大3.0m）；若船宽为27.73m或更大，则需额外的拖船用单导缆器（左右两舷，离中线3.0~6.0m）

若无中线船首导缆器，则需替代导缆器（在船首之后最大2.5m，左右两舷，离中线最大3.0m）



### 船舶大小

船舶总长在60.96m以下，船宽小于15.24m（若船舶总长超过38.10m，船宽为15.24或者以上，则还需要第1套和第4套导缆器。）

船舶总长为60.96 ~ 121.92m，船宽小于22.86m

船舶总长为121.92 ~ 173.74m，船宽小于22.86m

船舶总长超过173.74m，船宽为22.86m或以上

注：

船宽为27.73m或以上的船舶，若无中线船首双导缆器，则需两个替代双导缆器和两个额外的拖船用单导缆器。

### 所要求的导缆器：

船首中线（双导缆器），船尾中线（双导缆器），两个单导缆器（若无中线导缆器，则需替代导缆器）

除上述船首和船尾导缆器外，还需：

第1套（单导缆器，船首之后9~16m）；

第4套（单导缆器，船尾之前9~16m）。

除上述船首和船尾导缆器外，还需：

第1套（双导缆器，船首之后12~16m）；

第2套（单导缆器，船首之后24~28m）；

第4套（单导缆器，船尾之前12~16m）。

船首中线（双导缆器），船尾中线（双导缆器），

两个双导缆器（若无中线导缆器，则需替代导缆器）

第1套（双导缆器，船首之后12~16m）；

第2套（单导缆器，船首之后24~28m）；

第3套（单导缆器，船尾之前24~28m）；

第4套（双导缆器，船尾之前12~16m）。

图 2.1 导缆孔和系缆柱的位置

## 2.13 新巴拿马型和超巴拿马型船舶

2.13.1 船首和船尾均设有一个双式导缆孔（系泊用）。或船首和船尾具有两个双式导缆孔，位于左右舷，船首向船尾不大于 2.5m 或船尾前部不大于 3.0m，且距离中心线不大于 3.0m。

2.13.2 左右舷船首向船尾 2.5~16m 处各一个双式导缆孔和一对重型系缆柱（SET 1 系泊），每个系缆柱应能承受 64t/628KN 的系泊安全工作负荷；

2.13.3 左右舷船尾向船首 3~16m 处各一个双式导缆孔和一对重型系缆柱（SET 4 系泊），每个系缆柱应能承受 64t/628KN 的系泊安全工作负荷；

2.13.4 左右舷船首和船尾距中心线 3~14m 处各一个双式导缆孔和一对重型系缆柱（最佳直径为 500 millimeters）（附加拖航），每个系缆柱应能承受 90t/883KN 的系泊安全工作负荷；

2.13.5 左右舷船首向船尾 16~70m 处各一个双式导缆孔和一对重型系缆柱（SET 2 拖航），每个系缆柱应能承受 90t/883kN 的拖带安全工作负荷；

2.13.6 左右舷船尾向船首 16~60m 处各一个双式导缆孔和一对重型系缆柱（SET 3 拖航），每个系缆柱应能承受 90t/883kN 的拖带安全工作负荷。

2.13.7 其它的每个系泊用双式导缆孔也应配有一对重型系缆柱，每个系缆柱应能承受 64t/628KN 的系泊安全工作负荷。

2.13.8 就 PANAMAX PLUS 型和 Neo PANAMAX 型船舶而言：双式导缆孔的喉部开口面积不小于 900cm<sup>2</sup>，最佳尺寸为 14×10 英寸（355mm×255mm），且拖航作业时的安全工作负荷为 90t /883kN，系泊作业时任何方向上的安全工作负荷为 64 t /628kN。

2.13.9 拥有大型外展船首和/或船尾的船舶、或者干舷异常高的船舶，如 LNG 运输船，集装箱船，邮轮或车辆运输船等，SET2/SET3 位置的导缆孔可布置在相应更后/更前的位置，以便更好地配合拖轮工作。这些船舶可能会要求在船壳上安装凹式系缆柱来代替导缆孔，凹式系缆柱的安全工作负荷应满足 90t 的要求。

2.13.10 所有准备通过新船闸的船舶，都必须在每次通过新船闸的系泊作业前，配备有系泊绞车，并配上马尼拉或合成系泊缆绳。注意：用钢丝、钢丝和纤维组成的绳索，不能用于过运河系泊操作。通过新船闸的船舶绞车卷筒通常是使用马尼拉或合成系泊缆绳。在新船闸中使用的系泊设备和导缆孔通常位于船舶首/尾中心线或第 1 组（SET1）和第 1 组（SET4）的位置。

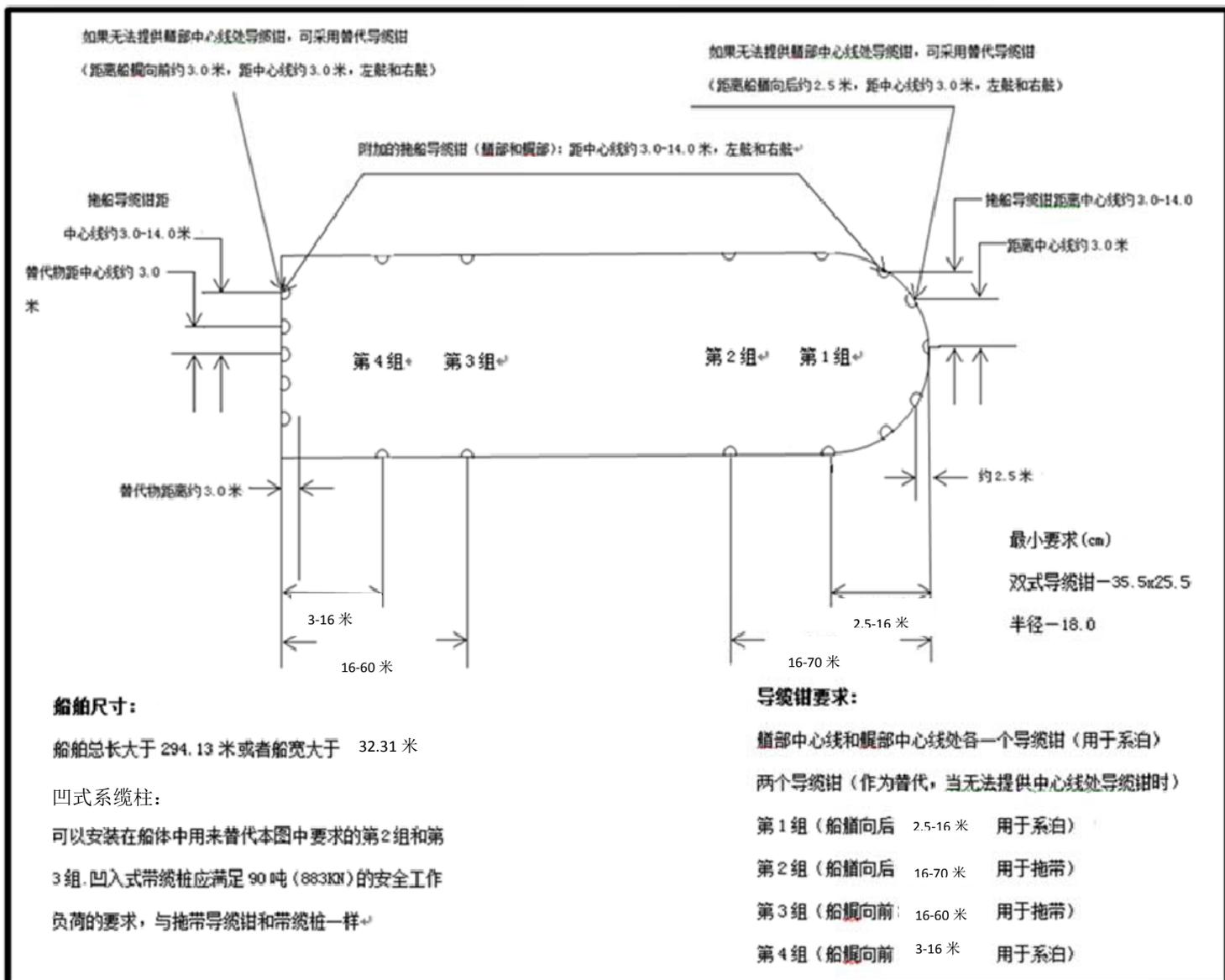


图 2.2 导缆孔和系缆柱的位置 (新巴拿马型和超巴拿马型船舶)

### 3 对特定船舶引航员平台和遮阳篷的要求

#### 3.1 一般规定

根据巴拿马运河管理局《巴拿马运河水域航行规则》第 64 条的规定，某些船舶<sup>⑥</sup>必须为助理引航员提供平台和遮阳篷。指挥引航员应把助理引航员安排在最有助于船舶控制的位置，可能是现有的引航员平台中的任何位置：

- (1)对驾驶台在船舶最后端的船舶，助理引航员平台位置将被前置。
- (2)对驾驶台在船舶最前端的船舶，助理引航员平台位置将被后置。

#### 3.2 引航员平台和遮阳篷

3.2.1 平台必须提供合适的遮阳篷以保护助理引航员不受雨淋或日晒。

3.2.2 每个平台应当放置在水线上最大船宽处前方最远端并且从船壳板垂直面最外端算起进入舷内不超过 6 英寸（152mm）。对于驾驶台在艏部的船舶，这些引航员平台遮阳篷应当放置在水线上最大船宽后方最远端并且从船壳板垂直面最外端算起进入舷内不超过 6 英寸（152mm）。

