# MARINE INSPECTOR PORT STATE CONTROL FREIGHTSHIP QUALIFICATION QUESTIONS



Marine Safety Office New Orleans

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# I. ADMINISTRATIVE

# What is vessel targeting & how does it work?

Vessel targeting is the process by which the Coast Guard selects foreign ships for boarding. Congress requires the Coast Guard to "hold those most responsible for substandard ships accountable, including owners, classification societies, and flag states." The Coast Guard then developed a simple, effective, risk-based targeting approach that assigns points to vessels in order to determine their boarding priority. Vessels that receive high scores are more likely to get boarded. Source: MSM, Vol. II, D4-1

# What five factors make up the targeting matrix?

These factors are a ship's owner, flag state, classification society, boarding history and vessel type. Source: MSM, Vol. II, D4-1

# What constitutes a vessel as a priority I?

Priority 1

Stateless vessels

Vessels suspected of involvement in a marine casualty that may have affected seaworthiness

Vessels suspected of hazarding the port or environment as a result of a hazardous materials release, or an ongoing discharge of oil

Vessels specifically targeted for boarding as Priority I vessels by Commandant

Vessels targeted by the COTP/OCMI

Vessels scoring 17 or more points on the matrix

Source: MSM, Vol. II, D4-14

# If Lloyds Register issues a vessel's Certificate of Class, but all other Certificates are issued by Panamanian Maritime Documentation Services, should the vessel be targeted as a Priority I for Class?

Targeting decisions under Column III of the foreign vessel-targeting matrix are left to the discretion of the OCMI/COTP. For example, if a vessel is classed by a 0 point category organization, but all Convention certificates are apparently issued by a targeted organization, the COTP should consider assigning points in the matrix that corresponds with the targeted class society. Source: MSM, Vol. II, D4-7

# When can a Priority I be downgraded?

If a vessel is targeted for boarding solely as a result of scoring a total of 17 or more points on the targeting matrix, or because of a Priority 1 class society, and has been boarded within 6 months, the vessel may be reduced to Priority III status provided no serious deficiencies were identified during the last boarding. Source: MSM, Vol. II, D4-14

## What constitutes a vessel as a priority II?

Priority II

Vessels that do not have, or are past due for, certificate of compliance (COC) exam, Renewal or annual.

Vessels with overdue outstanding requirements issued at previous examinations Vessels that lack a record of previous CG examination

Vessels that have engaged in an int'l voyage and have not been examined since being released from a port state intervention

Vessels scoring 7-16 points on the matrix

Source: MSM, Vol. II, D4-15

## When can a Priority II be downgraded?

A priority II can be downgraded if she is an II based solely on points and was boarded within the last 6 months and no serious deficiencies were noted. Source: MSM, Vol. II, D4-15

# What are the procedures for scheduling a Priority I vessel boarding?

Priority I vessels will be scheduled for examination prior to entering a U.S. port. The boarding team will include a marine inspector. When feasible, discrepancies will be corrected prior to entry. Exceptions to at-sea boardings may be made when the Officer in Charge Marine Inspection (OCMI) or Captain of the Port (COTP) determines that the risks to boarding personnel or other logistical considerations make an at-sea boarding impractical. In such cases, the vessel will be targeted for examination, and any discrepancies corrected, prior to the commencement of cargo transfer operations or passenger embarkation. Source: MSM, Vol. II, D4-1

# When would you issue a Captain of the Port (COTP) Order, Letter of Deviation, Letter of Undertaking, Letter of Warning, and Temporary Equivalency?

Captain of the Port Orders are issued to control the movement or operation of a vessel or the operation of a facility when the COTP feels the vessel or facility poses a hazard to public safety or to the environment.

Letter of Undertaking (LOU) ensures the payment of any civil penalty case against a foreign violator of US. For example, a foreign ship calling in US waters that spills oil would be required to produce an LOU prior to getting underway. This letter is generally written by a law firm or P&I club and states that money will be held in a US bank to cover any civil fines associated with the spill.

Surety bonds are similar to LOU's in that they guarantee payment of civil fines, however, a surety bond requires money posted up front. Therefore, industry prefers LOU's because they do not require the outlay of cash.

Letter of warnings are typically issued to first time spillers (or spillers who have not had a spill in a year) who are recreational. LOWs are not typically issued to commercial industry, notice of violations (tickets) are more common.

Cites: 33CFR160, MSM Vol. I, Chap 4; MSM Vol VI Chap 1

# What is a Special Interest Vessel (SIV)?

An SIV is a vessel whose flag state has been identified as a threat to national security while in US waters. MSM Volume VII, Chapter 8 (this Volume is currently not available online). Also, see MSM Volume VIII (Classified guidance on SIV program).

# What is a Target of Interest (TVI)?

A vessel that, due to her owner, operator, flag state, classification society or another reason, is targeted for boarding. Look for messages from Commandant. MSM Vol. II, Chapter 4.

# What is the order in which boardings should be scheduled/conducted?

Vessels will be scheduled based on the following precedence:

Priority II vessels due for Re-exams

Priority I vessels
Tank or Passenger Vessels with expired COC's
Priority II vessels with outstanding deficiencies
Priority II vessels due for Annual exams

# II. DOCUMENTS

# What is the harmonized system in regards to SOLAS Certificates?

The Harmonized System of Survey and Certification (HSSC) began on 03FEB00. This date was chosen because SOLAS 1988 and load line protocols were due to go in to enforcement at that time and a change in document expiration was desired by MSC. The goal was to harmonize expiry dates of documents, making it easier for the vessels to track their own dates and for the flag states to have better tracking of the expiration dates of the documents on board their vessels. Cite: SOLAS Consolidated 2001, Annex 1.

# What is a Classification Document, who issues it, what information is found on it?

Classification Document establishes the Classification Society for the vessel. In addition to the requirements contained elsewhere in the present regulations, ships shall be designed, constructed and maintained in compliance with the structural, mechanical and electrical requirements of a classification society which is recognized by the Administration or with applicable national standards of the Administration which provide an equivalent level of safety. The vessel's classification society issues the document to the vessel. Information found on the classification document includes vessel name, vessel type, official number, date of issue, gross tonnage, and port of issue. Cite: SOLAS 2001 Consolidated II-1, 840 book.

# What is a Certificate of Registry, who issues it?

Certificate of Registry demonstrates that the vessel is registered with a flag state and is not a stateless vessel. The flag state issues this document. MSM Vol. II, Sect. D, Chap. 1, Pg. D1-12

### What are the main SOLAS Certificates issued to a cargo ship?

Cargo Ship Safety Equipment, Cargo Ship Safety Construction, and Cargo Ship Safety Radio, Cargo Ship Safety, Safety Management. Cite: SOLAS Chapter I and IX

### What is a Safety Construction Certificate?

This certificate covers the inspections of the structure, machinery and equipment. The surveys shall be such as to ensure that the arrangements, materials, scantlings and workmanship of the structure, boilers and other pressure vessels, their appurtenances, main and auxiliary machinery including steering gear and associated control systems, electrical installation and other equipment comply with the requirements of the present\_regulations, are in satisfactory condition and are fit for the service for which the ship is intended and that the required stability information is provided. Cite: SOLAS Chapter I

# What is Safety Equipment Certificate: What attachment is found with it?

This certificate covers the inspections of the life-saving appliances and other equipment of cargo ships of 500 gross tonnage and upwards. The surveys shall ensure a complete inspection of the fire safety systems and appliances, life-saving appliances and arrangements except radio installations, the ship borne navigational equipment, means of embarkation for pilots and other equipment to which chapters II-1, II-2, III and V apply to ensure that they comply with the requirements of the present regulations, are in satisfactory condition and are fit for the service for which the ship is intended. The fire control plans, nautical publications, lights, shapes, means of making sound signals and distress signals shall also be subject to the above mentioned surveys for the purpose of ensuring that they comply with the requirements of the present regulations and, where applicable, the International Regulations for Preventing Collisions at Sea in force; A record of equipment (Form E) shall be permanently attached. Cite: SOLAS Chapter I

# What type of info is on the Form E?

Number of liferafts, number of lifeboats, whether or not the lifeboats are enclosed, number of rescue boats, number of lifejackets, number of immersion suits, number of lifebuoys, and radio installations used in lifesaving appliances. Cite: SOLAS Appendix I.

# What is a Safety Radio Certificate?

This certificate covers the inspections of the radio installations of cargo ships, including those used in life-saving appliances, to ensure that they comply with the requirements of the present regulations. Cite: SOLAS Chapter I

# What is a Cargo Ship Safety Certificate?

A certificate called a Cargo Ship Safety Certificate may be issued after an initial or renewal survey to a cargo ship which complies with the relevant requirements of chapters II-1, II-2, III, IV and V and any other relevant requirements of the present regulations, as an alternative to the Cargo Ship Safety Equipment, Safety Construction and Safety Radio certificates. Cite: SOLAS Chapter I

# What is an International Loadline Certificate?

A certificate that covers the inspections that ensure the general structural strength of the ship is sufficient for the draught corresponding to the freeboard assigned. Ships built and maintained in conformity with the requirements of a classification society recognized by the Administration may be considered to possess adequate strength. Cite: International Loadline Convention (ILLC) 66 Annex I

# What is an International Tonnage Certificate and is it required?

The certificate that assigns the official Gross, Net and Deadweight Tonnages of vessels. An International Tonnage Certificate (1969) shall be issued to every ship, the gross and net tonnage of which have been determined in accordance with the Convention. Cite: International Convention on Tonnage Measurement of Ships, 1969. Article.7

## Define gross and net tonnages.

- Gross tonnage: means the measure of the overall size of a ship determined in accordance with the provisions of the present Convention.
- Net tonnage: means the measure of the useful capacity of a ship determined in accordance with the provisions of the present Convention.

