

MARITIME SAFETY COMMITTEE
96th session
Agenda item 5

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8 March 2016
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GOAL-BASED NEW SHIP CONSTRUCTION STANDARDS

Ship Construction File Industry Standard (SCF IS) and the SCF Supplementary Guidance

Submitted by ICS, BIMCO, IACS, OCIMF, CESA, INTERTANKO and INTERCARGO

SUMMARY

Executive summary: This document provides the full text of the Interim SCF Industry Standard and the Interim SCF Supplementary Guidance, which is introduced in document MSC 96/5/7

Strategic direction: 10

High-level action: 10.1

Output: 10.1.1.2

Action to be taken: Paragraph 4

Related documents: MSC 87/3/5, MSC 87/5/4, MSC 87/5/5, MSC 87/5/5, MSC 87/5/5/Corr.1; MSC.296(87); MSC.1/Circ.1455; MSC 94/WP.5; MSC 96/5/7; and MEPC.254(67)

Information submitted

- 1 Annex 1 contains Interim SCF Industry Standard (SCF IS) providing Industrial Principles for Access and IPR Protection including a detailed definition of the content through models for presentation.
- 2 Annex 2 contains Interim SCF Supplementary Guidance (SCF SG) providing model procedures for practical implementation.
- 3 Since both annexes are, for the time being, presented as Interim Industry Standard and Supplementary Guidance, they should be considered as living documents. The revision history and the latest version of the SCF IS and SCF SG are publically made available through the websites of all participating SCF Cross Industry Partners.

Action requested of the Committee

- 4 The Committee is invited to note the information provided.

The SCF Interim Industry Standard

7 March 2016

**Approved for
submission to MSC 96**

Introduction

Goal-Based Ship Construction Standards for Bulk carriers and Oil Tankers (GBS) define high-level safety objectives to be achieved through “functional requirements” and “detailed requirements”. The conformity of rules and regulations of classification societies with the “functional requirements” are to be verified by procedures. GBS, accordingly, has a five-tier structure consisting of *Tier I – Goals*, *Tier II – Functional requirements*, *Tier III – Verification of conformity*, *Tier IV – Rules and regulations for ship design and construction* and *Tier V – Industry practices and standards*. The IMO supervises Tier I, II, III and IV, whereas Tier V is dealt with on industry level.

In order to ensure design transparency, one of the “functional requirements” of GBS, each Ship is required by the International Convention for the Safety of Life at Sea (SOLAS) to have specific information and documentation on ship design and construction onboard the Ship throughout the Ship’s life. This set of documents, drawings and information is collectively called the Ship Construction File (SCF).

The documents and drawings required to be provided as part of the SCF contain shipbuilding know-how. Therefore, all who have access to such sensitive information is expected to give due consideration to the intellectual property rights (IPR).

At the 2009 Tripartite Meeting (Shipowners, Shipbuilders and Classification Societies)¹ it was agreed to develop a cross industry concept for ensuring both design transparency and the protection of intellectual property (IP) which needs to be based on safekeeping certain SCF information at a dedicated Archive Center ashore.

MSC 87, held in May 2010, stressed the importance of addressing both design transparency and IPR, supported the cross-industry model presented and noted these proposals. It was also acknowledged by MSC 87 that detailed standard for SCF would be developed by the industry (Industry Standard).

GBS is applied only to bulk carriers and oil tankers of 150 meters in length and above. GBS-related rules (amendments to SOLAS Ch. II-1 and regulations concerning GBS) came into effect on January 1, 2012, and the members of the International Association of Classification Societies (IACS) developed GBS compatible structural rules.

The Industry Standard presented in this document corresponds to GBS Tier V and may be referred to or quoted in the rules and regulations for ship design and construction (Tier IV). The SCF Industry Standard establishes procedures for implementing the Ship Construction File (SCF), which is defined by four IMO documents – MSC.287 (87) (adopted at MSC 87 on 20 May 2010), MSC.290 (87) (adopted at MSC 87 on 21 May 2010), MSC.296 (87) (adopted at MSC 87 on 20 May 2010) and MSC.1/Circ.1343 (circulated on 2 June 2010) and supplement those IMO documents based on MSC 87/5/4 (endorsed by MSC 87).

The Industry Standard was developed in consultation with a cross industry group of the following industry organizations:

CANSI (China Association of the National Shipbuilding Industry);
CESA (Community of European Shipyards’ Associations);
KOSHIPA (Korea Offshore & Shipbuilding Association);

¹ Tripartite Meeting is a regular annual cross-industry meeting between the high level participants from Shipowners, Shipbuilders and Classification Societies to discuss and agree on prospective collective actions that will contribute to the development of maritime industry.

SAJ (The Shipbuilders' Association of Japan);
SCA (Shipbuilders Council of America);
BIMCO;
ICS (International Chamber of Shipping);
INTERCARGO (The International Association of Dry Cargo Shipowners);
INTERTANKO (The International Association of Independent Tanker Owners);
OCIMF (Oil Companies International Marine Forum); and
IACS (International Association of Classification Societies, Ltd.)

The cross industry group has agreed on the following principles.

The SCF Interim Industry Standard (SCF IS) serves as industry guidance and therefore do not oblige parties to fully follow the contents but rather provide principles, which will facilitate agreement being reached for each Ship. Such agreements and the resulting commitments will reflect specific individual situations. In other words, the purpose of the SCF IS is to promote common understanding of the industry issues involved, and to facilitate agreement on individual projects.

Furthermore, the SCF IS is intended to provide guidance on the principles of how the various parties manage the information and on taking various actions pertaining to SCF Information. The intention is to provide users of the SCF IS with practical assistance on the administrative, technical, operational and document management aspects.

Additional, more detailed guidance for the practical implementation of the SCF IS is provided in the Interim Supplementary Guidance (SCF SG) of the SCF IS.

The principles outlined in the SCF IS could also be used to facilitate the management of information other than the SCF required by GBS (entered into force in January 2012), which could then be kept according to a voluntary private agreement between, for example, the Shipowner, IP-Holder and the Archive Center.

The Shipbuilder prepares the relevant SCF Information for design and construction transparency, (see Ch. 3.1)

The Shipowner keeps and updates the SCF Information. (see Ch. 3.4)

SCF Information is to include necessary and sufficient information concerning the Ship's hull structure in order to facilitate the Ship's safe operation, maintenance, inspections and repair as well as response in emergency situations. (see Ch. 2.1)

Access Right Holders, need to give due consideration to the IPR. (see Ch. 3.2).

All parties should manage SCF Information in accordance with the access and safekeeping principles provided in the SCF IS. (see Ch. 3.2)

The SCF Supplement Ashore is kept at an Archive Center to ensure both transparency of the information and protection of IP. (see Ch 2.1)

Standard storage location of various documents and drawings is provided in Table 2.

The Archive Center keeps the SCF Supplement Ashore and a full copy of the SCF Onboard and discloses them to Access Right Holders through the Shipowner. (see Ch. 3.2 and 3.3)

1. Definitions

- (a) *Access Right Holders* are persons and institutions that have a right to access SCF Information, e.g. Shipowner, Seafarer, Ship operator and their Sub-contractors for the safe operation of the Ship and/or due to other legitimate obligation, authorities such as representatives of flag States, coastal States and their Recognized Organizations for Port State Controls or marine accident investigations, etc. as well as registered classification societies for surveys.
- (b) *Archive Center* means a facility tasked with storage, safekeeping and managing access of to the SCF Information that it holds.
- (c) *IP-Holder* means an entity which possesses rights related to the intellectual property in the Ship's SCF Information. The entity may cover the Shipbuilder, Shiprepairer, Equipment maker, Shipowner, etc.
- (d) *Intellectual Property (IP)* refers to creations of the mind which is divided into industrial property and copyright. In the field of shipbuilding, IP covers but is not limited to: proprietary technical descriptions, calculations, test results, plans, drawings, designs, models, specifications, reports and any other knowledge assets, registered and unregistered, which are instrumental for competitiveness and company strategies of the IP holder.
- (e) *Rules* means not only the rules by Classification Societies but also other rules and regulations that are sufficient to demonstrate the Ship meets that the GBS functional requirements concerning the hull structure.
- (f) *Safe Operation Purpose* means a purpose related to safe operations, maintenance, inspections and repair (structural work to maintain the structural strength assumed at the time of construction, such as restoring damaged parts to their original state and reinforcing parts with insufficient strength) of the Ship, and responses in emergency situations of the Ship.
- (g) *SCF Information* means a collection of information composed of the SCF Onboard and SCF Supplement Ashore. It is a general term given to a collection of information that is sufficient to demonstrate that the Ship meets the GBS functional requirements concerning the hull structure and is needed for the safe operation of the Ship, maintenance, inspections and repair as well as in emergency situations. In this document, the term "SCF Information" means the SCF Onboard and/or SCF Supplement Ashore, irrespective of whether it refers to partial or the whole, or to the original or a copy.
- (h) *SCF Onboard* means SCF Information that is required to be kept onboard the Ship at all times.
- (i) *SCF Supplement Ashore* means SCF Information that is Highly IP sensitive information but not absolutely necessary and relevant to be kept onboard the Ship at all times. Usually, it means information that is kept only at the Archive Center.
- (j) *Seafarer* means individuals who are employed and work regularly onboard the Ship.
- (k) *Ship* means an oil tanker of 150 meters in length and above or a bulk carrier of 150 meters in length and above, constructed with single deck, top-side tanks and hopper side tanks in cargo spaces, excluding ore carrier and combination carrier, that fulfills one of the following criteria:
 - i. The building contract is placed on or after July 1, 2016;
 - ii. In the absence of a building contract, the keels are laid or are at a similar stage of construction on or after July 1, 2017; or
 - iii. The delivery is on or after July 1, 2020.
- (l) *Shipowner* means an entity that has entered into possession of a Ship through acts like a purchase or a transfer and engaged in safekeeping and updating of SCF Information during the

Ship's operational lifetime in accordance with amendments to the SOLAS Convention Chapter II-1 Part A-1. These tasks in relation to management of SCF Information may also be tasked to Ship operators, management companies etc.

- (m) *Sub-contractor* means an entity (such as a Shipbuilder for repair/conversion) that is contracted, directly or indirectly, by the Shipowner.
- (n) *Third Party* means those other than the IP-Holder, Shipowner, Seafarer, Ship operator, Ship management company. Engineering houses and/or consultants employed by the Shipowner, Seafarer, Ship operator or Ship management company form a part of Third Party.
- (o) *Update* means promptly updating SCF Information when any modification is made to the Ship that requires a change or addition of SCF Information at any major event, including, but not limited to, substantial repair, Conversion or any modification to the Ship structure, or the updated portion of SCF Information.

2. SCF Information

2.1. Composition of SCF Information and Scope of Application

SCF Information is a set of documents, drawings and information composed of the SCF Onboard and SCF Supplement Ashore and collectively refers to information that is sufficient to demonstrate that the Ship meets the GBS functional requirements concerning the hull structure. Such information is needed for the Ship’s safe operation, maintenance, inspections and repair as well as in emergency situations. Figure 1 shows the “SCF Onboard – SCF Supplement Ashore” model.

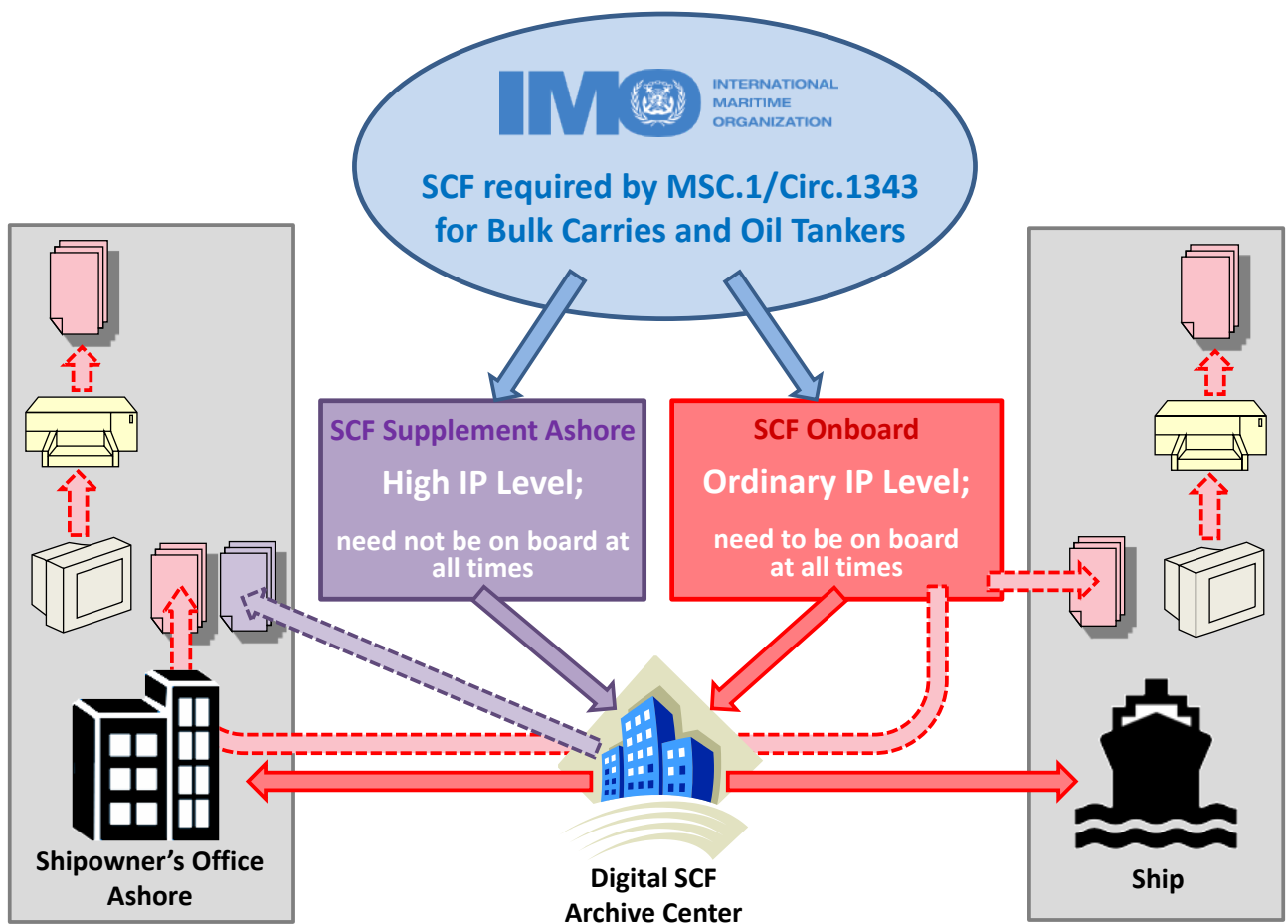


Figure 1: The “SCF Onboard – SCF Supplement Ashore” model

The SCF Supplement Ashore is the part of SCF Information that is highly IP sensitive and kept only at the Archive Center ashore. It would usually be provided directly to the Archive Center by the IP-Holder upon new-building of the Ship or Update. This is the highly IP sensitive information that is not absolutely necessary and relevant to be kept onboard the Ship at all times (see Chapter 1 “Definitions” and 3.3. “IP Levels”). Any SCF Information which is highly IP sensitive but necessary and relevant to be kept onboard the Ship at all times (for example required to be on board by IMO Conventions) should comprise a part of the SCF Onboard. In the case of conventional bulk carriers and oil tankers, the SCF Supplement Ashore is normally composed of the following four components:

- full “Detailed structural strength calculation” document⁽²⁾(see also page 24);
- full “Detailed fatigue life calculation” document⁽³⁾(see also page 36);
- “Yard plans” drawings⁽⁴⁾(see also page 32) ;and
- Master “Lines plan” drawing⁽⁵⁾(see also page 34).

2.2. Definition of SCF Information

The list of information to be included in the SCF is provided in Table 1. The actual names and sets of such documents and drawings may differ from those listed in the example documents or drawings as they depend on each Shipbuilder’s drawing system. The information provided may be in more than one document or drawing with appropriate names. Explanatory notes are provided below the Table.

This Table is not identical with the Appendix to MSC.1/Circ.1343, but includes additional items and explanations which are considered to be relevant to be included in the SCF by the cross industry group..

⁽²⁾ Full “Detailed strength calculation” documents contain the full bulky output of structural strength calculations, which is defined under Item 3-2 contained in Annex. Summarized information on structural strength calculation is available on board through documents such as Item 3-3 and 3-3A (Plan showing highly stressed areas prone to yielding and/or buckling).

⁽³⁾ Full “Detailed fatigue life calculation” documents contain the full bulky output of fatigue life calculations, which is defined under Item 4-1 contained in Annex. Summarized information on fatigue is available on board through document Item 4-2 (Plan showing areas prone to fatigue).

⁽⁴⁾ “Yard plans” drawings – besides scantling information of structural members – contain also sensitive proprietary information on fabrication processes. The scantling information of structural members to fulfil the day-to-day needs on board is, however, available on board, by means of Item 3-5 (Key construction plans) and Item 3-6 (Net scantlings of structural constituent parts) defined in Annex..

⁽⁵⁾ Master “Lines plan” is a master drawing displaying the detailed hull form of the entire ship. Hull form information frequently required is readily made available on board, by means of Item 3-5 (Key construction plans) defined in Annex. Hull form information needed in emergency situations is also encrypted and stored on ship loading computers on board as numerical data. (Refer to Item 3-11 “Equivalent to Lines plan” defined in Annex, too.)

Table 1: List of information to be included in the Ship Construction File (SCF)

Items shaded indicate those which are **NOT** explicitly included in the MSC.1/Circ.1343.

