



Lloyd's Register Asia
英国劳氏船级社（亚洲）
Regulatory Seminar
法规研讨会

IMO Safety Regulations – an Update

IMO 海上安全法规
– 最新发展

September 2009

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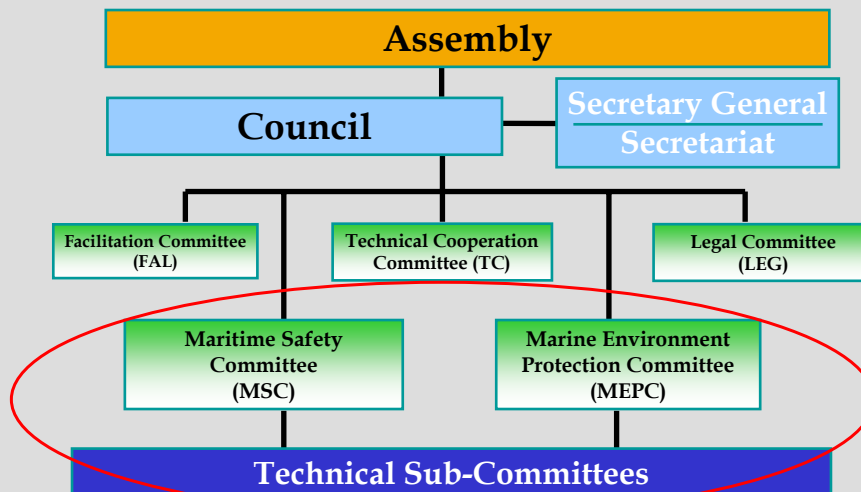
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REGULATORY BODIES – IMO

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REGULATORY BODIES – IMO

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Technical Sub-Committees 分组委员会（分委会）

BLG	Bulk, Liquid and Gas 散装液体和气体
COMSAR	Radio-communications and Search & Rescue 无线电通讯和搜寻救助
DE	Ship Design and Equipment 船舶设计与设备
DSC	Carriage of Dangerous Goods, Solid Cargoes, and Containers 危险货物、固体货物和集装箱
FP	Fire Protection 消防
FSI	Flag State Implementation 船旗国履约
NAV	Safety of Navigation 航行安全
SLF	Stability, Load Line, and Fishing Vessel Safety 稳性、载重线和渔船安全
STW	Standards of Training and Watch-keeping 培训与值班

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IMO INSTRUMENTS

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CONVENTIONS

SOLAS, MARPOL,
ICLL, COLREG,
STCW, TONNAGE,
AFS, BWM

CODES

IBC, IGC, BCH,
LSA, FTP, HSC, NOx,
FSS, MODU,
ISM, ISPS, IMSBC

RESOLUTIONS

ASSEMBLY, MSC,
MEPC,
FAL, LEG

IMO
Instruments

CIRCULARS

MSC, MEPC, BWM,
FP, COMSAR, SN,
DE, BLG, DCS, etc.

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IMO MEETING SCHEDULE

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Meeting Dates			Com / Sub-Com / Others		Meeting Dates			Com / Sub-Com / Others	
Year	From	To			Year	From	To		
2009	12-Jan	16-Jan	FAL	35	2010	25-Jan	29-Jan	SLF	52
	19-Jan	23-Jan	COMSAR	13		11-Jan	15-Jan	STW	41
	02-Feb	06-Feb	STW	40		08-Feb	12-Feb	BLG	14
	16-Feb	20-Feb	FP	53		22-Feb	26-Feb	DE	53
	02-Mar	06-Mar	BLG	13		08-Mar	12-Mar	COMSAR	14
	16-Mar	20-Mar	DE	52		22-Mar	26-Mar	MEPC	60
	30-Mar	03-Apr	LEG	95		12-Apr	16-Apr	FP	54
	20-Apr	24-Apr	FSI	17		26-Apr	30-Apr	FAL	36
	11-May	15-May	Ship Recycl.			12-May	21-May	MSC	87
	27-May	05-Jun	MSC	86		26-Jul	30-Jul	NAV	56
	23-Jun	25-Jun	TC	59					
	29-Jun	03-Jul	Council	102		Oct	Oct	MEPC	61
	13-Jul	17-Jul	MEPC	59		25-Oct	29-Oct	DE	54
	27-Jul	31-Jul	NAV	55		01-Dec	10-Dec	MSC	88
	21-Sep	25-Sep	DSC	14					
	05-Oct	09-Oct	LEG	96					
	19-Nov	20-Nov	Council extra	25					
	23-Nov	04-Dec	Assembly	26					
	04-Dec	04-Dec	Council	103					

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关于消防的指南与共同解释
- **INTERIM GUIDELINES FOR GAS-FUELLED SHIPS**
气体燃料船暂行指南
- **GUIDELINES FOR MAINTENANCE & REPAIR OF PROTECTIVE COATINGS**
保护涂层的维护与修补指南
- **GENERAL CARGO SHIP SAFETY**
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SAFETY REGULATIONS AMENDMENTS

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SOLAS Chap II-1 Reg. 3-5.2 amendment MSC.282(86) Prohibition of New Installation of Asbestos 禁止新安装含有石棉的设备

- Coming into force date – 1 January 2011
生效日期 – 2011 年1 月 1 日
- Applicable to new and existing ships – all Pax and Cargo ships ≥ 500 GT
适用于 新造船 和 营运船 – 所有客船与 ≥ 500 GT 的货船
- Current SOLAS II-1/3-5.2 allow exception on the use of asbestos
目前 第 3-5.2 条容许有条件下使用含有石棉的设备
- MSC 85 approved draft amendment proposed by Japan
由日本提出的建议得到 MSC 85 批核
- Proposal adopted at MSC 86 – Reg. 3-5.2 replaced by:
在 MSC 86 通过 – 第 3-5.2 条被以下取代:

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SAFETY REGULATIONS AMENDMENTS

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SOLAS Chap II-1 Reg. 3-5.2 amendment MSC.282(86) Prohibition of New Installation of Asbestos 禁止新安装含有石棉的设备

"From 1 January 2011, for all ships, new installation of materials which contain asbestos shall be prohibited"

- UK proposed to add definition of "new installation of materials", disallowing the use of items bought before 1 January 2011
英国提议对"new installation of materials"作出定义, 禁止在船上安装在2011年1月1 日前购买含有石棉的设备 – 即现存的要报废
- Agreement cannot be reached at MSC 86 – to be further considered at DE
未能在MSC 86 得到共识 – 将于DE分委会再作考虑
- Implication – Availability of compliant items, schedule of replacing parts with existing stock (using or not, or when)
影响 – 能满足要求的设备/配件是否供应充足, 使用现有满足修订前法规设备/配件的安排 (使用与否, 何时使用)

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SAFETY REGULATIONS AMENDMENTS

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SOLAS Chap V Reg. 19.2.1.4, 19.2.10 & 19.2.11 amendment **MSC.282(86)** Electronic Chart Display & Information System (ECDIS) 电子海图显示与资讯系统

