RULES FOR APPROVAL OF MANUFACTURERS AND SERVICE SUPPLIERS

Rules for Approval of Manufacturers and Service Suppliers
2015 AMENDMENT NO.1

Rule No.62 25th December 2015
Resolved by Technical Committee on 28th July 2015
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Rule No.62 25th December 2015
AMENDMENT TO THE RULES FOR APPROVAL OF MANUFACTURERS AND SERVICE SUPPLIERS

"Rules for approval of manufacturers and service suppliers" has been partly amended as follows:

Part 1 GENERAL

Chapter 2 ASSESSMENT

Section 2.3 has been amended as follows.

2.3 Initial Assessments

In initial assessments, a manufacturing works or a service supplier will be assessed by the Society based upon the results of a document examination and field examination as specified ~~for~~ in the following:

1 Document examination

(1) For manufacturing works of products intended to be approved under the Rules, ~~3 copies each of~~ the following documents are to be submitted to the Society for ~~the document~~ examination to verify whether the quality system, etc. complies with the Rules.
   (a) Outline of the ~~works~~firms ~~intended to be approved~~ (location, history, capital, organization ~~diagram~~and management structure, number of employees, main products, standard production output, etc.) subject to approval
   (b) Manufacturing facilities (a summary of main manufacturing facilities and inspection equipment, outline of workshops and facilities for storing materials and parts, a list of orders to the subcontractors and the subcontracted products, etc.)
   (c) Outline of the products
   (d) Quality manual and its supplementary documents
   (e) Quality plan for each product
   (f) Any other data deemed necessary by the Society

(2) For service suppliers intended to be approved under the Rules, ~~3~~one copy~~ies~~ each of the following documents ~~are~~is to be submitted to the Society for examination to verify whether the~~to~~ quality system, etc. complies with the Rules~~Society for the document examination~~.
   (a) Outline of the firms (the location, history, capital, organization and management structure (including subsidiaries), number of employees, main services and their actual records, etc.) ~~intended to be~~subject to approval~~ed (location, history, capital, organization diagram, number of employees, main services and their actual records, etc.)~~
   (b) List of nominated agents, subsidiaries and subcontractors
   (~~b~~c) Description of equipment and facilities used for the particular service for which approval is sought (measuring equipment, outline of workshops and facilities for storing materials and parts, a list of orders to the subcontractors, etc.)
   (d) For categories of service suppliers that require authorization from manufacturers, manufacturer's documentary evidence that the service supplier has been authorized or licensed to service the particular makes and models of equipment for which approval is sought are to be provided. Possible terms of termination of such authorization are to be considered in connection with the renewal of the service supplier's certificate.

(e) Outline (including description of service conditions or service regions) of the relevant service

(~~d~~f) Quality manual and its supplementary documents, or documented procedures (work procedures, verification procedures, recording and reporting procedures, training procedures, control procedures of measuring equipment, etc.) specified in **1.2.1 of Chapter 3**

(~~e~~g) List of operators/technicians/inspectors documenting name, qualifications, training and experience within the relevant service area, and training programmes for operators/technicians/inspectors

(~~f~~h) Checklists of the relevant services and ~~reporting~~record formats submitted to the Society

(i) A guide for operators of the equipment needed to perform the service being provided

(j) Documented procedures for communication with the crew prior to commencing work, so that it is safe to decommission the equipment being maintained, and to provide a safe system of work in place

(~~g~~k) ~~Copies of approval certificates issued by competent organizations or other classification societies~~Evidence of approval/acceptance by other bodies, if any

(l) Information on the other activities which may present a conflict of interest

(m) Record of customer claims and of corrective actions requested by certification bodies

(~~h~~n) Other documents deemed necessary by the Society

~~(3) In the document examination, the documents submitted under the requirement in **(1)** or **(2)** above are reviewed to confirm that the documented quality system is in conformity with the Rules.~~

2 Field examinations

When the documents submitted for the Society review specified in **-1** above are deemed satisfactory, a field examination is to be carried out according to the following **(1)** to **(3)**:

(1) In the field examination, based on the documents that have been submitted and reviewed, the quality system, etc. of ~~the~~ manufacturing works ~~or the service supplier~~ is investigated on site to confirm that the quality system, etc. is in conformity with the Rules.

(2) For manufacturing works to which **Chapter 4, Part 2** of the Rules applies, approval tests on the products intended to be approved are to be carried out with satisfactory results.

(3) Field examinations ~~For~~of service suppliers are to be as specified in the following **(a)** and **(b)**: ~~to which **Part 3** of the Rules applies, demonstrations of the service performances intended to be approved are to be carried out with satisfactory results.~~

(a) The supplier is to be assessed in order to ascertain that they are duly organised and managed in accordance with the submitted documents specified in **-1** above; and

(b) It is to be verified that the supplier is capable of conducting the services for which approval/certification is sought.

Section 2.4 has been amended as follows.

2.4 Periodical Assessments~~Surveillance~~

1 Periodical ~~surveillance is carried out to the~~assessments are to be made of approved manufacturing works or service suppliers.

2 In the periodical ~~surveillance~~assessment, it is confirmed by the Society that the approved quality system, etc. of the manufacturing works or service supplier are satisfactorily maintained ~~satisfactorily~~.

3 The ~~date~~timing of periodical ~~surveillance~~assessments is to be as follows:

(1) For manufacturing works of products, periodical ~~surveillance~~assessment is to be carried out within a 3 *month~~s~~* ~~either way of~~period before or after each anniversary date (the day corresponding to the expiry date of the certificate).
(2) For service suppliers, periodical ~~surveillance~~assessment is to be carried out after 2 *years*, but ~~not~~before 3 *years* ~~passing~~have passed from the initial or the renewal approval date. Periodical assessments, however, are not required for service suppliers subject to **Chapter 2, Part 3** of the Rules.

Section 2.5 has been amended as follows.

2.5 Renewal Assessments

1 Renewal assessment is to be carried out to the approved manufacturing works or service supplier by the expiry date of the approval certificate as specified in **3.3**, in case where the manufacturer's or supplier's management intends renewal of the approval.
2 In the renewal assessment, assessment is to be made in accordance mutatis mutandis with the requirements for ~~the~~ initial assessments specified in **2.3** above. The details of the assessment, h~~H~~owever, may be modified when deemed acceptable by ~~if~~ the Society ~~considers acceptable, the assessment may be modified~~. For service suppliers, evidence of performance since the previous approval or renewal assessment need to be verified by a Society surveyor.

Section 2.6 has been amended as follows.

2.6 Occasional Assessments

1 ~~Occasional assessment is carried out to the approved manufacturing works or service supplier as the occasion demands, i~~In cases where ~~the~~an approved manufacturer~~'s~~ or service supplier~~'s management~~ intends to ~~make~~ alter~~nations and some change in~~to the details of their approval~~ed~~, etc., ~~contents~~at a time other than during a periodical assessment or renewal assessment, they are to inform the Society of their intent in a timely manner so that the Society can carry out an occasional assessment if it deems necessary~~at a time other than that of periodical surveillance or renewal assessment~~.
2 In ~~the~~ occasional assessments, it is confirmed by the Society that all the necessary items are in a satisfactory condition.

2.7 Preparations for Assessment or Surveillance, and Others

Sub-paragraph -1 has been amended as follows.

1 All ~~such~~ preparations ~~as required~~ for assessments ~~or surveillance~~ as specified in **2.3** through **2.6** are to be made by the manufacturing works or the service supplier~~s~~. On such occasions, the management representative as specified in **2.2.1-2, Part 2** for the manufacturing works or ~~the~~a person familiar with the quality system for the service supplier~~s~~ is also to be present at the assessment ~~or the surveillance~~.
2 In case necessary preparations have not been made or in case no responsible person specified in **-1** above is present at the assessment or the surveillance, the Society may suspend the assessment or the surveillance.

3 As a result of assessment or surveillance, in case rectification is considered necessary, the Society will notify the management accordingly. The manufacturer's or supplier's management who has received such notification is to perform corrective actions subject to confirmation by the Society.

Chapter 3 APPROVAL

Section 3.1 has been amended as follows.

3.1 Issuance of Approval Certificates and Official Announcement

3.1.1 Manufacturing works

1 As a result of initial assessment or renewal assessment, if the quality system, etc. of a manufacturing works ~~or a service supplier~~ is found in conformity with the Rules, the manufacturing works ~~or the service supplier~~ is approved and an approval certificate be issued to the manufacturer's ~~or supplier's~~ management.

2 The Society officially announces a list of the approved manufacturing works ~~and service suppliers~~.

3.1.2 Service suppliers

1 Upon satisfactory completion of both initial assessment or renewal assessment and the demonstration test, as applicable, the Society may issue a Certificate of Approval stating that the supplier's service operation system has been found to be satisfactory and that the results of services performed in accordance with that system may be accepted and utilised by the Society's Surveyors in making decisions affecting classification or statutory certification, as relevant. The certificate is to clearly state the type and scope of services and any limitations or restrictions imposed including type of equipment and/or names of manufacturers of equipment where this is a limiting restraint.

2 The supplier may also be included in the Society's record of approved service suppliers.

Section 3.3 has been amended as follows.

3.3 Valid Term of Approval Certificates

3.3.1 Manufacturing works

The valid term of an approval certificate is 5 *years* from the date of the initial or the renewal approval. In case where the renewal assessment is carried out within 3 *months* before the expiry date, the valid term of the certificate is 5 *years* from the expiry date.

3.3.2 Service suppliers

1 Firms engaged in thickness measurements

For a firm engaged in thickness measurements, the valid term of an approval certificate is 3 *years* from the date of the initial or the renewal approval.

2 Other firms

For a firm other than those engaged in thickness measurements, the valid term of an approval certificate is 5 *years* from the date of the initial or the renewal approval or, where applicable, on expiry date of the approval received from an equipment manufacturer, whichever comes first.

3 Agents and Subsidiaries

The valid term of an approval of agents and subsidiaries certified according to **1.2.5-6** to **-9, Part 3** is until the expiry date of the parent company's approval.

Section 3.4 has been amended as follows.

3.4 Cancellation of Approval

1 In case an approved manufacturing works or service supplier falls under one of the following items **(1)** though **(~~5~~7)**, the Society may cancel the approval. Upon such a cancellation, the Society notifies the manufacturer's or supplier's management accordingly.

(1) In case where a quality of the products or a result of the services is in doubt.
(2) In spite of request from the Society for rectification, in case appropriate corrective actions have not been taken by the date designated by the Society.
(3) In case where the approved condition has not complied with the technical requirements concerned due to alteration of the requirements.
(4) In case assessment ~~or surveillance~~ specified ~~for~~ in **2.4** and **2.6** is not carried out.
(5) In case where wilful acts or omissions are ascertained.
(6) In case where any deliberate misrepresentation has been made by the manufacturer or the service supplier.
(~~5~~7) In case the manufacturer's or supplier's management proposes to cancel application to the Rules.

2 A supplier whose approval was cancelled, may apply for re-approval provided it has corrected the non-conformities which resulted in cancellation. The Society may confirm it has effectively implemented the corrective action.

3 Expiration or cancellation of the parent company approval automatically invalidates approval of all agents and subsidiaries if these are certified according to **1.2.5-6** through **-9, Part 3**.

Part 3 REQUIREMENTS FOR APPROVAL OF SERVICE SUPPLIERS

Chapter 1 GENERAL

1.1 General

Paragraph 1.1.1 has been amended as follows.