3.2.3 就最大宽度为 24.38 m 或以上的船舶而言：要求在驾驶台两翼为在第 4 和第 5 驾驶位置的执行指挥任务的引航员提供具有遮阳篷的平台。

3.2.4 遮阳篷应当采用合适的材料制成以遮阳避雨。引航员平台甲板应当是木制或者其他防滑表面的材料，在任何时候能保持脚底干燥。头顶的遮阳篷必须能够在下雨时防止雨水流入。

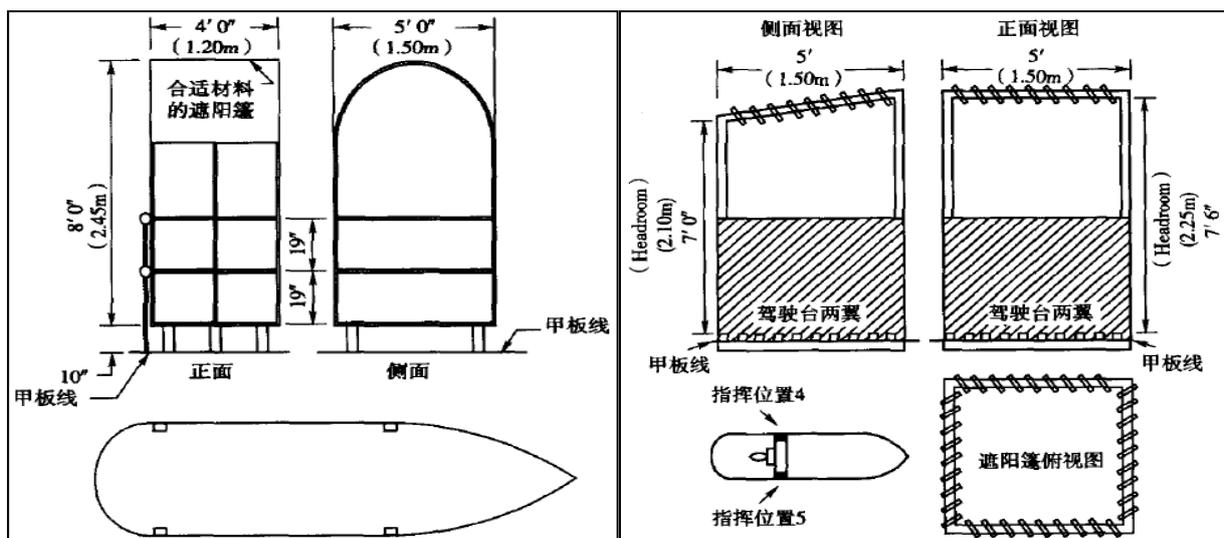


图 3.1 引航员平台和遮阳棚

<sup>⑥</sup>根据该船的设计、尺度、驾驶桥楼的位置和所需要的引航员数量，运河主管当局可以要求安装引航员平台。

## 4 引航员登离船设备

应设有能使引航员从船舶的任一舷安全登船和离船的装置。不接受机械式引航员梯。

### 4.1 舷梯

4.1.1 舷梯应当朝向船尾方向放置，即舷梯的下端平台朝向船尾。朝向船首的或者没有牢固的贴靠在船舶舷侧的舷梯被认为是不适合巴拿马运河管理局人员安全使用的。在使用过程中，舷梯下端平台应当牢固地贴靠在船舶平行中体范围内的舷侧上，并在船中一半船长范围内且远离所有的排水孔。在甲板上靠近升降机的位置应当有一架引航员软梯随时可用。

4.1.2 在使用过程中，舷梯的下平台应当水平放置，离开水面一段距离与登船艇的甲板持平。艇撑架应当伸出。若配有中间平台，平台应当是自动放平的。舷梯的踏板和梯级的设计应当在所用的角度提供充分和安全的立足点。

4.1.3 梯子和平台的两边应当装有垂直的安全支柱和扶手或者绳子。若使用扶手绳，则其应当绷紧并且进行合适的固定。介于栏杆或者扶手绳与梯子纵梁之间的垂直空间应当有安全的防护。

4.1.4 与设置为 9m 长的引航员软梯合用的舷梯应当足够长以确保斜坡的角度不超过 55°。引航员软梯应当紧靠在舷梯的下平台处并系牢在下平台上，使引航员软梯垂直悬挂。引航员软梯应当至少在舷梯下平台之上延伸 2m（6 英尺 8 英寸），应当牢固的靠在船舶平行中体的舷侧，并实际可行地位于船中一半船长的范围内且远离所有排水孔。舷梯下平台的位置要考虑到小艇甲板的高度，加上站在甲板上的一个人的高度和海面上涨和下落的影响；一般情况下水面之上 7m（23 英尺）就足够。

4.1.5 应提供充分的照明以便在夜间能照亮引航员软梯全长。

4.1.6 在引航员软梯和舷梯组合使用的情况下，舷梯下平台上活板门的开口尺寸应不小于 750mm×750mm（30 英寸×30 英寸），并且其设计应得到运河当局的认可。引航员软梯必须超过舷梯下平台至少 2m（6 英尺 8 英寸）。舷梯下平台的开口处要面向船壳以便引航员软梯能够平整的靠在船壳上。

4.1.7 在过运河时使用的舷梯，其任何悬挂布置或需使用与舷梯相配合的附件，必须使得巴拿马运河管理局感到满意。

## 4.2 引航员软梯

4.2.1 引航员软梯应满足本规则的要求或其它被巴拿马运河管理局接受的标准的的要求。引航员软梯的检验应符合 SOLAS I/6,7 和 8 的要求。

4.2.2 所有用于引航员登离船的引航员软梯必须用标签或其他永久标识清楚标识，以便易于对每件设备进行识别、检验和记录。船上应有引航员软梯的使用及维修记录。

4.2.3 引航员软梯应当安全、方便、有效地服务于登离船舶的引航员。引航员软梯应当保持清洁，状态良好，以便在船舶到达或者离开码头时可能会被港口国官员或其他人员使用。

4.2.4 引航员软梯所需爬高应不小于 1.5 米（5 英尺），离水面高度不超过 9m（30 英尺）。

4.2.5 引航员软梯的放置位置应当尽量远离任何可能的船舶排水孔，并位于船舶的平行中体范围内，且尽可能靠近船中位置。

4.2.6 每级踏板应稳固地紧靠在船舷；如结构特性，例如护舷材妨碍本规定的实施，应作出使主管机关满意的特别布置，以确保人员能安全登船和离船。

4.2.7 引航员软梯的单一长度能从登船处或离船处抵达水面，并充分考虑所有装载工况和船舶纵倾及 15° 的不利横倾；当从水面至登船处的距离超过 9 m（30 英尺）时，应设有与引航员软梯相连的舷梯，或其他同样安全方便的装置。

4.2.8 安全加固点、卸扣和系索的强度应至少与扶手索相同。

4.2.9 引航员软梯的踏板应符合下列要求：

- (1) 若踏板为硬木材质，应当为一整块没有节或者其他缺陷的整木。若为非木材料制成，应当有运河管理当局认可的等效的强度、刚度和耐久性。
- (2) 最下面的 4 级踏板可用具有足够强度和硬度的橡胶或者令运河管理当局满意的其他材料制成。
- (3) 踏板应当有有效的防滑表面，不得涂有不透明的油漆或者高亮度漆。踏板的纹理和特点应当一目了然以便使用者能容易地发现踏板的裂纹或者缺陷。
- (4) 不计入任何防滑装置或开槽，其在两扶手索之间的距离应不少于 406mm（16 英寸），其宽度应不小于 115mm（4.5 英寸），其厚度应不小于 25mm（1 英寸）。
- (5) 踏板应当分布均匀，其间距应不少于 305mm（12 英寸）也不超过 380mm（15 英寸），并且各踏板应平行放置。

4.2.10 引航员软梯的替换踏板最多有两块的系固方法与建造该软梯时所使用的，这种使用不同方法系固的替换踏板应在合理可行的条件下尽快更换成建造该软梯时所使用的系固方法

进行系固。如替换踏板是采用在踏板边缘开凹槽与该梯的扶手索进行固定，该凹槽应开在踏板的长边。

4.2.11 超过 5 级踏板的引航员软梯应设在长度至少为 1.8m (6 英尺) 的横杆并按一定间距分布，该间距应使引航员软梯不致扭转。最底部的横杆应为从软梯底部数起第 5 级踏板，每一横杆和下一级横杆之间的间距不应超过 9 级踏板。

4.2.12 引航员软梯每边的扶手索应由两根裸露的绳索组成，其直径应不小于 20mm (3/4 英寸)，并应连续无接头。两根安全绳，其直径不小于 28mm (1 英寸) 也不大于 32mm (1.3 英寸)，牢固地系在船上（如引航员有要求）。

4.2.13 安全绳的绳端应固定在甲板上的环板上，并应在引航员离船或当靠近船舷的引航员提出要求时即可使用（安全绳应在终止于甲板上的环板前，于登上甲板处达到支柱或舷墙的高度）。