Tier II items		Information to be included	Further explanation of the content	Example documents or drawings
<i>DESIGN</i>				
1	Design life	<ul style="list-style-type: none"> assumed design life in years 	<ul style="list-style-type: none"> statement or note on midship section 	<ul style="list-style-type: none"> List of Applied Rules & Standards (See Item 1-1 in Annex) and General Information on SCF midship section
2.	Environmental conditions	<ul style="list-style-type: none"> assumed environmental conditions 	<ul style="list-style-type: none"> statement referencing data source or Rule (specific rule and data) or; in accordance with Rule (date and revision) 	<ul style="list-style-type: none"> List of Applied Rules & Standards and General Information on SCF
3.	Structural Strength			
3.1	General design	<ul style="list-style-type: none"> applied Rule (date and revision) applied alternative to Rule 	<ul style="list-style-type: none"> applied design method alternative to Rule and subject structure(s) 	<ul style="list-style-type: none"> List of Applied Rules & Standards and General Information on SCF capacity plan
3.2	Deformation and failure modes	<ul style="list-style-type: none"> calculating conditions and results assumed loading conditions operational restrictions due to structural strength (See Item 3-1 in Annex) 	<ul style="list-style-type: none"> allowable loading patterns (This needs not necessarily be restricted to only the typical loading patterns shown in the loading manual) maximum allowable hull girder bending moment and shear force 	<ul style="list-style-type: none"> loading manual trim and stability booklet damage control plan

Tier II items		Information to be included	Further explanation of the content	Example documents or drawings
3.3	Ultimate strength	<ul style="list-style-type: none"> • applied Rule (date and revision) • Calculating conditions and results 	<ul style="list-style-type: none"> • maximum allowable cargo density or stowage factor • bulky output of strength calculation (See Item 3-2 in Annex) 	<ul style="list-style-type: none"> • List of Applied Rules & Standards and General Information on SCF • loading instrument instruction manual • damage control plan • full detailed strength calculation
3.4	Safety margins	<ul style="list-style-type: none"> • strength calculation results, including local strength • gross hull girder section modulus • minimum hull girder section modulus along the length of the Ship to be maintained throughout the Ship's lifetime, including cross section details such as the value of the area of the deck zone and bottom zone, the renewal value for the neutral axis zone. • gross scantlings of structural constituent parts 	<ul style="list-style-type: none"> • bulky output of strength calculation • plan showing highly stressed areas prone to yielding and/or buckling (See Item 3-3, 3-3A in Annex) • structural drawings (See Item 3-4 in Annex) 	<ul style="list-style-type: none"> • operation and maintenance manuals • full detailed strength calculation • areas prone to yielding and/or buckling • calculation of hull girder section modulus • damage control plan • general arrangement • key construction plans (See Item 3-5 in Annex)

Tier II items	Information to be included	Further explanation of the content	Example documents or drawings	
		<ul style="list-style-type: none"> • net scantlings of structural constituent parts(See Item 3-6 in Annex) • Voluntary addition thickness • hull form 	<ul style="list-style-type: none"> • rudder and stern frame • structural details of typical members (See Item 3-7 in Annex) • hull form information indicated in key construction plans • hull form data stored within an onboard computer necessary for trim and stability and longitudinal strength calculations 	<ul style="list-style-type: none"> • rudder and rudder stock • stern frame • structural details • yard plans (See Item 3-8 in Annex) • dangerous area plan (See Item 3-9 in Annex) • key construction plans • Master Lines plan (See Item 3-10 in Annex) and Equivalent to Lines plan (See Item 3-11 in Annex)

Tier II items		Information to be included	Further explanation of the content	Example documents or drawings
4.	Fatigue life	<ul style="list-style-type: none"> • applied Rule (date and revision) • applied alternative to Rule • calculating conditions and results; • assumed loading conditions • fatigue life calculation results 	<ul style="list-style-type: none"> • applied design method alternative to Rule and subject structure(s) • assumed loading conditions and rates • bulky output of fatigue life calculation (See Item 4-1 in Annex) • plan showing areas prone to fatigue (See Item 4-2 in Annex) 	<ul style="list-style-type: none"> • List of Applied Rules & Standards and General Information on SCF • structural details • full detailed fatigue life calculation • areas prone to fatigue
5.	Residual strength	<ul style="list-style-type: none"> • applied Rule (date and revision) • Calculating conditions and results 	<ul style="list-style-type: none"> • bulky output of strength calculation 	<ul style="list-style-type: none"> • List of Applied Rules & Standards and General Information on SCF • damage control plan • full detailed strength calculation
6.	Protection against corrosion			
6.1	Coating life	<ul style="list-style-type: none"> • coated areas and target coating life and other measures for corrosion protection in holds, cargo and ballast tanks, other structure-integrated deep tanks and void spaces • specification for coating in holds, cargo and ballast tanks, other structure-integrated deep tanks and void spaces 		<ul style="list-style-type: none"> • List of Applied Rules & Standards and General Information on SCF Coating Technical File required by PSPC

Tier II items	Information to be included	Further explanation of the content	Example documents or drawings	
6.2	Corrosion addition	<ul style="list-style-type: none"> • specification for coating and other measures for corrosion protection in holds, cargo and ballast tanks, other structure- integrated deep tanks and void spaces • gross scantlings of structural constituent parts • net scantlings of structural constituent parts • Voluntary addition thickness 	<ul style="list-style-type: none"> • plans showing areas prone to excessive corrosion (See Item 6-1 in Annex) 	<ul style="list-style-type: none"> • Coating Technical File required by PSPC • areas prone to excessive corrosion • key construction plans
7.	Structural redundancy	<ul style="list-style-type: none"> • applied Rule (date and revision) 		<ul style="list-style-type: none"> • List of Applied Rules & Standards and General Information on SCF
8.	Watertight and weathertight integrity	<ul style="list-style-type: none"> • applied Rule (date and revision) • key factors for watertight and weathertight integrity 	<ul style="list-style-type: none"> • details of equipment forming part of the watertight and weathertight integrity 	<ul style="list-style-type: none"> • hatch cover Maker Drawings • structural details of hatch covers, doors and other closings integral with the shell and bulkheads(See Item 8-1 in Annex) • damage control plan
9.	Human element considerations	<ul style="list-style-type: none"> • list of ergonomic design principles applied to ship structure design to enhance safety during operations, inspections and maintenance of the Ship 		<ul style="list-style-type: none"> • List of Applied Rules & Standards and General Information on SCF

Tier II items		Information to be included	Further explanation of the content	Example documents or drawings
10.	Design transparency	<ul style="list-style-type: none"> • applied Rule (date and revision) • applicable industry standard for design transparency and IP protection • reference to part of SCF Information kept ashore 	<ul style="list-style-type: none"> • summary, location and access procedure for part of SCF Information on shore 	<ul style="list-style-type: none"> • List of Applied Rules & Standards and General Information on SCF
CONSTRUCTION				
11	Construction quality procedures	<ul style="list-style-type: none"> • applied construction quality standard 	<ul style="list-style-type: none"> • recognized national or international construction quality standard 	<ul style="list-style-type: none"> • List of Applied Rules & Standards and General Information on SCF
12	Survey during construction	<ul style="list-style-type: none"> • survey regime applied during construction (to include all owner and class scheduled inspections during construction) • information on non-destructive examination 	<ul style="list-style-type: none"> • applied Rules (date and revision) • copies of certificates of forgings and castings welded into the hull 	<ul style="list-style-type: none"> • Block inspection list • inspection schedule for ship structures • copies of certificates of forgings and castings welded into the hull • tank testing plan including details of the test requirements • non-destructive testing plan • Coating Technical File required by PSPC
IN-SERVICE CONSIDERATIONS				

Tier II items	Information to be included	Further explanation of the content	Example documents or drawings	
13	Survey and maintenance	<ul style="list-style-type: none"> • maintenance plans specific to the structure of the Ship where higher attention is called for • preparations for survey • gross hull girder section modulus • minimum hull girder section modulus along the length of the Ship to be maintained throughout the Ship's lifetime, including cross section details such as the value of the area of the deck zone and bottom zone, the renewal value for the neutral axis zone. • gross scantlings of structural constituent parts • net scantlings of structural constituent parts • Voluntary addition thickness • hull form 	<ul style="list-style-type: none"> • plan showing highly stressed areas prone to yielding, buckling, fatigue and/or excessive corrosion • arrangement and details of all penetrations normally examined at dry-docking • details for dry-docking • details for in-water survey • hull form information indicated in key construction plans 	<ul style="list-style-type: none"> • Inspection Guidance in Operation and maintenance manuals (e.g., hatch covers and doors) • detail of bottom plug • docking plan • details for in-water survey • dangerous area plan • Ship Structure Access Manual • means of access to other structure-integrated deep tanks and large void spaces (See Item 13-1 in Annex) • Coating Technical File required by PSPC • key construction plans • rudder and rudder stock • stern frame • structural details • yard plans • Master Lines plan and Equivalent to Lines plan
14	Structural accessibility	<ul style="list-style-type: none"> • means of access to holds, cargo and ballast tanks and other structure-integrated 	<ul style="list-style-type: none"> • plans showing arrangement and details of means of access • Ship Structure Access Manual • means of access to other structure- 	

Tier II items		Information to be included	Further explanation of the content	Example documents or drawings
		deep tanks		integrated deep tanks and large void spaces • damage control plan
RECYCLING CONSIDERATIONS				
15	Recycling	• identification of all materials that were used in construction and may need special handling due to environmental and safety concerns	• list of materials used for the construction of the hull structure	• List of materials (See Item 15-1 in Annex)

Notes:

- 1 "Key construction plans" means plans such as midship section, main O.T. and W.T. transverse bulkheads, construction profiles/plans, shell expansions, forward and aft sections in cargo tank (or hold) region, engine-room construction, forward construction, stern construction and Superstructure (deck house) construction drawings. "Key construction plans" also includes scantling information of structural members and hull form information on a level meeting onboard needs as defined in Item 3-5 (Key construction plans) and Item 3-6 (Net scantlings of structural constituent parts) contained in Annex.
- 2 "Hull form" means a graphical or numerical representation of the geometry of the hull. Examples would include the graphical description provided by a lines plan and the numerical description provided by the hull form data stored within an onboard computer of the Ship.
- 3 "Equivalent to Lines plan" means a set of information of hull form to be indicated in Key construction plans and numerical data encrypted and stored on an onboard loading computer of the Ship, which meet onboard needs in normal and emergency situations. (Refer to Item 3-11 "Equivalent to Lines plan" defined in Annex, too.)
- 4 If some method alternative to classification rules is applied, declaration of such application and applied areas need to be indicated.

2.3. IP Levels

The following two IP Levels are defined for SCF documents and drawings considering IP sensitivity, operational needs and standard access procedures:

- Ordinary IP Level
- High IP Level

Standard IP Levels of SCF documents and drawings are shown along with standard storage locations in Table 2.

These standard IP Levels indicated in Table 2 may be modified for specific Ships subject to agreement between the Shipowner and IP-Holders concerned.

Storage locations indicated in Table 2 may be changed subject to agreement between the Shipowner and IP-Holder concerned. However, any item required to be on board by IMO Conventions, and those items listed as being on board in the table are to be on board as a minimum to ensure that they are transferred with the Ship whenever a change of Shipowner takes place.

All SCF Information will need appropriate care to be taken to safeguard the relevant IP.

2.4. Format of SCF Information

In order to facilitate both the use of the safety related information and the protection of IP, the SCF Onboard could be stored and used in different formats, e.g. either hardcopies or digital files (including a viewer/browser with printout functionality) at the choice of the Shipowner or in accordance with requirements of the Flag State and/or port States. A complete set of the SCF Onboard and SCF Supplement Ashore in a digital format is kept at the Archive Center.

Digital SCF documents need to be stored in a format (software and hardware) that ensures compatibility with standard hardware/software (standard PC operating systems) and that can be upgraded in the future to cater for IT technology advancement. Recognized global standards are expected to be used as far as practical so that there will be no critical access failure when hardware such as personal computers and/or software such as operating systems and browsers are updated or renewed, or when the Shipowner or the Archive Center is changed.

Regardless of the format of documents and drawings, the access to and safekeeping of SCF Information is performed in accordance with the principles provided in Ch. 3.2.

Table 2: Standard IP Levels and Storage Locations

IP Level	Document/drawing name used in Industry Standards	Storage location
Ordinary	Capacity plan (*2)	on board ship
	Loading manual (*1)	on board ship
	Trim & stability booklet (*1)	on board ship
	Loading instrument instruction manual (*1)	on board ship
	Operation and maintenance manual (*1)	on board ship
	General arrangement (*2)	on board ship
	Damage control plan (*2)	on board ship
	Docking plan (*1)	on board ship
	Calculation of hull girder section modulus	on board ship
	Dangerous area plan (*2)	on board ship
	Coating technical file	on board ship
	Structural details of hatch covers, doors and other closings integral with the shell and bulkheads	on board ship
	Hatch cover Maker drawings	on board ship
	Inspection Guidance in Operation	on board ship
	Block inspection list	on board ship
	List of materials	on board ship
	Inspection schedule for ship structures	on board ship
	Copies of certificates of forgings and castings welded into the hull	on board ship
	Tank testing plan including details of the test requirements	on board ship
	Non-destructive testing plan	on board ship
	Areas prone to yielding and/or buckling	on board ship
	Areas prone to fatigue	on board ship
	Areas prone to excessive corrosion	on board ship
	Detail of bottom plug	on board ship
	Details for in-water survey	on board ship
	Means of access to other structure-integrated deep tanks and large void spaces	on board ship
	Ship structure access manual	on board ship
	List of applied Rules & Standards and General Information on SCF	on board ship
	Midship section	on board ship
	Main O.T. and W.T. transverse bulkheads	on board ship
	Construction profiles/plans	on board ship
	Shell expansions	on board ship
	Forward and aft sections in cargo tank (or hold) region	on board ship
Engine-room construction	on board ship	
Forward construction	on board ship	
Stern construction	on board ship	
Superstructure (deck house) construction	on board ship	
Rudder and rudder stock	on board ship	
Stern frame	on board ship	
Structural details	on board ship	
Equivalent to Lines plan	on board ship	
High	Full Detailed strength calculation	on shore archive
	Full Detailed fatigue life calculation	on shore archive
	Yard plans	on shore archive
	Master Lines plan	on shore archive

Note: Documents and drawings in the “Ordinary” category marked by (*1) are those that are used frequently during ship operations, while documents and drawings with (*2) are those that are posted in the Ship’s accommodation at all times.

3. Management of SCF Information

3.1. Preparation of SCF Information

Upon delivery of the newly built ship, the Shipbuilder – functioning as co-ordinator of all IP-Holders – provides SCF Information in accordance with the IMO requirements as described below:

- i. The SCF Onboard to the Ship;
- ii. Copy of the SCF Onboard to the Shipowner's Office Ashore; and
- iii. Copy of the SCF Onboard and SCF Supplement Ashore to the Archive Center

3.2. Access and Safekeeping of SCF Information

Shipowner securely keeps SCF Information throughout the Ship's operational lifetime in order to ensure safe operations of the Ship.

Shipowner, for Safe Operation Purposes, can access the SCF Information on board at any time and permit other Access Right Holders to access SCF Information through the Shipowner under the following principles:

- The IP of SCF Information including confidentiality needs to be protected; and
- Appropriate procedures to manage access to and securely keep SCF Information in line with the SCF IS need to be implemented by the Shipowner, e.g. as a part of the Quality Management Systems.

In principle, the applicable access and safekeeping procedures are to be:

- i. strict enough to ensure IP protection;
- ii. simple enough for smooth access;
- iii. robust enough for onboard utilization;
- iv. durable enough for lifetime service;
- v. compatible with standard hardware/software systems in the market; and
- vi. cost effective.

The access and safekeeping procedures for each IP Level are as follows:

- a) **Ordinary IP Level information:** the company document management system as a part of the Ship's Quality Management System is expected to include procedures for access management (e.g., recording of name of document or drawing, access date, name of accessing person/organization and the existence of a confidentiality agreement between the IP Holder(s) and Shipowner needs to be recognized.) It is anticipated that appropriate IT security procedures to protect information held in electronic form are put in place. These include periodical renewal of passwords or equivalent and may include periodical renewal of the information to ensure that a complete set of the latest information is used and that the information has not been compromised.
- b) **High IP Level information:** is stored at the Archive Center ashore. When the Shipowner initiates the procedures for access to the information, accompanied with information related to the uses of the information, the Archive Center, in accordance with the specific procedures, provides the required information after obtaining confirmation by the IP Holder. After the period of use, High IP Level information is to be returned to the Archive Center.

Hull form and structural strength information that is required for mandatory Emergency Response Services (ERS) can be kept by dedicated ERS providers if IPR protection

obligations are acknowledged by the provider such as by means of a confidentiality agreement. The specific protection obligations and access procedures of the SCF IS may be modified to adapt to the needs of the ERS.

The full detailed strength and fatigue life calculation documents are available to the Shipowner during the design and construction period of the Ship, and can after the delivery of the Ship be provided to the Shipowner from the Archive Center for internal use subject to the requirement not to disclose to any Third Party unless specifically agreed by the IP-Holders. (refer to the Annex, Item 3-2 and Item 4-1)

In general, it is envisaged that a confidentiality agreement could be developed between the owner and the IP-Holder. Company procedures for SCF access management need to take account of such agreement.

3.3. Archive Center

The Archive Center securely keeps SCF Information and arranges appropriate measures for access to and IP protection of SCF Information, in accordance with the principles shown in the SCF IS.