- Mandatory installation of ECDIS – Implementation schedule
强制性 安装 电子海图显示与资讯系统 – 生效时间表

Ship Type	Size	New / Existing	Application Date	
Passenger	GT ≥ 500	New (≥ 1 July 2012)	≥ 1 July 2012	Keel laying
		Existing (< 1 July 2012)	1 July 2014	≤ First Survey
Tanker	GT ≥ 3,000	New (≥ 1 July 2012)	≥ 1 July 2012	Keel laying
		Existing (< 1 July 2012)	1 July 2015	≤ First Survey
Non-tanker	3,000 ≤ GT < 10,000	New (≥ 1 July 2014)	≥ 1 July 2014	Keel laying
	GT ≥ 10,000	New (≥ 1 July 2013)	≥ 1 July 2013	Keel laying
	GT < 10,000	Existing (< 1 July 2014) – no requirement		
	10,000 ≤ GT < 20,000	Existing (< 1 July 2013)	1 July 2018	≤ First Survey
	20,000 ≤ GT < 50,000		1 July 2017	≤ First Survey
	GT ≥ 50,000		1 July 2016	≤ First Survey

First Survey means first annual survey, the first periodical survey or the first renewal survey whichever is due first. For ships under construction with keel laying date before, delivery date after, the due date, first survey is the initial survey.

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SOLAS Chap V Reg. 19.2.1.4, 19.2.10 & 19.2.11 amendment **MSC.282(86)** Electronic Chart Display & Information System (ECDIS) 电子海图显示与资讯系统

- Mandatory for new & existing ships – installing ECDIS as per schedule
按照实施时间表, 新造船和营运船要强制性安装 电子海图显示与资讯系统
- Ships to be taken out of service within 2 years (count from first survey date) can be exempted
在两年内停止使用的船 可以免除 (从 “First Survey” 来算)
- Implication on builders – ECDIS to be considered in design/construction
对船厂的影响 – 在船舶设计与建造时要考虑到 ECDIS
- Implication on Owners/Managers 对船东/船管的影响
 - o Existing ships need to have ECDIS retrofitted not later than scheduled date
营运船要不晚于实施时间表所定地安装 ECDIS

(cont'd/.....)

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SAFETY REGULATIONS AMENDMENTS

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SOLAS Chap V Reg. 19.2.1.4, 19.2.10 & 19.2.11 amendment **MSC.282(86)** Electronic Chart Display & Information System (ECDIS) 电子海图显示与资讯系统

- Implication on Owners/Managers 对船东/船管的影响 (cont'd)
 - o May need to retrofit ECDIS at Docking Survey
考虑到对航程的安排, 营运船可能要在干坞检验时后补安装 ECDIS
 - o May need to ensure Electronic Navigation Charts (ENCs) are updated regularly, but may face availability difficulties
电子海图可能要定期更新, 但可能要面对供应问题
 - o Training and familiarisation of crew on newly installed ECDIS, in fulfilling ISM requirements (see also SN.1/Circ.276 on transitioning from paper charts to e-charts)
为了满足 ISM 的要求, 对船员要提供培训与熟悉新安装的ECDIS (参照 SN.1/Circ.276 关于从传统纸张海图转用电子海图要注意事项)

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SAFETY REGULATIONS AMENDMENTS

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SOLAS Chap V Reg. 19.2.2.3 & 19.2.2.4 amendment (new) **MSC.282(86)** Bridge Navigational Watch Alarm System (BNWAS) 驾驶室内航行当值警报系统

- Implementation Schedule: 生效日期:

Ship Type	Size	New / Exist	Application Date	
Passenger	All	New (\geq 1-Jul-2011)	\geq 1-Jul-2011	Keel laying
		Existing ($<$ 1-Jul-2011)	1-Jul-2012	\leq First Survey
Cargo	GT \geq 150	New (\geq 1-Jul-2011)	\geq 1-Jul-2011	Keel laying
	GT \geq 3,000	Existing ($<$ 1-Jul-2011)	1-Jul-2012	\leq First Survey
	3,000 $>$ GT \geq 500	Existing ($<$ 1-Jul-2011)	1-Jul-2013	\leq First Survey
	500 $>$ GT \geq 150	Existing ($<$ 1-Jul-2011)	1-Jul-2014	\leq First Survey

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SAFETY REGULATIONS AMENDMENTS

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SOLAS Chap V Reg. 19.2.2.3 & 19.2.2.4 amendment (new) **MSC.282(86)** Bridge Navigational Watch Alarm System (BNWAS) 驾驶室内航行当值警报系统

- Mandatory for new & existing ships – installing BNWAS as per schedule
按照实施时间表，新造船和营运船要强制性安装驾驶室内航行当值警报系统
- BNWAS shall be in automatic operation once ship is underway at sea
船在航行时，警报系统要自动在操作状态
- BNWAS Performance Standards to be as per MSC.128(75)
航行当值警报系统性能标准根据 MSC.128(75)
- Every 3 to 12 min. visual alarm will go off for 15 sec.
每隔 3-12分钟会发警告灯号，为时15秒
- If not reset during the 15 sec., then 1st stage additional audible alarm goes off on bridge for 15 sec.
如没有在15秒内重调，将会引起驾驶室内第一阶段的同步警告响号，为时 15秒

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SOLAS Chap V Reg. 19.2.2.3 & 19.2.2.4 amendment (new) **MSC.282(86)** Bridge Navigational Watch Alarm System (BNWAS) 驾驶室内航行当值警报系统

- If not reset during the 15 sec. period, then 2nd stage audible alarm goes off in Master's cabin for 90 sec.
如没有在15秒内重调，将会引起船长卧室第二阶段的同步警告响号，为时 90秒
- If not reset during 90 sec., then 3rd stage audible alarm goes off in other areas for crew to take action, non-stop
如没有在90秒内重调，将会引起其他地区第三阶段的同步不停警告响号
- BNWAS installed <1 July 2011 may be exempted from full compliance with MSC.128(75) if Flag agrees
如警报系统已在2011年7月1日前装妥，在船旗国同意下可以免除完全满足 MSC.128(75) 性能标准的要求

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SAFETY REGULATIONS AMENDMENTS

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SOLAS Chap VI Reg. 5-1 amendment

MSC.282(86)

Materials Safety Data Sheet (MSDS) 物料安全数据清单

- New regulation SOLAS VI/5-1 added as per MSC.239(83) – providing MSDS for cargo oil or fuel oil prior to loading, from 1 July 2009.
新法规 SOLAS VI/5-1 关于载货油或燃油前要提供MSDS 已于2009 年7月1日生效
- Wordings are confusing – requiring fuel oil data unclear, opinions diverse
此 SOLAS VI/5-1 较含糊 – 由于意见纷纭，对燃油的要求不明确
- MSC 86 adopted MSC.282(86) on SOLAS VI/5-1 amendments, coming into force from 1 January 2011
为了对不明确的地方得到阐明，在MSC.282(86)中 对 SOLAS VI/5-1 作出修正，并将在2011年1月1日实施
- MSC 86 also adopted MSC.286(86) on format for MDSS, MSC.1/Circ.1303 recommended to be effective from 1 July 2009
相关的 MSDS 格式也在MSC.286(86) 中发表，在通函1303 提出建议，在2009年7月1日以后使用