1.1.1 Application

1 This part applies to service suppliers listed as follows:

(1) Firms engaged in thickness measurements on ships

(2) Firms carrying out in-water survey of ships and mobile offshore units

(3) ~~Radio f~~Firms engaged in ~~services on ships~~servicing and testing of radio communication equipment

(4) Firms engaged in performance testing~~s~~ of Voyage Data Recorders (hereinafter referred to as "VDRs") and Simplified Voyage Data Recorders (hereinafter referred to as "S-VDRs")

(5) Firms engaged in ~~services~~survey and maintenance of fire fighting equipment and systems

(6) Firms engaged in servicing~~es~~ of life-saving appliances

(7) Firms engaged in tightness testing of closing appliances such as hatches, doors etc. with ultrasonic equipment

(8) Firms engaged in testing of coating systems (including such cases where paint manufacturers perform their own cross over testing)

(9) Firms engaged in the servicing~~es~~ and maintenance of lifeboats, launching appliances ~~and~~, on-load release gear and automatic release hooks

(10) Firms engaged in examination of the bow doors, stern doors, side doors and inner doors of ro-ro ships

(11) Firms engaged in luminance measurements of low location lighting systems

(12) Firms engaged in sound pressure level measurements of general alarm and public address systems on board ships

(13) Firms engaged in measurements of noise level onboard ships

(14) Firms engaged in tightness testing of primary and secondary barriers of gas carriers with membrane cargo containment systems for vessels in service

(1~~0~~5) Firms other than those listed in **(1)** ~~through~~to **(~~9~~14)** above

2 Firms listed in **-1(1)** through **(~~9~~14)** are to comply with the requirements in this Part as well as the requirements in **Part 1**.

3 Firms listed in **-1(~~10~~15)** are to comply with the requirements deemed appropriate by the Society as well as the requirements in **Part 1**.

4 Several servicing stations are owned by firms listed in **-1(1)** through **(14)**, each station is to be assessed and approved, except as specified in **1.2.5-6** to **-9**.

Paragraph 1.1.3 has been amended as follows.

1.1.3 Definition of Terms

1 "Internal quality audit" means systematic and independent examination the supplier's management performs to verify that the established quality system is operating effectively and as planned, and to determine the adequacy of the system to achieve the objectives.

2 "Rules of the Society" means technical rules of the Society such as the **"Rules for the Survey and Construction of Steel Ships"**, and others.

3 "Manufacturer" means a company that manufactures equipment required to be periodically serviced and/or maintained.

4 "Service supplier" or "supplier" means a person or company, not employed by an IACS Member, who at the request of an equipment manufacturer, shipyard, vessel's owner or other client acts in connection with survey work and provides services such as measurements, tests or maintenance of safety systems and equipment, the results of which are used by surveyors in making decisions affecting classification or statutory certifications.

5 "Agent" means a person or company authorised to act for or to represent a manufacturer or recognized service supplier.

6 "Subsidiary" means a company partly or wholly owned by a manufacturer or recognized service supplier.

7 "Subcontractor" means a person or company providing services to a manufacturer or recognized service supplier, with a formal contract defining the assumption of the obligations of the service supplier.

1.2 Quality System

Paragraph 1.2.1 has been amended as follows.

1.2.1 General

1 To maintain quality required to the services to be provided, the supplier's management is to establish and maintain a documented quality system that is in conformity with the requirements in **1.2.2** ~~through~~to **1.2.~~7~~8**.

2 The supplier is to have a documented quality system complying with the most recent version of the *ISO* 9000 series and covering at least the following:

(1) Code of conduct for the relevant activity
(2) Maintenance and calibration of equipment
(3) Training programmes for operators, technicians and inspectors
(4) Supervision and verification to ensure compliance with operational procedures
(5) Recording and reporting of information
(6) Quality management of subsidiaries, agents and subcontractors
(7) Job preparation
(8) Periodic review of work process procedures, complaints, corrective actions, and issuance, maintenance and control of documents

Paragraph 1.2.2 has been amended as follows.

1.2.2 Training

1 ~~The supplier's management is to provide the training of all personnel who are engaged in the activities which can affect quality of the relevant services.~~ The supplier is responsible for the

qualifications and training of its personnel to a recognised national, international or industry standards as applicable.

2 Where such standards do not exist, the supplier is to define the standards for training and qualifications of its personnel relevant to the functions each is authorised to perform.

~~**2**~~**3** The supplier's management is to establish and maintain a documented training procedure for implementing the training specified in **-1** and **-2**.

~~**3**~~**4** The supplier's management is to establish and maintain a list of operators and supervisors documenting name, qualifications, training and experience within the relevant service area.

Paragraph 1.2.3 has been amended as follows.

1.2.3 Documented Procedures to control, Calibrate and Maintain for Measuring and Testing Equipment

~~**1 Measuring and testing equipment to maintain quality of the relevant services is to be provided at the supplier.**~~

~~**2**~~ The supplier's management is to establish and maintain a documented procedure to control, calibrate and maintain the equipment and facilities specified in ~~**-1**~~**1.4**.

Paragraph 1.2.4 has been amended as follows.

1.2.4 Work Procedures

1 The supplier's management is to establish, have and maintain ~~**a**~~ documented work procedures for all~~**the**~~ services to be provided.

2 Documented procedures and instructions are to be available for the recording of damage and defects found during surveys, servicing and repair work. This documentation is to be made available upon request.

Paragraph 1.2.5 has been amended as follows.

1.2.5 Subcontracting Control

1 In case where any parts of the services provided are sub-contracted, the supplier's management is to examine and evaluate the subcontractor's quality system and works to verify that the subcontractor has enough capability to provide subcontracted services with the required quality and submit information of agreements and arrangements to the Society.

2 Ordering documents are to contain data clearly necessary for the subcontracting.

3 The supplier's management is to establish and maintain a documented procedure for implementing the subcontracting control specified in **-1** and the order specified in **-2**.

4 Particular emphasis is to be given to quality management by the supplier in following-up such subcontracts.

5 Subcontractors providing anything other than subcontracted personnel or equipment to also meet the requirements of this chapter and **Part 1**.

6 If a manufacturer of equipment (and/or its service supplier) applies to the Society for inclusion of its nominated agents and/or subsidiaries in the approval, then it is to have implemented a quality system certified in accordance with the most current version of *ISO* 9000 series.

7 The quality system specified in **-6** is to contain effective controls of the manufacturer's (and/or service supplier's) agents and/or subsidiaries. The nominated agents/subsidiaries are to also have in place an equally effective quality system complying with the most current version of *ISO* 9000 series.

8 The approvals of the nominated agents/subsidiaries are to be based upon an evaluation of the quality system implemented by the parent company against the most current version of *ISO* 9000 series.
9 The Society may require follow-up assessments on such agents or subsidiaries against the most current version of *ISO* 9000 series to confirm adherence to the quality system.

Title of Paragraph 1.2.6 has been amended as follows.

1.2.6 Quality Verification Measures~~Resources~~
1 The supplier's management is to verify quality of the services provided.
2 The supplier's management is to perform the internal quality audits periodically. As to the results of the audits, the following **(1)** though **(3)** are to be ensured.
(1) The audit results are to be reported to the supplier's management and the sections audited.
(2) Based on the audit results, the supplier's management is to review the quality system when necessary.
(3) The audit results and the records of the management review are all to be maintained.
3 The supplier's management is to establish and maintain a documented procedure for implementing the verification specified in **-1** and the internal quality audit specified in **-2**.

Paragraph 1.2.7 has been amended as follows.

1.2.7 Documented Procedures, etc. for Reporting to the Society
1 The supplier's management is to establish and maintain a documented procedure for reporting the results of the services provided to the Society in accordance with **1.5.2**.
2 Documented procedures and instructions are to be available for the recording of damage and defects found during surveys, servicing and repair work.

Paragraph 1.2.8 has been added as follows.

1.2.8 Relationship Between Service Suppliers and Equipment Manufacturers
1 A company which works as a service station for manufacturer(s) of equipment and as a service supplier in this field, is to be assessed by the manufacturer(s) and nominated as their agent.
2 The manufacturer is to ensure that appropriate instruction manuals, material etc. are available for the agent as well as proper training of the agent's technicians.
3 Such suppliers are to be approved either on a case by case basis, or in accordance with **1.2.5-6** to **-9**.

Section 1.3 has been added as follows.

1.3 Qualifications of Personnel

1.3.1 Qualifications of Personnel
1 The personnel is to have adequate experience and be familiar with the operation of any necessary equipment.
2 Operators/technicians/inspectors are to have had a minimum of one year tutored on-the-job training. Where it is not possible to perform internal training, a program of external training may be considered as acceptable.

1.3.2 Supervision

The supplier is to provide supervision for all services provided. The responsible supervisor is to have had a minimum of two years of experience as an operator/technician/inspector within the activity for which the supplier is approved. For a supplier consisting of one person, that person is to meet the requirements of a supervisor.

1.3.3 Personnel Records

1 The supplier is to keep records of the approved operators/technicians/inspectors.

2 The record specified in **-1** is to contain information on age, formal education, training and experience for the services for which they are approved.

Section 1.4 has been added as follows.

1.4 Measuring and Testing Equipment

1.4.1 Equipment and Facilities

The supplier is to have the necessary equipment and facilities for the service to be provided.

1.4.2 Records

1 The supplier is to keep a record of the equipment and facilities used for the service to be provided.

2 The record specified in **-1** is to contain information on maintenance and calibration.

Section 1.5 has been added as follows.

1.5 Verification and Reporting

1.5.1 Verification

The supplier is to verify that the services provided are carried out in accordance with approved procedures.

1.5.2 Reporting

1 The report is to be prepared in a form acceptable to the Society.

2 The report is to detail the results of surveys, measurements, tests, maintenance and/or repairs carried out and is also to comply with **Chapters 2** to **15** of this Part, as appropriate.

3 The report is to include a copy of the Certificate of Approval.

Chapter 2 has been amended as follows.

Chapter 2 FIRMS ENGAGED IN THICKNESS MEASUREMENTS ON SHIPS

2.1 General

2.1.1 Application

This chapter applies to firms engaged in carrying out thickness measurements of the structural members of ships, excluding the following types of ships:

(1) non-ESP Ships less than 500 *gross tonnage* and

(2) All fishing vessels.

2.~~1~~2 Quality System

2.~~1~~2.1 Work Procedures

The ~~A~~ documented work procedures specified~~required~~ in **1.2.4** are~~is~~ ~~at least~~ to include~~contain~~ information on at least the following items: ~~listed in the following **(1)** through **(5).**~~

(1) Survey preparation;

(2) Selection and identification of test locations;

(3) Surface preparation and protective coating preservation;

(4) Calibration checks; and

(5) Reporting measurement ~~the~~ results ~~of the measurements by~~ in writing ~~documents~~ and using electronic ~~computerized~~ data as well as ~~and~~ obtaining ~~the verification by the~~ Society~~'s~~ surveyor verification.

~~2.2 Operators and Supervisors~~

2.2.~~1~~2 Training Procedures

~~Operators carrying out thickness measurements and supervisors are to have sufficient knowledge as to following **(1)** through **(4).**~~ The~~A~~ documented training procedures specified~~required in~~ **1.2.2** are~~is at least~~ to at least include~~contain~~ information on ways to acquire knowledge about the following items~~them~~:

(1) Common~~Outline of~~ hull structures and structural members;

(2) Midship section~~s~~ shapes of representative ~~typical~~ ship types;

(3) Frequent locations of ~~Typical~~ damage~~s~~ and ~~positions where~~ corrosion~~s~~ for representative~~are liable to occur, of typical~~ ship types; and

(4) ~~Outline of the~~ Society~~'s~~ requirements related to ~~Rules on~~ thickness measurements.