The Archive Center is operated in accordance with the following basic operational requirements. The Archive Center:

- i. takes a nonpartisan stance;
- ii. provides services 24 hours and 365 days in accordance with a predetermined operational plan in order to respond to any global and urgent requirement to provide SCF Information kept at the Archive Center;
- iii. provides services at least in English;
- iv. makes and keeps secure backup copies of the digital documents it keeps;
- v. provides the information on necessary hardware and software, and on relevant software updates/upgrades, so that accessing individual may access SCF Information kept at the Archive Center; and
- vi. provides tools such as browser software to view SCF Information that should be compatible with standard PC operating systems.

The Archive Center provides the SCF Onboard Information after checking whether:

- the party that required Access to SCF Information is either the Shipowner or another registered Access Right Holder; and
- the party requesting the information has confirmed that the information is needed for the Ship's Safe Operation Purposes.

Archive Center provides the SCF Supplement Information after checking whether:

- the party that required Access to SCF Information is the Shipowner or another registered Access Right Holder who is making access via the Shipowner;
- there is an agreement between Shipowner and IP-Holder; and
- required SCF Information is necessary and sufficient for the purpose.

The Archive Center appointed by the IP-Holder, from accredited candidates at the time of new-building of the Ship, needs to be agreed with the Shipowner.

3.4. Update of SCF Information

The Shipowner, following any significant event including, for example, substantial repair, conversion or any major modification to the Ship structure that requires Update of the SCF Information, needs to arrange an Update of the SCF Information.

In such cases, SCF Information before the Update needs to be continuously retained without destruction or modification along with the updated SCF Information for traceability purposes.

The Shipowner may task the Archive Center to carry out procedures for Update as appropriate. Updated SCF Information needs to be stored at the same Archive Center that keeps the Ship's original SCF Information.

3.5. Use of SCF Information for Purposes other than Safe Operation

The Shipowner is expected to agree in advance with the IP-Holder when SCF Information is disclosed to a Third Party for purposes other than Safe Operation Purpose, noting that the definition of 'safe operation' includes maintenance, repair, inspection and emergency response.

4. Revision of the Interim Industry Standards

In the event that the IMO requirement is amended or a relevant issue concerning IT progress or use of this SCF IS arises and a proposal is made by any member of the cross industry group (see the Introduction for its definition) for the revision of this SCF IS, the cross industry group will consider the need for a revision to the SCF IS. Following agreement of such a need, this SCF IS may be revised as appropriate.

In addition it is anticipated that in the absence of significant issues arising, a general review will be initiated by the cross industry group within 24 months from 1 July 2016 to take account of experience gained in the initial use of this SCF IS.

References

- [1] International Maritime Organization: Res. MSC 290(87) SOLAS II-1/3-10: Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (2010)
- [2] International Maritime Organization: Res. MSC 287(87): Adoption of the International Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (2010)
- [3] International Maritime Organization: Res. MSC 296(87): Adoption of the Guidelines for Verification of Conformity with Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (2010)
- [4] International Maritime Organization: MSC.1/Circ.1343: Guidelines for the Information to be included in a Ship Construction File (2010)
- [5] International Maritime Organization: MSC/Circ.1135: As-built Construction Drawings to be Maintained on Board the Ship and Ashore, 15 December (2004)

Annex Practical Guidelines for SCF Information Definition

A.1 Introduction

(1) Purpose and notes

- This Annex shows a collection of detailed definitions, models and examples of SCF Information which is based on the requirements of the IMO. The purpose of the detailed definitions, models and examples of SCF Information is to provide practical clarification and explanation on the "List of information to be included in the Ship Construction File (SCF)" indicated in **Table 1** of Chapter 2 so as to prevent misinterpretation and confusion.
- Items with detailed definitions, models and examples are indicated by markers such as **Items 1-1 to 15-1** in **Table 1** of Chapter 2. In general, detailed definitions, models and examples are given on one page for each item. It should be noted that the set of SCF documents and drawings, models and examples given to each document/drawing are only for a specific design case, and different set of documents and drawings are acceptable as long as they include sufficient information conforming to requirements of SCF Information as a whole.

(2) Additional definitions

- Substantial repair: Steel replacement of the hull area of Ship affected by an accident (damage caused by contact, collision or grounding, etc.) or substantial corrosion.
- Any modification of the Ship structure: Scantling or shape change of original ship structure, or the addition of local reinforcements due to the installation of new equipment on board, etc.
- Updated SCF: Depending on Shipowner's decision, the Shipyard for repair/conversion updates the key construction plans or provides new sheets in relation with the modification which are additional to the existing key construction plans. Updated key construction plans or new sheets as well as relevant yard plans (fabrication and installation drawings) in a digital format are also provided as addition to SCF Supplement Ashore by the Shipyard for repair/conversion.

A.2 List of Applied Rules & Standards and General Information on SCF

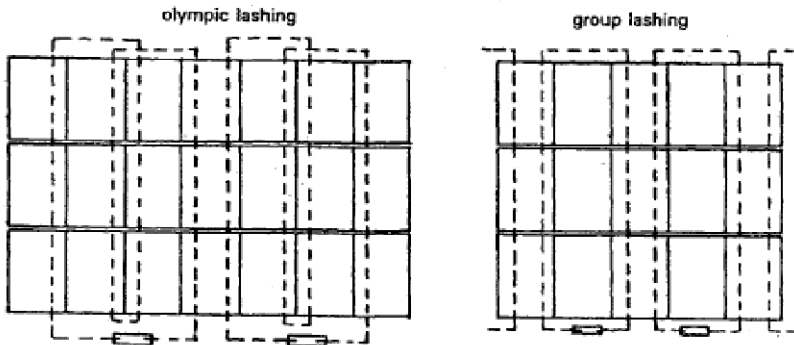
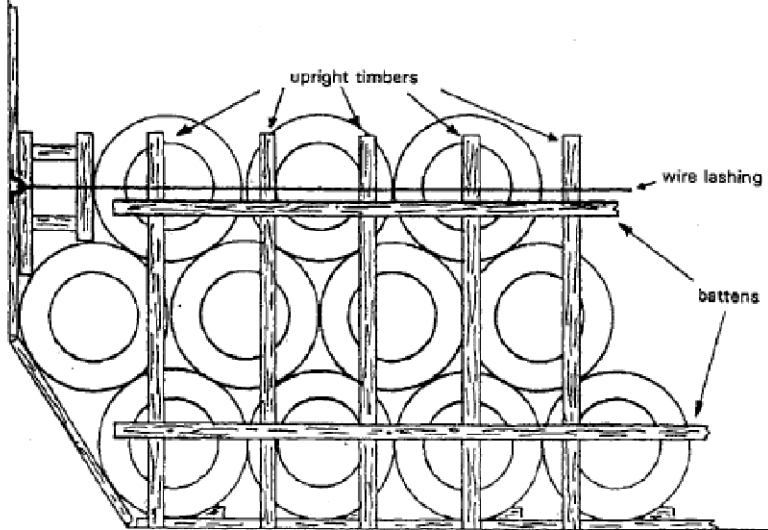
“List of Applied Rules & Standards and General Information on SCF” means the information listed hereunder. However, IP-Holder may divide such information into SCF document(s) or provide such information in SCF drawing(s). IP-Holder may also compile following information into one document as part of SCF Onboard:

- 1) Applied Rules and Standards
- 2) List of SCF Onboard Information: Documents and drawings that constitute SCF Onboard of the Ship need to be listed.
- 3) Table showing the storage location, IP Level and IP-Holder name for each of the SCF documents or drawings containing SCF Information.
- 4) Table showing the linkage between each of the documents and drawings containing SCF Information and the GBS Tier II functional requirements.
- 5) List of the documents and drawings kept at the Archive Center as SCF Supplement.
- 6) Location of the Archive Center and access information including contact points.
- 7) Procedures for updating SCF Information
- 8) The IS and SG including Intellectual property provisions.

Item 1-1: Applied Rules & Standards

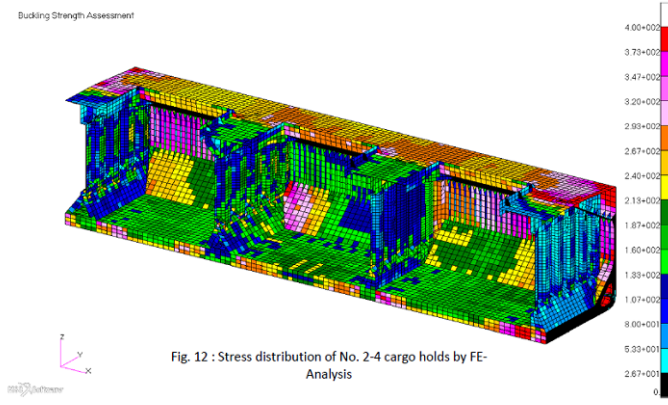
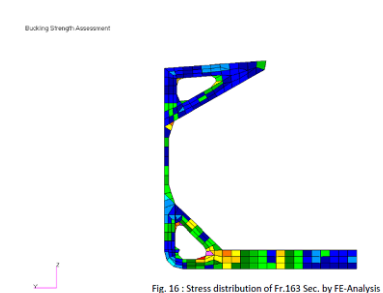
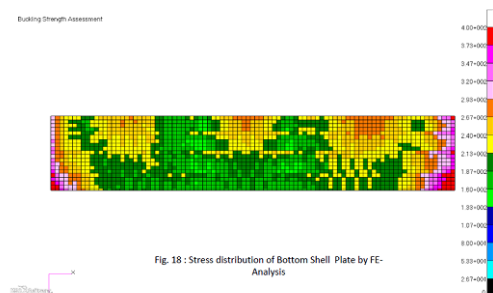
<p>Definition</p>	<ul style="list-style-type: none"> - This document shows the names and versions of applied rules and standards as required by GBS. - However, IP-Holder may divide such information and indicate in relevant SCF document(s) or drawing(s). 																																												
<p>Models & Examples (Information List)</p>	<table border="1"> <thead> <tr> <th colspan="2">GBS Tier II items</th> <th>SCF items</th> <th>Information</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Design life</td> <td>Design life</td> <td>A design life of 25 years is assumed for selecting ship design parameters. The specified design life is the nominal period that the ship is assumed to be exposed to operating conditions.</td> </tr> <tr> <td>2</td> <td>Environmental conditions</td> <td>Environmental conditions</td> <td> <p>Applied rules : Common Structural Rules for Bulk Carriers and Oil Tankers (DD MM YY)</p> <p>Assumed environmental condition :</p> <p>(North Atlantic wave environment) The rule requirements are based on a ship trading in the North Atlantic wave environment for its entire design life.</p> <p>(Wind and current) The effects of wind and current with regard to the strength of the structure are not considered.</p> <p>(Ice) The effects of ice and ice accretion are not taken into account by the Rules.</p> <p>(Design temperatures) The Rules assume that the structural assessment of hull strength members is valid for the following design temperatures:</p> <ul style="list-style-type: none"> · Lowest mean daily average temperature in air is -10° C. · Lowest mean daily average temperature in seawater is 0° C. <p>Ships intended to operate in areas with lower mean daily average temperature, e.g. regular service during winter seasons to Arctic or Antarctic waters are subject to the requirements as specified by the Society.</p> <p>In the above, the following definitions apply: Mean : Statistical mean over observation period (at least 20 years). 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Item 3-1: Operational restrictions due to structural strength

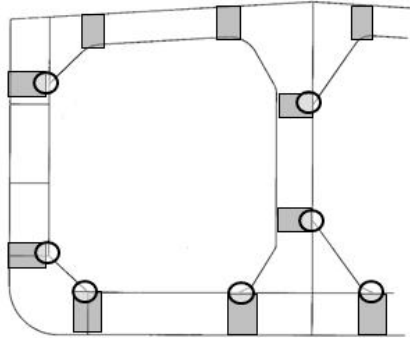
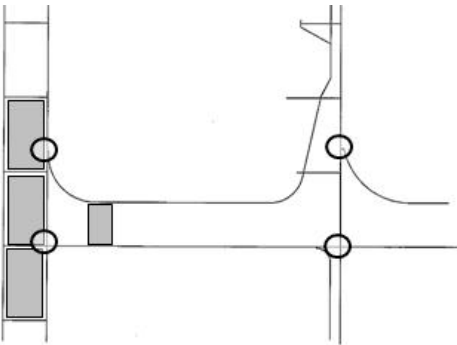
<p>Definition</p>	<p>Information on operational restrictions due to structural strength is covered by several documents, any such as loading manual, trim and stability booklet, loading instrument instruction manual and operation and maintenance manuals. The operation and maintenance manuals are for outfitting equipment for which operation is limited in terms of structural strength, and may include cargo securing manual (examples attached below), manuals for large outfitting equipment which loads to the hull construction, etc.</p>
<p>Models & Examples</p>	<div style="text-align: center;">  <p>olympic lashing group lashing</p> </div> <p>Figure 4 - Securing of top tier against fore-and-aft shifting (view from top)</p> <div style="text-align: center;">  <p>upright timbers wire lashing battens</p> </div> <p>Figure 5 - Securing of end row in top tier against fore-and-aft shifting</p> <p>Abstract from the Cargo Securing Manual is attached.</p>
<p>Remarks</p>	<ul style="list-style-type: none"> - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.

Item 3-2: Bulky output of strength calculation

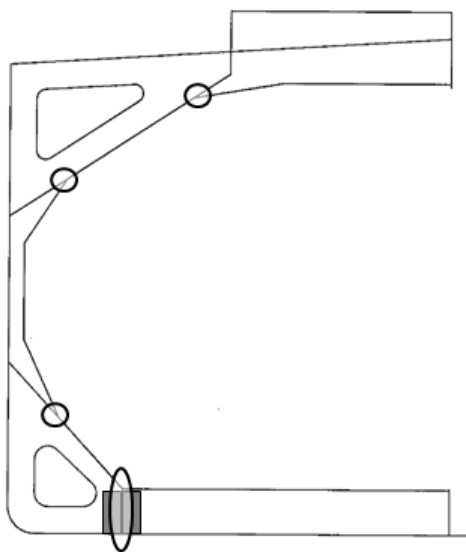
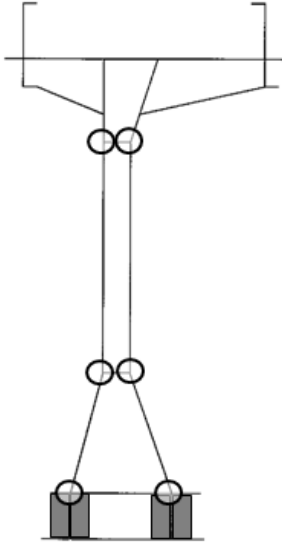
Definition	<p>A set of full detailed structural strength calculation required for approval of structural drawings and documents as required by the rules and prepared by a shipbuilder or a classification society. This is the generic terms of calculation for hull structure scantlings decided on the basis of their capacities for stress, buckling, deformation and any other factors stipulated in the rules (e.g. collapse, deformation, vibration, noise, corrosion, etc. if required) except for fatigue which is otherwise defined. This set of full detailed structural strength calculation may be divided into several documents. This set of full detailed structural strength calculation includes those approved by the classification society as an alternative method to the rules using proprietary techniques peculiar to each shipbuilder, instead of those specified by the rules. This set of full detailed structural strength calculation includes results and background information on the calculation procedures such as boundary conditions, load conditions, etc. as well as names and versions of computer hardware and software, and any other information related to direct strength analyses specified in the reporting requirements of Common Structural Rules for Bulk Carriers and Oil Tankers issued by IACS as follows.</p> <ul style="list-style-type: none"> <i>a) List of plans used including dates and versions.</i> <i>b) Detailed description of structural modelling including all modelling assumptions and any deviations in geometry and arrangement of structure compared with plans.</i> <i>c) Plots to demonstrate correct structural modelling and assigned properties.</i> <i>d) Details of material properties, plate thickness, beam properties used in the model.</i> <i>e) Details of boundary conditions.</i> <i>f) Details of all loading conditions reviewed with calculated hull girder shear force, bending moment and torsional moment distributions.</i> <i>g) Details of applied loads and confirmation that individual and total applied loads are correct.</i> <i>h) Plots and results that demonstrate the correct behaviour of the structural model under the applied loads.</i> <i>i) Summaries and plots of global and local deflections.</i> <i>j) Summaries and sufficient plots of stresses to demonstrate that the design criteria are not exceeded in any member.</i> <i>k) Plate and stiffened panel buckling analysis and results.</i> <i>l) Tabulated results showing compliance, or otherwise, with the design criteria.</i> <i>m) Proposed amendments to structure where necessary, including revised assessment of stresses, buckling and fatigue properties showing compliance with design criteria.</i> <i>n) Reference of the finite element computer program, including its version and date.</i> <p>This set of full detailed structural strength calculation also includes results and background information on the calculation procedures related to any strength calculations other than direct strength analyses, such as hull girder ultimate capacity calculation, residual strength calculation and hull girder section modulus calculation.</p>
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<p>Models & Examples</p>	<p style="text-align: center;">Results of Finite Element Analysis</p>  <p style="text-align: center;">Fig. 12 : Stress distribution of No. 2-4 cargo holds by FE-Analysis</p>  <p style="text-align: center;">Fig. 16 : Stress distribution of Fr.163 Sec. by FE-Analysis</p>  <p style="text-align: center;">Fig. 18 : Stress distribution of Bottom Shell Plate by FE-Analysis</p>
<p>Remarks</p>	<ul style="list-style-type: none"> - Full detailed structural strength calculation is available to the Shipowner during the construction period, with the Shipowner procedurally complying with the IP protection principles, similar to those stated in the Introduction and chapter 3 of the SCF IS (similar in the sense that the SCF IS descriptions are primarily for actions taking place after delivery of the ship). - It is standard to store such detailed structural strength calculation only at the Archive Center from the viewpoint of protection of Intellectual Property Rights. - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.