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SAFETY REGULATIONS AMENDMENTS

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SOLAS Chap VI Reg. 5-1 amendment

MSC.282(86)

Materials Safety Data Sheet (MSDS) 物料安全数据清单

- States provided clarifications: 已表明如何执行的国家：
 - Marshall Islands – 1 July 2009, Cargo Oil, Fuel Oil
 - Singapore – 1 July 2009, Cargo Oil, Fuel Oil
 - Australia – 1 July 2009, Cargo Oil, Fuel Oil
 - USA – 1 January 2011, Cargo Oil, Fuel Oil
- If no published positions from States (see LR Class News No.16/2009)

Effective Date	Application	IMO document	Regulation	Substance carried on board	Requirement
01-Jul-2009	Mandated	MSC.239(83)	SOLAS VI/5-1 (new)	Cargo oil	Provision of MSDS
01-Jul-2009	Recommended	MSC.1/Circ.1303	SOLAS VI/5-1 (revised)	Fuel Oil	Provision of MSDS
01-Jan-2011	Mandated	MSC.282(86) MSC.1/Circ.1303	SOLAS VI/5-1 (revised)	Cargo oil and Fuel Oil	Provision of MSDS

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SAFETY REGULATIONS AMENDMENTS

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SOLAS Chap VI Reg. 5-1 amendment

MSC.286(86)

Materials Safety Data Sheet (MSDS) 物料安全数据清单

ANNEX 1

RECOMMENDATIONS FOR MATERIAL SAFETY DATA SHEETS (MSDS) FOR MARINE USE SUITABLE TO MEET THE PARTICULAR NEEDS OF THE MARINE INDUSTRY CONTAINING SAFETY, HANDLING, AND ENVIRONMENTAL INFORMATION TO BE SUPPLIED TO A SHIP PRIOR TO THE LOADING OF MARPOL ANNEX I TYPE OIL AS CARGO IN BULK AND THE BUNKERING OF OIL FUEL

Section	Heading	Content
1	Identification of the substance or mixture and of the supplier	<ul style="list-style-type: none"> Name of the category – see guidance in annex 2 for MARPOL Annex I type oil cargoes and oil fuels. The name of the substances. Trade name of the substances. Description on Bill of Lading (B/L), Bunker Delivery Note or other shipping document. Other means of identification. Supplier's details (including name, address, telephone number, etc.). Emergency telephone number.
2	Hazards identification	<ul style="list-style-type: none"> GHS⁺ classification of the substance/mixture and any regional information. Other hazards which do not result in classification (e.g., hydrogen sulphide) or are not covered by the GHS. See Guidelines in annex 2.
3	Composition/information on ingredients	<ul style="list-style-type: none"> Common name, synonyms, etc. Impurities and stabilizing additives which are

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SAFETY REGULATIONS AMENDMENTS

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SOLAS Chap VI Reg. 5-1 amendment

MSC.286(86)

Materials Safety Data Sheet (MSDS) 物料安全数据清单

ANNEX 2

GUIDELINES FOR THE COMPLETION OF MSDS FOR THE MARPOL ANNEX I TYPE OIL AS CARGO IN BULK AND OIL FUEL

1 Categories of liquids

The following categories subdivide the full scope of substances covered by Annex I of MARPOL 73/78 and set in groups specific products for general identification purposes.

- .1 crude oils;
- .2 fuel and residual oils, including ship's bunkers*;
- .3 unfinished distillates, hydraulic oils and lubricating oils;
- .4 gas oils, including ship's bunkers**;
- .5 kerosenes;
- .6 naphthas and condensates;
- .7 gasoline blending stocks;
- .8 gasoline and spirits; and
- .9 asphalt solutions.

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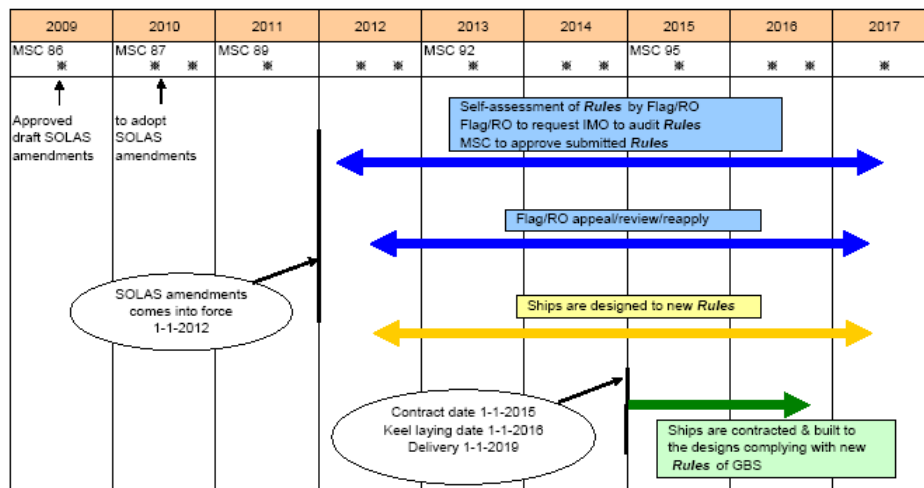
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GOAL BASED STANDARDS (GBS) 目标型新船建造标准

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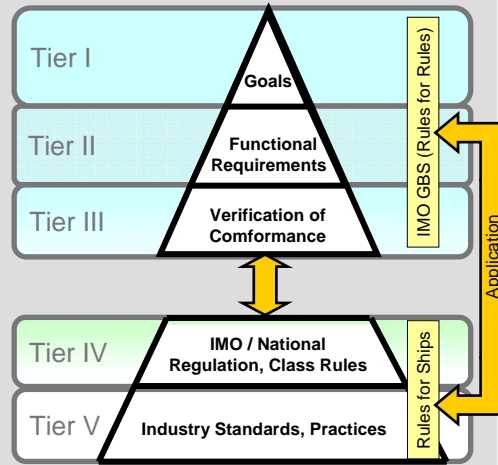
GOAL BASED STANDARDS (GBS) 目标型新船建造标准

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Basic Concept

基本概念

- High-level standards to be met through Rules & Regs. for ships
给船用的规范要达到的高层次标准
- Include 5 Tiers as shown
包含 5 个层次 – 目标，功能要求，验证准则与程序，国际/本土 法规与船级社规范，行业标准与惯例
- GBS establish “rules for rules” rather than “rules for ships”
GBS 提供“规范中的规范”，而不是“船的规范”
- Compliance rules will apply to ships 船将需要用 满足 达到GBS要求的规范



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GOAL BASED STANDARDS (GBS) 目标型新船建造标准