# If a vessel is carrying grain, or will be going to a Port to load grain what certificate will the vessel have?

International Grain Code requires a document of authorization for the carriage of grain (SOLAS VI/8, 9). Grain includes (but is not limited to) wheat, maize, corn, rye, barley, rice, pulses, & seeds.

# If a ship carries containers what manual should they have?

Cargo securing manual (SOLAS VI / 5.6)

## Who approves this manual?

"The administration" which means the government of the state of the flag the vessel is entitled to fly (flag state).

# How long are SOLAS Certificates valid for?

A Cargo Ship Safety Construction Certificate, Cargo Ship Safety Equipment Certificate, Cargo Ship Safety Radio Certificate and Safety Management shall be issued for a period specified by the administration, which shall not exceed five years. Cite: SOLAS Chapter I and Resolution A.741 (18)

# What language are Certificates required to be in?

If the language used is neither English nor French, the text shall include a translation into one of these languages. Cite: SOLAS I/15

# What is a COFR? How long is it good for? Who issues it?

COFR is the Certificate of Financial Responsibility. It establishes that the vessel has money to clean up a spill. COFRs are valid for 3 yrs for foreign boats. The Coast Guard at the National Pollution Funds Center. Cite: 33 CFR 138

Which vessels are required to have one and? What do you do if MISLE shows that a vessel's COFR is invalid and she is coming into port?

COFRs required for vessels over 300GT. If MISLE shows the COFR is invalid, call the COFR desk at NPFC to see if the vessel has applied for one. If it turns out the vessel has no COFR, a COTP order denying her entry is needed. Cite: 33CFR138

# What documents are required to be checked on an Annual exam or Document Check?

Checit			
The document check should include the follow	wing as appropriate;		
Certificate of Registry	☐ Oil Transfer Procedures		
□ Classification Society Certificate	Dangerous Cargo Manifest		
□ SOLAS Safety Construction Certificate	□ Stowage Plan		
□ SOLAS Safety Equipment Certificate	☐ Hazardous Materials Training Records		
SOLAS Safety Radiotelegraphy Certificate	□ Pollution Prevention Compliance Letter		
□ SOLAS Safety Radiotelephone Certificate	□ ISM Certificates		
□ Load Line Certificate	☐ Shipboard Oil Pollution Emergency Plan		
☐ Tonnage Certificate	☐ Cargo Securing Manual		
□ Certificate of Financial Responsibility	□ Garbage Management Plan		
Safe Manning Document	□ Oil Record Book		
International Oil Pollution Prevention Certificate or equivalent			
TT C Comp	hard E		

Cite: MSM Volume II, Section D, Chapter 5

## III. STCW

## What is the purpose of the STCW Convention?

To ensure that, from the point of view of safety of life and property at sea and the protection of the marine environment, seafarers on board ships are qualified and fit for their duties. Cite: STCW Article I

### Describe an STCW exam?

During all foreign vessel examinations, PSCO's will at a minimum, examine the following items:

- <u>Certification/documentation</u>: All information relating to the identity and personal description of the holder including: name, date of birth, photograph and signature, along with the date on which the document was issued. As well as all information relating to the capacity or capacities in which the holder is entitled to serve, and any limitations, which shall be prominently marked and easily identified.
- <u>Vessel familiarization</u>: PSCO should verify that all persons employed or engaged on a seagoing ship have received training or instructions in vessel familiarization and personal survival techniques.
- <u>Safe manning</u>: The flag Administration establishes the safe manning level of the vessel. The PSCO should verify that the vessel is manned in accordance with the Safe Manning Document.
- <u>Crew skills</u>: Every member of the crew must be knowledgeable of their assigned duties.
- Basic Safety Training (BST): Regulation VI/1 of the Convention and A-VI/1 of the Code requires seafarers who have designated safety or pollution prevention duties in the operation of the ship to receive appropriate basic safety training. The PSCO should ensure that each crewmember assigned to these types of duties has received the appropriate elements of BST. The four elements of BST are: personal survival techniques; fire prevention and basic fire fighting; elementary first aid; and personal safety and social responsibilities. Cite: G-MOC Policy letter 02-04

# What is the Minimum Safe Manning Document: Is it required onboard?

Contracting Governments undertake, each for its national ships, to maintain, or, if it is necessary, to adopt, measures for the purpose of ensuring that, from the point of view of safety of life at sea, all ships shall be sufficiently and efficiently manned. Every ship to which chapter I of SOLAS applies, shall be provided with an appropriate minimum safe manning document or equivalent issued by the Administration as evidence of the

minimum safe manning considered necessary to comply with the provisions of paragraph 1. Cite: SOLAS V/14

# Are STCW certificates and endorsements required to be in English?

Yes, Certificates shall be in the official language or languages of the issuing country. If the language used is not English, the text shall include a translation into that language. Cite: STCW I/2

# Can an Administration use a format different than as prescribed in STCW? If so, what information must be indicated?

- All information relating to the identity and personal description of the holder, including name, date of birth, photograph and signature, along with the date on which the document was issued, shall be displayed on the same side of the documents; and
- All information relating to the capacity or capacities in which the holder is entitled to serve, in accordance with the applicable safe manning requirements of the Administration, as well as any limitations, shall be prominently displayed and easily identified. Cite: STCW A I/2

# Does a licensed mariner require an endorsement of his license if he is not a citizen of the vessel's flag state?

STCW 95 Regulation I/10 details the requirement that all masters, officers and radio operators possess an endorsement from the flag Administration associated with the vessel for a certificate issued under the authority of another party.

Cite: STCW I/10 and G-MOC Policy letter 02-04

# Is a person allowed to sail on a vessel without an endorsement? If so, how long?

Not withstanding the requirement of STCW regulation I/2, paragraph 5, an Administration may, if circumstances require, allow a seafarer to serve in a capacity, other than radio officer or radio operator, except as provided by the Radio Regulations, for a period not exceeding three months on board a ship entitled to fly its flag, while holding an appropriate and valid certificate issued and endorsed as required by another Party for use on board that Party's ships but which has not yet been endorsed so as to render it appropriate for service on board ships entitled to fly the flag of the Administration. Documentary proof shall be readily available that application for an endorsement has been submitted to the Administration. Cite: STCW I/10

# What are the requirements for crew familiarization?

The company shall provide written instructions to the master of each ship to which the Convention applies, setting forth the policies and the procedures to be followed to ensure that all seafarers who are newly employed on board the ship are given a reasonable

opportunity to become familiar with the shipboard equipment, operating procedures and other arrangements needed for the proper performance of their duties, before being assigned to those duties. Cite: STCW I/14 and A-I/14

### What is a Letter of Dispensation? Can anyone receive one?

In circumstances of exceptional necessity, Administrations, if in their opinion this does not cause danger to persons, property or the environment, may issue a dispensation permitting a specified seafarer to serve in a specified ship for a specified period not exceeding six months in a capacity, other than that of the radio officer or radiotelephone operator, except as provided by the relevant Radio Regulations, for which he does not hold the appropriate certificate, provided that the person to whom the dispensation is issued shall be adequately qualified to fill the vacant post in a safe manner, to the satisfaction of the Administration. However, dispensations shall not be granted to a master or chief engineer officer except in circumstances of force majeure and then only for the shortest possible period. Cite: STCW Article VIII

# What is the minimum age of a scafarer? What International regulation applies? 15 yrs old.

Candidates for certification shall provide satisfactory proof: Of their identity and that their age is not less than that prescribed in the regulation relevant to the certificate applied for. Cites: STCW 95 I/9 and VI,

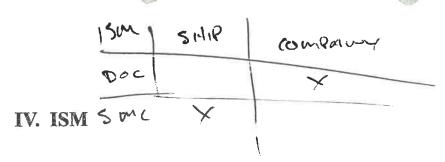
The minimum age for admission into employment shall not be less than 15 years, except that under certain specified national conditions this may be reduced to 14 years. In the case of employment which is likely to jeopardize the health, safety or morals of young persons, the minimum age shall not be less than 18 years, which may be reduced to 16 years under certain conditions prescribed by the convention. Minimum Standards Convention - ILO 147Article II, page 17 of the 1990 copy (ILO 147 actually cites the Minimum Age (Sea) Convention 1936 version. The differences between SCTW and ILO are that STCW gives position specific age requirements.

# What are the requirements for medical fitness and how often should a seafarer receive medical examinations?

Each Party shall ensure that certificates are issued only to candidates who comply with the requirements of the regulation.

That they meet the standards of medical fitness, particularly regarding eyesight and hearing, established by the Party, and hold a valid document attesting to their medical fitness, issued by a duly qualified medical practitioner recognized by the Party. Cite: STCW I/9

The medical certificate shall be valid for a period not exceeding 2 years from its issue, except as it relates to color vision, in which case the period of validity may extend to up to six years. Cite: ILO 147 (Medical Examination (Seafarers) Convention, 1946 (No. 73)



# What is the purpose of the ISM Code?

The purpose of the Code is to provide an international standard for the safe operation of ships and for pollution prevention. Cite ISM Code, Resolution A.741 (18)

# What Certificates would a vessel have onboard to demonstrate compliance with ISM Code?

A Document of Compliance shall be issued to every company, which complies with the requirements of the International Safety Management Code. This document shall be issued by the Administration, by an organization recognized by the Administration, or at the request of the Administration by another Contracting Government.