2.3 Operators and Supervisors

2.~~2~~3.~~2~~1 Qualifications

1 Operators and supervisors carrying out thickness measurements are to have sufficient knowledge regarding at least the items in the above **2.2.2(1)** through **(4)**.

~~1~~2 Operators carrying out thickness measurements are to be qualified in accordance with a recognized industrial *NDT* standard.

~~2~~3 Suppliers are, ~~I~~in principle~~general~~, to have the following operators and supervisors on staff ~~listed in the following are to be attached to the supplier~~:~~.~~

(1) At least 1 person with ~~or more who have~~10 *years* or more experience~~s~~ in carrying out~~on~~ thickness measurements ~~for 10 *years* or over~~

(2) At least 3 or more people with~~who have~~ 5 *years* or more experience~~s~~ in carrying out~~on~~ thickness measurements; and ~~for 5 *years* or over~~

(3) At least 1 person~~or more~~ with~~who have~~ sufficient~~enough~~ knowledge of hull structures~~,~~ (e.g., ~~i.e~~. a naval architect~~s~~)~~,~~ who~~and~~ can also serve~~act~~ as an instructor~~s~~ or~~and~~ a supervisor~~s~~.

4 The operators and responsible supervisor shall be qualified according to a recognized national or international industrial NDT standards (e.g., *EN 473 level II* as amended or *ISO* 9712 *level II* as amended).

2.~~3~~4 ~~Thickness Measuring~~ Equipment

2.~~3~~4.1 ~~Thickness Measuring~~ Equipment

Ultra-sonic gauging equipment is, in general, to be used for thickness measurements.

2.~~4~~5 Demonstration Tests

2.~~4~~5.1 Demonstration Tests

1 ~~On board d~~Demonstration tests on actual ships are ~~is~~ to be conducted ~~carried out~~ in ~~at~~ the presence of a ~~the~~ Society~~'s~~ surveyor to verify that the ~~supplier provides~~ thickness measurements specified in the documents submitted to the Society can be carried out. The ship used for the demonstration test is to preferably ~~to~~ be a large sized tanker, a bulk carrier or an ore carrier.

2 Structural members to be measured at demonstration tests are to be as determined ~~directed~~ by the Society's surveyor ~~at the demonstration~~ in order to ascertain that the operators and the supervisors have sufficient knowledge about the structural members. In addition, ~~T~~the surveyor may ask ~~some~~ questions about ~~in~~ damage~~s of typical ships~~ for representative ship types to ascertain that the operators and supervisors have sufficient knowledge about ship ~~the~~ damage.

3 In case~~s~~ where a ~~the~~ supplier has been approved by another classification society ~~ies~~, either a part of or ~~the whole of~~ the entire demonstration test may be dispensed with.

2.6 Reporting to the Society

2.6.1 Verification

The supplier is to have the Surveyor verification of each separate job, documented in the report by the attending Surveyor signature.

2.6.2 Reporting

The report shall be based on the guidelines accepted by the Society.

Chapter 3 has been amended as follows.

Chapter 3 FIRMS CARRYING OUT IN-WATER SURVEY OF SHIPS

3.1 General

3.1.1 Application

This chapter applies to firms engaged in-water survey of ships and mobile offshore units by diver or Remote Operated Vehicle.

3.~~1~~2 Quality System

3.~~1~~2.1 Work Procedures

The~~A~~ documented work procedures specified~~required~~ in **1.2.4** are ~~is at least~~ to include~~contain~~ information on at least the following items: ~~listed in the following **(1)** through **(5).**~~

(1) Survey preparation;
(2) Guidance to divers along the hull parts to be surveyed;
(3) Two-way communication between divers and the Society's surveyor;
(4) Video recording and closed circuit television operation;
(5) Reporting survey~~the~~ results ~~of the survey~~ and obtaining Society ~~the~~surveyor verification ~~by the Society's surveyor~~; and
(6) Guidance for the operation and maintenance of the Remote Operated Vehicle, if applicable

~~3.2 Divers and Supervisors~~

3.2.~~1~~2 Training Procedures

~~Divers carrying out in-water survey and supervisors are to have sufficient knowledge as to following **(1)** through **(8)**. A~~The documented training procedures specified in ~~required in~~ **1.2.2** are~~is at least~~ to at least include~~contain~~ information on ways to acquire knowledge about the following item~~them~~s:~~.~~

(1) Ship~~'s~~ underwater structure and appendages (including propeller shafts, propellers, rudders and their~~its~~ bearings, etc.);
(2) Ship~~'s~~ terminology in English;
(3) Underwater non-destructive testing in accordance with recognized national or international industrial NDT standards accepted by the Society. (This ~~requirement~~only applies to~~if a~~ firms carrying out in-water surveys of ships which also perform~~s~~ non-destructive testing.);
(4) Bearing clearance measurements for~~on~~ rudders and propeller shafts;
(5) Underwater video monitoring with TV-monitors on deck, ~~operation~~ as well as still picture work;
(6) Operation of underwater communication systems;
(7) Other ~~S~~special equipment and tools used for in-water surveys; and
(8) ~~Outline of the~~ Society~~'s~~ requirements related to~~Rules on~~ in-water surveys.

3.3 Diver and Supervisor

3.~~2~~3.~~2~~1 Qualifications

1 Divers and supervisors carrying out in-water surveys are to have sufficient knowledge of the above **3.2.2(1)** through **(8)**.

~~1~~**2** Divers carrying out in-water surveys are to have ~~had~~ at least 1 *year*~~'s~~ experience and participated in 10 different assignments as an assistant diver.

~~2~~**3** ~~In general~~Suppliers are, in principle, to have the following divers and supervisors on staff~~listed in the following are to be attached to the supplier~~:~~.~~

(1) At least 1 person with 2 *years* or more ~~or more who have~~ experience~~s~~ in carrying out ~~on~~ in-water surveys~~ for 2 *years* or over~~; and

(2) At least 3 or more persons with~~who~~ 1 *year* or more ~~have~~ experience~~s~~ in carrying out ~~on~~ in-water surveys. ~~for 1 *year* or over~~

3.~~3~~4 Equipment ~~Used for In-water Survey~~

3.~~3~~4.1 Equipment ~~Used for In-water Survey~~

The supplier is to possess~~have~~ the equipment listed in the following **(1)** through **(7~~6~~)**~~.~~:

(1) Closed circuit colour television with sufficient illumination equipment;
(2) Still photography camera;
(3) Video recording device connected to the closed circuit television;
(4) Two-way communication between diver and surface staff;
(5) Equipment for carrying out thickness measurements, non-destructive testing and measurements, e.g. clearances, indents, etc.;
(6) Equipment for cleaning of the hull; and
(7) Remote Operated Vehicle, if applicable.

3.~~4~~5 Demonstration Tests

3.~~4~~5.1 Demonstration Tests

1 Demonstration tests~~to~~ on~~the~~ actual ships are~~is~~ to be conducted ~~carried out~~ in~~at~~ the presence of a~~the~~ Society~~'s~~ surveyor to verify that the~~ supplier provides~~ in-water surveys specified in the documents submitted to the Society can be carried out.

2 Where other means (e.g., video tapes)~~,~~ are available which ~~which~~ enable the Society to verify the in-water survey operations of ~~the~~ suppliers in lieu of ~~the~~ demonstration tests~~, are available~~, the demonstration tests~~demonstration~~ may be dispensed with.

3.6 Reporting to the Society

3.6.1 Verification

The supplier is to have the Surveyor verification of each separate job, documented in the report by the attending Surveyor signature.

Chapter 4 has been amended as follows.

Chapter 4 FIRMS ENGAGED IN SERVICING AND TESTING OF RADIO COMMUNICATION EQUIPMENT

4.1 General

4.1.1 Application

This chapter applies to the following firms:

(1) Suppliers engaged in surveys, inspection, testing, and/or measurement of radio equipment aboard ships or mobile offshore units for compliance with *SOLAS* regulations;

(2) Suppliers engaged in annual testing of 406 *MHz* satellite *EPIRB*s for compliance with *SOLAS* regulation IV/15.9; and

(3) Suppliers involved in inspection, performance testing and maintenance of Automatic Identification Systems (*AIS*). The supplier is to be familiar with the equipment with which it will be involved, such as being a service agent for the equipment manufacturer.

4.2~~1~~ Quality System

4.2~~1~~.1 Work Procedures and Instructions

~~A documented work procedure required~~The supplier is to have documented work procedures, as required by~~in~~ **1.2.4**, and instructions containing at least the information on the following **(1)** to **(3)**.~~is at least to contain information on items listed in the following **(1)** through **(3)**~~. The procedures and instructions are also to be kept and be available at all times.

(1) ~~Preparation of radio inspections~~how to prepare testing, examination/inspection of radio equipment;

(2) ~~Carrying out radio inspections~~how to carry out testing, examination/inspection of radio equipment, including instruction for how to operate each item of testing, examination/inspection equipment; and

(3) ~~Reporting~~how to report the results of testing, examination/inspection of radio equipment~~the inspections and the verification by~~ to Society~~'s~~ surveyors and receiving surveyor verification of said results.

4.2.2 Documented Training Procedures

1 The documented training procedure required by **1.2.2** is to contain information on the items listed in **4.2.3-1(1)** to **(9)** as well as the following **(1)** and **(2)**. In addition, the supplier is to provide the latest versions of all relevant documents.

(1) Radiotelephony; and

(2) Global Maritime Distress and Safety System.

2 In accordance with the procedure specified in **-1**, inspection instructions issued by the Society are to be furnished to radio inspectors without fail.

~~**4.2 Radio Inspectors and Supervisors**~~

4.2.3~~1~~ Reference Documents~~Training~~

1 ~~Radio inspectors carrying out inspections of radio installations and supervisors are to have sufficient knowledge as to~~The supplier is to have access to the documents listed in the following **(1)** to~~through~~ **(4~~9~~)**~~.~~:

~~(1) Radiotelephony~~

~~(2) Global Maritime Distress and Safety System~~

~~(3) Outline of the Society's Rules on radio installations~~

(~~4~~1) ~~Latest~~ *SOLAS* Convention~~1974~~ (as amended);~~Convention (*International Convention for the Safety of Life at Sea*), *Radio Regulations of the International Telecommunication Union* and *IMO* (*International Maritime Organization*) Assembly Resolution concerning performance standards~~

(2) *A*.789(19) (as amended);

(3) *MSC*/*Circ*.1040/*Rev*.1 (as amended);

(4) *MSC*.1/*Circ*.1252 (as amended);

(5) *SN*/*Circ*.227, *SN*/Circ.227/*Corr*.1 and *SN*/Circ.245 (as amended);

(6) *ITU Radio Regulations*;

(7) *IMO* Performance Standards for the equipment for which the service supplier is approved;

(8) Flag State Administration requirements; and

(9) Requirements of the Rules of the Society related to communication equipment, such as **the Rules for Radio Installations**.

~~**2** A documented training procedure required in **1.2.2** is at least to contain information on items listed in **1**. And the supplier is to provide latest reference documents.~~

~~**3** In accordance with the procedure specified in **2**, inspection instructions issued by the Society are to be furnished to radio inspectors without fail.~~

4.3 Radio Inspectors and Supervisors

4.3.1~~2.2~~ Qualifications, etc.