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Approaches of GBS

目标型新船建造标准的方向

- IMO discussed two proposals in details:
IMO 详细讨论了两个提案：
 - Prescriptive Approach – Bulk Carriers and Oil Tankers
规定式发展方面 – 散货船 和 油轮
 - Safety Level Approach – for all ships
安全水平发展方面 – 所有船种
- No clear majority on one approach or the other to cover all ships
没有一个涵盖所有船的方案 拿到大多数支持
- Both will be developed, deterministic approach more advanced
最后同意两个方案也会发展，而以决定性发展方向得到明显的进展

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GOAL BASED STANDARDS (GBS) 目标型新船建造标准

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Prescriptive Approach

规定式发展方向

- GBS development using prescriptive approach has been well advanced
采取规定式方法的目标型新船建造标准已深入发展，近符成熟
- Bulk carriers and oil tankers are targeted, and focused on structure
发展方向以散货船和油轮为首，并专注于船体结构
- Draft SOLAS amendments are approved, soon to be adopted, then becomes mandatory
海上人命安全公约 SOLAS 有关的修正已得到认可，快将通过，成为强制性要求
- Framework of 5 tiers, and associated standards and guidelines, have been approved in principle, and soon to be adopted for implementing SOLAS
五层的法规框架，标准与指引，也得到原则性认可，很快会得到通过，让 SOLAS 修正得以执行

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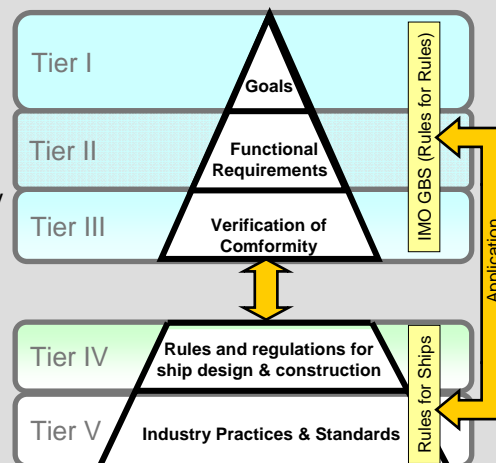
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Prescriptive Approach – 5 Tiers Regulatory Framework

规定式发展方向 – 五层的法规框架

- Tier I – Goals 目标
- Tier II – Functional requirements 功能要求
- Tier III – Verification of conformity 验证准则与程序
- Tier IV – Rules and regulations for ship design and construction 船舶设计与建造的规范与法规
- Tier V – Industry practices & standards 行业的有效惯例与标准



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Prescriptive Approach – 5 Tiers Regulatory Framework

规定式发展方向 – 五层的法规框架

- Tier I and requiring to apply **GBS-BC/OT** are given in SOLAS amendment
第 I 层 的内容 和 满足 GBS-BC/OT 的要求收录在 SOLAS 修正中
- Tiers I, II and III are given in "*International Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers*" (the **GBS-BC/OT**)
第 I, II, III 层 的内容则收录在 "*国际目标型新散货船和新油轮建造标准*" 内
- Guidelines on verification procedures (Tier III) – approved in principle
提供给 第 III 层 验证要求的验证程序 – 已得到原则性认可
- Division of work: 工作分配:

IMO	Tier I, Tier II
Flag/RO and IMO	Tier III
Flag/RO/others	Tier IV, Tier V
Builders/Owners	Design, build, operate ships complying with rules conforming with GBS

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Guidelines for Verification of Conformity with GBS-BC/OT

符合GBS-BC/OT规范的验证指引

- Provides procedures for verifying Rules of Flag/RO conforming to GBS-BC/OT
提供验证 船旗国或授权机构的规范 的程序, 来确认是否符合 GBS-BC/OT
- Consists of 2 parts
其中包含了两个部分

Part A Verification Process – method in conducting verification (initial & maintenance)

Part A 验证过程 – 进行验证的方法 (初验证与维持符合的验证)

Part B Information/Documentation Requirements and Evaluation Criteria
– detailed documentation required, and evaluation criteria

Part B 资料/文件需求与评核准则 – 所需的详细文件, 与评核准则的具体要求

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GBS Generic Framework/Guidance and Future Development GBS 通用框架/指南 与 未来发展

WORK PLAN OF GBS DEVELOPMENT AGREED AT MSC 84 (May 2008) 在 MSC 84 (2008 年 5 月) 得到共识的目标型新船建造标准发展工作计划

Time Line 时间表	Planned Action 工作计划	Status 情况
1. MSC 84 – MSC 85 (May 08 – Dec 08)	1.1. Pilot Panel to complete trail for CSR Bulklers & Tankers 测试审核专家组去完成用共同结构规范的测试	Completed for Oil Tankers 已完成用油轮来做测试
	1.2. Correspondence Group to develop generic guidelines based on MSC 84 results for MSC 86 to conclude 通讯小组去发展基于 MSC 84 结果的 GBS 通用指南，在 MSC 86 完结	Partially completed, continued after MSC 85 已局部完成，并在 MSC 85 后继续发展
2. MSC 85 (Dec 08)	2.1. To finalise Tier I to III for Bulklers and Tankers 把第 I 到第 III 层用于油论和散货船的标准定案	Completed 已完成
	2.2. To approve SOLAS amendments 去批核 SOLAS 修正	Approved at MSC 86 已在 MSC 86 批核
3. MSC 85 – MSC 86 (Dec 08 – May 09)	3.1. Correspondence Group to progress on generic guidelines 通讯小组去进展 GBS 通用指南	Completed, report submitted to MSC 86 已完成，报告送交 MSC 86
4. MSC 86 (May 09)	4.1. To finalise generic guidelines 把 GBS 通用指南定案	Postponed to MSC 87 延迟到 MSC 87
	4.2. To develop plans to validate results from Safety Level concept 去发展检定安全水平概念结果的计划	Not discussed 没有讨论
	4.3. To consider long-term implementation of GBS 去考虑如何长远执行 GBS	Postponed to MSC 87 延迟到 MSC 87

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GBS Generic Framework/Guidance and Future Development GBS 通用框架/指南 与 未来发展

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Time Line 时间表	Planned Action 工作计划	Status 情况
5. Long-term Considerations	5.1. To assess and to incorporate experience gained into generic guidelines & GBS further development 衡量与收纳所得经验，用于 GBS 通用指南及其发展	To be developed 有待发展
	5.2. To validate results of Safety Level Approach by using results of Prescriptive Approach 用决定性方法的结果去检定安全水平法的结果	
	5.3. To determine current safety level of rules/regulations 去厘定目前规范/法规的安全水平	
	5.4. To apply GBS to other ship types incrementally 渐进地应用 GBS 于其他船种	
	5.5. To expand GBS to cover other design aspects (not just structure) 去开拓 GBS 来覆盖其他非结构的层面	
	5.6. To consider if new/revised regulations, Class rules, etc. to follow GBS methodology 去考虑是否把新或修正后的法规，规范按照 GBS 来处理	
	5.7. To consider possible revision of IMO procedures in raising new regulatory items following adoption of GBS Guidelines 在通过 GBS 指南后，去考虑把 IMO 提议新法规的运作程序作出修改	