4.2.14 扶手索应用马尼拉麻或其它同等强度、耐用性、伸长性和握持力的材料制成，此种材料应经防光照老化处理，并应使得运河当局满意。

4.2.15 一个配有自亮灯的救生圈和撇缆绳应当随时可用。救生圈不得固定在船上。

4.2.16 应当提供充分的照明以照亮引航员软梯以及甲板上人员登船和离船位置。

### 4.3 船侧门

用于引航员登离船的船舶侧门不得向外开。入口或出口必须在水面以上 150 米(5 英尺)以上。

门孔尺寸不得小于 150 米(5 英尺)宽，220 米(7.2 英尺)高。

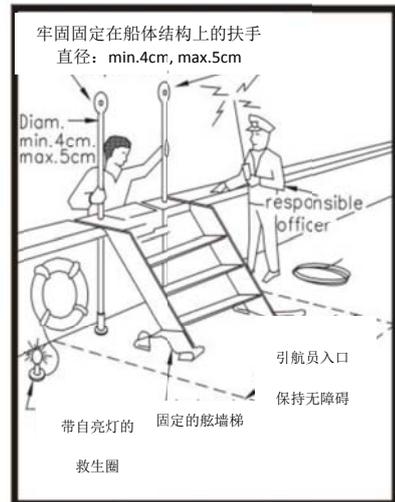
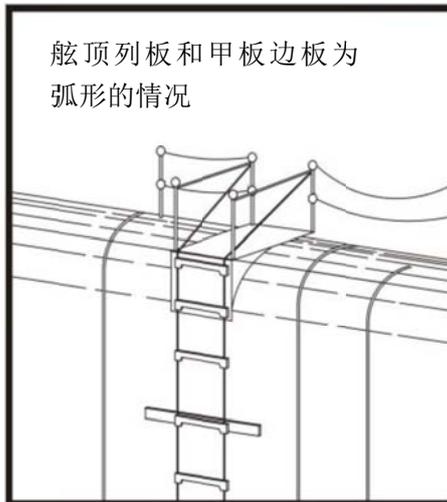
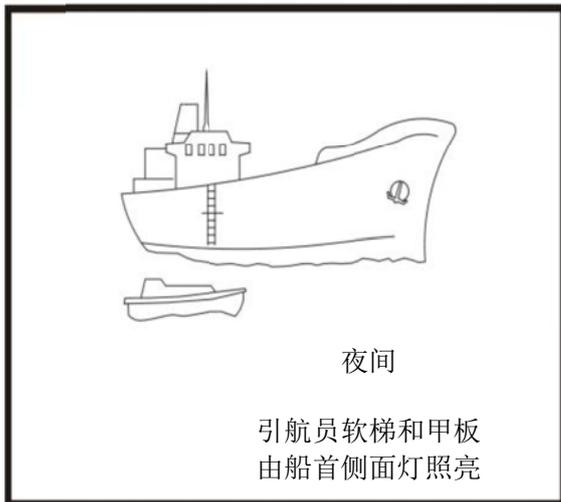
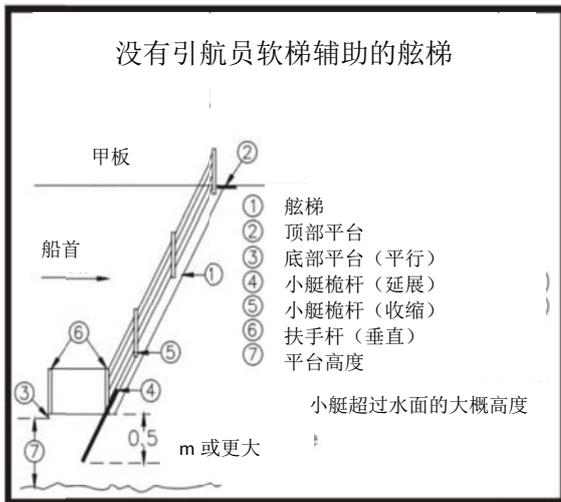
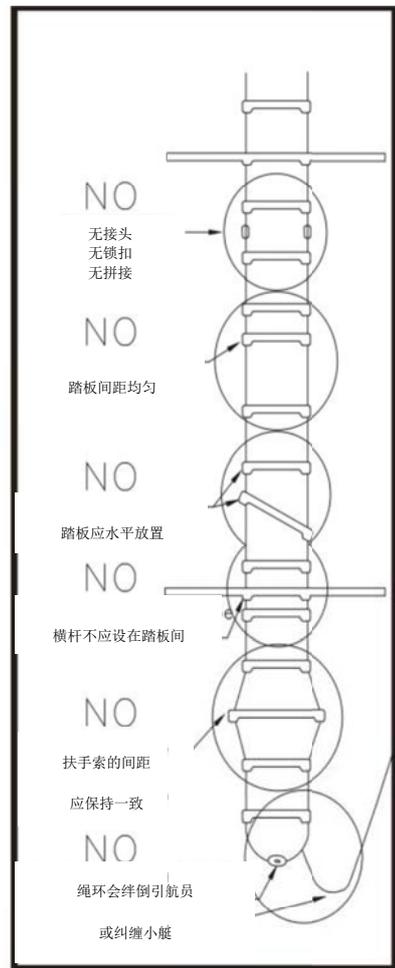
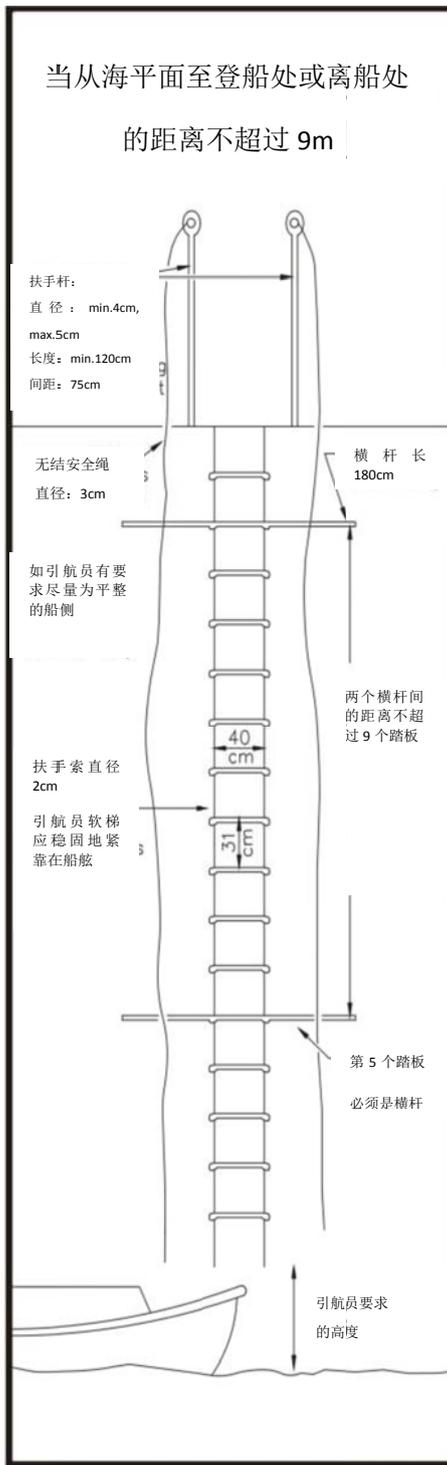
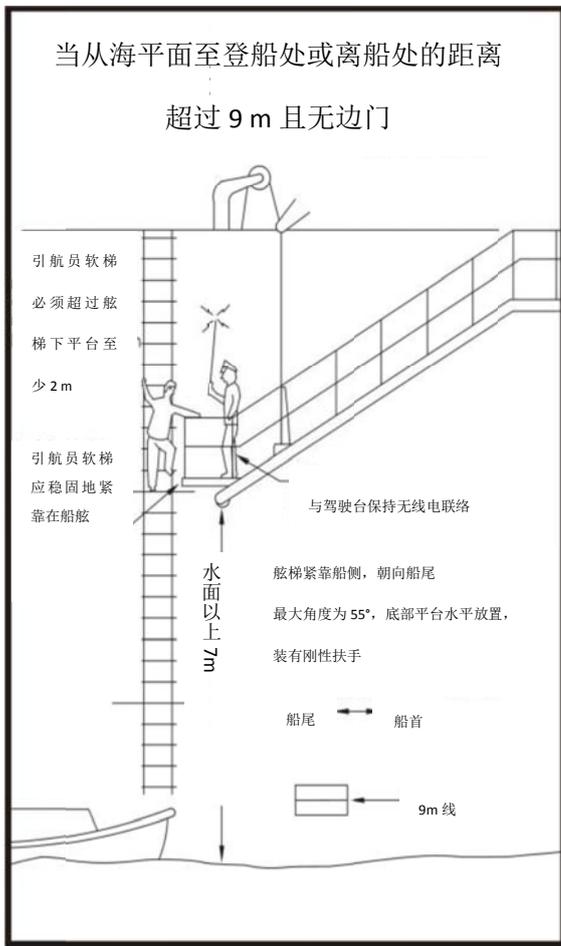