1 Radio inspectors carrying out inspections of radio equipment~~installations~~ are to satisfy the requirements in the following **(1)** ~~through~~to **(4~~7~~)**, with regard to competence and experience.

(1) Radio inspectors are to have passed the internal training of the supplier in Radiotelephony, GMDSS, and initial and renewal surveys, as applicable.

(~~1~~2) Either of the following **(a)** or **(b)** is to be fulfilled:~~;~~

(a) ~~To have a certificate recognized by an organization approved by the Government of a state~~The radio inspector holds evidence that he followed a technical course relevant to radio equipment approved by the relevant Administration; or

(b) ~~To have had~~The radio inspector has a minimum 1 *year's* technical school training~~education from a technical school relevant to radio~~;

(~~2~~3) ~~To~~The radio inspector is to have ~~had minimum~~at least 1 *year's* experience as an assistant radio inspector;

(~~3~~4) ~~To~~The radio inspector is to have passed the internal training of the supplier regarding *SOLAS* Convention, *ITU Radio Regulations* and *IMO* Assembly Resolution concerning performance standards, and to be familiar with these technical requirements; and

(5) The radio inspector is to preferably hold an appropriate National Radio Operators Certificate, recognised by the *ITU*, such as a *GMDSS* General Operator's Certificate (*GOC*) or a *GMDSS* Radioelectronic Certificate (*REC*);

(6) The radio inspector is to be aware of any local conditions for radio signal propagation, of regional radio stations and their facilities, and of the *GMDSS* infrastructure; and

(~~4~~7) The radio inspector is to be able to understand English.

2 Supervisors for inspections of radio equipment~~installations~~ are to satisfy the requirements in the following **(1)** ~~through~~to **(~~3~~4)~~.~~:

(1) The supervisor is ~~T~~to have ~~had~~a minimum of 2 *years* education from a technical school relevant to radio;

(2) The supervisor is to preferably~~To~~ have~~, as far as practicable,~~ a General Operator's Certificate (*GOC*) or a *GMDSS* Radioelectronic Certificate (*REC*), recognised by the *ITU*~~certificate recognized by an organization approved by the Government of a state~~, to operate or test radio transmitters;

(3) The supervisor is to be aware of any local conditions for radio signal propagation, of regional radio stations and their facilities, and of the *GMDSS* infrastructure; and

(~~3~~4) The supervisors is ~~T~~to have ~~had~~a minimum of 2 *years* experience as ~~a~~ radio inspector.

~~**3** Notwithstanding the requirements in **-1** and **-2**, the Society may appoint a person, who is deemed to have competence and experience equivalent to those specified in **-1** or **-2**, as a radio inspector of radio installations or a supervisor.~~

~~**4** In general, radio inspectors and supervisors listed in the following are to be attached to the supplier.~~

~~(1) 1 or more radio inspectors~~

~~(2) 1 or more supervisors~~

4.~~4~~3 Equipment ~~Used for Radio Inspections~~

4.~~4~~3.1 Equipment ~~Used for Radio Inspections~~

1 The supplier is to have the major and auxiliary equipment required for correctly performing the inspection. A record of the equipment used is to be kept. The record is to contain information on manufacturer and type of equipment, and a log of maintenance and calibrations.

2 A standard which is relevant to the radio equipment to be tested is to be available for the equipment and is to be cited in the inspection report.

3 For equipment employing software in conjunction with the testing/examination, this software is to be fully described and verified.

4 The supplier is to have at least the equipment listed in the following **(1)** ~~through~~to **(~~5~~6)~~.~~:

(1) Equipment for measuring frequency, voltage, current and resistance;

(2) Equipment for measuring output, reflect effect and modulation on *VHF* and *MF*/*HF*;

(3) Synchroscope;

(4) Acid tester for checking specific gravity of lead batteries;

(5) Tester for checking of correct output from free-float satellite *EPIRB*; and

(6) Equipment for testing the performance of Automatic Identification Systems (*AIS*).

4.~~5~~4 Demonstration

4.~~5~~4.1 Demonstration

An ~~O~~on-board demonstration is to be carried out at the presence of a~~the~~ Society~~'s~~ surveyor to verify that the supplier provides the radio inspections specified in the documents submitted.

Chapter 5 has been amended as follows.

Chapter 5 FIRMS ENGAGED IN PERFORMANCE TESTING~~S~~ OF VDRS AND S-VDRS

5.1 General

5.1.1 Application

This chapter applies to firms engaged in testing and servicing of voyage data recorders (VDR) and simplified voyage data recorders (S-VDR) in accordance with *SOLAS* regulation V/18.8 and *MSC*.1/*Circ*.1222 (as amended), as applicable.

5.1.2 Approval

1 The supplier is to provide evidence that he has been authorised or licensed by the equipment's manufacturer to service the particular makes and models of equipment for which approval is sought.

2 Where the supplier is also the manufacturer of the voyage data recorder (VDR) or simplified voyage data recorder (S-VDR) and has elected to apply *MSC*.1/*Circ*.1222 (as amended) in its entirety for the purpose of acting as a service supplier engaged in annual performance testing, the following **(1)** to **(4)** are to apply:

(1) The manufacturer is responsible for appointing manufacturer's authorised service stations to carry out annual performance testing;

(2) The manufacturer is required to be an approved supplier and is to satisfy the requirements for suppliers engaged in annual performance testing of voyage data recorders (VDR) and simplified voyage data recorders (S-VDR), as applicable;

(3) The manufacturer's authorised service station is not required to be an approved supplier; and

(4) The manufacturer is to demonstrate that *MSC*.1/*Circ*.1222 (as amended) is applied in its entirety.

5.2~~1~~ Quality System

5.2~~1~~.1 Work Procedures and Instructions

~~A documented work procedure specified~~The supplier is to have documented work procedures, as required by~~in~~ **1.2.4**, and instructions containing at least the information specified in the following **(1)** to **(4)** ~~is at least to contain information on items listed in the following **(1)** through **(4)**~~.

(1) ~~Preparation of~~Information related to preparing for the performance testing~~s~~ of VDRs and S-VDRs;

(2) ~~Implementation of~~Information related to implementing the performance testing~~s~~ of VDRs and S-VDRs;

(3) ~~Reporting~~Information related to reporting the results of the performance testing~~s~~ of VDRs and S-VDRs and receiving surveyor verification of said results~~by the Society's surveyor~~; and

(4) ~~Issue of~~Information related to issuing service record certificates.

5.2.2 Documented Training Procedures

1 The documented training procedure required in **1.2.2** is to contain information on the items listed in **5.2.3-1(1)** to **(6)** as well as the following **(1)** to **(3)**. In addition, the supplier is to provide the latest versions of all relevant documents.

(1) The Society's Rules related to VDRs as well as inspection instructions issued by the Society;

(2) The *SOLAS* Convention (as amended); and
(3) Procedures for the continuous education and training of suppliers.

~~**5.2 Firms**~~

5.2.3~~1~~ ~~Education and training~~Reference Documents

~~**1** Firms responsible for the carrying out of performance tests on VDRs are to maintain those up-to-date versions of the books and documents referred to in the following **(1)** through **(3):**~~The supplier is to have access to the documents and applicable industry performance standards listed in the following **(1)** to **(6)**:

(1) *SOLAS* regulation V/18.8 (as amended);
(2) *MSC*.1/*Circ*.1222 (as amended)
(3) *A*.861(20) (as amended by *MSC*.214(81) and *MSC*.333(90), etc.);
(4) *MSC*.163(78) (as amended by *MSC*.214(81), etc.);

~~(1) The requirements of VDRs and the inspection instructions issued by the Society~~

(~~2~~5) ~~The latest *SOLAS* (*Safety of life at sea*), *IMO* (*International Maritime Organization*) Assembly Resolution concerning performance standards, and *IEC* (*International Electrotechnical Commission*) standards~~Performance standards such *IEC* 61996 (as amended) and *IEC* 61996-2(as amended); and

(~~3~~6) The following ~~reference~~ documents related to the~~concerning~~ VDRs which are to be subjected to performance testing:~~in question~~
  (a) ~~I~~installation manual;
  (b) ~~O~~operation and maintenance manual;
  (c) ~~I~~information for use by an investigation authorities; and
  (d) any documentation specified in the authorisation or license from the equipment manufacturer.

~~**2** The documented training procedures specified in **1.2.2** are to contain the followings.~~

~~(1) Procedures to learn the knowledge specified in **-1** above~~

~~(2) Procedures for the continuous education and training of suppliers~~

5.3 Operators and Supervisors

5.3~~2~~.2 Qualifications, etc

~~**1** Firms responsible for the carrying out of performance tests on VDRs are to comply with the requirements specified in the following **(1)** and **(2):**~~In addition to **1.3.1**, operators are to have conducted performance tests at least once before.

~~(1) Firms are to provide evidence that they have been authorized or licensed by the relevant manufacturer to carry out performance tests on VDRs.~~

~~(2) In general, one or more qualified operators and supervisors (as specified below) are to be assigned to suppliers respectively.~~

~~i) Operators : Those persons who have qualifications approved by the relevant manufacturer for the carrying out of performance tests on VDRs and have one year or more prior experience as a sub-operator of VDRs as well as have conducted such performance tests at least once before.~~

~~ii) Supervisors : Those persons who have 2 or more years experience as an operator of VDRs.~~

~~**2 Notwithstanding -1 above, the Society may appoint a firm as the firm responsible for carrying out the performance tests of VDRs that is deemed to have qualifications equivalent to those specified in -1.**~~

5.4~~3~~ Equipment ~~for the Performance Tests of VDRs~~

5.4~~3~~.1 Equipment ~~for the performance tests of VDRs~~

~~Firms are to~~ The supplier is to have the equipment specified in the following **(1)** ~~through~~to **(3)** available for ~~the~~ carrying out of performance testing~~s~~ of~~on~~ VDRs and/or S-VDRs as well as any other equipment as specified in the authorisation or license from the equipment manufacturer:

(1) ~~I~~instruments for measuring frequency, voltage, current and resistance;

(2) ~~P~~playback hardware of recorded data, speakers, printers and memories; and

(3) ~~P~~playback software of recorded data.

5.5~~4~~ Demonstration

5.5~~4~~.1 Demonstration

On board demonstrations are~~is~~ to be carried out in the presence of a~~the~~ Society~~'s~~ surveyor to verify that the supplier has appropriate competence for the performance testing~~s~~ specified in the documents submitted.

5.6 Reporting to the Society

5.6.1 Test Report

1 The supplier is to issue a certificate of compliance as specified in *SOLAS* regulation V/18.8 (as amended).

2 Annual performance testing of VDR and S-VDR is to be recorded in the form of the model test report given in the Appendix to *MSC*.1/*Circ*.1222 (as amended, signed and stamped by the supplier and attached to the annual performance test certificate.

3 Where the supplier is also the manufacturer of the voyage data recorder (VDR) or simplified voyage data recorder (S-VDR) and has selected to apply *MSC*.1/*Circ*.1222 (as amended) in its entirety for the purpose of acting as a service supplier engaged in annual performance testing, the manufacturer is to make arrangements for the following **(1)** to **(3)**:

(1) review of the manufacturer's authorised service station annual performance test report;

(2) analysis of the recorder's 12 hour log; and

(3) checking of the master record/database for the recorder.