Item 3-3: Plan showing highly stressed areas prone to yielding and/or buckling

<p>Definition</p>	<p>This plan is used for proper and preventive inspections and surveys during construction and after the delivery of the Ship, and indicates each specific area for the Ship as "areas without margin more than a certain degree". In addition to the above, areas where general caution is advised may be included.</p>
<p>Models & Examples</p>	<p style="text-align: center;">Trans. Ring Section</p>  <p style="text-align: center;">Horizontal Stringer Plan</p>  <p style="text-align: center;">Figure: Typical plan showing highly stressed areas prone to yielding and/or buckling for Double Hull Oil Tanker</p> <p>(Note) Highly stressed areas prone to yielding and/or buckling are shown by the following marks: ○</p>
<p>Remarks</p>	<ul style="list-style-type: none"> - Background of this subject is the cautionary statement below in the Tier I Goal of GBS: "Ships shall be designed and constructed for a specified design life to be safe and environmentally friendly, when properly operated and maintained under the specified operating and environmental conditions" - "Specified design life is the nominal period that the ship is assumed to be exposed to operating and/or environmental conditions and/or the corrosive environment and is used for selecting appropriate ship design parameters. However, the ship's actual service life may be longer or shorter depending on the actual operating conditions and maintenance of the ship throughout its life cycle." - Acceptance criteria by classification society for yielding and buckling of all structural members are satisfied as a matter of course (see Item 3-2). - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.

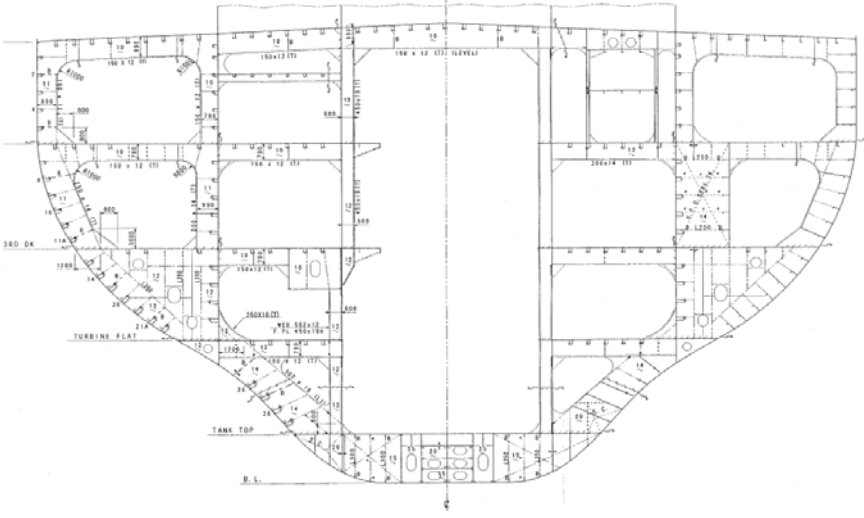
Item 3-3A: Plan showing highly stressed areas prone to yielding and/or buckling

<p>Definition</p>	<p>See Item 3-3</p>
<p>Models & Examples</p>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Trans. Ring Section</p>  </div> <div style="text-align: center;"> <p>Corrugate BHD Section</p>  </div> </div> <p style="text-align: center;">Figure: Typical plan showing highly stressed areas prone to yielding and/or buckling for Bulk Carrier</p> <p>(Note) Highly stressed areas prone to yielding and/or buckling are shown by the following marks: ○</p>
<p>Remarks</p>	<ul style="list-style-type: none"> - This shows examples of a bulk carrier in addition to Item 3-3. Conditions mentioned other than the figures and descriptions in Item 3-3A needs to be in accordance with the contents in Item 3-3. - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.

Item 3-4: Structural drawings

<p>Definition</p>	<p>1.A collection of drawings for structural members composing main hull 2.Including scantlings (as-built, net) of all structural members of the main hull 3.Including information on leg length of welds 4. Composed of following figures. (1) key construction plans See Item 3-5. (2) yard plans See Item 3-8. 5. Describing method for gross and net scantlings See Item 3-6. 6. Describing method for weld leg length See Item 3-8. 7. Explanation of abbreviated symbols Abbreviated symbols used for above SCF Information need to be explained in the drawings or in a separate drawing. Explanation of symbols not related to SCF Information (for instance, information provided by the shipbuilder for construction) is not necessary. 8. Examples of figures Key construction plans: See Item 3-5. Yard plans: See Item 3-8.</p>
<p>Models & Examples</p>	
<p>Remarks</p>	<p>- The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.</p>

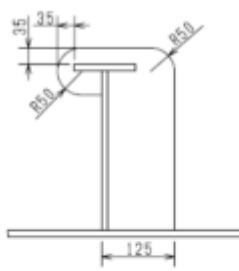
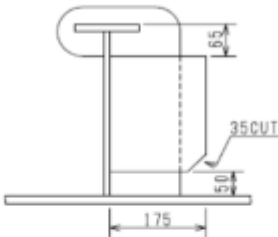
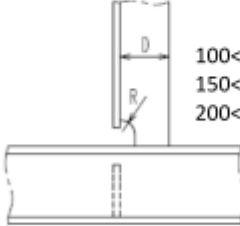
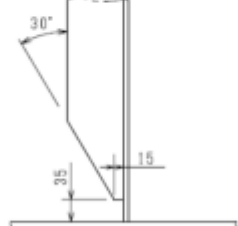
Item 3-5: Key construction plan

<p>Definition</p>	<p>A set of plans (drawings) showing shapes and gross scantlings of major structural members required mainly for classification approval, including superstructure construction.</p>
<p>Models & Examples</p>	<p>- Key construction plans are composed of the following set of drawings described in the explanatory note 2 of MSC.1/Circ.1343.</p> <ul style="list-style-type: none"> +midship section +main O.T. and W.T. transverse bulkheads +construction profiles/plans +shell expansions +forward and aft section in cargo tank (or hold) region +engine-room construction +forward construction +stern construction +superstructure (deck house) construction  <p style="text-align: center;">Example of a key construction plan</p>
<p>Remarks</p>	<ul style="list-style-type: none"> - Leg length of welds may be included in separate drawings. - Detailed structure may be included in separate drawings as "structural details". Refer to Item 3-6. - Hull form information should also be shown in cross section, plan and profile on a sufficient level meeting onboard needs. - Abbreviated symbols used for SCF Information need to be explained in the drawings or in a separate drawing. - Explanation of abbreviated symbols not related to SCF Information (for instance, information provided by the shipbuilder for construction) is not necessary. - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole

Item 3-6: Net scantlings of structural constituent parts

<p>Definition</p>	<p>Information showing net plate thickness or corrosion addition thickness in order to indicate renewal criteria specified by the classification requirements.</p> <p>Alternatively, information showing corrosion addition thickness for one side of each structural member in various compartment types of the Ship and method for calculating net plate thickness may be substituted for.</p>								
<p>Models & Examples</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>(1) Indication of net (renewal) scantlings</p> </div> <div style="text-align: center;"> <p>(2) Indication of corrosion addition (Special note when there is voluntary addition)</p> </div> </div> <div style="text-align: center; margin-top: 20px;"> <p>(3) Instruction for calculating procedure for net (renewal) scantlings</p> <div style="margin-left: 20px;"> $t_{net} = t_{drawing} - t_C$ $t_C = Roundup_{0.5}(t_{C1} + t_{C2}) + t_{reserve}$ $t_{reserve} = 0.5$ <p>Special note when there is voluntary addition</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Compartment</th> <th>t_{C1}, t_{C2}</th> </tr> </thead> <tbody> <tr> <td>C1</td> <td>1.2</td> </tr> <tr> <td>C2</td> <td>3.7</td> </tr> <tr> <td>⋮</td> <td>⋮</td> </tr> </tbody> </table> </div> </div> <p style="text-align: center;">Fig. Examples of plan showing "net scantlings of structural constituent parts"</p>	Compartment	t_{C1}, t_{C2}	C1	1.2	C2	3.7	⋮	⋮
Compartment	t_{C1}, t_{C2}								
C1	1.2								
C2	3.7								
⋮	⋮								
<p>Remarks</p>	<p>- The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.</p>								

Item 3-7: Structural details of typical members

<p>Definition</p>	<p>Information showing structural details required mainly for classification approval of Key construction plans at the time of new building, repair or conversion, including cutout (slot), collar plate, scallop, snip end, etc.</p> <p>This information may be included in a separate drawing showing structural details collectively and/or in each drawing including Yard plan.</p>
<p>Models & Examples</p>	<p>Structural details of typical members are shown in following figures.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>(1) Slot</p>  </div> <div style="text-align: center;"> <p>(2) Collar plate</p>  </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <p>(3) Scallop</p>  <p> $100 \leq D < 150 : R=25$ $150 \leq D < 200 : R=35$ $200 \leq D < 300 : R=50$ </p> </div> <div style="text-align: center;"> <p>(4) Snip end</p>  </div> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 20px; width: fit-content; margin-left: auto; margin-right: auto;"> <p>NOTE: These figures are only examples of a particular design. Details shall be different depending on each specific design.</p> </div>
<p>Remarks</p>	<ul style="list-style-type: none"> - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.

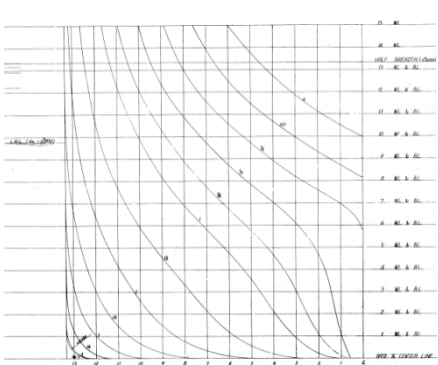
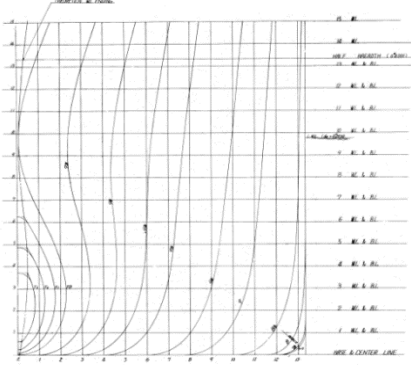
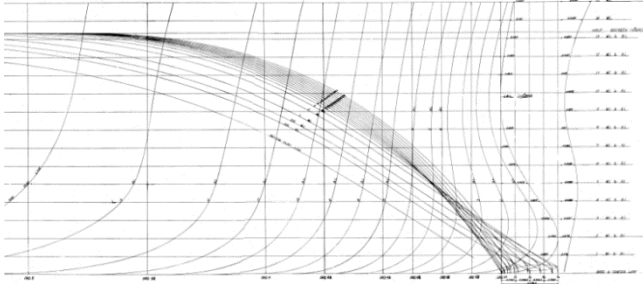
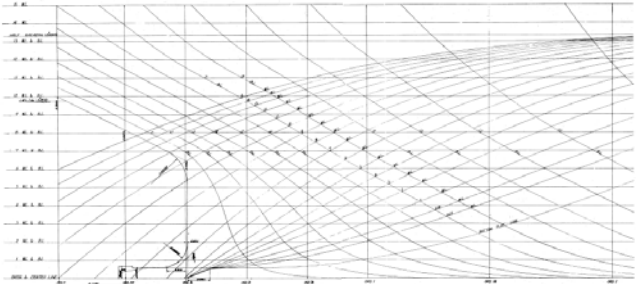
Item 3-8: Yard plans

<p>Definition</p>	<p>A set of plans (drawings) containing scantling information of all structural members of the Ship. The size, thickness, grade and continuity of structural members including weld property are shown.</p> <p>If the key construction plans include scantling information of all structural members, they can be substituted for yard plans, however, need to be kept as a part of SCF Onboard.</p>
<p>Models & Examples</p>	<p>Plans containing scantling information of all structural members of the Ship, including the following items :</p> <ul style="list-style-type: none"> ○ Superstructure (deck house) construction ○ Hatch Coaming ○ Poop ○ Forecastle Deck ○ Bulwark ○ Lower reinforcement for heavy outfitting equipment (the one required by classification rules) ○ Leg length of welds <ul style="list-style-type: none"> • Leg length of welds may be included in a separate drawing. • Structural details may be included in a separate drawing. See Item (3-6). • Abbreviated symbols used for SCF Information needs to be explained in the drawing or in a separate drawing. • Explanation of symbols not related to SCF Information (for instance, information provided by the shipbuilder for construction) is not necessary. • Bracket or other members in accordance with the shipbuilders' standards may be represented by marks of which details may be included in a separate drawing. <div data-bbox="507 1294 1356 1713" style="text-align: center;"> <p>The image shows a complex set of structural drawings for a ship's hull. It includes a central plan view of the hull structure with numerous lines representing structural members, labeled with alphanumeric codes such as L288, L275, L276, L277, L278, L279, L280, L281, L282, L283, L284, L285, L286, L287, L288, L289, L290, L291, L292, L293, L294, L295, L296, L297, L298, L299, L300, L301, L302, L303, L304, L305, L306, L307, L308, L309, L310, L311, L312, L313, L314, L315, L316, L317, L318, L319, L320, L321, L322, L323, L324, L325, L326, L327, L328, L329, L330, L331, L332, L333, L334, L335, L336, L337, L338, L339, L340, L341, L342, L343, L344, L345, L346, L347, L348, L349, L350, L351, L352, L353, L354, L355, L356, L357, L358, L359, L360, L361, L362, L363, L364, L365, L366, L367, L368, L369, L370, L371, L372, L373, L374, L375, L376, L377, L378, L379, L380, L381, L382, L383, L384, L385, L386, L387, L388, L389, L390, L391, L392, L393, L394, L395, L396, L397, L398, L399, L400, L401, L402, L403, L404, L405, L406, L407, L408, L409, L410, L411, L412, L413, L414, L415, L416, L417, L418, L419, L420, L421, L422, L423, L424, L425, L426, L427, L428, L429, L430, L431, L432, L433, L434, L435, L436, L437, L438, L439, L440, L441, L442, L443, L444, L445, L446, L447, L448, L449, L450, L451, L452, L453, L454, L455, L456, L457, L458, L459, L460, L461, L462, L463, L464, L465, L466, L467, L468, L469, L470, L471, L472, L473, L474, L475, L476, L477, L478, L479, L480, L481, L482, L483, L484, L485, L486, L487, L488, L489, L490, L491, L492, L493, L494, L495, L496, L497, L498, L499, L500, L501, L502, L503, L504, L505, L506, L507, L508, L509, L510, L511, L512, L513, L514, L515, L516, L517, L518, L519, L520, L521, L522, L523, L524, L525, L526, L527, L528, L529, L530, L531, L532, L533, L534, L535, L536, L537, L538, L539, L540, L541, L542, L543, L544, L545, L546, L547, L548, L549, L550, L551, L552, L553, L554, L555, L556, L557, L558, L559, L560, L561, L562, L563, L564, L565, L566, L567, L568, L569, L570, L571, L572, L573, L574, L575, L576, L577, L578, L579, L580, L581, L582, L583, L584, L585, L586, L587, L588, L589, L590, L591, L592, L593, L594, L595, L596, L597, L598, L599, L600, L601, L602, L603, L604, L605, L606, L607, L608, L609, L610, L611, L612, L613, L614, L615, L616, L617, L618, L619, L620, L621, L622, L623, L624, L625, L626, L627, L628, L629, L630, L631, L632, L633, L634, L635, L636, L637, L638, L639, L640, L641, L642, L643, L644, L645, L646, L647, L648, L649, L650, L651, L652, L653, L654, L655, L656, L657, L658, L659, L660, L661, L662, L663, L664, L665, L666, L667, L668, L669, L670, L671, L672, L673, L674, L675, L676, L677, L678, L679, L680, L681, L682, L683, L684, L685, L686, L687, L688, L689, L690, L691, L692, L693, L694, L695, L696, L697, L698, L699, L700, L701, L702, L703, L704, L705, L706, L707, L708, L709, L710, L711, L712, L713, L714, L715, L716, L717, L718, L719, L720, L721, L722, L723, L724, L725, L726, L727, L728, L729, L730, L731, L732, L733, L734, L735, L736, L737, L738, L739, L740, L741, L742, L743, L744, L745, L746, L747, L748, L749, L750, L751, L752, L753, L754, L755, L756, L757, L758, L759, L760, L761, L762, L763, L764, L765, L766, L767, L768, L769, L770, L771, L772, L773, L774, L775, L776, L777, L778, L779, L780, L781, L782, L783, L784, L785, L786, L787, L788, L789, L790, L791, L792, L793, L794, L795, L796, L797, L798, L799, L800, L801, L802, L803, L804, L805, L806, L807, L808, L809, L810, L811, L812, L813, L814, L815, L816, L817, L818, L819, L820, L821, L822, L823, L824, L825, L826, L827, L828, L829, L830, L831, L832, L833, L834, L835, L836, L837, L838, L839, L840, L841, L842, L843, L844, L845, L846, L847, L848, L849, L850, L851, L852, L853, L854, L855, L856, L857, L858, L859, L860, L861, L862, L863, L864, L865, L866, L867, L868, L869, L870, L871, L872, L873, L874, L875, L876, L877, L878, L879, L880, L881, L882, L883, L884, L885, L886, L887, L888, L889, L890, L891, L892, L893, L894, L895, L896, L897, L898, L899, L900, L901, L902, L903, L904, L905, L906, L907, L908, L909, L910, L911, L912, L913, L914, L915, L916, L917, L918, L919, L920, L921, L922, L923, L924, L925, L926, L927, L928, L929, L930, L931, L932, L933, L934, L935, L936, L937, L938, L939, L940, L941, L942, L943, L944, L945, L946, L947, L948, L949, L950, L951, L952, L953, L954, L955, L956, L957, L958, L959, L960, L961, L962, L963, L964, L965, L966, L967, L968, L969, L970, L971, L972, L973, L974, L975, L976, L977, L978, L979, L980, L981, L982, L983, L984, L985, L986, L987, L988, L989, L990, L991, L992, L993, L994, L995, L996, L997, L998, L999, L1000.</p> </div> <p style="text-align: center;">Example of Yard plans</p> <p>(Note) Yard plans may contain information not related to SCF Information, such as block names, ID of each member/piece, assembly sequence, etc.</p>
<p>Remarks</p>	<ul style="list-style-type: none"> - Yard plans also contains information on fabrication processes only required for initial construction. - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.