图 4.1 引航员软梯

## 5 其他

### 5.1 甲板设备

5.1.1 建议在船上对甲板机械的拉力进行验证。

5.1.2 所有的系泊绞车应当能够以每分钟 120 英尺（37 m）的速度将用于牵引机车钢索拖（13mm）的绳索回收到船上。

5.1.3 锚应当以每 3 分钟 1 节锚链的速度被收回。

5.1.4 船首和船尾的绞车应能以最小 37m/分钟的速度回收钢绳。

5.1.5 如有延伸至船体之外的部件，应确定其是永久的还是临时的。

5.1.6 总共有 12 根系泊缆绳（船首 6 根/船尾 6 根），每根长度至少为 75m,每端配有 1.5m 的加固眼板。不接受钢缆作为系泊缆。

### 5.2 前进或倒车的反应时间

无论从驾驶室或机舱对推进进行控制，前进或倒车的反应时间应为 10 秒或更少。

## 附件符合巴拿马运河船舶构造和设备要求的检验声明



Form SOC(ACP-CTR)  
No. \_\_\_\_\_

中国船级社  
CHINA CLASSIFICATION SOCIETY

**DECLARATION OF SURVEY REGARDING COMPLIANCE WITH THE PANAMA  
CANAL SHIP ARRANGEMENT AND EQUIPMENT REQUIREMENTS**

Name of Ship \_\_\_\_\_

Distinctive Number or Letters \_\_\_\_\_

Port of Registry \_\_\_\_\_

Panama Canal Gross Tonnage \_\_\_\_\_

IMO No. \_\_\_\_\_

CCS No. \_\_\_\_\_

Date on which keel was laid \_\_\_\_\_

**This is to confirm that** survey of the above vessel has been carried out - including examination of Drawings - upon request from the Yard and/or Owner in order to facilitate determination of the above Vessel's compliance with the Panama Canal Commission's(P.C.C), Vessel Arrangement and Equipment Requirements.

It should be noted that P.C.C is the only entity to evaluate, approve or disapprove vessels for transit, and it is their prerogative to require additional evidence / inspections of the vessel and equipment installed.

This declaration is not issued on behalf of Panama Canal Commission, but indicates compliance with CCS's understanding of their requirements.

It was found that – as far as could be seen – the vessel complies with the “ACP OP NOTICE TO SHIPPING” requirements w.r.t.: - Part 3, “Pilot Platforms and Shelters”, Part4, “Navigation Bridge Features required for Transiting Vessels” and Part 8, “Construction, Number and Location of Chocks and Bitts” - according to scope of work on the enclosed survey report as below.

Remark:

A Panama Canal SOPEP(PCSOPEP) to be provided and submitted for its initial review by the ACP in advance of vessel's first arrival in Panama Canal Waters(applicable for vessels carrying 400 metric tons or more of oil as cargo and/or fuel).

Issued at \_\_\_\_\_ ( \_\_\_\_\_ )

Issued on \_\_\_\_\_ Surveyor to CHINA CLASSIFICATION SOCIETY



**SURVEY REPORT FORM FOR COMPLIANCE WITH REQUIRED SHIP  
ARRANGEMENT AND EQUIPMENTS FOR TRANSITING THE PANAMA CANAL**

No.

The survey has been carried out upon request from the Yard and / or Owner. The Panama Canal Commission is the only entity authorized to evaluate, approve or disapprove vessels for Canal transit requirements.

Name of Ship \_\_\_\_\_  
Port of Registry \_\_\_\_\_  
IMO No. \_\_\_\_\_  
Date on which keel was laid \_\_\_\_\_  
Overall Length \_\_\_\_\_  
Breadth (beam) \_\_\_\_\_  
Height above waterline<sup>1</sup> \_\_\_\_\_  
Draft<sup>2</sup> \_\_\_\_\_

- |   |  |
|---|--|
| 1 | Maximum height above waterline 57.91 m                   |
| 2 | Draft min. and draft max. value allowable for transiting |

Items	
<b>1.0</b>	<b>General / Type of Vessel</b>
1.1	PANAMAX : 289.6 meters in length by 32.31 meters in beam by up to 12.04 meters TFW draft (Passenger and container ships may be up to 294.13 meters). <input type="checkbox"/>
1.2	PANAMAX PLUS : Panamax vessel with TFW draft above 12.04 up to 15.20 meters and approved for transit of new locks. <input type="checkbox"/>
1.3	Neo PANAMAX : All vessels with dimensions greater than Panamax and Panamax Plus that comply with the size and draft limitations for the new locks. 366 meters in length by 49 meters in beam by 15.2 meters TFW draft. <input type="checkbox"/>
1.4	OP notice to shipping used for survey No. N01-20XX <input type="checkbox"/>
1.5	List drawings used in connection with survey:
No.	Title
	Review date
	Towing and Mooring Arrangement
	Wheelhouse Arrangement
	Mast & Signals Arrangement

---

Pilot Platform and Shelters Arrangement

---

Pilot Transfer Arrangements

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1.6	Vessel built in compliance with SOLAS and provided with SOLAS certificates.	<input type="checkbox"/>
<b>2.</b>	<b>Wheelhouse</b>	
2.1	Windows of sufficient size and number to provide a clear view?	<input type="checkbox"/>
2.2	Of clear safety glass?	<input type="checkbox"/>
	Tinted windows, if any, movable?	<input type="checkbox"/>
2.3	Centre window arranged?	<input type="checkbox"/>
2.4	Mechanically operated rain wiper blades on windows at the normal bridge conning positions referred to below?	<input type="checkbox"/>
2.4.1	Conning position No. 1 is located directly behind and close to the forward center wheelhouse window?	<input type="checkbox"/>
2.4.2	Conning position No. 2 and No. 3 are located to port and stbd. of position No. 1 respectively, and directly behind and close to the nearest window thereto that provides a clear unobstructed view ahead?	<input type="checkbox"/>
2.4.3	Conning positions No. 4 and No. 5 are located at the extreme ends of the port and starboard bridge wings and must provide a clear and unobstructed view fore and aft of the vessel's sides. No equipment, instrumentation or inset navigation lights shall block the pilots approach to the forward and after portion of the bridge ends. Are the close approaches safeguarded?	<input type="checkbox"/>
2.4.4	Is there at any position a minimum of 1 meter clearance from consoles or obstructions provided?	<input type="checkbox"/>
2.4.5	For vessels equipped with bow/stern thrusters these should be provided with controls at the extreme ends of the bridge wings?	<input type="checkbox"/>
2.4.6	In case of enclosed bridge wings:	
2.4.6.1	Is an opening type window fitted on the outward bulkhead of each bridge wing in order to allow the pilot to view the waterline all along the side of the vessel?	<input type="checkbox"/>
2.4.6.2	When catwalks are fitted that extend to the maximum beam of the vessel: Is a wide door ( of at least 0.915m width and 2.134m height) provided on the outward bulkhead of each bridge wing in order to allow the pilot to step out onto the catwalk and look over the railing to view the waterline all along the side of the vessel?	<input type="checkbox"/>
<b>3.</b>	<b>Bridge indicators</b>	
	All vessels over 45.72 m (150 feet) in length shall be provided with:	
<b>3.1</b>	<b>Rudder angle indicators as follows:</b>	
3.1.1	(a) On vessels less than 24.38 m (80 feet) in beam, at least one of such design and placement that it can be easily read by day or night from all normal conning positions and from the steering station.	<input type="checkbox"/>
3.1.2	(b) On vessels 24.38 m (80 feet) or more in beam, at least one inside the wheelhouse and one on each bridge wing, of such design and placement so that at least one can be easily read by day or night from each conning position and from the steering station.	<input type="checkbox"/>
3.1.3	(c) They shall show in degrees clearly and accurately the position and direction of the rudder or rudders. It shall be noted that indicators located aft of the conning positions will not be considered as meeting this requirement. Overhead rudder angle indicators located behind the pilot's conning positions are not acceptable. Rudder angle indicators mounted on overhead panels should be located as close to the forward bulkhead as possible for most efficient viewing by the pilot.	<input type="checkbox"/>
<b>3.2</b>	<b>Propeller revolution tachometer indicators as follows:</b>	
3.2.1	(a) On vessels less than 24.38 m (80 feet) in beam, at least one for each propeller, of such design as to be easily read by day or night from all normal conning positions.	<input type="checkbox"/>
3.2.2	(b) On vessels 24.38 m (80 feet) or more in beam, at least one for each propeller located inside the wheelhouse and one for each propeller located on each bridge wing, of such design and placement so that at least one can be easily read by day or night from each conning position.	<input type="checkbox"/>
3.2.3	(c) Indicators shall show revolutions per minute clearly and shall accurately indicate the direction of the propeller or propellers. It shall be noted that indicators located aft of the conning positions will not be considered as meeting this requirement.	<input type="checkbox"/>
3.2.4	(d) All vessels with variable pitch control indicators will have them so located as required	<input type="checkbox"/>