5.7 Issuance of Certificates

5.7.1 Issuance of Certificates to Shipowners/Operators

Issue of the annual performance test certificate to the shipowner/operator within 45 days of completion of the annual performance test.

Chapter 6 has been amended as follows.

Chapter 6 FIRMS ENGAGED IN ~~SERVICES~~SURVEY AND MAINTENANCE OF FIRE FIGHTING EQUIPMENT AND SYSTEMS

6.1 General

6.1.1 Application

This chapter applies to firms engaged in ~~services~~surveys and maintenance of the following fire fighting equipment and systems and breathing apparatuses~~listed below~~:

(1) Fixed fire-extinguishing systems;
(2) Portable fire extinguishers;
(3) Self contained breathing apparatuses;
(4) Emergency escape breathing devices; and
(~~4~~5) Fire detection and alarm systems

6.1.2 Approval

1 Firms engaged in survey and maintenance of fixed fire extinguishing systems, portable fire extinguishers and fire detection and alarm systems

(1) Suppliers are to have professional knowledge of the following **(a)** to **(c)**:
  (a) fire theory;
  (b) fire-fighting and fire-extinguishing appliances sufficient to carry out the maintenance and/or survey; and
  (c) necessary evaluations of the condition of fire-fighting and fire-extinguishing appliances.
(2) Suppliers are to have an understanding of the various types of fires and the extinguishing media to be used on them.
(3) Suppliers who wish to be approved for performing survey and maintenance of fixed fire-extinguishing systems, are to have an understanding of the principles involved with gas, foam, deluge, sprinkler or water-mist systems, as relevant for the approval being sought.

2 Firms engaged in surveys and maintenance of breathing apparatus

(1) Suppliers are to have the documents containing and have knowledge of the items specified in the following **(a)** and **(b)**:
  (a) the equipment and systems sufficient to carry out the inspections and testing of self-contained breathing apparatus to identify standards; and
  (b) necessary evaluations of the conditions of self-contained breathing apparatuses.
(2) Suppliers are to have an understanding of the operational requirements involved with self-contained breathing apparatuses and how these are to be maintained.
(3) Suppliers are to demonstrate the necessary safety requirements applicable to self-contained breathing apparatuses.

6.2 Quality System

6.2.1 Work Procedure

The~~A~~ documented work procedure required in **1.2.4** is at least to contain information on items listed in the following **(1)** ~~through~~to **(6~~4~~)**~~.~~:

(1) The ~~Preparation~~preparing and ~~implementation~~implementing of ~~the services~~surveys and maintenance of fire fighting equipment and systems;
(2) The ~~Records~~recording of conditions of defects found during ~~the services~~surveys and maintenance;
(3) The ~~R~~reporting the results of ~~the services~~surveys and maintenance and ~~the~~ verification by ~~the~~a Society's surveyor;
(4) The ~~I~~issueing of ~~services~~survey and maintenance record certificates;
(5) References to the Manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate, and to international requirements; and
(6) Requirements related to markings and their method of application to the equipment/system.

6.2.2 Training Procedures

The documented training procedure required by **1.2.2** is to contain information on the items listed in **6.3.1** and **6.2.3**.

6.2.3 Reference Documents

1 Reference documents by firms engaged in surveys and/or maintenance of fixed fire extinguishing systems, portable fire extinguishers and fire detection and alarm systems

Suppliers are to have access to the documents listed in the following **(1)** to **(15)**:

(1) Manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate;
(2) Type Approval certificates showing any conditions that may be appropriate during the servicing and/or maintenance of fire-extinguishing equipment and systems;
(3) *MSC*.1/*Circ*.1318 (as amended);
(4) *SOLAS* (as amended);
(5) *International Code for Fire Safety Systems* (as amended);
(6) *ISO* 6406 (as amended);
(7) Documentation specified in the authorization or license from the equipment manufacturer;
(8) *MSC*.1/*Circ*.670 (as amended);
(9) *MSC*.1/*Circ*.798 (as amended);
(10) *MSC*.1/*Circ*.799 (as amended);
(11) *MSC*.1/*Circ*.1312 (*MSC*.1/*Circ*.1312/*Corr*.1 and as amended);
(12) *MSC*.1/*Circ*.1432 (as amended);
(13) *A*.951(23) (as amended);
(14) *MSC*.1/*Circ*.1370 (as amended); and
(15) Guidelines adopted by *IMO* for fire extinguishing equipment and systems specifically intended for service by service suppliers.

2 Reference documents by firms engaged in the survey and maintenance of breathing apparatuses

Suppliers are to have access to the documents listed in the following **(1)** and **(2)**:

(1) Manufacturers' servicing manuals, servicing bulletins, instructions and training manuals, as appropriate; and
(2) Type Approval certificates showing any conditions which may be appropriate during the servicing and/or maintenance of self-contained breathing apparatuses.

6.3 Operators and Supervisors

6.3.1 Training

~~**1**~~ Operators and supervisors ~~carrying out the services of fire fighting equipment and systems~~ are to have sufficient knowledge as to the following **(1)** ~~through~~to **(5)**~~.~~:

(1) Construction and services of fire fighting equipment and systems and breathing apparatus;

(2) Operational methods of the equipment used for ~~servicing~~ survey and maintenance ~~of fire fighting equipment and systems~~;

(3) ~~The latest version of~~ *SOLAS* ~~(*International Convention for the Safety of Life at Sea*),~~ (as amended)~~,~~ and ~~Revised Guidelines for the Maintenance and Inspection of Fire Protection Systems and Appliances (~~*MSC*.1/*Circ*.1432~~) developed by the *IMO*~~ (as amended)~~.~~;

(4) Flag Administration requirements; and

(5) ~~The r~~Requirements and ~~inspection~~survey and maintenance instructions ~~for fire fighting equipment and systems~~ issued by the Society.

~~**2** A documented training procedures required in **1.2.2** are to contain the procedures to learn the knowledge specified in **1.**~~

6.3.2 Qualifications, etc.

~~**1** In general, one or more operators and supervisors are to be attached to the suppliers respectively.~~

~~**2**~~**1** As for ~~the~~ competence and experience, operators ~~carrying out the services of fire fighting equipment and systems~~ are to comply with the requirements specified in the following **(1)** and **(2)**~~.~~:

(1) Operators are to have qualifications for the ~~services~~survey and maintenance of fire fighting equipment and systems and breathing apparatuses approved by the authorities concerned~~.~~; and

(2) Operators are to have at least 1 *year* experience of on-the-job training for ~~the services~~survey and maintenance ~~of fire fighting equipment and systems~~.

~~**3**~~**2** Supervisors carrying out ~~the services~~ survey and maintenance ~~of fire fighting equipment and systems~~ are to have at least 2 *year* experience as an operator.

6.4 Equipment ~~for Services of Fire Fighting Equipment and Systems~~

6.4.1 Equipment for Services of Fire Fighting Equipment and Systems

1 If suppliers undertake shore-based surveying and maintenance, they are to maintain and implement procedures for workshop cleanliness, ventilation and arrangement, with due cognisance of the spares and extinguishing media being stored, to ensure safe and effective working procedures.

2 If suppliers undertake surveying and maintenance onboard, they are to provide the appropriate facilities to either complete the work onboard or remove the necessary items to their workshops.

3 ~~The s~~Suppliers are to have the equipment for ~~services~~ survey and maintenance ~~of fire fighting equipment and systems~~ specified in the following **(1)** ~~through~~to **(5)**~~.~~:

(1) General
  (a) Reflecting mirrors and lighting to inspect inside of the fire extinguishers;
  (b) Pressure gauges;
  (c) Cylinder dryers;
  (d) Gases (carbon dioxide, halon and nitrogen) filling equipment;
  (e) Contents of filling;
  (f) Sufficient and appropriate ~~S~~spare parts;
  (g) Sufficient and appropriate tools;

(h) Various scales to weigh items;
(i) Means to hydrostatic pressure test components/systems/storage bottles;
(j) Liquid/gas, flow meters, as appropriate;
(k) Pressure gauges or manometers; and
(l) Specific equipment as may be specified by Manufacturer.

(2) Fixed fire-extinguishing systems
(a) Gas level meters or measuring scales
(b) Tools for ventilation test
(c) Chemical analysis equipment (in the case of foam concentrates)

(3) Portable fire extinguishers
(a) Equipment for fixing fire extinguishers, such as a clamp
(b) Spanners to open and close caps
(c) Caps of fire extinguishers for the pressure test
(d) Pumps for the hydraulic pressure test
(e) Testing bays
(f) Level measuring equipment for bottles
(g) Recharging facilities for pressurized bottles, extinguishers and cartridges

(4) ~~Air compressors for the s~~Self contained breathing apparatus
(a) Equipment for checking air quality
(b) Recharging facilities for breathing apparatuses

(5) Fire detection and alarm systems
(a) Equipment for ~~the~~ operation tests
(b) Tools for inspections of electrical equipment, such as a tester

6.5 Demonstration

6.5.1 Demonstration

1 On board demonstration is to be carried out in the presence of ~~the~~a Society~~'s~~ surveyor to verify that the suppliers have appropriate competence for ~~the services~~survey and maintenance of fire fighting equipment and systems or breathing apparatuses. However, ~~as~~the submission of survey and maintenance record certificates may be accepted instead substitution for ~~the~~ fire fighting equipment and systems or breathing apparatuses~~,~~ for which demonstrations are difficult to carry out ~~the demonstration, the submission of the service record certificates may be accepted as substitution~~.

2 In cases where the supplier has been approved by other classification societies, a part of or the ~~whole of~~entire the demonstration may be dispensed with.

Chapter 7 has been amended as follows.

Chapter 7 FIRMS ENGAGED IN SERVICING~~ES OF~~ LIFE-SAVING APPLIANCES

7.1 General

7.1.1 Application

This chapter applies to firms engaged in servicing~~es~~ the~~of~~ life-saving appliances listed below:

(1) Inflatable liferafts;
(2) Inflatable lifejackets;
(3) Hydrostatic release units;
(4) Inflated rescue boats; and
(5) Marine evacuation systems

7.2 Quality System

7.2.1 Work Procedures and Instructions

~~A documented~~ The supplier is to have documented work procedures, as required by~~in~~ **1.2.4**, and instructions~~is at least to~~ containing at least the information specified in~~on items listed in~~ the following **(1)** ~~through~~to **(4)**. Where inflatable liferafts are subject to extended service intervals in accordance with the requirements of *SOLAS* Regulation III/20.8.3 (as amended), *MSC*.1/*Circ*.1328 (as amended) is to be followed in addition to *A*.761(18) (as amended by *MSC*.55(66), etc.).

(1) Information related to how to carry out services of life-saving appliances, including the ~~P~~preparation and implementation of such services ~~of the services of life-saving appliances~~;
(2) Information related to ~~R~~records~~s~~ing the ~~of~~ conditions of defects found during servicing~~es~~;
(3) Information related to ~~R~~reporting the results of ~~the~~ servicing~~es and the verification by~~to ~~the~~ Society~~'s~~ surveyors and receiving surveyor verification of said results; and
(4) Information related to the ~~I~~issuing~~e of~~ service record certificates.

7.2.2 Documented Training Procedures

The documented training procedure required by **1.2.2** is to contain information on the items listed in **7.2.3(1)** to **(6)** as well as the following **(1)** to **(5)**. In addition, the supplier is to provide the latest versions of all relevant documents.