A copy of the Document of Compliance shall be kept on board the ship in order that the master can produce it on request for verification.

A Certificate, called a Safety Management Certificate, shall be issued to every ship by the Administration or an organization recognized by the Administration. The Administration or organization recognized by it shall, before issuing the Safety Management Certificate, verify that the company and its shipboard management operate in accordance with the approved safety-management system. SOLAS 2001 Consolidated, IX/4

# What information has to match on a vessel's Document of Compliance and Safety Management Certificate?

The Company's name and the type of vessel. Source: Resolutions A.741(18) and A.788 (19)

Can a company other than the owner be listed on the DOC and SMC? If the entity how is responsible for the operation of the ship is other than the owner, the owner must report the full name and details of such entity to the Administration. Resolution A.741(18)

# How often is the Document of Compliance required to be endorsed?

The validity of a Document of Compliance should be subject to annual verification by the Administration or by an organization recognized by the Administration within three months before or after the anniversary date. Source: Resolution A.741 (18)

# How often is the Safety Management Certificate required to be endorsed?

The validity of the Safety Management Certificate should be subject to at least one intermediate verification by the Administration or an organization recognized by the Administration. If only one intermediate verification is to be carried out and the period of

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validity of the Safety Management Certificate is five years, it should take place between the second and third anniversary date of the Safety Management Certificate. Source: Resolution A.741 (18)

# Are Interim ISM Certificates allowed? If so when are they issued?

An interim DOC, valid for no more than twelve months, may be issued to facilitate implementation of the ISM Code when a company is newly established, there is a change of flag or when new ship types are added to an existing DOC. The interim DOC certificate should be issued only after the company has demonstrated that it has an SMS that, at a minimum, meets the objectives for an SMS provided in Section 1.2.3 of the ISM Code and that the company plans to implement an SMS meeting the full requirements of the ISM Code within the period of validity of the interim DOC certificate.

An interim SMC, valid for no more than six months, may be issued to new ships on delivery and when a company takes responsibility for an existing ship, which is new to the company. The validity of an interim SMC may be extended for an additional six months by the flag Administration in special cases. The interim SMC should only be issued when the flag administration has verified the following:

The responsible company's DOC, or interim DOC, is relevant to that ship; The SMS includes key elements of the ISM Code, and has been assessed during an audit for issuance of the responsible company's DOC or demonstrated for issuance of the responsible company's interim DOC;

The master and relevant senior officers are familiar with the SMS and the plans for its implementation;

Instructions identified as essential to be provided prior to sailing have been given; The responsible company has plans for an audit of the ship within three months; The relevant information of the SMS is in a working language or languages understood by the ship's crew. Source: SOLAS IX, 33CFR96, NVIC 4-98.

### When would you conduct an expanded exam into a vessel's ISM?

When clear grounds have been identified that leads the boarding team to believe that the ship does not have a valid SMS properly implemented on board. Examples of clear grounds include, but are not limited to, improperly endorsed or expired ISM certificates; lack of SMS documentation; crewmembers have insufficient knowledge of their required duties under the SMS, and/or the level of non-compliance with international safety requirements is so extreme that it is evident that no safety management system is in place (e.g. numerous and/or recurring deficiencies that indicate a lack of maintenance, improper training or failure to correct previously identified deficiencies). In these situations, the PSCO will conduct an expanded examination of the SMS.

When limited non-compliance with other international requirements has been identified which warrant an expanded examination. In this situation, the boarding team would include a review of the SMS. Cite: NVIC 4-98 and ISM Code

# .. NAVIGATION SAFETY

# What charts and publications are required on a foreign vessel? Each vessel must have the following:

(1) Marine charts of the area to be transited and are currently corrected.

- (2) For the area to be transited, a currently corrected copy of, or applicable currently corrected extract from, each of the following publications:
  - U.S. Coast Pilot.
  - Coast Guard Light List.
  - Tide tables
  - Tidal current tables

As an alternative to the requirements for paragraph (a) of this section, a marine chart or publication, or applicable extract, published by a foreign government may be substituted for a U.S. chart and publication required by this section. The chart must be currently corrected. The publication, or applicable extract, must singly or in combination contain similar information to the U.S. Government publication to make safe navigation of the area possible.

NOTE: "currently corrected" means corrected with changes contained in all Notices to Mariners published by the National Imagery and Mapping Agency, or an equivalent foreign government publication, reasonably available to the vessel, and that is applicable to the vessel's transit. Cite: 33 CFR 164.33

Additionally, SOLAS Consolidated 2001V/20 requires sailing directions and V/21 requires the International Code of Signals.

### What are chart corrections?

Chart corrections are updates made to charts. A list of chart changes is available in the Broadcast notice to mariners. Chart corrections include, but are not limited to: new buoy positions, new underwater hazards, and alterations to the vsl traffic scheme, ect. Corrections allow mariners to use the same chart for many years without having to buy a new chart each year. Corrections are required to be made by vessels entering the navigable waters of the US. Cite: 33CFR164.33.

What is published that documents these corrections?

Notice to mariners. Cite: 33 CFR 164.33

## What are pre-arrival and departure tests?

No person may cause a vessel to enter into or get underway on the navigable waters of the United States unless no more than 12 hours before entering or getting underway, the following equipment has been tested:

- (1) Primary and secondary steering gear. The test procedure includes a visual inspection of the steering gear and its connecting linkage, and, where applicable, the operation of the following:
  - (i) Each remote steering gear control system.
  - (ii) Each steering position located on the navigating bridge.
  - (iii) The main steering gear from the alternative power supply, if installed.
  - (iv) Each rudder angle indicator in relation to the actual position of the rudder.
  - (v) Each remote steering gear control system power failure alarm.
  - (vi) Each remote steering gear power unit failure alarm.
  - (vii) The full movement of the rudder to the required capabilities of the steering gear.
  - (2) All internal vessel control communications and vessel control alarms.
- (3) Standby or emergency generator, for as long as necessary to show proper functioning, including steady state temperature and pressure readings.
- (4) Storage batteries for emergency lighting and power systems in vessel control and propulsion machinery spaces.
  - (5) Main propulsion machinery, ahead and astern.

Cite: 33 CFR 164.25

# What steering gear tests and/or drills must be performed in accordance with US Regulations?

No vessel may enter, or be operated on the navigable waters of the United States unless the emergency steering drill described below has been conducted within 48 hours prior to entry. This drill must include at a minimum the following:

- (1) Operation of the main steering gear from within the steering gear compartment.
- (2) Operation of the means of communications between the navigating bridge and the steering compartment.
- (3) Operation of the alternative power supply for the steering gear if the vessel is so equipped. Cite 33CFR164.25

### Are these tests required to be logged? Are there any exceptions?

Yes, they shall be logged in the vessel logbook. Yes, unless the drill is conducted and logged on a regular basis at least once every three months. Cite: 33CFR164.25

### Does SOLAS have similar requirements?

Yes, Cite: SOLAS 2000 Amendments, V/26

# What navigation equipment is required by U.S. regulations on a freight vessel?

All vessels over 1600 GT must have the following:

- 1. A marine radar system for surface navigation.
- 2. An illuminated magnetic steering compass, mounted in a binnacle that can be read at the vessel's main steering stand.
- 3. A current magnetic compass deviation table or graph or compass comparison record for the steering compass, in the wheelhouse.
- 4. A gyrocompass.
- 5. An illuminated repeater for the gyrocompass required that is at the main steering stand, unless that gyrocompass is illuminated and is at the main steering stand.
- 6. An illuminated rudder angle indicator in the wheelhouse.
- 7. A Maneuvering Fact Sheet
- 8. An echo depth-sounding device.
- 9. A device that can continuously record the depth readings of the vessel's echo depth sounding device.
- 10. Equipment on the bridge for plotting relative motion.
- 11. Simple operating instructions with a block diagram, showing the change-over procedures for remote steering gear control systems and steering gear power units, permanently displayed on the navigating bridge and in the steering gear compartment.
- 12. An indicator readable from the centerline conning position showing the rate of revolution of each propeller
- 13. If fitted with controllable pitch propellers, an indicator readable from the centerline conning position showing the pitch and operational mode of such propellers.
- 14. If fitted with lateral thrust propellers, an indicator readable from the centerline conning position showing the direction and amount of thrust of such propellers.
- 15. A telephone or other means of communication for relaying headings to the emergency steering station.

Also, each vessel of 500 gross tons and over and constructed on or after June 9, 1995 must be provided with arrangements for supplying visual compass-readings to the emergency steering station. Cite: 33 CFR 164.35 SOLAS 2001 Consolidated REG V/12 also list some of the requirements.