Item 3-9: Dangerous area plan

<p>Definition</p>	<p>Drawing showing dangerous areas of the Ship which are defined in IEC 60092-502 Electrical installation in ships Part 502 Tankers-Special features. Applicable to oil tankers only.</p>
<p>Models & Examples</p>	
<p>Remarks</p>	<p>- The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.</p>

Item 3-10: Master Lines plan

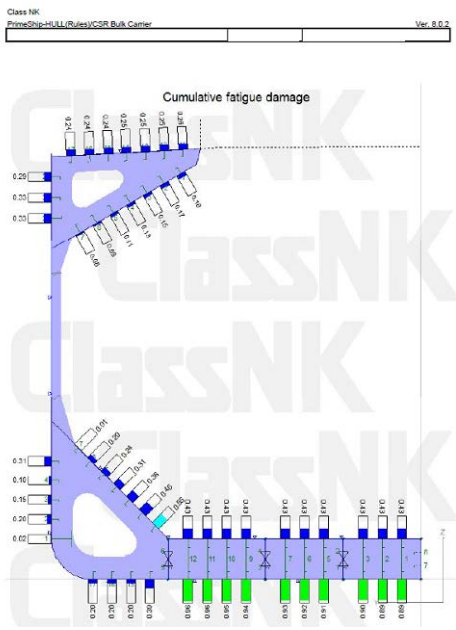
<p>Definition</p>	<p>A Master Lines plan is dedicated to show detailed hull form of the Ship entirely.</p>
<p>Models & Examples</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Body plan (Aft) (Station lines)</p> </div> <div style="text-align: center;">  <p>Body plan (Fore) (Station lines)</p> </div> </div> <div style="text-align: center; margin-top: 20px;">  <p>Forward part of half breadth and sheer plans (Water lines and buttock lines)</p> </div> <div style="text-align: center; margin-top: 20px;">  <p>Aft part of half breadth and sheer plans (Water lines and buttock lines)</p> </div> <p>(Note) Reproduced from the Report of the Shipping Research Association of Japan, the 154th Research Committee, (Research material No.235), March 1977, with the permission by Japan Ship Technology Research Association (JSTRA)</p>
<p>Remarks</p>	<ul style="list-style-type: none"> - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.

Item 3-11: Equivalent to Lines plan

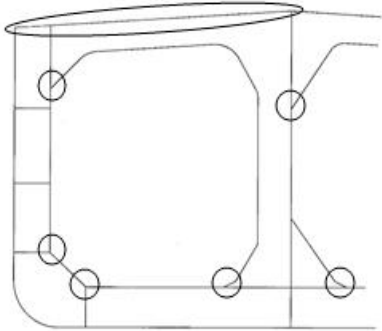
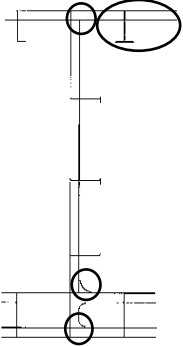
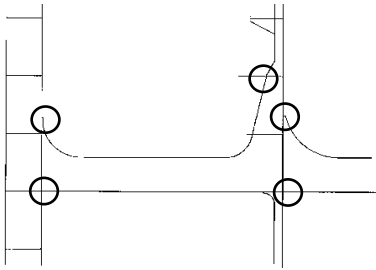
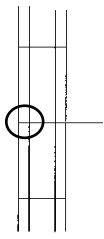
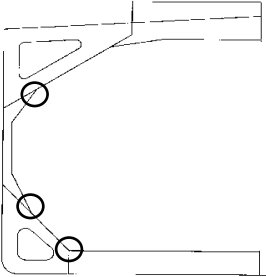
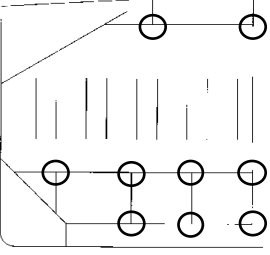
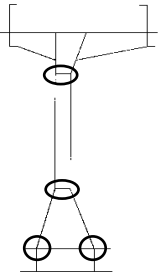
<p>Definition</p>	<p>"Equivalent to Lines plan" means graphical and/or numerical information of the geometry of the hull form needed for onboard repair of any part of the hull structure and/or trim & stability and longitudinal strength calculation needed routinely or in emergency situations onboard.</p> <p>It is provided by set of information of hull form to be indicated in Key construction plans and numerical data encrypted and stored on an onboard loading computer of the Ship.</p>
<p>Models & Examples</p>	<p style="text-align: center;">Hull Form Information in "Key construction plans"</p> <p style="text-align: center;">(Note) Hull form information should be shown in cross section, plan and profile.</p> <p style="text-align: center;">Utilization of numerical hull form data stored on onboard loading computer of the ship</p>
<p>Remarks</p>	<ul style="list-style-type: none"> - The above definition is covering notes 6 of "Annex to MSC.1/Circ.1343 (2 June 2010)" - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.

Item 4-1: Bulky output of fatigue life calculation

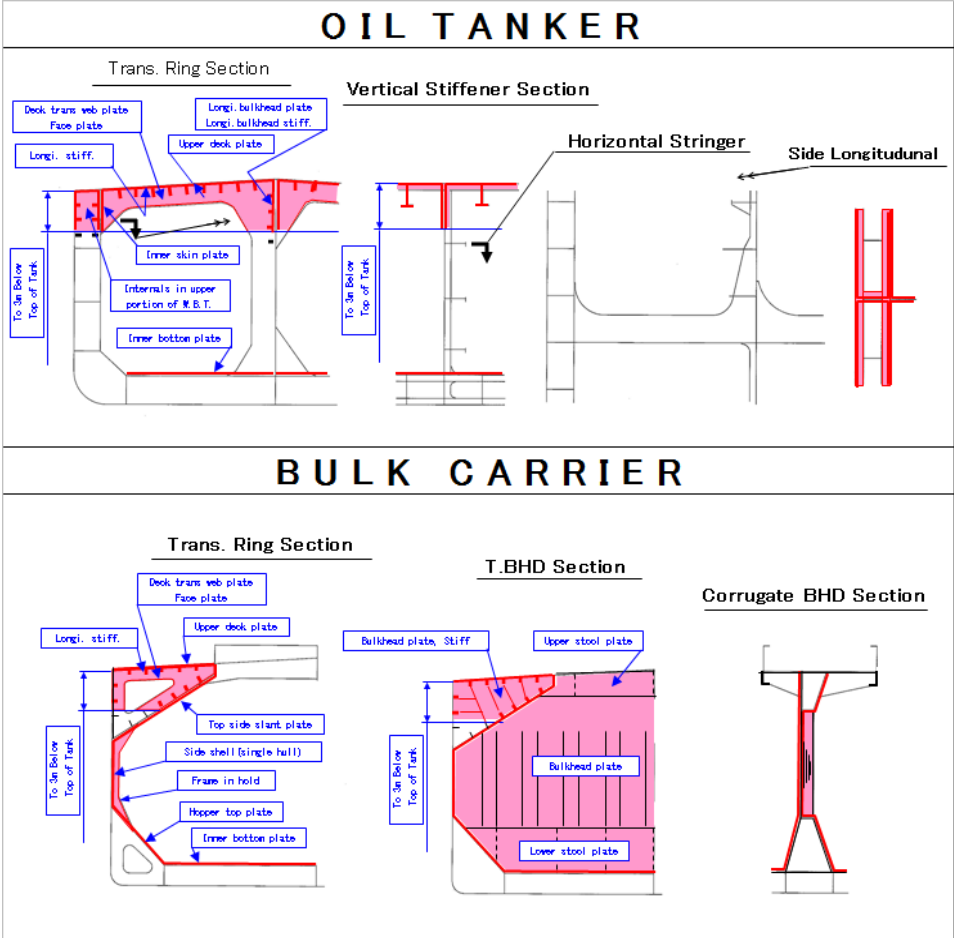
Definition	<p>A set of full detailed fatigue strength calculation required for approval of structural drawings and documents as required by the rules and prepared by a shipbuilder or a classification society. This set of full detailed fatigue life calculation may be divided into several documents. This set of full detailed fatigue life calculation includes those approved by the classification society as an alternative method to the rules using proprietary techniques peculiar to each shipbuilder, instead of those specified by the rules. This set of full detailed fatigue life calculation includes results and background information on the calculation procedures such as boundary conditions, load conditions, etc. as well as names and versions of computer hardware and software, and any other information related to direct fatigue life analyses specified in the reporting requirements of Common Structural Rules for Bulk Carriers and Oil Tankers issued by IACS as follows.</p> <p><i>a) List of plans used including dates and versions.</i></p> <p><i>b) Detailed description of structural modelling including all modelling assumptions and any deviations in geometry and arrangement of structure compared with plans.</i></p> <p><i>c) Plots to demonstrate correct structural modelling and assigned properties.</i></p> <p><i>d) Details of material properties, plate thickness, beam properties used in the model.</i></p> <p><i>e) Details of boundary conditions.</i></p> <p><i>f) Details of all loading conditions reviewed with calculated hull girder shear force, bending moment and torsional moment distributions.</i></p> <p><i>g) Details of applied loads and confirmation that individual and total applied loads are correct.</i></p> <p><i>h) Plots and results that demonstrate the correct behaviour of the structural model under the applied loads.</i></p> <p><i>i) Summaries and plots of global and local deflections.</i></p> <p><i>j) Summaries and sufficient plots of stresses to demonstrate that the design criteria are not exceeded in any member.</i></p> <p><i>k) Plate and stiffened panel buckling analysis and results.</i></p> <p><i>l) Tabulated results showing compliance, or otherwise, with the design criteria.</i></p> <p><i>m) Proposed amendments to structure where necessary, including revised assessment of stresses, buckling and fatigue properties showing compliance with design criteria.</i></p> <p><i>n) Reference of the finite element computer program, including its version and date.</i></p> <p>This set of full detailed fatigue life calculation also includes results and background information on the calculation procedures related to any fatigue life calculations other than direct fatigue life analyses, such as simplified fatigue life calculations.</p>
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<p>Models & Examples</p>	<p style="text-align: center;">Results of Fatigue Life Calculation</p>  <p>Advanced and highly confidential design and construction methods and detailed calculations to prove their safety which are required to adopt structure design and construction methods different from classification rules include the following, for instance:</p> <ul style="list-style-type: none"> + Soft configuration of snapped end of primary member end brackets for improved fatigue strength; + End configuration of web stiffener connected to longitudinal for improved fatigue strength; and + Special slot configuration (including collar plate) for improved fatigue strength
<p>Remarks</p>	<ul style="list-style-type: none"> - Full detailed fatigue life calculation is available to the Shipowner during the construction period, with the Shipowner procedurally complying with the IP protection principles, similar to those stated in the introduction and chapter 3 of the SCF IS (similar in the sense that the SCF IS descriptions are primarily for actions taking place after delivery of the ship). - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.

Item 4-2: Plan showing areas prone to fatigue

<p>Definition</p>	<p>This plan is the reference material used for proper and preventive inspections and surveys during construction and after the delivery of the Ship, and indicates each specific area for the Ship as "areas without margin more than a certain degree" In addition to the above, areas where general caution is advised may be included.</p>
<p>Models & Examples</p>	<p style="text-align: center;"><u>D/H Oil Tanker</u></p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><u>Trans. Ring Section</u></p>  </div> <div style="text-align: center;"> <p><u>Vertical Stiffener Section</u></p>  </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <p><u>Horizontal Stringer Plan</u></p>  </div> <div style="text-align: center;"> <p><u>Side Longitudinal Plan</u></p>  </div> </div> <p style="text-align: center; margin-top: 20px;"><u>Bulk Carrier</u></p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><u>Trans. Ring Section</u></p>  </div> <div style="text-align: center;"> <p><u>T.BHD. Section</u></p>  </div> <div style="text-align: center;"> <p><u>Corrugate BHD Section</u></p>  </div> </div> <p>(Note) Areas prone to fatigue are shown by the following marks: ○</p>
<p>Remarks</p>	<ul style="list-style-type: none"> - Background of this item is described in Item 3-3. - Acceptance criteria by classification society for fatigue are satisfied as a matter of course (see Item 4-1). - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.

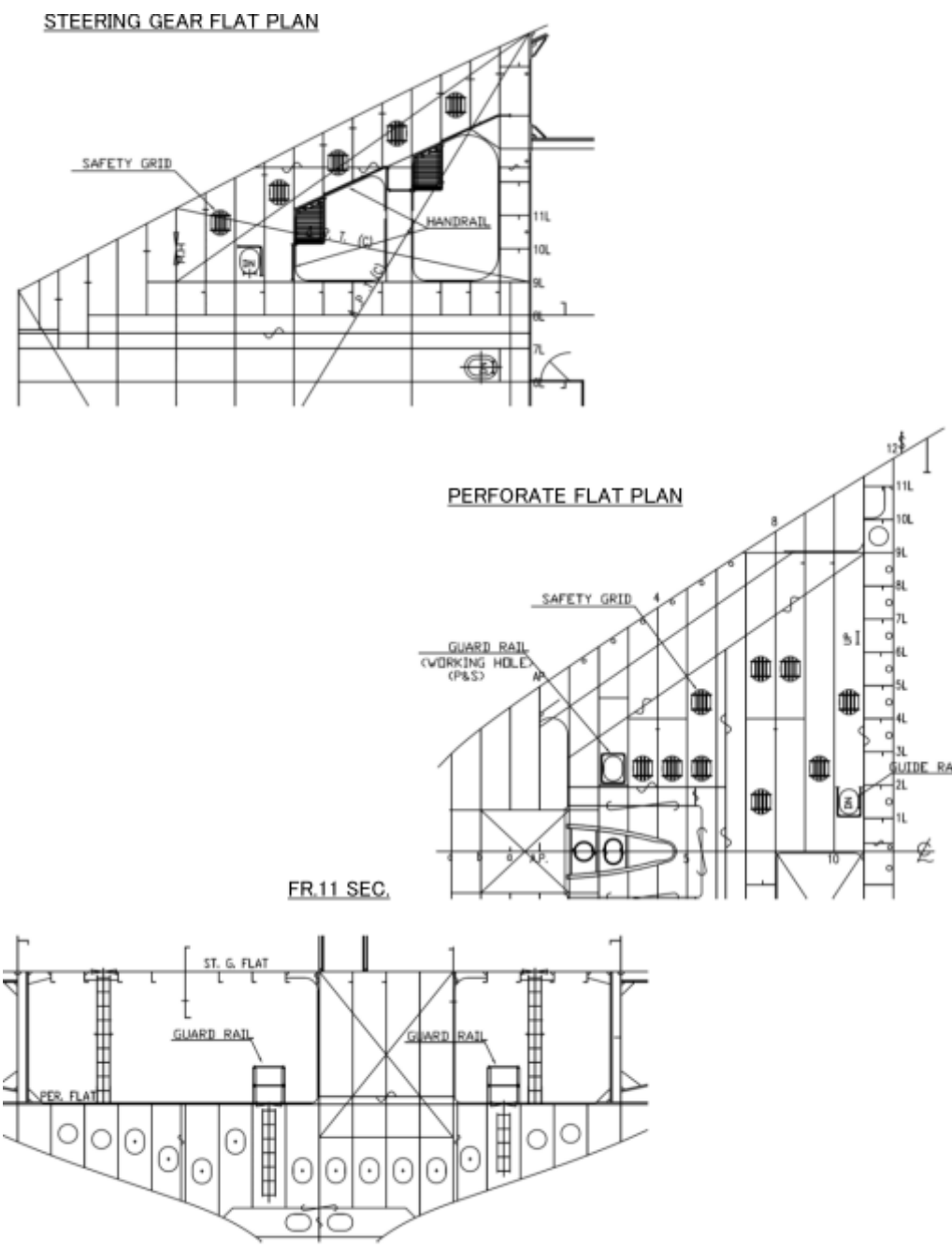
Item 6-1: Plan showing areas prone to excessive corrosion

<p>Definition</p>	<p>This plan is used for proper and preventive inspections and surveys after the delivery of the Ship, and indicates the areas where relatively severe corrosion is expected more than other areas.</p>
<p>Models & Examples</p>	<p>Structural members with larger quantity of corrosion additions according to CSR, such as $t_c=4.0$ in the following figure, namely</p> <ul style="list-style-type: none"> - Steel members within 3 meters below the upper deck - Inner skin - Inner bottom  <p>OIL TANKER</p> <p>Trans. Ring Section: Deck trans web plate, Face plate, Longi. stiff., Longi. bulkhead plate, Longi. bulkhead stiff., Upper deck plate, Inner skin plate, Internals in upper portion of M.B.T., Inner bottom plate.</p> <p>Vertical Stiffener Section: Horizontal Stringer, Side Longitudinal.</p> <p>BULK CARRIER</p> <p>Trans. Ring Section: Deck trans web plate, Face plate, Longi. stiff., Upper deck plate, Top side start plate, Side shell (single hull), Frame in hold, Hopper top plate, Inner bottom plate.</p> <p>T.BHD Section: Bulkhead plate, Stiff, Upper stool plate, Bulkhead plate, Lower stool plate.</p> <p>Corrugate BHD Section: Bulkhead plate.</p>
<p>Remarks</p>	<ul style="list-style-type: none"> - Background of this item is described in Item 3-3. - "Corrosion" of GBS is a general term including mechanical wear. Therefore, members including inner bottom plating with adjacent structures up to a certain height covered by GRAB Notation of BC need to be covered. - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.