	in (a) and (b) of this subsection.	
<b>3.3</b>	<b>Controllable pitch propeller indicators as follows:</b>	
3.3.1	(a) On vessels less than 24.38 m (80 feet) in beam, at least one for each propeller, of such design as to be easily read by day or night from all normal conning positions.	<input type="checkbox"/>
3.3.2	(b) On vessels 24.38 m (80 feet) or more in beam, at least one for each propeller located inside the wheelhouse and one for each propeller located on each bridge wing, of such design and placement so that at least one can be easily read by day or night from each conning position.	<input type="checkbox"/>
3.4	(4) Indicators must be operational.	<input type="checkbox"/>
<b>4.</b>	<b>VHF radio</b>	
4.1	Equipped with at least Channels 12 (156.00 MHz), 13 (156.650 MHz) and 16 (156.800 MHz)?	<input type="checkbox"/>
4.2	Operable from the navigational bridge and located near Conning Position No.1?	<input type="checkbox"/>
<b>5.</b>	<b>Whistle control</b>	
5.1	Within easy reach on the navigational bridge from Conning Position Nos. 1, 2 and 3(preferably on the forward bulkhead)?	<input type="checkbox"/>
5.2	If beam over 15 meters, are additional controls provided within 1.5 meters of the extreme end of bridge wings at Conning Position Nos. 4 and 5?	<input type="checkbox"/>
5.3	Is it possible to regulate precisely any required signals?	<input type="checkbox"/>
<b>6.</b>	<b>Bridge wings</b>	
6.1	Do bridge wings extend to the extreme breadth, and provide a clear passage of at least 1.2 meters wide from wheelhouse doors to extreme ends?	<input type="checkbox"/>
6.2	If not, are portable or swing-out platforms provided?	<input type="checkbox"/>
6.2.1	Portable or swing-out platform if any, extended to the full breadth, and be of size, strength and rigidity to hold two persons and equipped with horizontal handrails and a toe board with a minimum 10 cm height?	<input type="checkbox"/>
6.3	A spotlight or searchlight capable of illuminating the side of the vessel at the waterline is required to be fitted at the extreme end of each bridge wing on all vessels whose maximum beam is 30 m (98.4 feet) and over. For all vessels, such lights should be of the hinged type and located on the after portion of the bridge wing to allow them to be swung out of the way behind the bridge wing when not in use, or mounted below the bulwark if fitted forward. The normal work position of the pilot on the bridge wing is at the forward outboard corner where he can look forward and down, as well as over the side and aft. Lights, bearing repeaters and other equipment must not interfere with the pilot's ability to do that.	<input type="checkbox"/>
<b>7.</b>	<b>Ladders</b>	
7.1	Accommodation ladder provided SOLAS V/23?	<input type="checkbox"/>
7.2	Pilot ladder in accordance with the SOLAS requirements.	<input type="checkbox"/>
7.3	Ship side doors used for pilot transfer shall not open outward. The point of ingress or egress must be no less than 1.5 m (5 feet) above the surface of the water. The opening used for embarking or disembarking shall not be less than 1.5 m (5 feet) wide and 2.2 m (7.2 feet) tall.	<input type="checkbox"/>
<b>8.</b>	<b>Miscellaneous</b>	
8.1	If the vessel is over 100 meters in length, is a fixed blue steering light installed at or near the stem and visible from the bridge along the centerline and its height as close as possible to the height of eye level at the bridge?	<input type="checkbox"/>
8.1.1	If direct view ahead at conning position No.1 is obscured two blue steering lights fitted ahead of conning positions Nos. 2 and 3.	<input type="checkbox"/>
8.1.2	The wheelhouse position directly aft of the steering lights shall be marked with a small labeled plaque on the window sill which can be located in the dark by feel.	<input type="checkbox"/>
8.1.3	Suitable control switch located on bridge or forecandle or both?	<input type="checkbox"/>
8.2.1	For vessels with max. beam of 30 meters or more: Is a spotlight or a searchlight located on the after portion of the extreme end of each bridge wing or mounted below the bulwark if fitted forward?	<input type="checkbox"/>
8.2.2	Are these lights capable of illuminating the side of vessel and able to be swung out of the way, behind the bridge wing, when not in use?	<input type="checkbox"/>
8.2.3	The normal work position for the pilot is at the outboard corner where he can look forward and down as well as over the side and aft. Are there any lights, bearing repeaters or other equipment obstructing him from doing so?	<input type="checkbox"/>
8.3	Ships of 150 gross tonnage (ITC69) and over shall be fitted with a standard magnetic	<input type="checkbox"/>

	compass and with a steering compass unless the information provided by the standard compass is made available and is clearly readable by the helmsman at Conning Position No.1.	
8.3.1	Means must be available for taking bearings, as nearly as practicable over an arc of the horizon of 360° .	<input type="checkbox"/>
8.3.2	Residual deviation of the magnetic compass must be verified to be less than 7 degrees by swinging the vessel on various headings. Such verification by a recognized calibration authority must have been accomplished, and an accurate deviation table issued, within the previous 12-month period. If necessary, the compass must be adjusted to reduce the observed deviation to less than 7 degrees. Calibration cards issued and signed by the master will be accepted as long as the deviation is less than 6 degrees.	<input type="checkbox"/>
8.3.3	Ships of less than 150 gross tonnage shall be fitted with a steering compass and have means for taking bearings.	<input type="checkbox"/>
8.4	Ships of 500 gross tons (ITC69) and over shall be fitted with a gyro compass. The master gyro compass or a gyro repeater shall be clearly readable by the helmsman from the main conning position. On ships of 1,600 gross tonnage (ITC69) and over, a gyro repeater or gyro repeaters shall be provided and shall be suitably placed for taking bearings as nearly as practicable over an arc of the horizon of 360° . A gyro repeater shall be provided which shall be readily visible and useable by the pilot from Conning Position No.1. Maximum residual steady state gyro error shall not exceed 2° . The maximum divergence in reading between the master compass and repeaters under all operational conditions should not exceed plus or minus 0.5° .	<input type="checkbox"/>
8.5	All vessels over 300 gross tons or over 20 meters LOA must be equipped with an AIS transponder that meets the standards set by the International Maritime Organization(IMO). With regard to combined and multiple units (tug-and-tows), only the tug will be required to be equipped with an AIS transponder.	<input type="checkbox"/>
8.5.1	The AIS system installed onboard vessels shall be Class A AIS ship borne equipment according to IMO MSC 74 (69) Annex 3, "Recommendation on Performance Standards for Universal Ship borne Automatic Identification Systems (AIS)", as amended.	<input type="checkbox"/>
8.5.2	The AIS equipment shall be type-approved according to standard IEC 61993-2.	<input type="checkbox"/>
8.5.3	The AIS equipment shall be installed according to IMO "Guidelines for Installation of Ship borne Automatic Identification System (AIS)", including the installation of a Pilot Plug. The Pilot Plug shall be close to conning position No. 1 on the navigation bridge. This plug shall be labeled "AIS PILOT PLUG", and shall have nearby a USA standard (NEMA 5-15R)120V, AC, 3-prong power receptacle, to provide power to the pilot's laptop computer. This receptacle shall be connected to emergency power.	<input type="checkbox"/>
8.5.4	In addition, the Panama Canal will make an exception with older ships that only have 100VAC to 110VAC electrical service available on the bridge, instead of the required 120VAC, as well as with those vessels that have a 2-prong USA standard electrical outlet, instead of the required 3-prong outlet. This lower voltage and type of outlet (NEMA 1-15R) will be acceptable; however, the Canal will not accept vessels with 220-240 VAC electrical service.	<input type="checkbox"/>
8.6	Recommend pull in capacity of deck machinery to be verified on board.	<input type="checkbox"/>
8.6.1	All mooring winches shall be capable of retrieving the lines used for pulling the locomotive wires onboard at a rate of 120 feet (37 meters) per minute.	<input type="checkbox"/>
8.6.2	Anchors shall be retrieved at a rate of 3 minutes per shot.	<input type="checkbox"/>
8.7.1	Does anything extend beyond any portion of the hull of the vessel, whether permanent or temporary?	<input type="checkbox"/>
8.7.2	If yes, please specify :	
8.8	Winches fore and aft are capable of retrieving wires with a minimum speed of 37 meters/minute?	<input type="checkbox"/>
8.9	Are a total of 12 mooring lines (6 forward/ 6 aft) each of length at least 75 meters and with an eye of at least 1.5 meters spliced in each end? Wire ropes not accepted.	<input type="checkbox"/>
8.10	Notwithstanding whether the propulsion is controlled from the bridge or the engine room is the response time ahead or astern 10 seconds or less?	<input type="checkbox"/>