# Is there a difference for vessels over 10,000 gross tons?

Yes, all of the above and a second marine radar system that operates independently of the first. Cite: 33 CFR 164.37

### What does ARPA stand for?

Automatic Radar Plotting Aids Cite: 33 CFR 164.38

# What is the U.S. requirement for ARPA's on freight ships?

- Each self-propelled vessel of 15,000 gross tons or more that is not a tank vessel and was constructed before September 1, 1984, must be equipped with an ARPA.
- Each vessel of 10,000 gross tons or more constructed on or after September 1, 1984 must be equipped with an ARPA. Cite: 33 CFR 164.38

# What information is required on the Maneuvering Fact Sheet? The following maneuvering information prominently displayed on a fact sheet in the wheelhouse:

(1) A turning circle diagram to port and starboard that shows the time and distance and advance and transfer required to alter course 90 degrees with maximum rudder angle and constant power settings, for either full and half speeds, or for full and slow speeds. For vessels whose turning circles are essentially the same for both directions, a diagram showing a turning circle in one direction, with a note on the diagram stating that turns to port and starboard are essentially the same, may be substituted.

(2) The time and distance to stop the vessel from either full and half speeds, or from full and slow speeds, while maintaining approximately the initial heading with minimum

application of the rudder.

(3) For each vessel with a fixed propeller, a table of shaft revolutions per minute for a representative range of speeds.

(4) For each vessel with a controllable pitch propeller, a table of control settings for a

representative range of speeds.

- (5) For each vessel that is fitted with an auxiliary device to assist in maneuvering, such as a bow thruster, a table of vessel speeds at which the auxiliary device is effective in maneuvering the vessel.
  - (6) The maneuvering information for the normal load and normal ballast condition for:
  - (i) Calm weather wind 10 knots or less, calm sea;

(ii) No current;

(iii) Deep water conditions--water depth twice the vessel's draft or greater; and

(iv) Clean hull.

(7) At the bottom of the fact sheet, the following statement:

# Warning

The response of the (name of the vessel) may be different from that listed above if any of the following conditions, upon which the maneuvering information is based, are varied:

(1) Calm weather--wind 10 knots or less, calm sea;

(2) No current;

(3) Water depth twice the vessel's draft or greater;

(4) Clean hull; and

(5) Intermediate drafts or unusual trim.

Cite: 33 CFR 164.35

# What are the requirements for Emergency Communication Equipment?

Cargo ships 300 GT and upwards, but less than 500 GT

- At least two (2) two-way VHF radiotelephone apparatus
- 1 radar transponder
- 12 rocket parachute flares stowed on or near the navigation bridge
- System (fixed or portable) for two-way communication between emergency control stations, muster and embarkation stations and strategic positions on board
- General emergency alarm

## Cargo ships 500GT and up

- All the above AND
- One additional two-way VHF radiotelephone apparatus (3 total)
- One additional radar transponder

Cite: (SOLAS 2001 Consolidated III/6)

### What is an EPIRB?

An EPIRB is an Emergency Position Indicating Radio Beacon.

## When is it required?

Every ship shall be provided with a satellite emergency position-indicating radio beacon (satellite EPIRB) capable of transmitting distress alert in 406 MHz band or through INMARSAT if the ship operates wholly within INMARSAT range. SOLAS IV / 7.6

### Where/how should it be stowed?

The EPIRB must be installed in an easily accessible position. The EPIRB must be capable of floating free if the ship sinks. The EPIRB must be automatically activated when afloat. The EPIRB must be capable of being activated manually. Ready to be manually released and capable of being carried by one person into a survival craft. Cite: SOLAS IV / 7

# VI. ILO

Note: The ILO convention is made up of several conventions such as ILO 68, ILO 92, and ILO 133, ILO 147, and ILO 152.

# Which conventions make up ILO 147?

- Minimum Age Convention, 1973 (No.138)
- Shipowners' Liability (Sick and Injured seamen) Convention, 1936 (No.55), or Sickness Insurance (Sea) Convention, 1920 (No. 7);
- Medical Care and Sickness Benefits Convention, 1969 (No.130)
- Medical Examination (Seafarers) Convention, 1946 (no.73);
- Prevention of Accidents (Seafarers) Convention, 1970 (No.134) (Articles 4 and 7);
- Accommodation of Crews Convention (Revised), 1949 (No.92);
- Food and Catering (Ships' Crews) Convention, 1946 (No.68) (Article 5);
- Officers' Competency Certificates Convention, 1936 (No.53)( Articles 3 and 4);
- Seamen's Articles of Agreement Convention, 1926 (No.22);
- Repatriation of Seamen Convention, 1926 (No.23);
- Freedom of Association and Protection of the Right to Organize Convention, 1948 (No.87);
- Right to Organize and Collective Bargaining Convention, 1949 (No.98).
   Cite: ILO 147, Appendix.

What CG guidance would you use to examine a vessel in accordance with ILO-147? Marine Safety Manual, Also refer to 840 book and ILO 147 directly.

# What are the requirements for water closets or toilets?

The following minimum number of separate water closets shall be provided:

- Ships of under 800 tons: three;
- Ships of 800 tons or over, but under 3,000 tons: four;
- Ships of 3,000 tons or over: six;
- Ships where the radio officers or operators are accommodated in an isolated position, sanitary facilities near or adjacent thereto shall be provided.

Cite: ILO 92, Article 13

# What are the requirements for crewmembers that do not have sanitary facilities in their cabins?

Sanitary facilities for all members of the crew who do not occupy rooms to which private facilities are attached shall be provided for each group of the crew on the following scale:



- One tub and/or shower bath for every eight persons or less;
- One water closet for every eight persons or less;
- One washbasin for every six persons or less:

Provided that when the number of persons in a group exceeds an even multiple by less than ½ of the specified number, this surplus may be ignored.

Cite: ILO 92, Article 13

## When should a ship have a hospital space?

In any ship carrying a crew of fifteen or more and engaged in a voyage of more than three days' duration, separate hospital accommodation shall be provided. The competent authority may relax this requirement in respect of vessels engaged in coastal trade. Cite: ILO 92, Article 13

## What would you inspect for in the hospital space?

The hospital accommodation shall be suitably situated, so that it is easy of access and so that the occupants may be comfortably housed and may receive proper attention in all weathers.

- The arrangement of the entrance, berths, lighting, ventilation, heating and water supply shall be designed to ensure the comfort and facilitate the treatment of the occupants.
- The number of hospital berths required shall be prescribed by the competent authority.
- Water closet accommodation shall be provided for the exclusive use of the occupants of the hospital accommodation, either as part of the accommodation or in close proximity thereto.
- Hospital accommodation shall not be used for other than medical purposes.
- An approved medicine chest with readily understandable instructions shall be carried in every ship, which does not carry a doctor. Cite: ILO 92.

### What are the requirements for food stores onboard a vessel?

The provision of food and water supplies which, having regard to the size of the crew and the duration and nature of the voyage, are suitable in respect of quantity, nutritive value, quality and variety. Cite: ILO 68, Article 5

# What would you inspect for in regards to Food and Catering?

Visually inspect food and water supplies and of the accommodation, arrangements and equipment on board ship for the storage, handling and preparation of food. Cite: ILO 68, Article 2

Can we detain a vessel for not enough food under International authority?

The inspector should not unreasonably detain of delay a ship owing to its failure to meet standards concerning food and catering. Consideration should be given to detaining a ship until corrective action is taken only when the failure to satisfy the requirements of Article 5 of Convention 68 poses a clear hazard to safety or health. Sources: PWSA 33CFR160; ILO "Inspection of labor conditions on board ship: Guidelines for procedure. pg. 32

What are the basic requirements for crew accommodation on vessels?

- The location, means of access, structure and arrangement in relation to other spaces of crew accommodation shall be such as to ensure adequate security, protection against weather and sea, and insulation from heat or cold, undue noise or effluvia from other space.
- Steam supply and exhaust pipes for winches and similar gear shall not pass through crew accommodation.
- Crew accommodation shall be provided with sufficient drainage.
- An adequate system of heating crew accommodation shall be provided. The heating shall be by means of steam, hot water, warm air or electricity.
- Crew accommodations shall be adequately lighted. When it is not possible to
  provide adequate natural lighting, adequate lighting shall be provided. In sleeping
  rooms, an electric reading lamp shall be installed at the head of the berth.
- The number of persons allowed to occupy sleeping rooms shall not exceed the following maximum, which shall be indelibly and legibly marked in some place in the rooms where they can be conveniently seen:
- -Officer in charge of a department, navigating and engineer officers in charge of a watch and senior radio officers or operators: one person per room
- -other officers and petty officers; one person per room whenever possible, and in no case more than two;
- -other ratings; two or three persons per room whenever possible, and in no case more than four persons.