Item 8-1: Structural details of hatch covers, door and other closings integral with the shell and bulkhead

<p>Definition</p>	<p>Scope of coverage is of the doors and other closings covered by the damage stability definition. Refer to the respective drawings of manufacturers for detailed structure.</p>
<p>Models & Examples</p>	<p style="text-align: center;">Hatch Cover Maker Drawings</p>
<p>Remarks</p>	<p>- The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.</p>

Item 13-1: Means of access to other structure-integrated deep tanks

<p>Definition</p>	<p>Arrangement of means of access in other structure integrated deep tanks and large void spaces, except for those in the hold (tank) part, including F.P.T. which are covered by PMA regulation.</p>
<p>Models & Examples</p>	 <p>The figure consists of three technical drawings illustrating access means in a ship's structure:</p> <ul style="list-style-type: none"> STEERING GEAR FLAT PLAN: A plan view of a steering gear flat showing a safety grid, handrails, and various structural elements. Labels include 'SAFETY GRID', 'HANDRAIL', and deck levels 7L, 8L, 9L, 10L, 11L. PERFORATE FLAT PLAN: A plan view of a perforate flat showing safety grids, guard rails (working holes), and guide rails. Labels include 'SAFETY GRID', 'GUARD RAIL (WORKING HOLE (P&S))', 'GUIDE RAIL', and deck levels 1L through 13L. FR.11 SEC.: A section view showing the arrangement of guard rails and access points between the steering gear flat and the perforate flat. <p>Fig. Example of plan showing "Means of access to other structure"</p>
<p>Remarks</p>	<ul style="list-style-type: none"> - The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.

Item 15-1: List of materials

<p>Definition</p>	<p>List of materials used for the hull structure.</p>																							
<p>Models & Examples</p>	<p style="text-align: center;">Hull structure material list</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 50%;">Kind of Material</th> </tr> </thead> <tbody> <tr> <td rowspan="10" style="text-align: center; vertical-align: middle;">Main Hull</td> <td style="text-align: center;">A</td> </tr> <tr> <td style="text-align: center;">AH315</td> </tr> <tr> <td style="text-align: center;">DH315</td> </tr> <tr> <td style="text-align: center;">EH315</td> </tr> <tr> <td style="text-align: center;">AH355</td> </tr> <tr> <td style="text-align: center;">DH355</td> </tr> <tr> <td style="text-align: center;">EH355</td> </tr> <tr> <td style="text-align: center;">EH390</td> </tr> <tr> <td style="text-align: center;">SS400</td> </tr> <tr> <td style="text-align: center;">STPG370</td> </tr> <tr> <td rowspan="8" style="text-align: center; vertical-align: middle;">Rudder & Stern Frame</td> <td style="text-align: center;">Forged Steel ($\sigma_y=***N/mm^2$)</td> </tr> <tr> <td style="text-align: center;">Cast Steel ($\sigma_y=***N/mm^2$)</td> </tr> <tr> <td style="text-align: center;">SUS304</td> </tr> <tr> <td style="text-align: center;">SUS316</td> </tr> <tr> <td style="text-align: center;">SCS14</td> </tr> <tr> <td style="text-align: center;">SS400</td> </tr> <tr> <td style="text-align: center;">S20C</td> </tr> <tr> <td style="text-align: center;">Resin (STARLITE #*****)</td> </tr> <tr> <td style="text-align: center;">Rubber (Perbunan N)</td> </tr> </tbody> </table>		Kind of Material	Main Hull	A	AH315	DH315	EH315	AH355	DH355	EH355	EH390	SS400	STPG370	Rudder & Stern Frame	Forged Steel ($\sigma_y=***N/mm^2$)	Cast Steel ($\sigma_y=***N/mm^2$)	SUS304	SUS316	SCS14	SS400	S20C	Resin (STARLITE #*****)	Rubber (Perbunan N)
	Kind of Material																							
Main Hull	A																							
	AH315																							
	DH315																							
	EH315																							
	AH355																							
	DH355																							
	EH355																							
	EH390																							
	SS400																							
	STPG370																							
Rudder & Stern Frame	Forged Steel ($\sigma_y=***N/mm^2$)																							
	Cast Steel ($\sigma_y=***N/mm^2$)																							
	SUS304																							
	SUS316																							
	SCS14																							
	SS400																							
	S20C																							
	Resin (STARLITE #*****)																							
Rubber (Perbunan N)																								
<p>Remarks</p>	<p>- The models and examples attached in this document are only for a specific design case, and different set of documents are acceptable as long as they include necessary information conforming to SCF requirements as a whole.</p>																							

Interim Supplementary Guidance of the SCF Interim Industry Standard

7 March 2016

**Approved for
submission to MSC 96**

Introduction

The SCF Interim Industry Standard (SCF IS) provides guidance procedures for implementing the Ship Construction File (SCF), which is defined in four IMO documents – MSC.287 (87) (adopted at MSC 87 on 20 May 2010), MSC.290 (87) (adopted at MSC 87 on 21 May 2010), MSC.296 (87) (adopted at MSC 87 on 20 May 2010) and MSC.1/Circ.1343 (circulated on 2 June 2010) and supplement those IMO documents based on MSC87/5/4 (endorsed by MSC87).

The SCF IS also provides guidance on general principles with regard to legitimate use of SCF Information.

To facilitate practical use of the SCF IS from the administrative and operational point of view, while according with the SCF IS, this Interim Supplementary Guidance (SCF SG) of the SCF IS provides users with more detailed guidance. These details aim to further clarify the SCF IS, with concrete explanations, models and examples. This SCF SG is therefore not intended to alter, go beyond or supersede the contents of the SCF IS.

The Archive Center is tasked with the principal functions of storage, safekeeping and managing access to highly IP sensitive SCF Information, as well as backing up of ordinarily IP sensitive SCF Information. It is anticipated that the Shipowner, IP-Holder and Archive Center will operate under certain contractual provisions that will enable the SCF IS to be implemented and this SCF SG will provide guidance to assist the parties where use of an Archive Center is agreed. Interim Guidance on Systems for Management of SCF in a digital Format (SCF GS) are provided separately so that SCF archive service systems can be developed in a consistent manner and system & procedural compatibility can be enhanced.

This SCF SG of the SCF IS was developed in consultation with a cross industry group of the following industry organizations:

- CANSI (China Association of the National Shipbuilding Industry);
- CESA (Community of European Shipyards' Associations);
- KOSHIPA (Korea Offshore & Shipbuilding Association);
- SAJ (The Shipbuilders' Association of Japan);
- SCA (Shipbuilders Council of America);
- BIMCO;
- ICS (International Chamber of Shipping);
- INTERCARGO (The International Association of Dry Cargo Shipowners);
- INTERTANKO (The International Association of Independent Tanker Owners);
- OCIMF (Oil Companies International Marine Forum); and
- IACS (International Association of Classification Societies)

1. Definitions

The definitions of terms used in this SCF SG of the SCF IS are given below. Those definitions that are defined and appear in the SCF Interim Industry Standard (SCF IS) are repeated identically in this SCF SG unless specifically mentioned to the contrary. (The definitions which also appear in the SCF IS are shaded in gray for user's convenience)

- (a) **Access Right Holders** are persons and institutions that have a right to access SCF Information, e.g. Shipowner, Seafarer, Ship operator (*Shipowner Agent*) and their Sub-contractors for the safe operation of the Ship, and/or due to legitimate obligation authorities such as representatives of flag States, coastal States and their Recognized Organizations for Port State Controls or marine accident investigations, etc. as well as registered classification societies for surveys.
- (b) **Archive Center** means a facility tasked with storage, safekeeping and managing access to SCF Information that it holds.
- (c) **Electronic Media Onboard** means the electronic media used to store a digital version of the SCF Onboard when Shipowner chooses digital documents, which is provided in accordance with **Annex-2**.
- (d) **Intellectual Property (IP)** refers to creations of the mind which is divided into industrial property and copyright. In the field of shipbuilding, IP covers but is not limited to: proprietary technical descriptions, calculations, test results, plans, drawings, designs, models, specifications, reports and any other knowledge assets, registered and unregistered, which are instrumental for competitiveness and company strategies of the IP holder.
- (e) **IP-Holder** means an entity which possesses the rights related to the intellectual property (IP) in the Ship's SCF Information. The entity may cover the Shipbuilder, Shiprepairer (the Shipbuilder and the Shiprepairer may be collectively called Shipyard to be engaged in newbuilding, repair and conversion), Equipment maker, Shipowner, etc.

If more than one entity possesses the intellectual property rights in, or right to provide access to the Ship's SCF Information when the Ship is built or converted, IP-Holder may, in principle, be a single entity which organizes and represents the others. Alternatively, there may be more than one IP-Holder for the Ship.

- (f) **Periodical Renewal** means an IT procedure intended to assure the security, consistency and accuracy of information stored in a digital format.
- (g) **Relevant Provisions** means the provisions of SCF IS, this SCF SG or any other associated provisions and any other agreement made among the Shipowner, IP-Holder and Archive Center.
- (h) **Rules** means not only the rules by Classification Societies but also other rules and regulations that are sufficient to demonstrate the Ship meets that the GBS functional requirements concerning the hull structure.
- (i) **Safe Operation Purpose** means a purpose related to safe operations, maintenance, inspections and repair (structural work to maintain the structural strength assumed at the time of construction, such as restoring damaged parts to their original state and reinforcing parts with insufficient strength, and major or minor structural conversion work such as those involved in model change of machinery) of the Ship, and responses in emergency situations of the Ship.
- (j) **SCF Information** means a collection of information composed of the SCF Onboard and SCF

Supplement Ashore. It is a general term given to a collection of information that is sufficient to demonstrate that the Ship meets the GBS functional requirements concerning the hull structure and is needed for the safe operation of the Ship, maintenance, inspections and repair as well as in emergency situations. In the SCF IS and this SCF SG, the term “SCF Information” means the SCF Onboard and/or SCF Supplement Ashore, irrespective of whether it refers to partial or the whole, or to the original or a copy.

- (k) *SCF Onboard* means SCF Information that is required to be kept onboard the Ship at all times.
- (l) *SCF Supplement Ashore* means SCF Information that is highly IP sensitive, not absolutely necessary and relevant to be kept onboard the Ship at all times, and not required to be onboard by any mandatory requirement by any flag State. Usually, it means information that is contained in the documents or drawings listed in 2.1 and kept only at the Archive Center.
- (m) *Seafarer* means individuals who are employed and work regularly onboard the Ship.
- (n) *Seafarer Representative* means a Seafarer (of the Ship in question) who serves as the representative in communication with the Sub-contractor, the IP-Holder, the Archive Center and other parties concerned.
- (o) *Ship* means an oil tanker of 150 meters in length and above or a bulk carrier of 150 meters in length and above, constructed with single deck, top-side tanks and hopper side tanks in cargo spaces, excluding ore carrier and combination carrier, that fulfills one of the following criteria:
 - i. The building contract is placed on or after July 1, 2016.
 - ii. In the absence of a building contract, the keels are laid or are at a similar stage of construction on or after July 1, 2017; or
 - iii. The delivery is on or after July 1, 2020.
- (p) *Ship's Operational Lifetime* means the period from the delivery of the Ship until removal of the Ship's registration due to recycling or total loss.
- (q) *Shipowner* means an entity that has entered into possession of a Ship through acts like a purchase or a transfer and engaged in safekeeping and updating of SCF Information during the Ship's Operational Lifetime in accordance with amendments to the SOLAS Convention Chapter II-1 Part A-1. These tasks in relation to management of SCF Information, may also be tasked to Ship operators, management companies etc. (*refer also to the definition of "Shipowner Agent"*).
- (r) *Shipowner Representative* means an individual who is regularly employed by the Shipowner and serves as the representative in communication with the Sub-contractor, the IP-Holder, the Archive Center and other parties concerned.
- (s) *Shipowner Agent* means an entity that is tasked by the Shipowner to carry out, onboard the Ship or at the Shipowner's Office Ashore, with management of SCF Information. Shipowner Agent's tasks include procedures for access and keeping SCF Information, disclosure of SCF Information to Seafarers, the Sub-contractor and other Access Right Holders, and requirements to view and use SCF Information to the Archive Center. Shipowner Agent needs to be an entity that is tasked by the Shipowner with the Ship's daily operations. Shipbuilders for repair/conversion, for instance, cannot be a Shipowner Agent. Shipowner Agents may cover managing and operating companies of the Ship, if any (as appropriate).
- (t) *Shipowner Agent Representative* means an individual who is regularly employed by the Shipowner Agent and serves as the representative in communication with the Sub-contractor,

the IP-Holder, the Archive Center and other parties concerned.

- (u) *Shipowner's Office Ashore* means the office ashore of the Shipowner or the Shipowner Agent that is registered as the place to access and keep copy of the SCF Onboard.
- (v) *Sub-contractor* means an entity (such as a shipbuilder for repair/conversion) that is contracted, directly or indirectly, by the Shipowner or the Shipowner Agent.
- (w) *Third Party* means those other than the IP-Holder, Shipowner, Seafarer, Ship operator and Ship management company (*last two: Shipowner Agent*). Engineering houses and/or consultants employed by the Shipowner, Seafarer, Ship operator or Ship management company (*last two: Shipowner Agent*) form a part of Third Party.
- (x) *Update* means promptly updating SCF Information when any modification is made to the Ship that requires a change or addition of SCF Information at any major event, including, but not limited to, substantial repair, conversion or any modification to the ship structure, or the updated portion of SCF Information.

2. SCF Information

2.1 Composition of SCF Information and Scope of Application

- As in the SCF IS, SCF Information is a set of information composed of the SCF Onboard and SCF Supplement Ashore.
- **Figure 1** of the SCF IS shows the “SCF Onboard – SCF Supplement Ashore” model.
- In the case of conventional bulk carriers and oil tankers, the SCF Supplement Ashore is normally composed of the following four documents or drawings:
 - 1) full “Detailed strength calculation” document;
 - 2) full “Detailed fatigue life calculation” document;
 - 3) “Yard plans” drawings; and
 - 4) Master “Lines plan” drawing
- Definitions of the above four documents or drawings are shown in **2.2** of the SCF IS.
- The full Detailed strength and fatigue life calculation documents are available to the Shipowner during the design and construction period of the Ship, and can after the delivery of the Ship be provided to the Shipowner from the Archive Center for internal use subject to the requirement not to disclose to any Third Party unless specifically agreed by the IP-Holders. (refer to the SCF IS, Annex, Item 3-2 and Item 4-1)

2.2 Definitions of SCF Information

- The list of information to be included in the SCF is provided in **Table 1** of the SCF IS.
- **Annex: Practical Guidelines for SCF Information Definition** to the SCF IS is provided to provide clarification as to the content of drawings etc. by providing detailed definitions, illustrated models and examples for reference.
- A sample linkage between SCF documents or drawings and GBS Tier II (functional requirements) is shown in **Table 1**.

2.3 IP Levels

- The following two IP Levels are defined for SCF documents and drawings considering IP sensitivity, operational needs and standard access procedures as shown in **Table 2** of the SCF IS.
 - 1) Ordinary IP Level
 - 2) High IP Level

2.4 Format of SCF Onboard kept onboard the Ship and at the Shipowner's Office Ashore

- For the sake of reducing complexity in the implementation of the SCF IS and facilitating long-term storage without deterioration or loss of information throughout the Ship's Operational Lifetime, consideration should be given to SCF Information being stored and used in a digital format as described in the paragraphs below.
- Considering the practical needs on board, where digital format is selected, the following SCF Onboard documents and drawings, as marked by (*1) or (*2) in **Table 2** of the SCF IS, will be provided in a printed format in addition to that in a digital format for normal operation:
 - 1) Capacity plan;
 - 2) Loading manual;
 - 3) Trim & stability booklet;
 - 4) Loading instrument instruction manual;
 - 5) Operation and maintenance manual;
 - 6) General arrangement;
 - 7) Damage control plan
 - 8) Docking plan; and
 - 9) Dangerous area plan
- SCF documents and drawings that are required onboard by the flag State in a paper format will be provided in a printed form.
- Alternatively, a complete set of the SCF Onboard may be provided in a printed format if so chosen by the Shipowner. In case that the Shipowner's choice is to have the complete set of the SCF Onboard in a printed format, the Archive Center's role will normally focus on the services related to the SCF Supplement Ashore and back up of the SCF Onboard, unless provided otherwise in the contract provisions expected to be established between the Shipowner, IP-Holder and the Archive Center to implement the SCF IS.
- Where a digital format is selected, in addition, a complete set of printed SCF Onboard, if so requested by the Shipowner, may be provided onboard the Ship by the IP-Holder specifically and exclusively for emergency use as described in **Annex-1 (see A1.4(2))**. In addition, in the case of an emergency situation, the electronic system provides a means to override the authentication procedures normally required for access to the SCF Onboard in digital format.
- Management of SCF Information is shown in **Annex-1**.

2.5 Format of SCF Information kept at the Archive Center

- A complete set of the SCF Onboard and SCF Supplement Ashore, both in a digital format, will be kept at the Archive Center.