(1) The construction and service of the life-saving appliances;
(2) The operational methods of the equipment used to service life-saving appliances;
(3) The *SOLAS* Convention (as amended) and the *LSA* Code (as amended);
(4) Special requirements of the concerned flag administration (if any); and
(5) The Society's Rules related to life-saving appliances as well as inspection instructions for life-saving appliances issued by the Society.

~~**7.3 Operators and Supervisors**~~

7.2.3~~3.1~~ ~~Training~~Reference Documents

1 ~~Operators and supervisors carrying out services of life-saving appliances are to have sufficient knowledge as to the following **(1)** through **(5).**~~The supplier is to have access to the documents listed in the following **(1)** to **(6)**:

~~(1) Construction and services of life-saving appliances~~

~~(2) Operational methods of the equipment used for services of life-saving appliances~~

(~~3~~1) ~~The latest version of the *SOLAS* (*International Convention for the Safety of Life at Sea*), as amended, *LSA Code* (*Life-Saving Appliances Code*) and *IMO* (*International Maritime Organization*) Resolution Assembly~~ *A.*761(18) (as amended by *MSC.*55(66), etc.);

~~(4) Flag Administration requirements (where required)~~

~~(5) The requirements and inspection instructions for life-saving appliances issued by the Society~~

(2) *MSC.*55(66) (as amended);

(3) *MSC.*1/*Circ.*1328 (as amended);

(4) Manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate;

(5) Type Approval certificates, showing any conditions that may be appropriate during the servicing and/or maintenance of inflatable liferafts, inflatable rescue boats, inflatable lifejackets, and hydrostatic release units; and

(6) Chapter IV of the *LSA* Code (as amended) and *SOLAS Conference Resolution* 4 (1995) regarding marine evacuation systems.

~~**2** A documented training procedures required in **1.2.2** are to contain the procedures to learn the knowledge specified in **1.**~~

7.3 Operators and Supervisors

7.3.1~~2~~ Qualifications, etc.

The supplier is to provide evidence that it has been authorised or licensed to service the particular makes and models of equipment for which approval is sought by the equipment's manufacturer.

~~**1** In general, one or more operators and supervisors are to be attached to the suppliers respectively.~~

~~**2** As for the competence and experience, operators carrying out the services of life-saving appliances are to comply with the requirements specified in the following **(1)** and **(2).**~~

~~(1) Operators are to have at least 1 *year* experience of on-the-job training for the services of life-saving appliances.~~

~~(2) Operators are to have qualifications for the services of the inflatable liferafts approved by the manufacturer, where the services are provided.~~

~~**3** Supervisors carrying out the services of life-saving appliances are to have at least 2 *year* experience as an operator.~~

7.4 Equipment ~~for Services of Life-Saving Appliances~~

7.4.1 Equipment ~~for Services of Life-Saving Appliances~~

The supplier~~s~~ is~~are~~ to have the equipment for servicing~~es~~ of the life-saving appliances specified in the following **(1)** ~~through~~to **(6)**, in addition to any equipment required after taking into account *A.*761(18) (as amended by *MSC.*55(66), etc.). Where inflatable liferafts are subject to extended service intervals, *MSC.*1/*Circ.*1328 (as amended) is also to be followed.

(1) Pressure gauges
(2) Thermometers
(3) Barometers
(4) Air pumps capable~~with functions~~ of air cleaning and drying (including all~~the~~ necessary high-pressure hoses and adapters)
(5) A weight scale for inflation gas cylinders
(6) Inflation gases

7.5 Demonstration

7.5.1 Demonstration

1 An ~~O~~on-board demonstration is to be carried out in the presence of a~~the~~ Society's surveyor to verify that the supplier~~s~~ has~~ve~~ appropriate competence for the servicing~~es~~ of life-saving appliances. However, ~~as~~ for ~~the~~ life-saving appliances for~~,~~ which such a demonstration is~~are~~ difficult to carry out ~~the demonstration~~, the submission of ~~the~~ service record certificates may be accepted instead~~as substitution~~.

2 In cases where a~~the~~ supplier has been approved by other classification societies, a part of or the entire~~whole of the~~ demonstration may be dispensed with.

Chapter 8 has been amended as follows.

Chapter 8 FIRMS ENGAGED IN TIGHTNESS TESTING OF CLOSING APPLIANCES SUCH AS HATCHES, DOORS ETC. WITH ULTRASONIC EQUIPMENT

8.1 General

8.1.1 Application

This chapter applies to firms engaged in the ultrasonic tightness testing of closing appliances such as hatches, doors etc.

8.~~1~~2 Quality System

8.~~1~~2.1 Work Procedures

The ~~A~~ documented work procedures specified~~required~~ in **1.2.4** are~~is at least~~ to contain information on at least the following items ~~listed in the following **(1)** through **(6)**.~~:

(1) Preparation of ultrasonic tightness testing of hatches, doors etc~~ with ultrasonic equipment~~;
(2) Manuals of~~for~~ the ~~construction of~~ hatches, doors etc construction for operators;~~es~~
(3) Adjustment and operation~~s~~ of the ultrasonic test equipment;
(4) Maintenance of the ultrasonic test equipment;
(5) Criteria for evaluating~~the~~ test results; and
(6) Reporting ~~the~~ test results and obtaining Society surveyor ~~the~~ verification ~~by the Society's surveyor~~

~~**8.2 Operators and Supervisors**~~

8.2.~~1~~2 Training Procedures

~~**1** Operators and supervisors carrying out tightness testing of hatches with ultrasonic equipment are to have sufficient knowledge as to the following **(1)** through **(5)**.~~

The documented training procedures specified in **1.2.2** are to include information on ways to acquire knowledge about the following items:

(1) Operation of ~~the~~ultrasonic test equipment
(2) The ~~Different hatch~~designs, functions and sealing features for each type of closing appliance, such as hatches and doors, etc.
(3) Theoretical and practical aspects of the onboard operation of~~onboard in using~~ ultrasonic test equipment
(4) Safe~~ty~~ onboard work operations~~ onboard~~;
(5) Society ~~The~~ requirements and inspection instructions for the ultrasonic tightness testing of hatches, doors etc ~~with ultrasonic equipment issued by the Society~~.

~~**2** A documented training procedures required in **1.2.2** are to contain the procedures to learn the knowledge specified in **1.**~~

8.3 Operators and Supervisors

8.~~2~~3.~~2~~1 Qualifications~~, etc.~~

1 Operators and supervisors carrying out ultrasonic tightness testing of hatches are to have sufficient knowledge as to the above **8.2.2(1)** through **(5)**.~~In general, one or more operators and supervisors are to be attached to the suppliers respectively.~~

2 ~~As for the competence and experience, o~~Operators carrying out the ultrasonic tightness testing of closing appliances, such as hatches and doors, etc., are to have the following competence and experience: ~~with ultrasonic equipment are to comply with the requirements specified in the following **(1)** through **(3).**~~

(1) ~~Operators are to have~~ Suitable~~appropriate~~ qualifications determined ~~approved~~ by relevant public~~the~~ organizations~~authorities concerned~~ or those considered equivalent thereto; and~~.~~

(2) ~~Operators are to have e~~Experience ~~carrying out the~~ operating~~on~~ and ~~the~~ maintaining~~enance~~ various closing appliances, such as hatches and doors, etc.~~of different hatches.~~

~~(3) Operators are to have at least 1 *year* experience of on-the-job training for tightness testing of hatches with ultrasonic equipment.~~

3 Supervisors carrying out the ultrasonic tightness testing of hatches, doors etc with ultrasonic equipment are to have ~~at least~~ 2 *year*s or more experience as an operator.

8.~~3~~4 Equipment ~~used for tightness testing of hatches with ultrasonic equipment~~

8.~~3~~4.1 Equipment ~~used for tightness testing of hatches with ultrasonic equipment~~

1 ~~The s~~Suppliers are to have ~~the ultrasonic~~ equipment for the ultrasonic testing of closing appliances, such as hatches and doors, etc., which~~in~~ complies~~ance~~ with the following functional requirements:~~ specified in the following **(1)** through **(3).**~~

(1) The transmitter is to indicate a uniform value at any point~~s~~ in ~~of~~ a tested area~~,~~ under the condition in which the closing appliance, such as a hatch, and door, etc. ~~cover~~ is completely open.

(2) The measurement sensitivity of the receiver is to be adjustable.

(3) The receiver is to be provided with an audible signal and a visual readout in decibels.

2 The ultrasonic test equipment is to be deemed appropriate by the Society for the purpose of detecting leakages in closing appliances such as hatches and doors, etc.~~deemed appropriate by the Society.~~

3 At least once every two years, ~~biennial~~ calibration tests are to be carried out by the manufacturer or ~~the~~ laboratories authorized by the manufacturer.

8.4 Demonstration Tests

8.4.1 Demonstration Tests

1 ~~On board d~~ Demonstration tests on actual ships are ~~is~~ to be conducted ~~carried out~~ in the presence of a ~~the~~ Society~~'s~~ surveyor to verify that ~~the~~ suppliers have the appropriate competence to carry out ~~for~~ the ultrasonic tightness testing of hatches, doors, etc. specified ~~with ultrasonic equipment listed~~ in the documents submitted to the Society.

2 In cases where a ~~the~~ supplier has been approved by another classification society~~ies~~, a part of or the entire ~~whole of the~~ demonstration test may be dispensed with.

Chapter 9 has been amended as follows.

Chapter 9 FIRMS ENGAGED IN TESTING OF COATING SYSTEMS

9.1 General

9.1.1 Application

This chapter applies to firms engaged in testing of coatings systems according to *IMO PERFORMANCE STANDARD FOR PROTECTIVE COATINGS* (Resolution *MSC.*215(82) (as amended) and Resolution 288(87) (as amended)) and the relevant *IACS* unified interpretation.

9.~~1~~2 Quality System

9.~~1~~2.1 Work Procedure

~~A~~ The documented work procedure required in **1.2.4** is at least to contain information on items listed in the following **(1)** ~~through~~to **(4)**~~;~~:

(1) Preparation of the testing of coating systems
(2) Implementation of the testing of coating systems
(3) Criteria for the test results of coating systems
(4) Issue of statement of compliance

9.2.2 Training Procedures

The documented training procedure required by **1.2.2** is to contain information on the items listed in **9.4.1**. Suppliers are to provide the latest versions of all relevant reference documents.

9.~~2~~3 Initial Assessment

9.~~2~~3.1 Initial Assessment

1 Initial Assessment

~~Firms engaged in testing of coating systems~~Suppliers ~~is~~are to submit 3 copies each of the following documents in addition to the documents specified in **2.3-1**, **Part 1**.

(1) A detailed list of the Laboratory test equipment for the *IMO* Resolution *MSC.*215(82) or *MSC.*288(87) as may be amended coating approval;
(2) A detailed list of reference documents comprising a minimum those referred to in *MSC.*215(82) or *MSC.*288(87) as may be amended that are available in the laboratory;
(3) Details of testing panel preparation, procedure of test panel identification, coating application, test procedures and a sample test report (Report forms for the test procedures of the coating qualification and crossover tests for seawater ballast tanks, etc. are to be as referred to **Form 9-1** and **9-2**.);
(4) Details of exposure method and site for weathering primed test panels;
(5) A sample daily or weekly log/form for recording test condition and observations including unforeseen interruption of the exposure cycle with corrective actions;
(6) Details of any sub-contracting agreements if available; and
(7) Comparison test report with an approved coating system or laboratory if available.

9.3.2 Audit

Audits of the test laboratories are to be based on this procedure and the standards listed in the *IMO* Resolution *MSC.*215(82) as amended and/or *MSC.*288(87) as amended for the coating approval.