**ILO 92** 

language of the State whose flag the ship is entitled to fly shall prevail in case of a dispute or discrepancy. Cite: MARPOL 73/78. Annex I/20

# Do the Oil Record Book entries have to be signed? If so, by whom?

Yes, each completed operation shall be signed by the officer or officers in charge of the operations concerned and each completed page shall be signed by the master of the ship. Cite: MARPOL 73/78 Annex I/20

# How long are the oil record books required to be kept on board?

The Oil Record Book shall be kept in such a place as to be readily available for inspection at all reasonable times. It shall be preserved for a period of three years after the last entry has been made. Cite: MARPOL 73/78. Annex I/20

# What is a Shipboard Oil Pollution Emergency Plan (SOPEP)?

The SOPEP is an oil spill response plan for a vessel. This plan is geared towards oil that the vessel uses, NOT cargo (cargo would be covered under the Vessel Response Plan). All vessels of any type over 400 gross tons traveling over international waters must have a SOPEP approved by their flag state. Cites: MARPOL 73/78 Annex I/26 & 33CFR151.26

# Who approves SOPEPs?

The Flag state or a recognized organization acting on behalf of the Flag state. Cite:http://www.uscg.mil/vrp/faq/planreq.shtml#prl

# What would you be looking for in a SOPEP?

- Plan must be in English & language readily understood by the crew
- Plan must be approved by the flag state
- Six sections
- 1. Introduction: general information, vessel particulars, ship's name, ect,
- 2. Preamble: how this plan relates to shore plans
- 3. Reporting requirements: when to report a spill, information required when reporting a spill, who to report a spill to (NRC is OK)
- 4. Steps to control a discharge
- 5. National and local coordination
- Appendices: MUST have 24hr contact info, list of agencies or officials in regularly
  visited ports, list of parties with financial interest in the ship, record of annual reviews
  and changes

MARPOL 73/78 Annex I/26 & 33CFR151.26

# What actions should be taken if a vessel does not have a SOPEP on board?

a. Since 4 July 1995, all tank vessels 150 gross tons and above, and all other

ships over 400 gross tons, shall have an approved SOPEP on board in accordance with MARPOL Annex I, Regulation 26. Any vessel not meeting the criteria, shall be dealt in the manner below.

NOTE: An approved plan shall be required within 90 days and the vessel's master should be warned in writing that failure to comply will result in denial of entry, detention, and/or suspension of operations. The OCMI/COTP shall document the absence of an approved SOPEP with a Vessel of Particular Interest (VPI) notice in MSIS. MSM Vol II D.2.d.4

# What is the Standard Discharge Connection used for?

To enable pipes of reception facilities to be connected with the ship's discharge pipeline for residues from machinery bilges. Cite: MARPOL 73/78. Annex I/19

# Are vessels allowed to have connections directly overboard from sludge tanks or machinery spaces?

No, piping to and from sludge tanks shall have no direct connection overboard, other than the standard discharge connection. Cite: MARPOL 73/78. Annex I/17

# Are there any exceptions to this?

Ships with existing installations having piping to and from sludge tanks to overboard discharge outlets, other than the standard discharge connection may comply by the installation of blanks in this piping. Cite: MARPOL 73/78. Annex I Unified Interpretation 8.3.1

### What is an OWS?

Oily water separator. The OWS is oil filtering equipment that prevents the accidental discharge of oil overboard by removing oil from the water. It ensures that any oily mixture discharged into the sea after passing through the system has oil content not exceeding 15 ppm. Cite: MARPOL 73/78. Annex I/16

# What vessels are required to have an OWS?

- Any ship of 400 tons gross tonnage and above but less than 10,000 tons gross tonnage shall be fitted with oil filtering equipment which ensures that any oily mixture discharged into the sea after passing through the system has an oil content not exceeding 15 parts per million.
- Any ship of 10,000 tons gross tonnage and above shall be provided with oil
  filtering equipment, and with arrangements for an alarm and for automatically
  stopping any discharge of oily mixture when the oil content in the effluent
  exceeds 15 parts per million. Cite: MARPOL 73/78. Annex I/16

## What are the alarm requirements for an OWS?

An alarm device which should be pre-set by the manufacturer to activate when the effluent exceeds 15 ppm. These alarms should also operate automatically if at any time the meter should fail to function, require a warm-up period or otherwise by de-energized. Cite: MEPC Resolution 60(33)

## What are the system and alarm requirements for OWS on vessels?

>400GT Oil filtering equipment shall be of a design approved by the Administration and shall be such as will ensure that any oily mixture discharged into the sea after passing through the system has an oil content not exceeding 15 parts per million.
>10,000GT Oil filtering equipment shall be of a design approved by the Administration and shall be such as will ensure that any oily mixture discharged into the sea after passing through the system has an oil content not exceeding 15 parts per million. It shall be provided with alarm arrangements to indicate when this level cannot be maintained. The system shall also be provided with arrangements such as will ensure that any discharge of oily mixtures is automatically stopped when the oil content of the effluent exceeds 15 parts per million.

# What should be checked when inspecting a vessel's OWS system?

The following are a few items/situations that field personnel should keep in mind during OWS examinations:

- Ensure that operational tests follow written procedures.
- Ensure that the ppm sensor samples the OWS output and that the sensor is not sampling the flushing water routinely used to clean the sensor.
- Ascertain a lined up sampling connection to the ppm meter and ensure that there
  are no additional connections to the piping after the three-way control valve.
- Look for discoloration around skin valve bonnets. Any such discoloration found after the three-way valve may indicate discharges with content above 15 ppm.
- Be suspicious of areas that appear too clean or dirty. Recently painted surfaces may indicate concealment.
- Evaluate if the OWS can reasonably be expected to handle the oily water load in the bilge.
- Identify waste oil tank levels from which the OWS may take suction, compare tank levels with notations in the oil record book.
- During the course of examinations, field personnel should be aware of the exceptions under MARPOL 73/78, Annex I/11 that allow for oil discharges under certain conditions.

Source: G-MOC msg 181917Z MAY 01, INSPECTIONS OF OILY WATER SEPARATORS ON FOREIGN AND U.S. VESSELS

# What should you do if evidence of a possible violation is found?

If evidence of a possible violation is found, COTPs are reminded of the following:

- An investigation should immediately be initiated.
- Any evidence discovered during the inspection shall be seized in accordance with 14 USC 89 and turned over to investigators.
- Care should be taken to preserve the scene and custody of the evidence.
- Photos are recommended.
- COTPs shall notify CGIS d (M) and d (L).
- Only Coast Guard commissioned, warrant and petty officers may exercise law enforcement authority under 14 USC 89.

Source: G-MOC msg 181917Z MAY 01, INSPECTIONS OF OILY WATER SEPARATORS ON FOREIGN AND U.S. VESSELS

# What are the requirements for fuel/lube oil containment?

A ship of 300 gross tons or more constructed after June 30, 1974 must have a fixed container or enclosed deck area under or around each fuel oil or bulk lubricating oil tank vent, overflow, and fill pipe, that:

(1) For a ship of 300 or more but less than 1600 gross tons has a capacity of at least one-half barrel; and

(2) For a ship of 1600 or more gross tons has a capacity of one barrel.

Cite: 33 CFR 155.320

# What vessels must have a "Discharge of Oil" Placard, where must it be posted and what should it say?

A ship, except a ship of less than 26 feet in length, must have a placard of at least 5 by 8 inches, made of durable material fixed in a conspicuous place in each machinery space, or at the bilge and ballast pump control station, stating the following:

### Discharge of Oil Prohibited

The Federal Water Pollution Control Act prohibits the discharge of oil or oily waste into or upon the navigable waters of the United States, or the waters of the contiguous zone, or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States, if such discharge causes a film or discoloration of the surface of the water or causes a sludge or emulsion beneath the surface of the water. Violators are subject to substantial civil penalties and/or criminal sanctions including fines and imprisonment.

The placard must be printed in the language or languages understood by the crew. Cite: 33 CFR 155.450.

# What are the U.S. oil transfer procedure requirements? Do not include the Content of the procedures.

The operator of a vessel with a capacity of 250 or more barrels of oil, hazardous material, or liquefied gas shall provide transfer procedures that meet the requirements of this part and part 156 of this chapter for transferring

- (a) To or from the vessel; and
- (b) From tank to tank within the vessel.

The vessel operator of each vessel shall maintain them current and shall require vessel personnel to use the transfer procedures for each transfer operation.

The transfer procedures must be:

- (a) Available for inspection by the COTP or OCMI whenever the vessel is in operation;
- (b) Legibly printed in a language or languages understood by personnel engaged in transfer operations; and
- (c) Permanently posted or available at a place where the procedures can be easily seen and used by members of the crew when engaged in transfer operations. Cite: 33 CFR 155.720, 730, 740

### Which vessels are required to have Garbage Record Books?

Every ship of 400 tons gross tonnage and above and every ship which is certified to carry 15 persons or more engaged in voyages to ports or offshore terminals under the

jurisdiction of other Parties to the, shall be provided with a Garbage Record Book. The Garbage Record Book, whether as a part of the ship's official logbook or otherwise, shall be in the form specified in the appendix of Annex V. Cite: MARPOL 73/78 Annex V/9

# How must garbage be properly disposed?

The disposal into the sea of all plastics, including but not limited to synthetic ropes, synthetic fishing nets, plastic garbage bags and incinerator ashes from plastic products which may contain toxic or heavy metal residues, is prohibited. The disposal into the sea of the following garbage shall be made as far as practicable from the nearest land but in any case is prohibited if the distance from the nearest land is less than:

25 nautical miles for dunnage, lining and packing materials which will float;

 12 nautical miles for food wastes and all other garbage including paper products, rags, glass, metal, bottles, crockery and similar refuse;

Disposal into the sea of garbage specified above may be permitted when it has passed through a comminuter or grinder and made as far as practicable from the nearest land but in any case is prohibited if the distance from the nearest land is less than 3 nautical miles. Such comminuted or ground garbage shall be capable of passing through a screen with openings no greater than 25 millimeters.