Table 1: Linkage of SCF Documents with Functional Requirements in Tier II of GBS

Document name used in Industry Standard	Linkage between Functional Requirements in Tier II of GBS																		
	1	2	3				4	5	6		7	8	9	10	11	12	13	14	15
			.1	.2	.3	.4			.1	.2									
Capacity plan			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>													
Loading manual			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>											
Trim & stability booklet			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>													
Loading instrument instruction manual			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>													
Operation and maintenance manual			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>		
Full Detailed strength calculation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Areas prone to yielding and/or buckling			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>									<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Calculation of hull girder section modulus			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>													
General arrangement			<input checked="" type="checkbox"/>																
Midship section			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Main O.T. and W.T. transverse bulkheads			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Construction profiles / plans			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Shell expansions			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Forward and aft sections in cargo tank (or hold) region			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Engine-room construction			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Forward construction			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Stern construction			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Rudder and rudder stock			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>											<input checked="" type="checkbox"/>		
Superstructure (deck house) construction			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Stern frame			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>											<input checked="" type="checkbox"/>		
Structural details			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>		
Yard plans			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Dangerous area plan			<input checked="" type="checkbox"/>														<input checked="" type="checkbox"/>		
Master Lines plan			<input checked="" type="checkbox"/>														<input checked="" type="checkbox"/>		
Equivalent to Lines plan			<input checked="" type="checkbox"/>														<input checked="" type="checkbox"/>		
Full Detailed fatigue life calculation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>									<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Areas prone to fatigue							<input checked="" type="checkbox"/>									<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Coating technical file required by PSPC									<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Areas prone to excessive corrosion									<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Structural details of hatch covers, doors and other closings integral with the shell and bulkheads			<input checked="" type="checkbox"/>								<input checked="" type="checkbox"/>								
Inspection schedule for ship structures																	<input checked="" type="checkbox"/>		
Copies of certificates of forgings and castings welded into the hull																	<input checked="" type="checkbox"/>		

Tank testing plan including details of the test requirements																<input checked="" type="checkbox"/>			
Non- destructive testing plan																<input checked="" type="checkbox"/>			
Operation and maintenance manuals (e.g., hatch covers and doors)																	<input checked="" type="checkbox"/>		
Detail of bottom plug																	<input checked="" type="checkbox"/>		
Docking Plan																	<input checked="" type="checkbox"/>		
Details for in-water survey																	<input checked="" type="checkbox"/>		
Means of access to other structure-integrated deep tanks and large void spaces																<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Ship structure access manual																<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Damage control plan				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	
Hatch cover Maker drawings												<input checked="" type="checkbox"/>							
Inspection Guidance in Operation																		<input checked="" type="checkbox"/>	
Block inspection list																<input checked="" type="checkbox"/>			
List of materials																			<input checked="" type="checkbox"/>
List of Applied Rules & Standards and General Information on SCF	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

(Note)

means potential linkage.

3. Shipowner Items

3.1 Access and Safekeeping of SCF Information

- Shipowner securely keeps SCF Information throughout the Ship's Operational Lifetime in order to ensure safe operations of the Ship in accordance with **Annex-1**.
- The Shipowner:
 - 1) Keeps the SCF Onboard on board the Ship and tasks the Archive Center to keep a copy of the SCF Onboard in a digital format;
 - 2) Keeps a copy of the SCF Onboard at the Shipowner's Office Ashore; and
 - 3) Tasks the Archive Center to keep the SCF Supplement Ashore in a digital format.
- Shipowner, for Safe Operation Purposes, can access SCF Information on board at any time and permit other Access Right Holders to access SCF Information through the Shipowner in accordance with **Annex-1** under the following principles stipulated in the SCF IS.
 - The IP of SCF Information including confidentiality needs to be protected; and
 - Appropriate procedures to manage access to and secure keeping of SCF Information need to be implemented by the Shipowner as a part of the Quality Management Systems.
- Models and examples of safekeeping and access procedures for the SCF Onboard are shown in **Annex-4**. The Shipowner could develop and apply equivalent safekeeping and access procedures for the SCF Onboard in line with the principles and procedures of the SCF IS.

3.2 Update of SCF Information

- Following any significant event including, for example, substantial repair, conversion or any major modification to the Ship structure that requires Update of the SCF Information, Updating needs to be done in a timely manner.
- In such cases, SCF Information before the Update needs to be continuously retained without destruction or modification along with the updated SCF Information for traceability purposes.
- The Shipowner may task the Archive Center to carry out procedures for Update of SCF Information held by the Archive Center in a digital format. Procedures for Update of SCF Information in a printed format kept on board and in the Shipowner's office, if any, also need to be implemented.
- Updated SCF Information in a digital format that supersedes or affects the accuracy of the original SCF Information needs to be stored at the same Archive Center that keeps the Ship's original SCF Information.

3.3 Delegating tasks to Shipowner Agent

- The Shipowner may engage the Shipowner Agent to carry out tasks related to the management of SCF Information, such as safekeeping and managing access to the SCF Onboard, sending requirements to print out and/or view SCF Information to the Archive Center and managing disclosure of SCF Information. The Shipowner needs to ensure that the Shipowner Agent complies with the Relevant Provisions.

3.4 Provision of Information Concerning Ship, Shipowner Representative and Shipowner Agent Representative etc.

- The Shipowner should communicate necessary information to the Archive Center for implementation of the Relevant Provisions, such as contact information of Shipowner Representative and Shipowner Agent Representative or any changes, and to allow the Archive Center to provide this information to the IP-Holder. The exchange of communications is anticipated to be carried out through the Shipowner Representative or the Shipowner Agent Representative.
- The Shipowner preserves, onboard the Ship, the archival records of Update of SCF Information, and any changes concerning the Ship such as the Ship's name, flag State, the Class, and Purpose of Ship according to its safekeeping and access procedures. The Shipowner also notifies the Archive Center of their changes in a timely manner.
- In the event the Ship's name changes, the original names written in SCF Information may not need to be physically changed as the IMO number of the Ship can be used to identify the Ship throughout the Ship's Operational Lifetime.

3.5 Use of SCF Information for Purposes Other than Safe Operation

Purpose of the Ship

- In principle, irrespective of information format, the Shipowner should agree in advance with the IP-Holder, on use of SCF Information, i.e., for the Shipowner's internal use (either in office or onboard), or for disclosure to a Third Party, if the purpose of such use is other than Safe Operation Purpose of the Ship.
- However, where IP-Holder rights are not affected, the Shipowner may use internally the SCF Onboard for normal operation of the Ship other than Safe Operation Purpose without an agreement in advance, in line with Relevant Provisions.
- The Shipowner may, for example, also require detailed local hull form information in way of the proposed location for retrofitting energy saving device, which is contained in Master Lines plan, of Archive Center in accordance with the procedures shown in **Table A1.1**.

3.6 Notification and Treatment of SCF Information upon Change of Shipowner or Shipowner Agent

- The Shipowner, when the ownership of the Ship changes with a transfer of the ownership or other reasons, notifies the Archive Center of the event to facilitate contact between the new Shipowner and the Archive Center. The outgoing Shipowner promptly transfers SCF Information it possesses or controls to the new Shipowner and destroys all copies of such SCF Information, if any, or returns them to the Archive Center.
- The new Shipowner, promptly upon receipt of any new Electronic Media Onboard from the Archive Center, returns the old Electronic Media Onboard received from the previous Shipowner to the Archive Center.

- The Shipowner, when it changes its Shipowner Agent, ensures prompt transfer of SCF Information it possesses or controls to the new Shipowner Agent and destroys all copies of such SCF Information, if any, or returns them to the Archive Center.

3.7 Notification and Treatment of SCF Information upon End of Ship's Operational Lifetime

- When a Ship comes to the end of its Operational Lifetime, the Archive Center is notified of that event by the Shipowner. SCF Information and copies should either be destroyed in a controlled manner or returned to the Archive Center.

3.8 Change of Archive Center

- The Archive Center can be changed subject to agreement between the Shipowner and the IP-Holder.

4. IP-Holders Items

4.1 Preparation and Provision of SCF Information

- The Shipyard prepares and compiles SCF Information at new-building and when involved in significant events such as substantial repair, conversion or modification to the Ship structure that requires Update of SCF Information of the Ship.
- The Shipyard provides the Shipowner and the Archive Center with SCF Information as described below and in **Annex-2**. As to SCF Information in a digital format, the Shipyard may task the Archive Center to carry out procedural tasks 1) and 2). The Shipyard provides:
 - 1) The SCF Onboard to the Ship;
 - 2) Copy of the SCF Onboard to the Shipowner's Office Ashore; and
 - 3) Copy of the SCF Onboard and SCF Supplement Ashore, both in a digital format, to the Archive Center

4.2 Notification of Necessary Information for Management of SCF Information

- The IP-Holder communicates the information necessary, such as IP-Holder's name, contact information to the Archive Center by the time of the delivery of the Ship or after any changes to it, and arranges for the Archive Center to make this information available to the Shipowner.

4.3 Access by IP-Holder

- IP-Holder may obtain SCF Information, of which IPR is possessed by the IP-Holder, from the Archive Center if there are justifications including e.g. loss of SCF documents/drawings, etc. Such access will be recorded by the Archive Center.

4.4 Change of IP-Holder

- The IP-Holder may transfer its intellectual property rights concerning SCF Information of the Ship to another party subject to assurance that the Relevant Provisions are applied to the said party. The IP-Holder notifies the Archive Center of the new IP-Holder's name, address and other contact information.

4.5 Appointment of Archive Center

- The Archive Center appointed by the IP-Holder from accredited candidates at the time of new-building of the Ship needs to be agreed with the Shipowner.

4.6 Change of Archive Center

- The Archive Center involved in the management of SCF Information of the Ship may be changed to a new one subject to a mutual agreement by the IP-Holder and Shipowner. In case the change of Archive Center takes place, the Archive Center(s), regardless of whether they are the outgoing or incoming center, both should ensure ready access at all times during their period of responsibility.

5. Archive Center Items

5.1 Provision of Archive Service

- The Archive Center securely stores the SCF Supplement Ashore and copy of the SCF Onboard, both in a digital format provided by IP-Holders, and carries out procedures for their Update. The Archive Center needs to be operated to provide archive service at least in accordance with **Annex-3**.
- The Archive Center does not engage in examining and judging whether SCF Information fulfills the GBS requirements.
- If the Shipowner selects the SCF Information in a printed format the Archive Center should provide the SCF documents where such SCF document/drawing needs to be restored following loss or damage, through the archive printout service.

5.2 Safekeeping and Access Management of SCF Information

- The Archive Center manages the security of the IPR relating to SCF Information, and facilitates appropriate procedures so that the Shipowner and other Access Right Holders can effectively manage SCF Information in accordance with the Relevant Provisions.
- The Archive Center provides the SCF Supplement Ashore information when required by Shipowner in accordance with **Annex-1** after checking whether:
 - 1) The party that required access to SCF Information is a registered Access Right Holder;
 - 2) The access is either made for the Ship's Safe Operation Purposes or otherwise so agreed by the IP-Holder; and
 - 3) Required SCF Information is necessary and sufficient for the purpose.
- The Archive Center takes appropriate precautions to minimize the likelihood that SCF Information it has provided is not inappropriately used for purposes other than those in the access agreement between the IP-Holder and the Shipowner.
- The Archive Center takes appropriate measures to ensure that the SCF Supplement Information it has provided is either destroyed or returned by the agreed time.

5.3 Update of SCF Information

- The Archive Center may be tasked to carry out procedures for Update of SCF Information as appropriate. In such a case, the Archive Center needs to receive the Updated parts of SCF Information and update simultaneously all SCF Information in a digital format kept at various locations. When an update is made, the Archive Center does not replace any of its stored SCF Information with the Updated version but retains the original SCF Information together with the Updated Information.

5.4 Periodical Renewal of digital SCF information

- Password or equivalent for access to SCF Information in a digital format should be periodically renewed.
- Where an Archive Center provides Periodical Renewal of the SCF Onboard Information in a digital format in accordance with **Annex-2**, by providing a new Electronic Media Onboard to the Shipowner or by updating via the Internet prior to the expiration of the access period, or where new Electronic Media Onboard is provided, appropriate measures are to be taken to ensure that any copies of information that is out of date or no longer required are promptly returned to the Archive Center.

5.5 Notification of Necessary Information for Management of SCF Information

- The Archive Center communicates necessary information for implementation of the Relevant Provisions, such as the names, and other contact information of the IP-Holder, Shipowner and the Shipowner Agent to the Shipowner or IP-Holder as requested.

5.6 Audit

- In accordance with **Annex-4**, the Archive Center operates its services in accordance with relevant ISO standards concerning Information Security Management Systems (ISMS) and will need relevant ISO certification.
- The Archive Center needs to be inspected periodically whether the Archive Center complies with the Relevant Provisions by ISO Certification body.

5.7 Confidentiality

- The Archive Center limits the use of SCF Information to its employees or subcontractor engaging in managing access to, and safekeeping of SCF Information. The Archive Center keeps SCF Information confidential and does not use it for any purpose other than the purposes described in the Relevant Provisions.

5.8 Data Storage and Information Management

- The Archive Center may outsource the data storage tasks to a data handling professionals, such as IT companies, subject to agreement by the IP-Holder and the Shipowner.
- The Archive Center provides the necessary information to the Shipowner and the IP-Holder if it changes sub-contractor for outsourcing data storage tasks.
- The Archive Center may not outsource its information management tasks. Information management includes, for example, preparing the appropriate scope of partial information that will satisfy the requirements of the Access Holder.

5.9 Prohibition against Assignment and Transfer without Permission

- The Archive Center does not assign or transfer the rights and obligations related to the management and safekeeping of SCF Information to another party without obtaining advance agreement from the IP-Holder and the Shipowner.

5.10 Change of Archive Center

- When the Archive Center is changed, the previous Archive Center transfers all SCF Information and all records it keeps to the new Archive Center.

5.11 Change of Shipowner or Shipowner Agent

- The Archive Center, upon change of the Shipowner or the Shipowner Agent, makes appropriate notifications so that the previous Shipowner or the previous Shipowner Agent transfers to the new Shipowner or the new Shipowner Agent, or destroys or returns, all SCF Information it keeps.
- The Archive Center, upon change of the Shipowner, promptly provides any new Electronic Media required Onboard to the new Shipowner as tasked by the new Shipowner, and ensures the return of any relevant Electronic Media from the previous Shipowner.
- The SCF Onboard provided in a printed format to the Ship may be transferred directly from the previous Shipowner to the new Shipowner.
- The Archive Center facilitates the provision of any relevant SCF Information to the new Shipowner or the new Shipowner Agent who manages SCF Information in accordance with the access and safekeeping principles provided in the SCF IS.

5.12 Procedures to be Followed upon End of Ship's Operational Lifetime

- The Archive Center, if notified by the Shipowner of the end of Ship's Operational Lifetime, makes appropriate notifications so that all SCF Information either is destroyed by Shipowner or returned to the Archive Center.
- In such a case, the Archive Center needs to either return the all SCF Information to the IP-Holder or destroy it upon consultation with the IP-Holder.

6. Revision of Interim Supplementary Guidance

- In the event that the IMO requirement is amended, the SCF IS is revised or a relevant issue concerning IT progress or compliance with the SCF IS and/or this SCF SG arises and a proposal is made by any member of the cross industry group (see 1. Introduction for its definition) for the revision of this SCF SG, the cross industry group will consider the need for a revision to this SCF SG. Following agreement of such a need, this SCF SG may be revised as appropriate.
- In addition it is anticipated that in the absence of significant issues arising, a general review will be initiated by the cross industry group within 24 months from 1 July 2016 to take account of experience gained in the initial use of this SCF SG.

References

- [1] International Maritime Organization: Res. MSC 290(87) SOLAS II-1/3-10: Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (2010)
- [2] International Maritime Organization: Res. MSC 287(87): Adoption of the International Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (2010)
- [3] International Maritime Organization: Res. MSC 296(87): Adoption of the Guidelines for Verification of Conformity with Goal-based Ship Construction Standards for Bulk Carriers and Oil Tankers (2010)
- [4] International Maritime Organization: MSC.1/Circ.1343: Guidelines for the Information to be included in a Ship Construction File (2010)
- [5] International Maritime Organization: MSC/Circ.1135: As-built Construction Drawings to be Maintained on Board the Ship and Ashore, 15 December (2004)

Annex-1 Access and Safekeeping Management

A1.1 Access to and Safekeeping of SCF Information: General Principles

The Shipowner:

- 1) Manages SCF Information to keep it secure throughout the Ship's Operational Lifetime taking into account the need for related IP rights including confidentiality to be duly protected;
- 2) Has "Unconditional access" to SCF Information. "Unconditional access" means that the IP-Holder may neither withhold Shipowner/Shipowner Agent from keeping and/or accessing SCF Information for Safe Operation Purposes and other purposes as stipulated in the second and third bullet points in 3.5 nor charge fees based on intellectual property rights;
- 3) Implements its safekeeping and access procedures for the SCF Onboard so that Seafarers follow them as appropriate. A model of those procedures is described in **Annex-4**;
- 4) Manages other Access Right Holders so that they follow its safekeeping and access procedures for SCF Information as appropriate. Establishes and implements procedures to prevent disclosure of SCF Information to unauthorized persons ;
- 5) When the purpose of the access to SCF Information is accomplished, for example, SCF Information in a digital format is made unavailable by ending the session, printouts of the digital information should be destroyed and printed documents and drawings of SCF Information need to be returned to the designated storage location as appropriate; and
- 6) Establishes and implements procedures to mitigate the risk of activities such as reverse engineering, recomposition or inappropriate reproduction of SCF Information.

A1.2 General guidance on Access to SCF Information of each IP Level

- a) **Ordinary IP Level information:** the company document management system as a part of the Quality Management Systems should include procedures for access management (e.g., recording of name of document or drawing, access date, name of accessing person/organization etc.)
- b) **High IP Level information:** is stored at the Archive Center ashore. When the Shipowner initiates the procedures for access to the information, the Archive Center, in accordance with the specific procedures, provides the required information after obtaining confirmation by the IP-Holder. After the period of use, High IP Level information is to be returned to the Archive Center.