<b>9. Construction, number and location of chocks and bitts</b>	
9.1	For vessel less than 60.96 meters in length and not exceeding 15.24 meters in beam:
9.1.1	Is there double chock at the stem and stern? <input type="checkbox"/>
	or two single chocks at the stem and stern, placed port and starboard, not more than 2.5 meters abaft the stem or 3.0 meters forward of the stern, and not more than 3.0 meters off the center line? <input type="checkbox"/>
9.2	For vessel 60.96 meters to 121.92 meters in length and not exceeding 22.86 meters in beam
9.2.1	Is there a double chock at the stem and stern? <input type="checkbox"/>
	or two single chocks at the stem and stern, placed port and starboard, not more than 2.5 meters abaft the stem or 3.0 meters forward of the stern, and not more than 3.0 meters off the center line? <input type="checkbox"/>
9.2.2	and in addition two single chocks, placed port and starboard, 9 to 16 meters abaft the stem and 9 to 16 meters forward of the stern? <input type="checkbox"/>
9.3	For vessel 121.92 meters to 173.74 meters in length and not exceeding 22.86 meters in beam:
9.3.1	Is there a double chock at the stem and stern? <input type="checkbox"/>
	or two single chocks at the stem and stern, placed port and starboard, not more than 2.5 meters abaft the stem or 3.0 meters forward of the stern, and not more than 3.0 meters off the center line? <input type="checkbox"/>
9.3.2	and in addition a double chock, placed port and starboard, 12 to 16 meters abaft the stem, and a single chock, placed port and starboard, 24 to 28 meters abaft the stem. <input type="checkbox"/>
9.3.3	and a single chock placed port and starboard, 12 to 16 meters forward of the stern? <input type="checkbox"/>
9.4	For vessel over 173.74 meters long, or 22.86 meters in beam or over, is there: <input type="checkbox"/>
9.4.1	A double chock at the stem and stern? <input type="checkbox"/>
	or two double chocks at the bow and stern, port and starboard, not more than 8 feet (2.5 m) abaft the stem or 10 feet (3 m) forward of the stern and not more than 10 feet (3 m) off the center line. <input type="checkbox"/>
9.4.2	a double chock, port and starboard, 12 to 16 meters abaft the stem and a single chock, port and starboard, 24 to 28 meters abaft the stem. <input type="checkbox"/>
9.4.3	A double chock, port and starboard, 12 to 16 meters forward of the stern and a single chock, port and starboard, 24 to 28 meters forward of the stern? <input type="checkbox"/>
9.4.4	Vessels with unusually high freeboard, large flared bows and/or sterns such as Container/car carriers are required to provide single closed chocks, further aft than those above for tugs, or to fit recessed tug bits. <input type="checkbox"/>
9.5	For vessels with a maximum beam of 27.73 meters or more, two additional single chocks on the stern, symmetrically spaced 3 to 6 meters from the centerline. <input type="checkbox"/>
9.6	For vessel over 274.32 meters in length with maximum beam of 27.73 meters or more is extending to the stern: Are double chocks (SET 4) required on port and starboard, 12 to 16 m forward of the stern, 13 meters or more above the waterline at FW draft? <input type="checkbox"/>
9.7	The single and double chocks are of a type approved for Panama Canal use. <input type="checkbox"/>
9.7.1	Single chock -shall have a throat opening of not less than 650 square cm (100 square inches) in area, preferred dimensions are 12 x 9 inches (305 x 230 mm) and SWL 100, 000 pounds (45.36t) / 445kN. <input type="checkbox"/>
9.7.2	Double chock -shall have a throat opening of not less than 900 square cm (140 square inches) in area, preferred dimensions are 14 x10 inches (355 x 255 mm) and SWL 140,000 pounds (64t) / 628kN. <input type="checkbox"/>
9.8	Each single chock is accompanied by a bitt capable of withstanding a strain of 45.36t/ 445kN. <input type="checkbox"/>
9.9	Each double chock located at the stem or stern have two pairs of heavy bitts with each bitt of each pair capable of withstanding a strain of 64t/628kN. <input type="checkbox"/>
9.10	Other double chocks shall have a pair of accompanying heavy bitts with each bitt capable of withstanding a strain of 64t/628kN. <input type="checkbox"/>
9.10.1	All chocks for towing wires shall be of heavy closed construction and shall have a convex bearing surface with a radius of not less than 180 mm (7 inches). The convex surface shall extend so that a wire from the bitt, or from the locks locomotive through the chock, shall be tangent to the 180 mm (7 inches) radius at any angle up to 90 degrees with respect to a straight line through the chock. <input type="checkbox"/>

9.10.2	No part of the vessel which is in contact by the towing wires, at any angle, have a radius of less than 180 mm.	<input type="checkbox"/>
9.11	Where recessed tug bollards are installed in the hull.	<input type="checkbox"/>
9.11.1	Are the recessed hull bits not less than 3.7 meters and not more than 4.6 meters above the vessels waterline?	<input type="checkbox"/>
9.11.2	Are they installed as far forward as possible, both port and starboard sides, where the bow flare does not exceed 25 degrees as measured from the vertical line of the vessel's side?	<input type="checkbox"/>
9.11.3	Vessels that have an appreciative variation in draft. Are two sets of recessed hull bitts so arranged that one bitt is located above the other?	<input type="checkbox"/>
9.12	<b>NEO PANAMAX and PANAMAX PLUS VESSELS. For vessels with a length above 294.13m or breath above 32.31m are there:</b>	
9.12.1	A double chock at the stem and stern? (mooring)	<input type="checkbox"/>
	Or two double chocks at the stem and stern, placed port and starboard, not more than 2.5 meters abaft the stem or 3.0 meters forward of the stern, and not more than 3.0 meters off the center line.	<input type="checkbox"/>
9.12.2	A double chock and one pair of accompanying heavy bitts, port and starboard, 2.5 to 16 meters abaft the stem (SET 1 mooring),and each bitt shall be capable of withstanding a SWL of 64 t (628 kN) in mooring operations.	<input type="checkbox"/>
9.12.3	A double chock and one pair of accompanying heavy bitts, port and starboard, 3 to 16 meters forward of the stern (SET 4 mooring),and each bitt shall be capable of withstanding a SWL of 64 t (628 kN) in mooring operations.	<input type="checkbox"/>
9.12.4	A double chock and one pair of accompanying heavy bitts (preferred diameter 500 millimeters) port and starboard 3-14 meters off centerline at the bow and stern (towing), and each bitt shall be capable of withstanding the stress caused by a SWL of 90 t (883kN).	<input type="checkbox"/>
9.12.5	A double chock and one pair of accompanying heavy bitts port and starboard 16~70 meters abaft of stem (SET2 towing), and each bitt capable of withstanding a SWL of 90 t (883kN).	<input type="checkbox"/>
9.12.6	A double chock and one pair of accompanying heavy bitts port and starboard 16~60 meters forward of stern (SET3 towing), and each bitt capable of withstanding a SWL of 90 t (883kN).	<input type="checkbox"/>
9.12.7	The rest of the chock locations for use in mooring operations shall be accompanied by one pair of heavy bitts meeting the minimum SWL of 64 t (628 kN).	<input type="checkbox"/>
9.12.8	<b>For PANAMAX PLUS and Neo PANAMAX:</b> Double chock -shall have a throat opening area of not less than 900 square centimeters, preferred dimension are 14 x 10 inches (355 x 255 mm) and SWL 90 t /883kN in towing operations and a minimum SWL 64t / 628kN in mooring operations from any direction.	<input type="checkbox"/>
9.12.9	Vessels with large flared bows, pronounced counters or unusually high freeboards, such as LNG carriers, container vessels, cruise vessels or vehicle carriers, will be required to provide closed chocks located further aft/forward, respectively, than those required for SET2/SET3 above for correct positioning of assisting tugs. These vessels may be required to fit recessed tug bollards into the hull in lieu of the chocks so that tugs can work without coming in contact with the flare or counter and without requiring extra-long lines and/or inefficient leads. Recessed bitts shall meet the 90 tons (883kN) SWL required above.	<input type="checkbox"/>
9.12.10	All vessels wishing to transit the new locks will be required to have mooring winches in operation and fitted with manila or synthetic mooring lines before every transit to be used during mooring operations at the new locks.	<input type="checkbox"/>
<b>10.</b>	<b>Requirements for Pilot Platforms and Shelters on Certain Vessels.</b>	
	As required by the ACP Navigation Regulations, Article 64, suitable platforms and shelters must be provided by certain vessels for assisting pilots. Control pilots will position assisting pilots where they can best contribute to vessel control, which may be at any of the existing pilot platform locations: (1) Vessels with the bridge in the extreme after part of the vessel (assisting pilot platforms will normally be forward). (2) Vessels with the bridge in the extreme forepart of the vessel (assisting pilot platforms will normally be aft).	
10.1	Platforms must afford suitable shelter to protect assisting pilots from rain and sun.	<input type="checkbox"/>
10.2	Each platform is to be erected directly over the furthest point forward of the extreme beam at the waterline and not more than six inches inboard from the outside of the vertical plane of the shell plating. For vessels where the bridge is located forward, these pilot platform shelters will be required to be erected directly over that position which is the furthest point aft of the extreme	<input type="checkbox"/>

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beam at the waterline and not more than six inches inboard from the outside surface of the vertical plane of the shell plating.

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10.3 For all vessels whose extreme beam is 24.38 m or more:

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Provide bridge wing shelter platforms for the protection of control pilots at Conning Positions No. 4 and 5.

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10.4 The deck of pilot platforms shall be made of wood or other material with non-skid surface, sufficient to dry footing at all times. Overhead awning should be rigged to avoid spilling water inside the framework of the shelter during rain.