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Implications to the Ship Industry

对航运界的影响

- IMO and member States could be “referee” of Rules and Regulations
IMO 与 会员国 可能会对 规范与法规作出 “裁判”
- With a hybrid verification mechanism, Rule development remains responsible for the rule developers, IMO/Flag would have certain control
应用混合验证架构，规范的内容还是由发展者负责，IMO 会有某程度的控制
- The latest GBS requirements apply to Oil Tankers and Bulk Carriers of length 150 m or above, excluding ore carriers and combination carriers
最新的GBS 要求是针对 $L \geq 150$ m 的油轮与散货船，除了矿砂船和混装船
- Current CSR-BC applies to Bulk Carriers of $L \geq 90$ m, not sure if Bulk Carriers of $L < 150$ m to future CSR-BC conforming to GBS are to comply
目前 CSR-BC 适用于 $L \geq 90$ m 的散货船，将来符合GBS 的 CSR-BC 会否也适用于 $L < 150$ m 的散货船，仍有待解释

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Implications to the Ship Industry

对航运界的影响

- Class would need to respond, not just CSR, but other rules in the future
船级社需要作出应对，不单 CSR，还有其他规范 (如非 CSR 的散货船)
- Rules & regulations could be more robust, flexible, comprehensive
规范与法规可能会更健全，更有弹性，更全面
- Innovative ship designs could be encouraged, while safety, environmental protection, human element standards are at least maintained
创新的设计可能受到鼓励，而同时安全环保，人为因素标准起码得以维持
- Ships could be more reliable, easier to maintain, more complicated
船舶可能会更可靠，更容易维护，更复杂
- Ship designers/builders would need to invest in new product development
船研所/设计所/船厂 需要投放资源开发新产品

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Implications to the Ship Industry

对航运界的影响

- More pressure on ship designers/builders on training needs
船研所/设计所/船厂 会带来培训压力
- If Asian ship builders are not preparing in advance, challenges will arrive from elsewhere
如亚洲船厂未能早作准备，挑战会从他方而来
- Intellectual Property Rights remains a concern, and if not properly taken care of, innovation may be discouraged
知识产权仍是使人担心，如未能妥善处里，创新意念或会遇到障碍
- Owners will have more robust ships, but may need to pay premiums
船东会有更稳固的船，但可能要付出代价

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Implications to the Ship Industry

对航运界的影响

- New building costs would increase – design, technology, materials, labour
新造船造价会提升 – 设计，技术，材料，劳动力
- Shipbuilders may need to change construction process, survey scheme, quality management
船厂可能要更新建造过程，检验体制，质量管理
- Flag/Class may need to invest in training, software tools, and change in plan approval & survey process
船旗国 / 船级社 可能要增强投资在培训，软件工具，和更改审图与检验过程
- Shipbuilding market could be realigned
造船市场可能会重新整合

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INTERNATIONAL MARITIME SOLID BULK CARGOES CODE (IMSBC CODE) 国际海上固体散货规则

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- Procedures for amendment adoption agreed at DSC 13, approved at MSC 86
“通过修正” 的程序 在DSC13 得到同意，在MSC 86 审议批准
- DSC meetings held in even years (2010, 2012, etc.) are to agree amendments
在双数年份的DSC 会议 (如 2010, 2012, 等)，修正案要先得到同意
- MSC meetings consider and adopt proposed amendments, and entering into force 18 months thereafter
在MSC 会议中，如修正案得到通过，将于18 个月后生效
- IMSBC Code amendments will be adopted every 2 years, and entering into force in 1 January of odd years (2013, 2015, etc.)
IMSBC 规则的修正案可以每两年通过，然后在单数年份的一月一日生效
- Voluntary compliance is encourage 1 year ahead on entering onto force
在生效前的一年，自愿性满足修正案将会受到鼓励，还没生效的会提早得到接受

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REVISED GUIDELINES – FOAM CONCENTRATES PERFORMANCE, TESTING, SURVEY 指南的修订 – 浓缩泡沫的性能, 测试, 检验 (MSC.1/Circ.1312)

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- **Application – Foam concentrates for use in deck foam fire extinguishing systems**
适用于 – 甲板上灭火系统的浓缩泡沫
 - SOLAS Ch. II-2 Reg. 10.8, & FSS Code Ch. 14 for tankers
油轮 – 《人命安全公约》II-2 章 10.8 条, 和《消防安全系统规则》14 章
 - SOLAS Ch. II-2 Reg. 1.6.2.1.2, & IBC Code for chem tankers
化学品船 – 《人命安全公约》II-2 章 10.8 条, 1.6.2.1.2 条, 和 IBC 规则
- **Also applied to fixed and portable foam system in FSS Code Ch. 6 and 4**
同样适用于《消防安全系统规则》6 章 和4 章中的固定与手提式的灭火系统
- **Not applicable to foam generating equipment, only foam concentrates**
不适用于泡沫生产设备, 只适用于浓缩泡沫

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REVISED GUIDELINES – FOAM CONCENTRATES PERFORMANCE, TESTING, SURVEY ³⁷
指南的修订 – 浓缩泡沫的性能, 测试, 检验 (MSC.1/Circ.1312)

- MSC.1/Circ.1312 supersedes MSC/Circ.582 & Corr.1, & MSC/Circ.799, but foam concentrates type-approved using old circulars remain valid until 1 July 2012
海安会通函 1312 取代了通函 582 Corr.1, 和 799, 但按这旧通函认可过的可以维持有效, 直到2012 年1月1日
- New requirements on Tests on Type-approval : declaration of container markings, declaration of main characteristics, reference tests and annual periodic re-test
型式认可测试的新要求 – 存储容器上所标明的资料, 主要特性的声明, 参考测试, 每年定期的重测试
- New requirements on periodic control onboard by Owners for protein-based concentrates : small scale fire test (initial within first 3 years, then every year), chemical stability test (every year)
船东要对船上蛋白质浓缩液体安排定期管控的新要求 – 小型灭火测试 (首3年一次, 然后每年一次), 化学稳定性测试 (每年一次)

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GUIDELINES FOR APPROVAL OF FIXED DRY POWDER SYSTEM FOR GAS SHIPS ³⁸
液化气体船上固定干化学粉末灭火系统审核指南 (MSC.1/Circ.1315)

- SOLAS Ch. II-2/1.6.2 and IGC Code Ch.11 – provision of dry chemical powder fire-extinguishing system
《人命安全公约》II-2 章 1.6.2 条 与 IGC 规则 11 章 – 提供干化学粉末灭火系统
- MSC 86 approved MSC.1/Circ.1315, for providing guidance to the industry
MSC 86 审核了 得到 FP 53 同意的 通函 1315, 向业界提供指导
- These guidelines apply to approval of fixed dry chemical powder fire-extinguishing systems protecting on-deck cargo area of Gas Carriers
指南适用于保护液化气船甲板的干化学粉末灭火系统的审核
- A list of principal requirements – added manual release, ambient conditions, same type of chemical powder (potassium-salt-based), user manuals, etc.
提出了主要要求 – 附加人工释放, 周边条件, 同种粉末(钾盐类), 用者手册, 等
- Onboard test needed after installation 安装后要做操作测试, 遥控与本地操控