9.~~3~~4 Operators and Supervisors

9.~~3~~4.1 Training

1 Operators and supervisors ~~carrying out testing of coating systems~~ are to have sufficient knowledge ~~as to~~ of the following **(1)** and **(2)**~~.~~:

(1) *MSC.*215(82) or *MSC.*288(87) as may be amended; and

(2) Operational methods of the equipment used for the testing of coating systems.

~~**2** A documented training procedures required in **1.2.2** are to contain the procedures to learn the knowledge specified in **1.**. And the supplier is to provide latest reference documents.~~

9.~~4~~5 Equipment ~~for Testing of Coating Systems~~

9.~~4~~5.1 Equipment ~~for Testing of Coating Systems~~

1 ~~The s~~Suppliers are to have the equipment for testing of coating systems for seawater ballast tanks, etc. specified in the following **(1)** ~~through~~to **(5)**~~.~~:

(1) Tanks for testing ~~on~~ simulated ballast tank coatings (Equipment for wave movement simulation is not necessary for firms only engaged in cross over testing.);

(2) Condensation chambers (~~N~~not necessary for firms only engaged in cross over testing);

(3) Infrared (IR) identification equipment;

(4) Detector; and

(5) Tensile testing machines.

2 ~~The s~~Suppliers are to have the equipment for testing of coating systems for cargo oil tanks specified in the following **(1)** ~~through~~to **(5)**:

(1) Gas-tight cabinet test equipment;

(2) Immersion test equipment;

(3) Infrared (IR) identification equipment;

(4) Detector; and

(5) Tensile testing machines.

9.~~5~~6 Demonstration

9.~~5~~6.1 Demonstration

1 Demonstrations ~~is~~are to be carried out in the presence of ~~the~~a Society~~'s~~ surveyor to verify that ~~the~~ suppliers have appropriate competence for the services of testing of coating systems. However, the submission of the comparison test report specified in **9.~~2~~3.1-1(7)** ~~and~~may be accepted instead where deemed appropriate by the Society ~~may be accepted as substitution~~.

2 In cases where the supplier has been approved by the flag administration, another administration deemed acceptable by the flag administration or another ~~and other~~ classification society~~ies~~, a part of or the ~~whole of~~entire the demonstration may be dispensed with.

Chapter 10 has been amended as follows.

Chapter 10 FIRMS ENGAGED IN THE SERVICING~~ES~~ AND MAINTENANCE OF LIFEBOATS, LAUNCHING APPLIANCES~~ AND~~, ON-LOAD RELEASE GEAR AND AUTOMATIC RELEASE HOOKS

10.1 General

10.1.1 Application

This chapter applies to firms engaged in the servicing~~es~~ and maintenance of the life-saving appliances listed below:

(1) Lifeboats;
(2) Launching appliances;
(3) On-load release gear; and
(4) Automatic release hooks.

10.1.2 Approval

1 The contents of this procedure apply equally to manufacturers when they are acting as suppliers.

2 Any supplier engaged in the thorough examination, operational testing, repair and overhaul of lifeboats, launching appliances, on-load release gear and automatic release hooks carried out in accordance with *SOLAS* regulation III/20 (as amended) are to be qualified in these operations for each make and type of equipment for which they provide the service, and provide manufacturers documentary evidence that they have been so authorized or they are certified in accordance with an established system for training and authorisation in accordance with *MSC*.1/*Circ*.1277 (as amended).

3 In cases where an equipment manufacturer is no longer in business or no longer provides technical support, suppliers may be authorised for the equipment on the basis of prior authorisation for the equipment and/or long term experience and demonstrated expertise as an authorized service provider.

10.2 Quality System

10.2.1 Work Procedures

~~A~~The supplier is to have documented work procedures, as required by~~in~~ **1.2.4**, ~~is at least to~~ containing information ~~on~~for at least ~~items listed in~~ the following **(1)** ~~through~~to **(4)**:~~.~~

(1) Information related to ~~Preparation~~preparing and ~~implementation~~implementing ~~of~~ the service~~s~~ of lifeboats, launching appliances~~, and~~ on-load release gear and automatic release hooks;
(2) Information related to ~~R~~recording~~s of~~ the conditions of defects found during servicing~~es~~;
(3) Information related to ~~R~~reporting the results of ~~the~~ servicing~~es and the verification by the~~to Society~~'s~~ surveyors and receiving surveyor verification of said results; and
(4) Information related to ~~I~~issuing~~e of~~ service record certificates.

10.2.2 Documented Training Procedures

The documented training procedure required by **1.2.2** is to contain information on the items listed in **10.3.1-3(1)(a)** to **(f)** as well as **10.2.3(1)** to **(4)**. In addition, the supplier is to provide the latest versions of all relevant documents.

~~**10.3 Operators and Supervisors**~~

10.2.3~~3.1~~ Reference Documents~~Training~~

~~**1** Operators and supervisors carrying out services of lifeboats, launching appliances and on-load release gear are to have sufficient knowledge as to the following **(1)** through **(6)**.~~The supplier is to have access to the documents listed in the following **(1)** to **(4)**:

~~(1) Construction and services of lifeboats, launching appliances and on-load release gear~~

~~(2) Operational methods of the equipment used for services of lifeboats, launching appliances and on-load release gear~~

(~~3~~1) ~~The latest version of the *SOLAS* (*International Convention for the Safety of Life at Sea*), as amended, *LSA Code* (*Life-Saving Appliances Code*), *IMO* (*International Maritime Organization*)~~ *MSC*.1/*Circ*.1206/Rev.1 (as amended) and *MSC*.1/*Circ*.1277(as amended);

~~(4) Flag Administration requirements (where required)~~

~~(5) The requirements and inspection instructions for services of lifeboats, launching appliances and on-load release gear issued by the Society~~

~~(6) Issuance procedure of a statement required under *IMO* (*International Maritime Organization*) *MSC.1/Circ.1206/Rev.1*~~

(2) *A*.689(17) (as amended) and for life-saving appliances installed on board on or after 1 July 1999, *MSC*.81(70), as amended;

(3) For servicing and repair work involving disassembly or adjustment of on-load release mechanisms, availability of the equipment manufacturer's specifications and instructions; and

(4) Type approval certificate showing any conditions that may be appropriate during the servicing and/or maintenance of lifeboats, launching appliances and on-load release gear.

~~**2** A documented training procedures required in **1.2.2** are to contain the procedures to learn the knowledge specified in **1.**~~

10.3 Operators and Supervisors

10.3.1 Qualifications, etc.

1 Qualifications

Suppliers are to be trained and qualified in the operations for which they are authorised, for each make and type of equipment for which they provide the service. Such training and qualification should include, as a minimum, the following **-2** to **-5**:

2 Certification of Personnel

Employment and documentation of personnel are to be certified in accordance with a recognized national, international or industry standard as applicable, or an equipment manufacturer's established certification program. In either case, the certification program is to be based on the provisions of this Chapter for each make and type of equipment for which service is to be provided.

3 Education and training of personnel

(1) The education and training for initial certification of personnel are to be documented and address, as a minimum the following **(a)** to **(f)**:

(a) causes of lifeboat accidents;
(b) relevant rules and regulations, including International Conventions as well as lag Administration requirements, as well as the Rules of the Society related to the servicing of lifeboats, launching appliances and on-load release gear and the inspection instructions for said devices issued by the Society;
(c) design and construction of lifeboats, including launching appliances, on-load release gear and automatic release hooks;
(d) education and practical training in the procedures specified in Annex 1 to *MSC*.1/*Circ*.1206/*Rev*.1 (as amended) for which certification is sought;
(e) detailed procedures for thorough examination, operational testing, repair and overhaul of lifeboats, launching appliances, on-load release gear and automatic release hooks, as applicable; and
(f) procedures for issuing a report of service and statement of fitness for purpose based on paragraph 15 of Annex 1 to *MSC*.1/*Circ*.1206/*Rev*.1 (as amended);

(2) The education and training for the personnel are to include practical technical training on actual inspection and maintenance using the equipment (lifeboats, launching appliances, on-load release gear and automatic release hooks) for which the personnel are to be certified. The technical training is to include disassembly, reassembly, correct operation and adjustment of the equipment. Classroom training is to be supplemented by field experience in the operations for which certification is sought, under the supervision of an experienced senior certified person.

4 Initial certification and renewal of certification

At the time of initial certification and at each renewal of certification, the supplier is to provide documentation to verify personnel's satisfactory completion of a competency assessment using the equipment for which the personnel are certified.

5 Training for renewal of certification

The supplier is to require refresher training as appropriate to renew the certification.

~~**10.3.2 Qualifications, etc.**~~

~~**1** In general, one or more operators and supervisors are to be attached to the suppliers respectively.~~

~~**2** As for the competence and experience, operators carrying out the services of lifeboats, launching appliances and on-load release gear are to comply with the requirements specified in the following **(1)** and **(2)**.~~

~~(1) Operators are to have at least 1 *year* experience of on-the-job training for the services of lifeboats, launching appliances and on-load release gear.~~

~~(2) Operators are to have qualifications for the services of lifeboats, launching appliances and on-load release gear approved by the manufacturer, where the services are provided.~~

~~**3** Supervisors carrying out the services of lifeboats, launching appliances and on-load release gear are to have at least 2 *year* experience as an operator.~~

10.4 Demonstration

10.4.1 Demonstration

1 On board demonstrations are~~is~~ to be carried out in the presence of a~~the~~ Society~~'s~~ surveyor to verify that the suppliers have appropriate competence for the services of lifeboats, launching appliances ~~and~~, on-load release gear, or automatic release hooks. However, as for the lifeboats, launching appliances ~~and~~, on-load release gear, and automatic release hooks for which said

demonstration is~~are~~ difficult to carry out ~~the demonstration~~, may be substituted for by the submission of the service record certificates ~~may be accepted as substitution~~.

2 In cases where the supplier has been approved by other classification societies, a part of or the whole of the demonstration may be dispensed with.

10.5 Equipment and Facilities

10.5.1 Equipment and Facilities

The supplier is to have access to the following:

(1) sufficient tools, and in particular any specialized tools specified in the equipment manufacturer's instructions, including portable tools as needed for work to be carried out on board ship;

(2) access to sufficient materials, spare parts and accessories as specified by the equipment manufacturer for repairing lifeboats, launching appliances and on-load release gear, as applicable; and

(3) for servicing and repair work involving disassembly or adjustment of on-load release mechanisms, availability of genuine replacement parts as specified or supplied by the equipment manufacturer.

10.6 Reporting to the Society

10.6.1 Reporting

The report is to conform to the requirements of paragraph 15 Annex 15 to *MSC*.1/*Circ*.1206/*Rev*.1. When repairs, thorough examinations and annual servicing are completed, a statement confirming that the lifeboat arrangements remain fit for purpose is to be promptly issued by the supplier.

Chapter 11 has been added as follows.

Chapter 11 FIRMS ENGAGED IN EXAMINATION OF THE BOW DOORS, STERN DOORS, SIDE DOORS AND INNER DOORS OF RO-RO SHIPS

11.1 General

11.1.1 Application

1 This chapter applies to firms engaged inspection of securing and locking devices, hydraulic operating system, electric control system for the hydraulics, electric indicator systems, and supporting, securing and locking devices and tightness testing.