A1.3 Access, Safekeeping and Collection of SCF Onboard Kept Onboard and at the Shipowner's Office Ashore Provided in Digital Documents: Details

- For the SCF Onboard and copy of the SCF Onboard at each Shipowner's Office Ashore stored in Electronic Media Onboard, appropriate measures such as secure storage in a locked cabinet need to be taken to prevent them going missing. For these documents and drawings provided in a digital format, a model of safekeeping and access procedures is shown in **Table A4.1**.
- The Shipowner could develop and apply equivalent safekeeping and access procedures for the SCF Onboard in line with the principles and procedures of the SCF IS.

A1.4 Access, Safekeeping and Return of SCF Onboard kept Onboard and at the Shipowner's Office Ashore Provided in Printed Documents: Details

(1) SCF Onboard and copy of SCF Onboard at the Shipowner's Office Ashore

- The printed documents and drawings of the SCF Onboard and the copy of the SCF Onboard at each Shipowners' Office Ashore need to be kept in a location that can be secured. An inventory of the printed documents and drawings should be taken by the Shipowner at appropriate intervals to confirm that all the volumes are in place. If any of the volumes are found missing, the Shipowner should promptly notify the Archive Center of the name of the missing document or drawing and the reason, if known, so that replacement of the missing document or drawing in a printed format is provided without delay.
- For the SCF Onboard kept onboard the Ship and the copy of the SCF Onboard kept at the Shipowner's Office Ashore provided in a printed format, a model of safekeeping and access procedures is shown in **Table A4.2**.
- The Shipowner could develop and apply equivalent safekeeping and access procedures for the SCF Onboard in line with the principles and procedures of the SCF IS.

(2) Complete set of SCF Onboard for emergency use

- Where the Shipowner and the Shipyard agree that the SCF will be provided electronically, if so requested by the Shipowner, a complete set of printed documents and drawings of the SCF Onboard may also be provided for emergency use. Such sets of printed documents should be stored in a secure location onboard allowing administrative procedures in case of emergency to be fulfilled in an appropriate manner. In case of emergency, relevant printed documents and drawings may be accessed by, for example, breaking the seal of their packaging. When purpose of emergency use is accomplished, relevant printed documents and drawings are restored to the package and sealed up again retaining a record of their use.
- In the event that the ownership of the Ship changes, the Shipowner in conjunction with the Archive Center should ensure that all SCF relevant documents, drawings and other information are transferred to the new owner. It being understood that the SCF Onboard will need to:
 - A. remain available on board as mandated by IMO; and
 - B. Continue to be managed under appropriate procedures taking into account the need for protection of IPR.

A1.5 Access, Safekeeping and Return of SCF Supplement Ashore kept at Archive Center: Details

- Access, safekeeping and return of the SCF Supplement Ashore kept at Archive Center should be carried out in accordance with the procedures shown in **Table A1.1**.

Table A1.1: Specific Procedures to be arranged by Archive Center for Access to and Return of the SCF Supplement Ashore

Accessing Person	Procedures	Security Measures to be Displayed or Embedded in Printed out Documents:
Only Shipowner Representative ¹⁾	<ol style="list-style-type: none"> (1) Shipowner Representative submits a requirement for access to the Archive Center stating the reason²⁾ for the requirement, the scope of information needed for Safe Operation Purposes or other purposes as stipulated in the third bullet point in 3.5, and the period of use. (2) Archive Center notifies the Shipyard and/or equipment makers of the requirement to obtain permission for access after confirming that all information necessary for the requirement has been provided³⁾. (3) Archive Center prints out the scope of information necessary and sufficient for the purpose of the requirement for access and sends out the documents/drawings within a specified period while notifying the Shipowner Representative and the IP-Holder⁴⁾. If there is compelling needs for more speedy delivery of the information, the information may be sent out in a digital format⁵⁾ via the Internet. (4) After the end of the use period, Shipowner Representative promptly returns the printed documents and/or drawings to the Archive Center. In the case documents and/or drawings were sent out in a digital format, Shipowner Representative promptly deletes them and destroy their printouts, if any. (5) Archive Center destroys the printed out documents and/or drawings after confirming that they are original and complete. (6) Archive Center keeps access records throughout the Ship's lifetime. 	<ol style="list-style-type: none"> (1) A message indicating that unpermitted access or copying is prohibited (2) Information facilitative for deterring unpermitted access or copying (such as the name of the Shipowner Representative, the name of the organization to which the Shipowner Representative belongs, the date and time of printout, etc.) (3) Measures facilitative for tracking unpermitted copying

Remarks:

- 1) Other Access Right Holders may access through the Shipowner Representative.
- 2) Sensitive information in detail is not necessary. Archive Center and Shipyard and/or equipment makers should not divulge the reason.
- 3) If the Archive Center receives no confirmation from the Shipyard and/or equipment makers about whether to accept access within a predetermined period from the submission of the requirement, the Archive Center may accept access on behalf of the Shipyard and/or equipment makers. The standard predetermined period is 48 hours.
- 4) The standard predetermined period from the submission of the requirement is 48 hours. If the Archive Center believes that a request for information is not from an authorised person or is for a purpose outside the agreed scope, then the Archive Center must bring this to the attention of the Shipowner and the IP-holder within 24 hours.
- 5) The SCF Supplement information in a digital format is provided with exclusive password and the period of validity in line with the period of use stated.

Annex-2 Preparation of SCF and Provision for Shipowner

A2.1 Upon Delivery of New Ship

(1) SCF Onboard

- The Shipyard functioning as coordinator of all IP-Holders prepares and compiles the SCF Onboard. In that case, the Shipyard needs to provide the Shipowner with two sets of the SCF Onboard which are to be kept on board the Ship, in an agreed format (such as pdf files) on behalf of all the IP-Holders.
- Digital documents need to be provided with means to prevent inappropriate copying and stored in the Electronic Media Onboard provided with copy prevention measures. An electronic access expiration date may be updated by Periodical Renewal so that there is not any discontinuity of the services due to expiry.
- Digital documents need to be accompanied by appropriate viewing software (such as a dedicated browser) necessary for viewing the encrypted information in the Electronic Media Onboard. The documents may also be provided via the Internet if the equivalent level of security is provided and the Shipowner and the IP-Holder have so agreed.
- Printed documents and drawings, as referred to in 2.4 and A1.4, are accompanied by security measures, such as an embedded warning, against inappropriate copying or use of the subject document or drawing.
- Where digital documents are used, the Ship will be expected to have general information-processing equipment (such as personal computers, operating systems, printers and network environment) compatible for SCF browsing. The provision of an Uninterruptible Power Supply (UPS) should also be considered.

(2) A copy of SCF Onboard at Shipowner's Office Ashore

- The same preparations and provisions as in A2.1 (1) will apply. Shipowner and Shipowner Agents, if any, are provided with two sets of the SCF Onboard each.

(3) A full copy of SCF Onboard kept at Archive Center

- The IP-Holder typically a shipyard, compiles a full copy of the SCF Onboard in a digital format (such as pdf files) and provides it to the Archive Center.

(4) SCF Supplement Ashore kept at Archive Center

- The IP-Holder, typically a shipyard, prepares and compiles the SCF Supplement Ashore in a digital format (such as pdf files) and provides it to the Archive Center.

A2.2 Upon Periodical Renewal and Update of Digital Data in Service

(1) Periodical Renewal for Access Security Management of SCF Onboard in a Digital Format

a) For SCF Onboard Kept Onboard the Ship:

- Where an Archive Center completes a Periodical Renewal, the Archive Center provides two sets of the Electronic Media storing the SCF Onboard, as standard in a digital format (such as pdf files) with an updated expiration date for access, to the Shipowner before the expiration of the access period of the SCF Onboard currently kept onboard the Ship.
- In that case, the Shipowner needs to replace the existing Electronic Media Onboard with the new one and return the existing Electronic Media Onboard to the Archive Center.
- The Periodical Renewal mentioned above may be carried out via the Internet if the equivalent level of security is provided and the Shipowner and the IP-Holder has agreed.
- Periodical Renewal of expiration date for access to the SCF Onboard Information in a digital format may be discontinued after elapse of ten years from the delivery of the Ship.

b) For Copy of the SCF Onboard Kept at Shipowner's Office Ashore:

- The same preparation and provisions as in A2.2 (1) a) will apply.

(2) Update (as required by substantial repair, conversion or any modification to the ship structure, etc.)

- The same preparations and provisions as in A2.1 will apply.
- Upon updating, any existing SCF documents and drawings concerned need to be retained for traceability purposes and differential information in additional SCF documents and drawings needs to be provided in an incremental manner.
- Upon updating of SCF Onboard in a digital format, the Shipowner returns the existing Electronic Media Onboard to the Archive Center.
- The Update of digital SCF documents may be carried out digitally via the Internet if appropriate procedures have been agreed.
- The procedures for Update of SCF Documents in a printed format, as referred to in 2.4, also need to be managed and in particular, the Updated SCF Documents, need to be provided to the Archive Center in a digital format. Updating of digital files due to system changes, such as standard operating system software will be undertaken by the Archive Center, in consultation with the Shipowner to ensure that all relevant digital information is available in a consistent format that is compatible with the Ship's systems.

Annex-3 Operational Requirements for Archive Center

- Archive Center is operated in accordance with the following principles.

A3.1 Basic Operational Requirements

- 1) Archive Center takes a nonpartisan stance.
- 2) Archive Center provides services 24 hours and 365 days in accordance with a predetermined operational plan in order to respond to any global and urgent requirement to provide SCF Information kept at the Archive Center in a digital format.
- 3) Archive Center provides services at least in English.
- 4) Archive Center makes and keeps backup copies of the digital documents it keeps.
- 5) Archive Center provides the information on necessary hardware and software, and on relevant software updates/upgrades, so that accessing individual may access SCF Information in a digital format as provided by the Archive Center. The details of the related information processing equipment used are expected to be discussed between the Archive Center and the Shipowner so that the equipment will satisfy the general requirements of the Archive Center, and the Shipowner.
- 6) Archive Center provides dedicated tools such as browser software to view SCF Information.
- 7) Archive Center may, on a voluntary and optional basis, provide SCF Information kept at the Archive Center to the Access Right Holders on demand via Internet services if the equivalent level of security is provided and the IP-Holders have agreed. In doing so, Archive Center requires the Access Right Holders to comply with **Annex-1**.
- 8) A minimum suspension of services at the Archive Center for less than one day as standard for system maintenance and other inevitable reasons is permitted. In such a case, Archive Center makes best possible efforts to notify potential users of the planned service suspension in advance.
- 9) The Archive Center will have means to print documents so that SCF Information in a printed format may be provided to the Shipowner in cases where it is necessary to replace a lost or damaged document and/or drawings.

A3.2 Information Security Policy

- Archive Center provides its services in accordance with the latest versions of relevant ISO standards concerning Information Security Management Systems (ISMS) and needs to obtain relevant ISO certification through inspection by an independent ISMS certification organization accredited by a recognised accreditation institution:
 - 1) ISO/IEC 27001: Information technology –Security techniques – Information security management systems – Requirements
 - 2) ISO/IEC 27002: Information technology –Security techniques – Code of practice for information security controls
- Archive Center pays due attention to internal control management processes to avoid opportunities for inappropriate access and to ensure that information held at the Archive Center is not compromised. Archive Center, if requested, discloses its information security policy and, if necessary, improves the policy.
- In case Archive Center outsources its data storage tasks to another party, the Archive Center needs to confirm the contractor's ISMS compliance and appoint a senior manager to ensure regular reconfirmation of such compliance.

- The Archive Center may not outsource its information management tasks.
- Archive Center also operates its services in accordance with the latest versions of ISO standards concerning service availability and continuity management, such as:
 - 1) ISO/IEC 20000-1: Information technology – Service management – Part 1: Service management system requirements
 - 2) ISO/IEC 20000-2: Information technology – Service management – Part 2: Guidance on the application of service management systems

Annex-4 Models of Safekeeping and Access Procedures for SCF Onboard

- For the SCF Onboard kept onboard the Ship and copy of the SCF Onboard kept at the Shipowner's Office Ashore provided in a digital format, example of a model of safekeeping and access procedures is shown in **Table A4.1**.
- For the SCF Onboard kept onboard the Ship and copy of the SCF Onboard kept at the Shipowner's Office Ashore provided in a printed format, example of a model of safekeeping and access procedures is shown in **Table A4.2**.
- The Shipowner could develop and apply equivalent safekeeping and access procedures for the SCF Onboard in line with the principles and procedures of the SCF IS.

Table A4.1: Example of Model Procedures to be Arranged by Archive Center for Access to and Collection of SCF Onboard Provided in a Digital Format

Accessing Person	Authentication	Activation	Viewing	Printout from Digital Documents	Copying of Digital Document	Validity Period	Collection	Access Registration ³⁾
Shipowner, Seafarer or Shipowner Agent ¹⁾	Password or IC-ID card or alternative/equivalent such as Onetime Password ²⁾	Specific terminals need to be designated for access.	<p>The information should be stored on a secure system, for example dedicated browser software could be provided.</p> <p>A notification warning that unpermitted copying and access is prohibited needs to be displayed.</p> <p>A reminder of the need for appropriate confidentiality should also be displayed.</p>	<p>A notification warning that unpermitted copying of and access to a printout are prohibited needs to be displayed.</p> <p>The following information should be displayed and/or embedded in the printout.</p> <ul style="list-style-type: none"> - Information to identify the keeper. - Names of the printout person and organization - Printout date and time 	<p>Copying of Digital Documents is prohibited.</p> <p>Capturing and photographing of screen are prohibited.</p> <p>Hardcopying or copying into a digital document such as by scanning of printout is permitted only for Safe Operation Purpose of the Ship or other purposes as stipulated in the second and third bullet points in 3.5.</p>	<p>The Archive Center may complete Periodical Renewal of the SCF Onboard Information in a digital format in accordance with Annex-2, by providing a new Electronic Media Onboard to the Shipowner or by updating via the Internet prior to the expiration of the access period</p> <p>Procedures should be implemented to ensure that Passwords or IC-ID cards are renewed at agreed intervals and/or on changeover of personnel joining the Ship.</p>	<p>Any out of date Electronic Media Onboard should be identified, collected and returned to the Archive Center at the time of Periodical Renewal.</p> <p>If new Electronic Media Onboard storing Updated SCF digital documents is delivered to the Shipowner's Office Ashore for replacement, the old ones kept at various locations should be collected and either destroyed or returned to the Archive Center.</p>	<p>The system should ensure that the following information is available.</p> <ul style="list-style-type: none"> - Date and time of access/print out) - Scope of access (Name of documents and drawings accessed/printed-out) - Name of accessing person and organization

Remarks:

- 1) Authorities and their Recognized Organizations, registered classification societies and Sub-contractors may view, use, print, and/or keep such information following the contents of **Annex-1** subject to the Shipowners' acknowledgement and agreement for such access, and access registration.
- 2) Onetime Password needs access via the Internet or equivalent.
- 3) It is anticipated that information listed in the Access Registration column of the Table above will be automatically recorded by browser software for the SCF Onboard in Electronic Media Onboard. Where agreed by the Shipowner, the Archive Center through Periodical Renewal of the Electronic Media Onboard may securely keep the information for the Shipowner. Alternatively, recording of the information may be automatically carried out via the Internet when access to the SCF Onboard is made via the Internet. The information will subsequently be available, if needed, only through the Shipowner. These records of access should be maintained for ten years after the delivery of the Ship.

Table A4.2: Example of Model Procedures to be Arranged by Shipowners for Safekeeping, Access to and Return of SCF Onboard Provided in a Printed Format

Accessing Person	Storage ²⁾	Security Measures	Copying of Printed Document	Return to the Storage Location	Return to Archive Center	Access Record ³⁾
Shipowner, Seafarer or Shipowner Agent ¹⁾	Printed Documents are stored in a dedicated cabinet or locker.	A notification warning that unpermitted copying and access are prohibited needs to be displayed. A reminder of the need for appropriate confidentiality should also be displayed.	Hardcopying of documents and drawings or copying into a digital document such as by scanning is permitted only for Safe Operation Purpose of the Ship or other purposes as stipulated in the second and third bullet points in 3.5.	Printed Documents need to be returned to the relevant storage location(s) when the purposes of the access are accomplished.	If new Printed Documents Onboard are delivered for replacement, old (deteriorated) Printed Documents, if any, are promptly returned to the Archive Center,	The following information should be recorded within the onboard document management procedures, for example with a written document log. <ul style="list-style-type: none"> - Name of document or drawing - Name of the accessing organization - Legibly-written name of the accessing person - Signature of the accessing person - Borrowing date - Return date - Confirmation signature of the accessing person when the document is returned - Note as to whether or not any additional hard copies have been used

Remarks:

- 1) Authorities and their Recognized Organizations, registered classification societies and Sub-contractors may view, use, print, and/or keep such information following the contents of **Annex-1** subject to the Shipowners' acknowledgement and agreement for such access, and access registration.
- 2) The document management system should include an inventory of the printed documents and drawings. Periodic audits of the documents and drawings should be undertaken at appropriate intervals. If any of the volumes are found missing, the Shipowner should promptly notify the Archive Center of the name of the missing document or drawing and the reason, if known, and request a replacement.
- 3) Records of access should be maintained for ten years after the delivery of the Ship. However, it may be good practice to subsequently continue to record use of the documents and drawings, and periodically review the inventory of documents and drawings to ensure continuing availability of a complete set of documents and drawings.