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GUIDELINES FOR DRAINAGE OF FIRE-FIGHTING WATER FROM RO-RO DECKS 39
滚装船车辆甲板灭火水排放的指南 (MSC.1/Circ.1320)

- SOLAS Ch. II-2/20.6.1.4 and 20.6.1.5 as amended by MSC.256(84) requires rapid discharge overboard of Fi-Fi water
MSC.256(84) 对 SOLAS Ch. II-2/20.6.1.4 和 20.6.1.5 的修正要求快速排放灭火水
- Guideline referenced in MSC.256(84) now finalised and approved at MSC 86
在MSC.256(84) 中提到的指南已在MSC 86 定案, 并得到审核
- Size of drains (area) above bulkhead deck are to be provided as per formula
在舱壁甲板以上的排水口最低横切面积要按照指南内的方程式来计算
- Bilge system to be provided below bulkhead deck
在舱壁甲板以下的排水装置要用舱底污水排放系统来满足要求
- Instead of the above, additional stability margin is acceptable for cargo ships
对于货船, 可以用提供额外稳性余度的手段来带替以上两个要求
- Protection from blockage of drain openings are to be provided
排水开口要提供保护, 防止让飘浮物堵塞

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GUIDELINES FOR DRAINAGE OF FIRE-FIGHTING WATER FROM RO-RO DECKS 40
滚装船车辆甲板灭火水排放的指南 (MSC.1/Circ.1320)

Example of drainage opening protection
保护排水口装置的例子



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GUIDELINES FOR PREVENTING FIRES IN ENGINE ROOMS AND PUMP ROOMS 机舱与泵舱防火措施的指南 (MSC.1/Circ.1321)

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- Studies carried out on effectiveness of SOLAS fire prevention requirements
对于 SOLAS 防火要求的效用作了深入探讨 (韩国)
- Proposal in developing practical guidelines and measures in minimising ER & PR fires was agreed at MSC 79
在 MSC 79 时提出了发展尽量减低机舱与泵舱火灾实用指南的建议, 并得到同意
- FP 49 to FP 53 developed the guidelines, approved at MSC 86, consolidating various resolutions, circulars, other documents of IMO
基于 IMO 的决议案, 通函, 其他文件, 在 FP 49 到 FP 53进行了指南的发展, 并在 MSC 86 时得到审批
- Provide uniform and harmonised guidance in a single document, but **non-mandatory** as original SOLAS requirements prevails with mandatory status
此指南提供了统一和协调的单一**非强制性**文件, 而原本的 SOLAS 要求保留其强制性地位

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GUIDELINES FOR PREVENTING FIRES IN ENGINE ROOMS AND PUMP ROOMS 机舱与泵舱防火措施的指南 (MSC.1/Circ.1321)

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- Good reference on design, installation, survey and maintenance, with industry practice and examples
此指南提供了很全面的指引, 对设计, 安装, 检验, 和维护作出了实质指导与例子

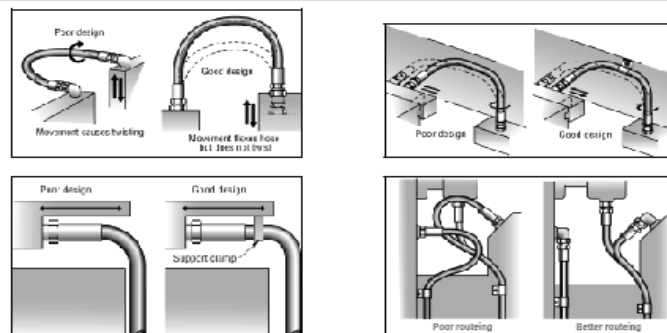


Figure 2-2 – Example of correct installation of flexible hoses

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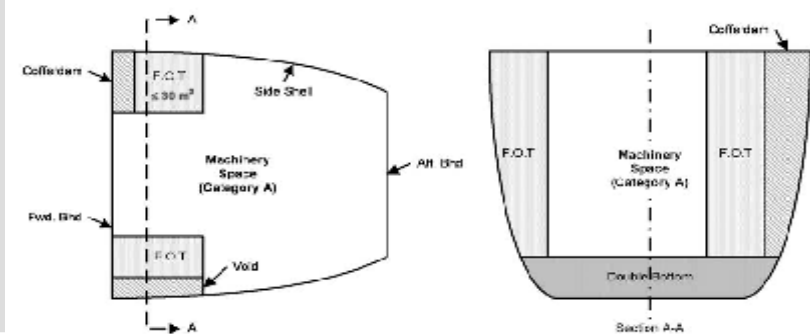
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UNIFIED INTERPRETATIONS ON LOCATION OF FOT – SOLAS II-2/4.2.2.3.2 燃油舱位置的统一解释 – SOLAS II-2/4.2.2.3.2 (MSC.1/Circ.1322)

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- Requires at least one of FOT's vertical sides should be contiguous to the machinery space boundaries when located in category A machinery space
此条法规要求在 A 级机械处所的燃油舱至少要有一边垂直面与此处所周边相连
- Example explicitly shows acceptable arrangement (subject to MARPOL I/12A)
以下是具体可接受的布置 (同时还需要满足 MARPOL 附则 I 第 12A 条)



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INTERIM GUIDELINES FOR GAS-FUELLED SHIPS

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气体燃料船暂行指南 MSC.285(86)

- LNG used as fuel for many years as cargo boil off on LNG Ships, and is regulated by IGC Code Ch.16
液化天然气船利用 蒸发出的天然气作为燃料已有多时，并受 IGC 规则第 16 章规管
- Growing number of other ship types not applying IGC Code use LNG as fuel
使用天然气作为燃料的其他船种也越来越多，IGC 规则 也不适用
- *Interim Guidelines On Safety For Natural Gas-fuelled Engine Installations In Ships* approved at MSC 86 for non-IGC Code ships
MSC 86 已审批了 *安装燃烧天然气发动机船舶的暂行指南*，用于非 IGC 规则的船
- Provides criteria – arrangement & installation of main & auxiliary machinery
提供布置与安装主要和辅助机组的准则
- Equivalent level safety, reliability and dependability to oil-fuelled machinery
与燃烧油类的机组 维持等效的安全与可靠水平

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INTERIM GUIDELINES FOR GAS-FUELLED SHIPS

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气体燃料船暂行指南 MSC.285(86)

- MSC 86 agreed to insert Interim Guidelines in SOLAS II-1/26 as footnote
MSC 86 同意把这暂行指南加入 SOLAS II-1/26 作为脚注
- This Interim Guidelines are not mandatory, but form a basis for developing mandatory International Code of Safety for Gas Fuel Ships (IGF Code)
目前此 *暂行指南* 不是强制性，但为发展强制性的《国际气体燃料船安全规则》打好基础
- IGF Code is expected to be ready by 2011/2012
IGF 规则预算在2011/2012 年完成