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applicable and in order       outstanding recommendation       not applicable

Issued at \_\_\_\_\_ ( \_\_\_\_\_ )

Issued on \_\_\_\_\_ Surveyor to CHINA CLASSIFICATION SOCIETY

Rev.1.0 201712

## 附录 2 通过苏伊士运河船舶的构造和设备要求

### 1 舱室与处所

1.1 船舶应为引航员提供适当的住处（高级船员级别）。

根据航行规则第 42（1）条，当在苦湖锚泊或在运河沿岸的停泊处系泊时，应为引航员提供适当的住处（高级船员级别）。万一无可用的适当住处，船舶将额外为每个临时雇佣的引航员支付 1000 美元的报酬。

1.2 船舶在通过苏伊士运河期间应为 3-6 名带缆工人和 2 名操作探照灯的岸上电工提供有遮蔽的处所。

根据航行规则第 42（3）条，在通过苏伊士运河期间，应为带缆工人（根据船舶尺度确定 3-6 名）和 2 名操作探照灯的岸上电工提供有遮蔽的处所。关于带缆工人的人数，可依据航行规则第 20 条来确定：对于 5000 苏伊士运河总吨位（SC.G.T）及以下的船舶，要求 3 人；对于 5000 SC.G.T 以上的船舶，要求 6 人。

### 2 系泊和锚泊

2.1 船舶必须配备能够起吊 3 吨重的系泊船（包括船员重量）的起重装置。

根据航行规则第 20（5）条，船舶必须安装维护良好的起重装置，该起重装置能够吊落 3 吨重的系泊船（包括船员重量）。系泊船的操作必须安全，远离船舶推进器。关于系泊船的租用、替代、操纵以及额外配备等，可参考航行规则第 20 条。

2.2 船舶必须配备至少 6 根可浮式系泊索。对于配有牵引钢丝绳系泊索的船舶，该数量可减为 4 根。对于油船、LPG、LNG 以及载运易燃物质的船舶，禁止使用可能产生火花的绳索。

(1) 根据航行规则第 19（1）条，船舶在甲板上适当位置必须配备至少 6 根合适尺寸的具有索端眼环的柔性可浮式系泊索，并保持良好状态，以备任何紧急情况下使用。所有的布置应能快速操作。同时，根据航行规则第 19（2）条，对于配有牵引钢丝绳系泊索的船舶，可浮式系泊索的数量可减为 4 根。对于油船、LPG、LNG 以及载运易燃物质的船舶，绝对禁止使用在操作时可能产生火花的任何绳索。此外，关于绳索的操作和钢丝绳的规格尺寸等相关要求，可进一步参考航行规则第 19（3）条。

(2) 注意到，本社规范中建议舾装数  $EN > 205$  时，系泊索数量不少于 4 根； $EN > 2530$  时，系

泊索数量不少于 6 根。

2.3 所有船舶应配备两只经船级社认可的锚并布置在防撞舱壁之前。对于小于 1500 SC.G.T 的船舶，必须在首部配备一只工作锚。

(1) 根据航行规则第 23 (1) 条，所有通过运河的船舶都应配备两只认可的锚并布置在防撞舱壁之前。每只锚都应备有独立的锚链或钢丝绳，并能够通过重力释放，也能通过锚机或绞盘进行提升。同时，根据航行规则第 23 (2) 条，作为替代，小于 1500 SC.G.T 总吨的船舶必须在首部配备一只工作锚。

(2) 注意到，根据本社《钢质海船入级规范》第 2 篇第 3 章第 2 节的规定，所有船舶的首锚至少为 2 个。因此，满足本社规范的船舶，已经满足上述航行规则的要求。

### 3 消防设备

3.1 所有船舶应配有 2 根防火钢丝绳。

根据航行规则第 61 (3) 条，在进入运河之前，所有船舶应备有 2 根防火钢丝绳，分别系牢在船首尾两端，并垂挂在舷外，以备应急时使用。也可参见航行规则第 37 (3) 条和第 19 (3) (c) 条。

### 4 引航员登离船设备

4.1 应配备经船级社认可的舷梯。

根据航行规则第 24.A (1) 条，在运河外的北部或南部之外的锚泊区，引航员可利用引航员软梯上下船。软梯应在其位置上保护以使得每级踏板稳固地紧靠在船舷，确保引航员能安全登船和离船。当海平面至登船点距离超过 12 英尺 (3.65 米) 时，从引航员软梯登离船舶时应利用舷梯或其他类似安全方便的工具。又根据航行规则第 24.B (1) 条，在运河港口和湖泊内登离船应使用舷梯。

### 5 信号设备

5.1 红色苏伊士运河尾灯可用。

根据航行规则第 92.B (13) 条，船舶在运河内系泊时，应熄灭两盏白灯，并在尾部一直显示一盏红灯，直到实际开航为止。该要求和 COLREG (IMO 国际海上避碰规则) 显示锚灯的要求有明显差别。

## 5.2 船舶应配备通过运河所要求的号灯。

航行规则第 92.B 条规定了船舶在港口和运河内所要显示的特殊号灯。船舶通过显示不同的号灯组合，表达船舶的意图，如申请引航员、申请免检、申请拖船、无系泊船、无探照灯、系泊等等各种情况。

A. 船舶挂起的所有信号旗和三角旗，均应符合国际信号规则。夜间信号应悬挂在最容易被他船看见的地方。

### B. 信号编号

NO. 1: 载运散装石油的油航（闪点在 73 — 150 °F 之间）

NO. 2: 载运爆炸物品的船舶（未消除油气的油船）

LPG-LNG. 散装化学品危险货

No. 3: 载运散装石油的油船（闪点低于 73 °F）

No. 4: 载运放射性物质的船舶

NO. 5: 我需要引航员

注意:

(1) 船舶由港出海或移泊，在出航时间半小时之前挂出信号。

(2) 通过运河要求船舶在第 1 艘船进入运河之前 2 小时挂出信号。

NO. 6: 我需要检疫证（仅限港内）

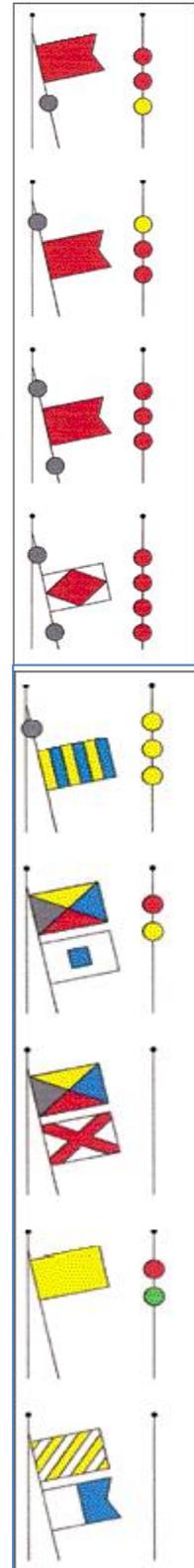
NO. 7: 我船从有疫情港口来（仅限港内）

NO. 8: 我船在检疫中

NO. 9: 我需要拖船（后跟一数字三角旗，说明需要拖船数量）

夜间：1 长声号笛和用莫尔斯信号灯发出字母“YA”数次。

(仅限港内)



No . 10: 我没有带缆艇

夜间: 莫尔斯信号灯发出数字“3”数次。

(仅限港内)

NO . 11: 我没有探照灯

夜间: 莫尔斯信号灯发出数字“4”数次。

(仅限港内)

(在船舶没有系泊艇和探照灯的情况下信号 10&11 可以互相兼用)

NO . 12: 护航船队中最后一条船

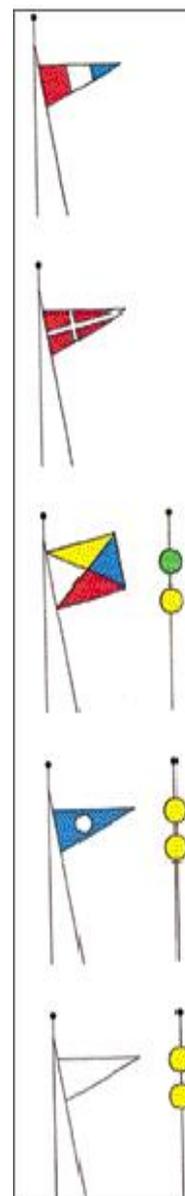
NO . 13: 船舶正在绑岸

注意: 当船舶在运河中绑岸毕, 熄灭两盏白灯,

并于停泊所有时间内在船尾显示 1 盏红灯, 直到船舶确已在航为止。

NO . 13 副条: 船舶在大苦湖中迂回航行 (doubling)

(数字旗指示船舶新的转向)



NO . 14: 船舶正向海机动

NO . 15: 船舶正向运河机动

No . 16: 自愿停船

船舶未准备好且不保持护航编队中的位置。

如果船舶在运河中发出本信号：“我已安全绑岸，编队中其他船舶可以横越或绕过我船。”