When the garbage is mixed with other discharges having different disposal or discharge requirements the more stringent requirements shall apply. Cite: MARPOL 73/78 Annex V/3

# Which vessels are required to have Garbage Management Plans? What information should be in the Plan?

Every ship of 400 tons gross tonnage and above, and every ship which is certified to carry 15 persons or more, shall carry a garbage management plan, which the crew shall follow. This plan shall provide written procedures for collecting, storing, processing and disposing of garbage, including the use of the equipment on board. It shall also designate the person in charge of carrying out the plan. Such a plan shall be in accordance with the guidelines developed by the Organization and written in the working language of the crew. Cite: MARPOL 73/78 Annex V/9

# What are the Garbage Placard requirements?

Every ship of 12 meters or more in length overall shall display placards which notify the crew and passengers of the disposal requirements of regulations 3 and 5 of MARPOL Annex V, as applicable. The placards should be written in the official language of the State whose flag the ship is entitled to fly and, for ships engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties to the Convention, in English or French.

# What are Type II and III MSD's?

Type II MSD: not greater than 200 fecal colliform count per 100 ml

Type III MSD: prevents any discharge overboard of treated or untreated sewage or waste derived from sewage (a holding tank that gets pumped out to a facility) CITE 33CFR159.3

## What type of MSD must be placarded?

All devices must have a placard with lettering at least 1/8 "high describing the operating instructions, the safety precautions and warnings (33CFR159.59)

Also, all types must be marked with the manufacturer name, the model name, the model number, the month and year of manufacture completion, serial number, whether the device is a I, II, or III, and whether the model is certified for use one a inspected or uninspected vessel. If it meets the requirements of 33 CFR 159.12a, a type III MSD does not need to be placarded. (33CFR159.55)

## Who may approve a MSD?

U.S. Coast Guard – COMDT G-MSE or a government that is party to the MARPOL convention. Devices that meet MARPOL Annex IV are fully equivalent to USCG Type II MSD's. MARPOL Annex IV MSD's must have a "Certification of Type Test" demonstrating compliance with IMO Resolution MEPC.2(VI). The "Certification of Type Test" must be issued by or on behalf of a nation which is signatory to MARPOL Annex IV. Cite: MARPOL 73/78 Annex IV; 33CFR159, and NVIC9-82 CH.1

# Is the US party to MARPOL Chapter IV? What convention/regulations do we use to write deficiencies for sewage systems?

No, the US is not party to MARPOL Chapter IV, so our control comes from requirements in 33CFR159.

# When must the overboard discharged be shut in US waters? Is it required to be shut in the Mississippi River?

The overboard discharge must be shut in specific areas listed in 40CFR140.3 or 140.4. Some areas include the Florida Keys National Marine Sanctuary and certain sections of the Hudson River. No, it's not required in the Mississippi River. 40CFR140 is available at:

http://www.access.gpo.gov/nara/cfr/cfrhtml\_00/Title\_40/40cfr140\_00.html Individual states have the right to prohibit sewage discharges in their waters, but they must apply to the Administrator of the EPA to do so.

Procedures include padlocking the seacock in a closed position or closing each valve leading to an overboard discharge and removing the handle;

Padlocking the seacock in the closed position;

Using non-releasable wire-tie to hold the seacock in the closed position; or Locking the door to the space enclosing the toilets with a padlock or door handle key lock. Cite: (33CFR159.7)

# IX. LIFESAVING EQUIPMENT

### LIFEBOATS

# How many lifeboats are required on a freight vessel?

Cargo ships shall carry:

One or more totally enclosed lifeboats complying with the requirements of section 4.6 of the LSA Code of such aggregate capacity on each side of the ship as will accommodate the total number of persons on board; In lieu of meeting these requirements, cargo ships may carry:

- One or more free-fall lifeboats, complying with the requirements of section 4.7 of the LSA Code, capable of being free-fall launched over the stern of the ship of such aggregate capacity as will accommodate the total number of persons on board.
- in addition, one or more inflatable or rigid liferafts complying with the requirements of section 4.2 or 4.3 of the LSA Code, on each side of the ship, of such aggregate capacity as will accommodate the total number of persons on board. The liferafts on at least one side of the ship shall be served by launching appliances.

Cite: SOLAS Consolidated 2001, III/31

Keel laid prior to 01JUL86

vsl less than 1600GT: number is determined by the flag state vsl greater than 1600GT: at least one motorized and one each side of the ship of the open type lifeboat is required (SOLAS Unamended III/8, 35)

Keel laid after 01JUL86

All other vsls: one or more lifeboats required to accommodate the total number of persons on board (SOLAS III/26,1.1.1)

Are there any exceptions?

Yes. Cargo ships of less than 85 meters in length, may comply with the following: They shall carry on each side of the ship, one or more inflatable or rigid liferafts complying with the requirements of section 4.2 or 4.3 of the LSA Code and of such aggregate capacity as will accommodate the total number of persons on board. Cite: SOLAS Consolidated 2001, III/31.1.3

Additionally, vessels with keel laid after 01JUL86 may have liferafts in lieu of lifeboats to the satisfaction of the Administration. Cite SOLAS III/26.

What are the four methods of propelling a lifeboat?

By sail, by oars, by engine, by flemming gear.

# What are the lifeboat engine operating requirements?

- The engine shall be provided with either a manual starting system, or a power starting system with two independent rechargeable energy sources. Any necessary starting aids shall also be provided.
- The engine starting systems and starting aids shall start the engine at an ambient temperature of -15°C within 2 min of commencing the start procedure unless, in the opinion of the Administration having regard to the particular voyages in which the ship carrying the lifeboat is constantly engaged, a different temperature is appropriate.
- The engine casing, seating or other obstructions shall not impede the starting systems.
- The engine shall be capable of operating for not less than 5 min after starting from cold with the lifeboat out of the water.
- The engine shall be capable of operating when the lifeboat is flooded up to the centerline of the crankshaft.

Cite: LSA Code Section 4

# Where can you find the list of equipment required in a lifeboat?

LSA Code / Section 4

# How often are lifeboats and their equipment required to be inspected?

The following tests and inspections shall be carried out weekly:

- All survival craft, rescue boats and launching appliances shall be visually inspected to ensure that they are ready for use;
- All engines in lifeboats and rescue boats shall be run for a total period of not less than 3 min provided the ambient temperature is above the minimum temperature required for starting and running the engine. During this period of time, it should be demonstrated that the gear box and gear box train are engaging satisfactorily.
- If the special characteristics of an outboard motor fitted to a rescue boat would not allow it to be run other than with its propeller submerged for a period of 3 min, it should be run for such period as prescribed in the manufacturer's handbook. In special cases the Administration may waive this requirement for ships constructed before I July 1986.

The following tests and inspections shall be carried out monthly:

- Inspection of the life-saving appliances, including lifeboat equipment, shall be carried out monthly using the checklist required by regulation 36.1 to ensure that they are complete and in good order.
- A report of the inspection shall be entered in the logbook.

Cite: SOLAS Consolidated 2001, III/20

# Are davit arm limit switches required and why?

Where davit arms are recovered by power, safety devices shall be fitted which will automatically cut off the power before the davit arms reach the stops in order to prevent overstressing the falls or davits, unless the motor is designed to prevent such overstressing. Cite LSA Code Section 6.

# How often should lifeboat falls be end for ended/renewed?

Lifeboat falls shall be turned end for end at intervals of not more than 30 months and be renewed when necessary due to the deterioration of the falls or at intervals of not more than five years, whichever is earlier. The administration may accept, in lieu of end for ending, periodic inspection of the falls and their renewal whenever necessary due to the deterioration or at intervals of not more than four years. SOLAS III / 20

# Can a lifeboat be used as a rescue boat?

Yes. Cargo ships shall carry at least one rescue boat complying with the requirements of section 5.1 of the LSA Code. A lifeboat may be accepted as a rescue boat, provided that it also complies with the requirements for a rescue boat. Cite: SOLAS 2001 Consolidated III / 31

# What is a rescue boat?

A rescue boat is a boat designed to rescue persons in distress and to marshal survival craft. SOLAS Consolidated 2001 III / 3.19

# What are the additional requirements for a rescue boat?

In addition to meeting all requirements of lifeboats, rescue boats must also meet the following:

- Must be able to go 6 knots and maintain that speed for 4 hours
- Must have sufficient mobility and be able to maneuver to rescue persons in the
  water, marshal liferafts, and tow the largest liferaft when full with largest
  compliment of persons at a speed of at least 2 knots
- Must meet all testing requirements in SOLAS III / 42
- Cite: LSA Code Section 5.

### LIFE RAFTS

# How many life rafts required?

One or more inflatable or rigid liferafts, complying with the requirements of section 4.2 or 4.3 of the LSA Code, stowed in a position providing for easy side-to-side transfer at a single open deck level, and of such aggregate capacity as will accommodate the total number of persons on board. If the liferaft or liferafts are not stowed in a position providing for easy side-to-side transfer at a single open deck level, the total capacity

available on each side shall be sufficient to accommodate the total number of persons on board. Additionally, Cargo ships where the horizontal distance from the extreme end of the stem or stem of the ship to the nearest end of the closest survival craft is more than 100 m shall carry, in addition to the liferafts required above, a liferaft stowed as far forward or aft, or one as far forward and another as far aft, as is reasonable and practicable. Such liferaft or liferafts may be securely fastened so as to permit manual release and need not be of the type, which can be launched from an approved launching device. Cite: SOLAS Consolidated 2001, III/31

Applicability	Liferaft type	#	Stowage
Before 1Jul86 – all ships	Inflated or rigid	One or more with enough capacity for all persons o/b	Automatically releases from a sinking ship
Keel laid before 01JUL86 Vsl >100m – the above cite AND	Inflated or rigid	One six-man	Bow or stern, does not have to be float free
Keel laid after 01JUL86	Inflated or rigid	Enough capacity for all persons o/b	Must be able to launch from each side of the ship
Keel laid after 01JUL86 Vsl >100m - the above cite AND	Inflated or rigid	One six-man	Bow or stern, does not have to be float free

Cite: SOLAS Consolidated 2001, III/31

# Are operating instructions required for survival craft?

Yes, posters or signs shall be provided on or in the vicinity of survival craft and their launching controls and shall:

- Illustrate the purpose of controls and the procedures for operating the appliance and give relevant instructions or warnings;
- Be easily seen under emergency lighting conditions;
- Use symbols in accordance with the recommendations of the Organization

Cite: SOLAS Consolidated 2001 III / 9.