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GUIDELINES FOR MAINTENANCE & REPAIR OF PROTECTIVE COATINGS 保护涂层的维护与修补指南 (MSC.1/Circ.1330)

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- PSPC Para 3.4 in MSC.215(82) requires Coating Technical File to include details on inspection, maintenance and repair as per IMO guidelines
保护涂层性能标准要求涂层技术文档内要按 IMO 的指南包含检验维护与修补资料
- Such guidelines now finalised at DE 52 and approved at MSC 86 as Circ.1330
这指南在 DE 52 有了定案，在 MSC 86 得到审核，发表为 通函 1330
- Purpose – assist surveyors, owners, shipyards, Flag in survey, assessment, and maintain & repair coatings as per PSPC
用途 – 协助验船师，船东，船旗国 按 PSPC 来做 检验，评估 和 维护与修补涂层
- Application – all ships need to comply with PSPC
适用范围 – 所有需要满足 PSPC 的船
- Covering in-service maintenance and repair of coatings
指南覆盖营运船涂层的维护与修补

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- Maintenance = minor coating restoration work carry out by crew onboard, to maintain GOOD or FAIR conditions
维护 = 由船员负责较小的涂层修复工作, 保持 GOOD (良) 或 FAIR (可) 的状况
- Repair = coating restoration work of longer term protection, carried out at repair-yard during dry-docking, to restore FAIR or POOR to GOOD conditions
修补 = 由修船厂在干坞时为了作长远保护而做的涂层修复工作, 从 FAIR (可) 或 POOR (差) 恢复到 GOOD (良) 的状况
- Survey intervals of PSPC coatings – Intermediate Survey (ship's age > 5 years) and Renewal Survey
PSPC 涂层的检验频率 – 中期检验 (船龄低于5年), 和更新检验
- Definition of coating conditions– either GOOD, FAIR, or POOR
涂层状况的定义 – 可分为 GOOD (良), FAIR (可), POOR (差)

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GUIDELINES FOR MAINTENANCE & REPAIR OF PROTECTIVE COATINGS 保护涂层的维护与修补指南 (MSC.1/Circ.1330)

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Table 1 – “GOOD”, “FAIR” and “POOR” coating conditions

	GOOD ⁽³⁾	FAIR	POOR
Breakdown of coating or area rusted ⁽¹⁾	< 3%	3 – 20%	> 20%
Area of hard rust scale ⁽¹⁾	-	< 10%	≥ 10%
Local breakdown of coating or rust on edges or weld lines ⁽²⁾	< 20%	20 – 50%	> 50%
Notes:			
1	% is the percentage calculated on basis of the area under consideration of the “critical structural area”		
2	% is the percentage calculated on basis of edges or weld lines in the area under consideration or of the “critical structural area”		
3	spot rusting, i.e. rusting in spot without visible failure of coating		

- Areas under considerations are clarified, and approx. 5 m to 7 m high
对“考虑范围”作出了阐释, 大概 5 到 7 米高

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GUIDELINES FOR MAINTENANCE & REPAIR OF PROTECTIVE COATINGS

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保护涂层的维护与修补指南 (MSC.1/Circ.1330)

- Annual inspection by crew is recommended for ships over 6 year of age
对船龄有6年以上的船，由船员作出了每年检查
- Recommended maintenance are given:
提供了维护的建议

Table 2 – Recommended maintenance

Purpose	Preparation	Coating system	Dry Film Thickness (DFT)
Maintenance of affected area <ul style="list-style-type: none"> • GOOD to GOOD • FAIR to FAIR 	<ul style="list-style-type: none"> • Removal of mud, oil, grease, etc. • Fresh water hosing • Drying • St 3⁺ or equivalent according to manufacturer's recommendation • Check ambient conditions 	<ul style="list-style-type: none"> • Epoxy-based system • The same coating system as was originally employed or according to manufacturer's recommendation 	<ul style="list-style-type: none"> • According to manufacturer's recommendation

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保护涂层的维护与修补指南 (MSC.1/Circ.1330)

- As for repairs, depending on ship's age, recommendation is given for medium and long-term repairs
在修补方面，按船龄的大小，来提供中期或长期的修补
- POOR and FAIR coatings should be restored to GOOD conditions
POOR (差) 或 FAIR(可)的涂层状况要恢复到 GOOD(良) 的状态
- Repair work to be inspected by NACE 2 or FROSIO III or equivalent inspectors
修补工作要由合格的检查原来检查，如拿到 NACE 二级 或FROSIO III 级 或 等同水平的检查员
- Maintenance and repair data, records, certificates, etc. are to be included in Coating Technical File
涂层技术文档内要包含 维护与修补数据，纪录，证书，等

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保护涂层的维护与修补指南 (MSC.1/Circ.1330)

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Table 3 – Recommended medium and long-term repair

Purpose	Preparation	Coating system	DFT
Repair of affected area <ul style="list-style-type: none"> • POOR to GOOD • FAIR to GOOD 	<ul style="list-style-type: none"> • Removal of mud, oil, grease, etc. • Fresh water hosing • Drying • St 3 or Sa 2½* for FAIR condition • Sa 2½* for POOR condition • Intact coating next to damaged area should be feathered • Total soluble salts, calculated as sodium chloride, according to manufacturer's recommendation, but not more than 80 mg/m2 • Climatic control 	Medium term (10-year target life) (Not recommended for ships of less than five years of age)	<ul style="list-style-type: none"> • 250 µm DFT** • Minimum two spray coats with two stripe coats
		Long term (More than 10 years. target life)	<ul style="list-style-type: none"> • 320 µm DFT • Minimum two spray coats with two stripe coats

* Refer to standard: ISO 8501-1:1988/Suppl:1994. Preparation of steel substrate before application of paints and related products – Visual assessment of surface cleanliness.

** Coating used approved at 320 µm DFT, according to resolution MSC.215(82), is satisfactory for medium-term at 250 µm DFT.