NO . 17: 搁浅

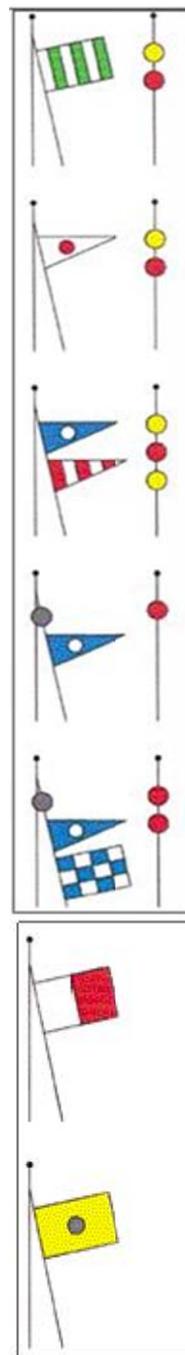
“对拖船，航道无阻 “。

“对拖船，航道受阻 “。

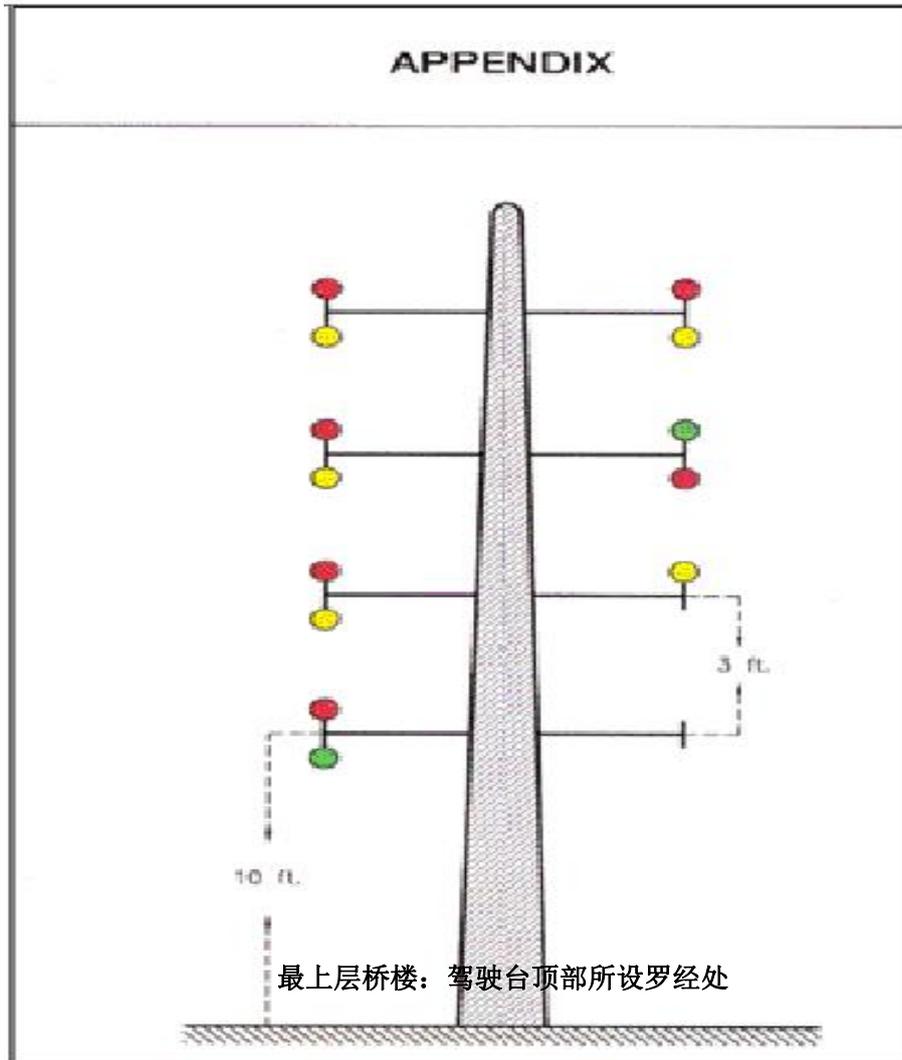
No . 18:

- (1) 我有引航员在船。
- (2) 驶离塞得港和苏伊士港：我有引航员离船。

NO . 19: 我船受孤立。我船没有通信工具。



## APPENDIX



注意：当在运河中绑岸完毕，应以一盏红灯代替尾灯。

## 6 吃水标志

所有船舶应在船首、船中（包括干舷和甲板线）和船尾（艏柱或者舵柱处）堪划吃水标志。

根据航行规则第 35 条，所有船舶应根据载重线公约在船首、船中（包括干舷和甲板线）和船尾（艏柱或者舵柱处）堪划吃水标志。注意到，SOLAS 公约第 II-1 章第 5 条规定了吃水标志，仅要求在船首和船尾标示，苏伊士运河航行规则要求在船中也要标示，船尾的标示位置则明确为艏柱或者舵柱处。

## 7 集装箱船的附加要求

装载不同尺寸集装箱的集装箱船必须配备独立的吊架。

根据航行规则第 21 条，建议集装箱配备独立的吊架（吊索）在必要时帮助装卸集装箱。装载不同尺寸集装箱的集装箱船必须配备独立的吊架。

## 8 电气装置

### 8.1 探照灯

- (1) 船舶应配备经船级社认可并发证的探照灯，该探照灯应位于船舶中轴线上并安置在船首，同时必须满足航行规则第 28（2）条中所规定的规格要求，包括照射距离、功率、材料、水密性、散热等。
- (2) 探照灯的电缆和电气连接件都必须永久地固定好、绝缘和气密。在电缆末端，靠近探照灯处，应安装固定气密插座。
- (3) 在电力推进或者具有电动装置（舵机、绞缆机等）的船舶上，发电机的数量及其各自的功率输出必须充足以保证：停止其中一台发电机时，不影响探照灯正常工作。但船上为探照灯单独设有独立的发电机和线路则可除外。

### 8.2 甲板灯

船舶应安装甲板灯，其在 360 度水平范围之内照射距离至少 200m。

### 8.3 翼桥探照灯

在驾驶室两侧必须安装驾驶室翼桥探照灯，以便在通过运河和系泊作业时清晰地显示出运河的堤岸。特性：功率应满足在大气传递因数（ $T=0.74$ ）时，在最小距离 200 米处，照度

为 4 勒克斯左右。

#### 8.4 烟囱照亮

烟囱必须被照亮，以便夜间识别船舶。

## 附件符合苏伊士运河船舶构造和设备要求的检验声明



Form SOC(SCA-RN) No. _____
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中国船级社  
CHINA CLASSIFICATION SOCIETY

STATEMENT OF COMPLIANCE WITH THE SUEZ CANAL SHIP  
ARRANGEMENT AND EQUIPMENT REQUIREMENTS

Name of Ship \_\_\_\_\_  
Distinctive Number or Letters \_\_\_\_\_  
Port of Registry \_\_\_\_\_  
Suez Canal Gross Tonnage \_\_\_\_\_  
IMO No. \_\_\_\_\_  
CCS No. \_\_\_\_\_  
Date on which keel was laid \_\_\_\_\_

**This is to confirm that**

At the request of the \_\_\_\_\_, the undersigned surveyor to this Society did attend on board the vessel at \_\_\_\_\_ on \_\_\_\_\_ for the purpose of examining the equipment and arrangements to verify compliance with the Suez Canal Rules of Navigation.

It was found that the vessel complies with the above rules according to scope of work on the enclosed survey report (Form RNC) No. \_\_\_\_\_

Note:  
This statement is not issued on behalf of the Suez Canal Authority, but indicates compliance with CCS's understanding of Suez Canal Rules of Navigation. It is the prerogative of the Suez Canal Authority whether to accept this statement or to require additional evidence/ inspection of the arrangements installed.

Issued at \_\_\_\_\_ ( \_\_\_\_\_ )  
Issued on \_\_\_\_\_ Surveyor to CHINA CLASSIFICATION SOCIETY

**CHINA CLASSIFICATION SOCIETY****SURVEY REPORT FORM FOR COMPLIANCE WITH REQUIRED SHIP****ARRANGEMENT AND EQUIPMENTS FOR TRANSITING THE SUEZ CANAL**

No.	Vessel Name:	CCS No.	Note
1	Can suitable accommodation (officer standard) be put at pilot's disposal?		<input type="checkbox"/>
2	Can a sheltered place be provided for 3-6 mooring-boat men?		<input type="checkbox"/>
3	And for the 2 shore electricians for the projector?		<input type="checkbox"/>
4	Lifting appliance for hoisting/lowering mooring-boats of 3 tons weight including crewmembers is provided. (Handling of boats to be carried out well clear from the propellers)		<input type="checkbox"/>
5	At least 6 floating mooring ropes are provided. The number may be reduced to 4 on ships with tension mooring wires (Synthetic ropes likely to produce sparks forbidden on oil and gas tankers)		<input type="checkbox"/>
6	One fire wire rope fore and aft for use by tugboat in case of emergency is provided.		<input type="checkbox"/>
7	An approved accommodation ladder is provided.		<input type="checkbox"/>
8	An approved searchlight with certificate stating compliance with the Suez Canal Authority Regulations is provided. (Gas tankers must have their own searchlights)		<input type="checkbox"/>
9	Electric cables and connection for the searchlight are permanently fixed, insulated and gastight.		<input type="checkbox"/>
10	At the end of cables, is a fixed and gastight socket installed close to the searchlight?		<input type="checkbox"/>
11	Is the number of generators and their individual power output sufficient to ensure uninterrupted supply to the searchlight in the event of stoppage of one of the generators?		<input type="checkbox"/>
12	Rudder angle indicator and engine rpm indicator so located and illuminated as to be easily visible by the pilot.		<input type="checkbox"/>
13	Are overhead lights (deck lights) fitted, visible all round the horizon with a		<input type="checkbox"/>

	minimum of range of 200 meters?	
14	Bridge wing projector on either side to show the canal banks clearly. Power about 4 lux and minimum 200 meters range.	<input type="checkbox"/>
15	Red Suez stern light available?	<input type="checkbox"/>
16	The vessel is equipped with the signal lights required for transit through the canal.	<input type="checkbox"/>
17	Two classed anchors located forward of the collision bulkhead fitted with own chain or wire cable, and capable of being released, and hoisted by means of a windlass. (in lieu of the above, vessels of less than 1000 SCGT must be equipped with one working anchor)	<input type="checkbox"/>
18	Lights to illuminate the funnels to facilitate the identification of the vessel by night.	<input type="checkbox"/>
Note	“×”-- Applicable and in order “O”-- Outstanding recommendation “—” Not applicable	<input type="checkbox"/>