# How often should life rafts and hydrostatic releases be serviced? How long/who/when can service dates be extended?

Every inflatable liferaft and marine evacuation system needs to be serviced every 12 months; the flag state may extend this up to 5 months, making the interval 17 months. SOLAS Consolidated 2001 III / 20. Also, MSC Circular 955. The requirement is the same for hydrostatic release units.

# What are the requirements for an embarkation and/or pilot ladder?

Requirements are:

- Handholds to ensure safe passage from deck to the ladder and vice versa
- Must be made of hardwood
- Must be smoothly machined w/ no splinters, ect
- Not less than 480mm long, 115 mm wide, and 25mm deep
- Steps must be equally spaced apart, between 300mm and 380mm
- Side ropes, must have two of them, 65mm in circumference
- Side ropes must be manila ropes

CITE: LSA Code Section 6

# What are the requirements for a line-throwing appliance?

Line throwing appliances are required to:

- Be capable of throwing a line with reasonable accuracy
- Must have at least 4 projectiles
- Each projectile must be able to carry the line 230m in calm weather
- Must have at least 4 lines
- Must have instructions/diagrams

The rocket, in the case of a pistol-fired rocket, or the assembly, in the case of an integral rocket and line, shall be contained in a water-resistant casing. In addition, in the case of a pistol-fired rocket, the line and rockets together with the means of ignition shall be stowed in a container which protection from the weather.

Cite: LSA Code Section 7

# What type and how many distress signals would you find onboard a ship?

Not less than 12 rocket parachute flares, complying with the requirements of section 3.1 of the LSA Code, shall be carried and be stowed on or near the navigation bridge. Cite: SOLAS Consolidated 2001 III/6

The following are required in each lifeboat. Cite: LSA Code Chapter IV

- Four rocket parachute flares
- Six hand flares
- Two buoyant smoke signals

# What are the requirements for lifebuoys?

Lifebuoys complying with the requirements of paragraph 2.1.1 of the LSA Code shall be:

- So distributed as to be readily available on both sides of the ship and as far as practicable on all open decks extending to the ship's side; at least one shall be placed in the vicinity of the stern; and
- So stowed as to be capable of being rapidly cast loose, and not permanently secured in any way.

- At least one lifebuoy on each side of the ship shall be fitted with a buoyant lifeline
  equal in length to not less than twice the height at which it is stowed above the
  waterline in the lightest seagoing condition, or 30 m, whichever is the greater.
- Not less than one half of the total number of lifebuoys shall be provided with lifebuoy self-igniting lights; not less than two of these shall also be provided with lifebuoy self-activating smoke signals and be capable of quick release from the navigation bridge;
- Lifebuoys with lights and those with lights and smoke signals shall be equally
  distributed on both sides of the ship and shall not be the lifebuoys provided with
  lifelines.
- Each lifebuoy shall be marked in block capitals of the Roman alphabet with the name and port of registry of the ship on which it is carried. SOLAS Consolidated 2001 III / 7

## How many lifebuoys are required?

Cargo ships shall carry not less than the number of lifebuoys complying with the requirements of SOLAS III/ 7.1 and section 2.1 of the LSA Code prescribed in the following table:

Length of ship in meters	Minimum number of lifebuoys	
Under 100	8	
100 and under 150	10	
150 and under 200	12	
200 and over	14	

### What are the requirements for lifejackets?

The following are required:

- One for every person aboard the ship
- One child size for each child aboard the ship
- A sufficient number of lifejackets shall be carried for persons on watch and for
  use at remotely located survival craft stations. The lifejackets carried for persons
  on watch should be stowed on the bridge, in the engine control room and at any
  other manned watch station.
- Placed in readily accessible areas and their position plainly marked
   Cite: SOLAS Consolidated 2001 III / 7

### What is an immersion suit and what are the requirements?

- A protective suit that reduces the body heat loss of a person wearing it in cold water.
- An immersion suit, complying with the requirements of section 2.3 of the Code or an anti-exposure suit complying with section 2.4 of the Code, of an appropriate size, shall be provided for every person assigned to crew the rescue boat or assigned to the marine evacuation system party. If the ship is constantly engaged

in warm climates where, in the opinion of the Administration thermal protection is unnecessary, this protective clothing need not be carried.

Cites: SOLAS Consolidated 2001 III / 7, LSA Code 2.3 and 2.4

# X. FIRE FIGHTING

# How many fire pumps are required on a freight ship?

Less than 1,000GT – the flag state determines Over 1,000GT – at least 2

Cite: SOLAS Consolidated 2001 II-2 / 4

## Can a ballast pump be accepted as a fire pump?

Yes. Sanitary, ballast, bilge or general service pumps may be accepted as fire pumps, provided that they are not normally used for pumping oil and that if they are subject to occasional duty for the transfer or pumping of oil fuel, suitable change-over arrangements are fitted. Cite: SOLAS Consolidated 2001 II-2 / 4

## What is the requirement for emergency fire pumps? Where should it be located?

In cargo ships of 2,000 gross tonnage and upwards, if a fire in any one compartment could put all the pumps out of action there shall be an alternative means consisting of a fixed independently driven emergency pump which shall be capable of supplying two jets of water to the satisfaction of the Administration. The pump and its location shall comply with the following requirements:

- The boundaries of the space containing the fire pump shall be insulated to a standard of structural fire protection equivalent to that required for a control station.
- No direct access shall be permitted between the machinery space and the space containing the emergency fire pump and its source of power.
- When this is impracticable an Administration may accept an arrangement where
  the access is by means of an airlock, each of the two doors being self-closing, or
  through a watertight door capable of being operated from a space remote from the
  machinery space and the space containing the emergency fire pump and unlikely
  to be cut off in the event of fire in those spaces.
- In such cases a second means of access to the space containing the emergency fire pump and its source of power shall be provided.

Cite: SOLAS Consolidated 2001 II-2 / 4

# How many fire hoses are required?

In cargo ships of 1,000 gross tonnage and upwards the number of fire hoses to be provided shall be one for each 30 m length of the ship and one spare but in no case less than five in all.

This number does not include any hoses required in any engine or boiler room. In cargo ships of less than 1,000 gross tonnage the number of fire hoses to be provided shall be to the satisfaction of the Administration.

Cite: SOLAS Consolidated 2001 II-2/4

# What are the requirements for portable fire extinguishers?

Must weigh less than 23 kg, each powder or CO2 extinguisher should have at least a 5kg capacity and each foam extinguisher a capacity of at least 9 liters (NVIC 10-99), FSS Code Chapter 4.

# How often must portable fire extinguishers be serviced?

- Extinguishers should be subject to periodical inspections and maintenance in accordance with the manufacturer's instructions. The periods between such inspections and maintenance should not exceed the period between safety equipment surveys. Source: IMO Resolution A.602 (15)
- All must be examined annually by a competent person and must be hydraulically tested every 10 yrs.
- Records of inspections should be maintained. The records should show the date of inspection, the type of maintenance carried out, and whether or not a pressure test was performed.
- Instructions for recharging extinguishers should be supplied by the manufacturer and be available for use on board. Source: MSC / Circ. 847

# How many firemen's outfits are required?

At least TWO Cite: SOLAS 2001 Consolidated II-2 / 17

# What does a firemen's outfit consist of?

Personal equipment consisting of:

- Protective clothing made of material to protect the skin from the heat of the fire with outer coating that is water resistant
- Boots and gloves of rubber (or another non-conducting material)
- Rigid helmet
- Electric safety lamp of an approved type that can burn for 3 hours
- An axe approved by the flag state
- A breathing apparatus of an approved type
  - o A smoke helmet or smoke mask with a suitable air pump and length of hose; or
  - o A self-contained compressed-air-operated breathing apparatus with a volume of at least 12001 or 30 minutes of functioning air. With spare bottles supplied to satisfaction of Administration.
- Each breathing apparatus shall have a fireproof lifeline Cite: SOLAS 2001 Consolidated II-2 / 17, FSS Code Chapter 3

### What is an International Shore Connection?

The international shore connection is a slotted flange that connects the ship's fire fighting to any shore hose. This allows any shore side hose to be hooked up to the international shore connection so that a fire can be fought on board the vessel. Cite: SOLAS 2001 Consolidated II-2 / 19, FSS Code Chapter 2

### What is a fire control plan used for?

General arrangement plans shall be permanently exhibited for the guidance of the ship's officers, showing clearly for each deck the control stations, the various fire sections enclosed by "A" class divisions, the sections enclosed by "B" class divisions together with particulars of the fire detection and fire alarm systems, the sprinkler installation, the fire extinguishing appliances, EEBDs, fireman's outfits, international shore connection, means of access to different compartments, decks, etc., and the ventilating system, including particulars of the fan control positions, the position of dampers and identification numbers of the ventilating fans serving each section. Alternatively, at the discretion of the Administration, the aforementioned details may be set out in a booklet, a copy of which shall be supplied to each officer, and one copy shall at all times be available on board in an accessible position. Plans and booklets shall be kept up to date; any alterations thereto shall be recorded as soon as practicable. Cite: SOLAS 2001 Consolidated II-2/20 or SOLAS 2002 II-2/15

## What language must the Fire Control Plan be in?

Description in such plans and booklets shall be in the language or languages required by the Administration. If the language is neither English nor French, a translation into one of those languages shall be included. Cite: SOLAS 2001 Consolidated II-2/20 or SOLAS 2002 II-2/15

### What type of symbols must be used?

IMO Resolution A.654 (16) lists the type of symbol that must be used. Cite: SOLAS 2001 Consolidated II-2/20 or SOLAS 2002 II-2/15.