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GENERAL CARGO SHIP SAFETY

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杂货船安全

- Acknowledge urgent need in considering General Cargo Ship Safety
认同需要迫切需要考虑杂货船的安全问题 (MAC 84)
- “General Cargo Ships” to be defined, identify other ship types which could be included
拟订出杂货船的定义，并确定出在此议题下要处理的杂货船类型所涵盖的船舶类型
- Proposal submitted include Formal Safety Assessment (FSA) studies on frequency of accident, risk levels, causes, risk control options
提交的建议包括利用 **综合安全评估 (FSA)** 来分析发生意外事故频率，风险水平，因由，风险控制方案
- Evaluation of historic data is in progress, and more data is needed
以 IACS 为首，评估历史数据正在进行，而 IACS 向各国寻求事故资料数据
- Data analysis for FSA studies is also progressing
作为综合安全评估 (FSA) 数据分析也在进行中

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ITEMS TO WATCH FOR 值得留意的规条发展

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Draft SOLAS Ch. II-1 Reg. 2 and Reg. 3-10 – Goal Based Standards SOLAS 草案 – 目标型新船建造标准

- Apply to Oil tankers of $L \geq 150$ m and Bulk Carriers of $L \geq 150$ m with single deck, topside/hopper, excluding ore carriers and combination carriers
适用于长度在150米或以上的油轮和散货船(单层甲板, 顶边舱, 底边舱), 除了矿砂船和混装船
- Key dates for application: 生效日期:
 - o Contract Signing 签合同 ≥ 1 January 2015
 - o Keel laying 上船台(如没合同) ≥ 1 January 2016 if no contract exist
 - o Delivery 交船 ≥ 1 January 2019
- Applicable ships to be designed and built in fulfilling the goal set, with Ship Construction File with specific depth of details provided
适用的船要按照设立的目标来设计与建造, 并提供含有针对性详细资料的《船舶建造文档》

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ITEMS TO WATCH FOR 值得留意的规条发展

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Measures to Prevent Explosions on Oil and Chemical Tankers 防止油轮与化学品船发生爆炸的手段

- FP 53 agreed new oil tankers of 20K DWT to be installed with inert gas system in cargo tanks, could be further revised down to 8K or 6K or 4K later
FP 53 同意了20,000 载重吨以下新油轮的货油舱要安装惰气系统, 并可能下调到8,000 或 6,000 或 4,000 载重吨
- FP 53 agreed requirements for new chemical tankers to be separately developed
FP 53 同意了新化学品船的要求需要分开发展
- Further discussion on this matter is needed for 2 more FP meetings, hence extend completion date to 2011
需要多两次 FP 会议去深入讨论, 完成日期要延长到2011年

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ITEMS TO WATCH FOR 值得留意的规条发展

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Guidelines for Ships Operating in Polar Waters

极地海域船舶操作指南

- Draft Assembly resolution approved by MSC 86, subject to approval of MEPC, for adoption at Assembly
大会决议案的草案已得到 MSC 86 的审核，在得到 MEPC 的审核后，将在大会通过
- Provides requirements on ship structure, stability, machinery, electrical, fire & LSA, , navigation, operation while in Polar waters
指南提供了极地海域船舶的船体结构，稳性，轮机，电气，消防与救生设备，导航，操作的有关要求
- Requirements may be different for different Polar class (PC 1 to PC 7)
对不同极地级别 (PC1 至 PC7) 的船有不同程度的要求，以 PC1 的要求最严格
- If adopted by Assembly, guidelines will be applied from 1-1-2011 (keel laying)
如得到大会通过，指南将于2011年1月1日生效 (上船台)

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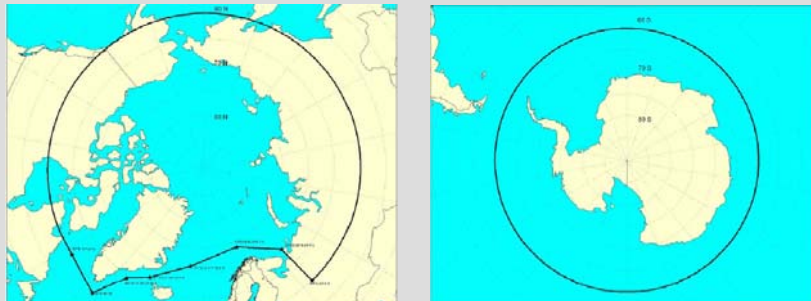
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Guidelines for Ships Operating in Polar Waters

极地海域船舶操作指南

- Guidelines are recommendatory, but will form basis for developing into a Code which will be mandatory
指南是建议性的，但会作为发展强制性规则的依据
- Polar areas where the Guidelines referred to are as shown below
指南适用于船舶在如下图所示的操作范围：



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Draft SOLAS II-1/3-x – Corrosion Protection of COT of Crude Oil Tankers SOLAS 草案 – 原油油轮 货油舱的防腐

- Apply to crude oil tankers of 5,000 DWT, except combination carriers, chemical tankers, and Product/Chem Tankers
适用于 5,000 DWT 以上的原油油轮，除了混装船，化学品船，和产品/化学品船
- Draft SOLAS regulation to be adopted at MSC 87
SOLAS 新法规草案 将会在MSC 87 通过
- Entry into force will be based on **contract date** (1 January 2012 ?), **keel laying date** (1 July 2012 ?) and **delivery date** (1 January 2016 ?), and mandatory生效条件基于 签合同日期(2012-1-1?), 上船台日期(2012-7-1?), 和交船日期(2016-1-1?), 并会成为强制性
- PSPC-COT, Alternative Means of protection and related guidelines will be finalised DE 53, and approved at MSC 87
PSPC-COT, 替代的保护方法 和 有关指南将会在DE 53 定案, MSC 87 时得到审批

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Draft SOLAS II-1/3-x – Corrosion Protection of COT of Crude Oil Tankers SOLAS 草案 – 原油油轮 货油舱的防腐

- Protection is achieved by using 需要通过以下手段来提供保护
 - protective coatings complying PSPC-COT
按照 货油舱涂层保护标准 对货油舱提供保护
 - using corrosion resistance materials (25 years of structural integrity), or other alternative means
使用防腐蚀材料 (维持25年的结构完整性)
- Above could be exempted if 在下列情况，以上可以免除
 - Novel prototype alternative is used with conditions
使用有条件下的新颖原型替代的方法
 - Ship only used to carry non-corrosive oil cargoes
船舶只可以运载非腐蚀性的原油作为货物

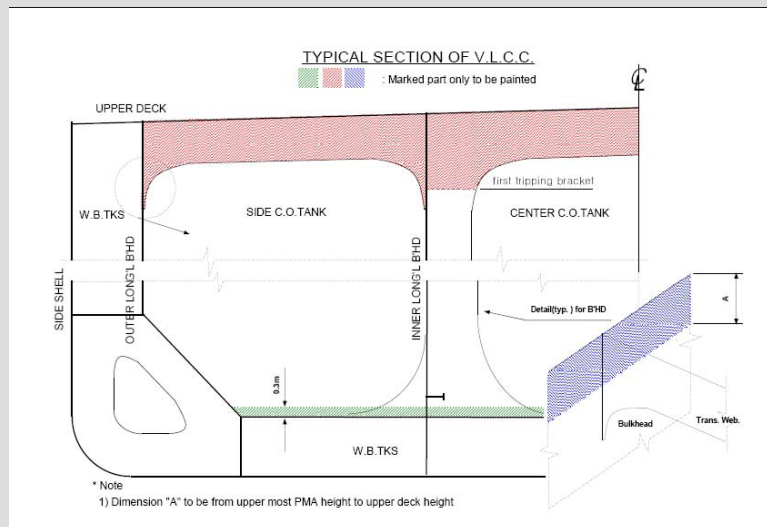
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