### Where should it be stowed/exhibited?

One copy shall at all times be available on board in an accessible position and a duplicate set of fire control plans or a booklet containing such plans shall be permanently stored in a prominently marked weathertight enclosure outside the deckhouse for the assistance of shore-side fire-fighting personnel. Cite: SOLAS 2001 Consolidated II-2/20 or SOLAS 2002 II-2/15

What are the Fire-extinguishing arrangements for machinery spaces containing internal combustion engines?

Machinery spaces of category A containing internal combustion machinery shall be provided with:

- One of the following fire-extinguishing systems
  - o A gas system
  - O A high-expansion foam system
  - o A pressure water-spraying system
- At least one set of portable air-foam equipment
- In each such space approved foam-type fire extinguishers, each of at least 45 l capacity or equivalent, sufficient in number to enable foam or its equivalent to be directed on to any part of the fuel and lubricating oil pressure systems, gearing and other fire hazards. In addition, there shall be provided a sufficient number of portable foam extinguishers or equivalent which shall be so located that no point in the space is more than 10 m walking distance from an extinguisher and that there are at least two such extinguishers in each such space. For smaller spaces of cargo ships the Administration may consider relaxing this requirement. Cite: SOLAS 2001 Consolidated II-2/7

# What are the Fire-extinguishing arrangements for machinery spaces containing oil-fired boilers or oil fuel units?

Machinery spaces of category A containing oil-fired boilers or oil fuel units shall be provided with any one of the following fixed fire-extinguishing systems:

- One of the following fire-extinguishing systems
  - o A gas system
  - O A high-expansion foam system
  - o A pressure water-spraying system
- At least one set of portable foam applicator units.
- There shall be at least two portable foam extinguishers or equivalent in each firing space in each boiler room and in each space in which a part of the oil fuel installation is situated.
- There shall be not less than one approved foam-type extinguisher of at least 135 l
  capacity or equivalent in each boiler room.
  - These extinguishers shall be provided with hoses on reels suitable for reaching any part of the boiler room.
- In the case of domestic boilers of less than 175 kW in cargo ships the Administration may consider relaxing the requirements of this paragraph.
- In each firing space there shall be a receptacle containing sand, sawdust impregnated with soda, or other approved dry material in such quantity as may be required by the Administration.
  - O An approved portable extinguisher may be substituted as an alternative.

Cite: SOLAS 2001 Consolidated II-2/7

### What are the requirements if the engine and boiler are in the same space?

In each case if the engine and boiler rooms are not entirely separate, or if fuel oil can drain from the boiler room into the engine-room, the combined engine and boiler rooms shall be considered as one compartment. Cite: SOLAS 2001 Consolidated II-2/7

### What are the requirements for other machinery spaces?

Where, in the opinion of the Administration, a fire hazard exists in any machinery space for which no specific provisions for fire-extinguishing appliances are prescribed, there shall be provided in, or adjacent to, that space such a number of approved portable fire extinguishers or other means of fire extinction as the Administration may deem sufficient. Cite: SOLAS 2001 Consolidated II-2/7

## What are the requirements for remote operations in machinery spaces?

The means of control for the following:

Opening and closure of skylights, closure of openings in funnels which normally allow exhaust ventilation and closure of ventilator dampers;

Permitting the release of smoke

Closing power-operated doors or actuating release mechanism on doors other than power-operated watertight doors

Stopping ventilating fans; and

Stopping forced and induced draught fans, oil fuel transfer pumps, oil fuel unit pumps and other similar fuel pumps.

Every oil fuel pipe, which, if damaged, would allow oil to escape from a storage, settling or daily service tank situated above the double bottom, shall be fitted with a cock or valve directly on the tank capable of being closed from a safe position outside the space concerned in the event of a fire occurring in the space in which such tanks are situated. These controls shall be located outside the space concerned, where they will not be cut off in the event of fire in the space they serve. Cite: SOLAS 2001 Consolidated II-2/11 and 15

### What are the fire-extinguishing arrangements for Paint lockers?

Paint lockers and flammable liquid lockers shall be protected by an appropriate fireextinguishing arrangement approved by the Administration. Cite: SOLAS 2001 Consolidated II-2/18

### What do methods of protection IC, IIC, IIIC mean?

- Method IC-The construction of all internal divisional bulkheading of noncombustible "B" or "C" class divisions generally without the installation of an automatic sprinkler, fire detection and fire alarm system in the accommodation and service spaces.
- Method IIC-The fitting of an automatic sprinkler, fire detection and fire alarm system as required for the detection and extinction of fire in all spaces in which

- fire might be expected to originate, generally with no restriction on the type of internal divisional bulkheading.
- Method IIIC-The fitting of a fixed fire detection and fire alarm system as required in all spaces in which a fire might be expected to originate, generally with no restriction on the type of internal divisional bulkheading, except that in no case must the area of any accommodation space or spaces bounded by an "A" or "B" class division exceed 50 m2. Consideration may be given by the Administration to increasing this area for public spaces. Cite: SOLAS 2001 Consolidated II-2/42

# Where are fire/smoke detection and fire alarm systems required?

- In ships in which method IC is adopted, a fixed fire detection and fire alarm system of an approved type complying with the requirements of regulation 13 shall be so installed and arranged as to provide smoke detection and manually operated call points in all corridors, stairways and escape routes within accommodation spaces.
- In ships in which method IIC is adopted, an automatic sprinkler, fire detection and fire alarm system of an approved type complying with the relevant requirements of regulation 12 shall be so installed and arranged as to protect accommodation spaces, galleys and other service spaces, except spaces which afford no substantial fire risk such as void spaces, sanitary spaces, etc. In addition, a fixed detection and fire alarm system of an approved type complying with the requirements of regulation 13 shall be so installed and arranged as to provide smoke detection and manually operated call points in all corridors, stairways and escape routes within accommodation spaces.
- In ships in which method IIIC is adopted, a fixed fire detection and fire alarm system of an approved type complying with the requirements of regulation 13 shall be so installed and arranged as to detect the presence of fire in all accommodation spaces and service spaces, except spaces which afford no substantial fire risk such as void spaces, sanitary spaces, etc.
- A fixed fire detection and alarm system complying with the provisions of regulation 14 shall be fitted in any machinery space:
  - Where the installation of automatic and remote control systems and equipment has been approved in lieu of continuous manning of the space; and
  - Where the main propulsion and associated machinery including sources of main electrical supply are provided with various degrees of automatic or remote control and are under continuous manned supervision from a control room.

Cite: SOLAS II-2/11, 12, 13, 14, 52, 53

# XI. DRILLS

# What are the SOLAS requirements for drills?

 Drills shall, as far as practicable, be conducted as if there were an actual emergency.

• Every crewmember shall participate in at least one abandon ship drill and one fire

drill every month.

• The drills of the crew shall take place within 24 h of the ship leaving a port if more than 25% of the crew have not participated in abandon ship and fire drills on board that particular ship in the previous month. When a ship enters service for the first time, after modification of a major character or when a new crew is engaged, these drills shall be held before sailing.

• The Administration may accept other arrangements that are at least equivalent for

those classes of ships for which this is impracticable.

Cite: SOLAS Consolidated 2001, III/19

# Are drills required to be logged and where?

The date when musters are held, details of abandon ship drills and fire drills, drills of other life-saving appliances and on-board training shall be recorded in such log-book as may be prescribed by the Administration. If a full muster, drill or training session is not held at the appointed time, an entry shall be made in the logbook stating the circumstances and the extent of the muster, drill or training session held. Cite: SOLAS Consolidated 2001, III/19

# What are the requirements for launching and maneuvering lifeboats in the water?

Each lifeboat shall be launched with its assigned operating crew aboard and maneuvered in the water at least once every 3 months during an abandon ship drill. Cite: SOLAS Consolidated 2001, III/19

# What are the requirements for free fall lifeboats?

Lowering into the water, rather than launching of a lifeboat arranged for free-fall launching, is acceptable where free-fall launching is impracticable provided the lifeboat is free-fall launched with its assigned operating crew aboard and maneuvered in the water at least once every six months. However, in cases where it is impracticable, the Administration may extend this period to 12 months provided that arrangements are made for simulated launching which will take place at intervals of not more than 6 months. Cite: SOLAS Consolidated 2001, III/19