2 The supplier is to be certified to the most current version of *ISO* 9000 series.

11.2 Quality System

11.2.1 Work Procedures

The documented work procedures specified in **1.2.4** are to include information on at least the following items:

(1) Drawings and documents, including the Operating and Inspection Manual;

(2) The service history of the doors; and

(3) Checklist which has been found acceptable by the Society.

11.2.2 Training Procedures

The documented training procedures specified in by **1.2.2** is to include information on ways to acquire knowledge about the following items:

(1) International Convention on the Safety of Life at Sea (*SOLAS*) 74/78 (as amended)

(2) *ISO* 9002 (as amended); and

(3) *IACS UR Z* 24 (as amended).

11.2.3 Reference Documents

Suppliers are to have access to the documents listed in the above **11.2.2(1)** to **(3)**.

11.3 Operators and Supervisors

11.3.1 Qualifications

1 Operators carrying out non-destructive examinations (NDE) are to be qualified to a recognised National or International Standard for the methods used.

2 Supervisors carrying out examinations are to have the following competence and experience:

(1) Supervisors is to have had a minimum of two years experience as operator/technician/inspector within the activity.

(2) Supervisor is to have a minimum two years related education from a technical school.

11.4 Equipment

11.4.1 Equipment

1 Suppliers engaged in the inspection of supporting securing and locking devices, as well as hinges and bearings are to possess the following equipment for use in said inspections:

(1) Equipment for measuring clearances (i.e. feeler gauges, vernier calipers, micrometers).

(2) Equipment for non-destructive examination (i.e. dye penetrant, magnetic particle inspection)

2 Suppliers engaged in tightness testing are to possess ultrasonic leak detectors or the equivalent for use in said testing.

3 Suppliers engaged in the inspection of hydraulic operating systems are to possess the following equipment for use in said inspections:

(1) Pressure gauges; and

(2) Particle counters for analysing the quality of hydraulic fluid

4 Suppliers engaged in the inspection of electric control systems and indicator systems are to possess the following equipment for use during said inspections:

(1) Digital multi-meters, and

(2) Earth fault detectors.

Chapter 12 has been added as follows.

Chapter 12 FIRMS ENGAGED IN LUMINANCE MEASUREMENTS OF LOW LOCATION LIGHTING SYSTEMS

12.1 General

12.1.1 Application

This chapter applies to firms engaged in luminance measurements on board ships of low location lighting systems using photo luminescent materials and evacuation guidance systems.

12.2 Quality System

12.2.1 Work Procedure

The documented work procedure required in **1.2.4** is to at least contain information on items listed in the following **(1)** and **(2)**:

(1) Survey preparation; and

(2) Selection and identification of test locations.

12.2.2 Training Procedures

The documented training procedure required by **1.2.2** is to contain information on the items listed in **12.3.1** and **12.2.3**. Suppliers are to provide the latest versions of all relevant reference documents.

12.2.3 Reference Documents

Suppliers are to have access to the documents listed in the following **(1)** to **(5)**:

(1) *SOLAS* regulation II-2/13.3.2.5 (as amended);

(2) Chapter 11 of *Fire Safety Systems Code* (as amended);

(3) *A.*752(18) (as amended);

(4) *ISO* 15370-2010 (as amended); and

(5) *MSC/Circ.*1168 (as amended).

12.3 Operators and Supervisors

12.3.1 Qualifications, etc.

1 Operators and supervisors are to have sufficient knowledge of the following **(1)** to **(4)**.

(1) *SOLAS* regulation II-2/13.3.2.5 (as amended);

(2) *A.*752(18) (as amended);

(3) *ISO* 15370-2010 (as amended); and

(4) Chapter 11 of *Fire Safety Systems Code* (as amended).

2 Operators are to be able to document theoretical and practical training onboard in using the equipment specified in **12.4**.

12.4 Equipment

12.4.1 Equipment

Suppliers are to have the measuring instruments used for surveys of low location lighting systems and evacuation guidance systems. Such measuring instruments are to incorporate a fast-response photometer head with CIE (International Commission on Illumination) photopic correction and have a measurement range of at least 10^{-4} *cd/m*^{2} to 10 *cd/m*^{2}.

12.5 Demonstration

12.5.1 Verification

Suppliers are to receive surveyor verification for each separate measurement and have the surveyor sign each report of measurement results.

12.5.2 Reporting

Reports are to be made in accordance with *Annex C* of *ISO* 15370-2010 (as amended).

Chapter 13 has been added as follows.

Chapter 13 FIRMS ENGAGED IN SOUND PRESSURE LEVEL MEASUREMENTS OF GENERAL ALARM AND PUBLIC ADDRESS SYSTEMS ON BOARD SHIPS

13.1 General

13.1.1 Application

This chapter applies to firms engaged in sound pressure level measurements of general alarm and public address systems on board ships.

13.2 Quality System

13.2.1 Work Procedures

The supplier is to have documented work procedures, as required by **1.2.4**, containing at least information on survey preparation, calibration, selection and identification of test locations.

13.2.2 Documented Training Procedures

The documented training procedure required by **1.2.2** is to contain information on the items listed in **13.2.3(1)** to **(7)**. In addition, the supplier is to provide the latest versions of all relevant documents.

13.2.3 Reference Documents

The supplier is to have access to the documents listed in the following **(1)** to **(7)**:

(1) *SOLAS* regulation III/4 (as amended);
(2) *SOLAS* regulation III/6 (as amended);
(3) Paragraph 7.2, Chapter VII of the *LSA* Code (as amended);
(4) *A*.830(19) (as amended);
(5) *IEC* 60651 (2001-10) (as amended);
(6) *IEC* 61672 (as amended); and
(7) *IEC* 61260 (as amended);

13.3 Operators

13.3.1 Qualification, etc.

1 Operators are to have adequate knowledge of the applicable international requirements: *SOLAS* regulations III/4 and III/6 (as amended), paragraph 7.2, Chapter VII of the *LSA* Code (as amended), and *A*.830(19) (as amended).

2 Operators are to be able to document a theoretical and practical training onboard in using equipment specified.

13.4 Equipment

13.4.1 Equipment

The measuring instrument is to be an integrating sound level meter with frequency analysis capabilities complying with *IEC* 60651 (as amended), and *IEC* 61672 (as amended), class 1, at least an A-weighting frequency response curve and 1/3 octave and 1 octave band filters, complying with *IEC* 61260 (as amended), as appropriate for the measurements to be carried out. In addition, microphones are to be of the random incidence type, complying with *IEC* 60651 (as amended).

13.5 Reporting to the Society

13.5.1 Verification

The supplier is to have the Surveyor's verification of each separate job, documented in the report by his signature.

13.5.2 Reporting

The report is to describe, as a minimum, the environmental conditions of the tests and, for each test location, the ambient noise level or the speech interference level, as appropriate for the measurements to be carried out. The report is to conform to any other specific requirement of the Society.

Chapter 14 has been added as follows.

Chapter 14 FIRMS ENGAGED IN MEASUREMENTS OF NOISE LEVEL ONBOARD SHIPS

14.1 General

14.1.1 Application

This chapter applies to firms engaged in measurements of noise level onboard ships.

14.2 Quality System

14.2.1 Work Procedures

1 Suppliers are to have documented work procedures and instructions to carry out service of the equipment specified in **14.4**.

2 Suppliers are to have documented work procedures, as required by **1.2.4**, containing at least the information specified in the following **(1)** to **(4)**:

(1) Survey preparation;
(2) Selection and identification of sound level measurement locations;
(3) Calibration checks; and
(4) Report preparation.

14.2.2 Training Procedures

The documented training procedure required by **1.2.2** is to contain information on the items listed in **14.3.1** and **14.2.3**. Suppliers are to provide the latest versions of all relevant reference documents.

14.2.3 Reference Documents

Suppliers are to have access to the documents listed in the following **(1)** to **(4)**:

(1) *SOLAS* regulation II-1/3-12 (as amended);
(2) *IMO Code on Noise Levels on Board Ships* (*A.*468(XII) and *IMO Res. MSC.*337(91)) (as amended);
(3) *A.*343(IX) (as amended); and
(4) Rules of the Society.

14.3 Operators and Supervisors

14.3.1 Training

Operators and supervisors are to have sufficient knowledge of the following **(1)** and **(2)**:

(1) Sound measurements and handling of measurement equipment; and
(2) The applicable international requirements (*SOLAS* regulation II-1/3-12 (as amended) and *IMO Code on Noise Levels on Board Ships* (as amended)).

14.3.2 Qualification, etc.

1 As for competence and experience, operators are to comply with the requirements specified in the following **(1)** to **(3)**:

(1) Operators are to have at least 1 *year* experience, including participation in a minimum of 5 measurement campaigns as an assistant operator;
(2) Operators are to have passed training concerning the procedures specified in *IMO Code on Noise Levels on Board Ships*; and
(3) Operators are to be able to document theoretical and practical training onboard in using the equipment specified in **14.4**.

2 Supervisors are to have a minimum of 2 *years* of experience as an operator in sound pressure level measurements.

14.4 Equipment

14.4.1 Equipment

1 Suppliers are to have the equipment for measurements of noise level onboard ships specified in the following **(1)** to **(4)**:

(1) Sound Level Meters
Measurement of sound pressure levels is to be carried out using precision integrating sound level meters. Such meters are to be manufactured to *IEC* 61672-1(2002-05) (as amended), type/class 1 standard as applicable, or to an equivalent standard acceptable to the Society. Class/Type 1 sound level meters manufactured according to *IEC* 651/IEC 804 (as amended), may be used until 1 July 2016.

(2) Octave Filter Sets
When used alone, or in conjunction with a sound level meter, as appropriate, an octave filter set is to conform to *IEC* 61260 (1995) (as amended), or an equivalent standard acceptable to the Society; and

(3) Sound Calibrators
Sound calibrators are to comply with the standard *IEC* 60942 (2003-01) (as amended), and are to be approved by the manufacturer of the sound level meter used.

(4) Microphone wind screen
A microphone wind screen is to be used when taking readings outside, e.g. on navigating bridge wings or on deck, and below deck where there is any substantial air movement. The wind screen is not to affect the measurement level of similar sounds by more than 0.5 *dB*(*A*) in "no wind" conditions.

2 Sound Calibrator and sound level meter are to be verified at least every two years by a national Standard laboratory or a competent laboratory accredited according to *ISO* 17025 (2005), as amended. A record with a complete description of the equipment used is to be kept, including a calibration log.

14.5 Reporting to the Society

14.5.1 Verification

Suppliers are to receive surveyor verification for each separate measurement and have the surveyor sign each report of measurement results.

14.5.2 Reporting

A noise survey report is to be made for each ship. The report is to comprise information on the noise levels in the various spaces on board. The report is to show the reading at each specified measuring point. The points are to be marked on a general arrangement plan, or on accommodation

drawings attached to the report, or are to otherwise be identified. The noise survey report is to be made in accordance with **Form 1** of **Annex B2.3.1-1(11), Part B of the Rules for the Survey and Construction of Steel Ships**.

Chapter 15 has been added as follows.

Chapter 15 FIRMS ENGAGED IN TIGHTNESS TESTING OF PRIMARY AND SECONDARY BARRIERS OF GAS CARRIERS WITH MEMBRANE CARGO CONTAINMENT SYSTEMS FOR VESSELS IN SERVICE

15.1 General

15.1.1 Application

This chapter applies to firms engaged in the following tightness testing of the primary and secondary barriers of gas carriers with membrane cargo containment systems for vessels in service:

(1) Global vacuum testing of primary and secondary barriers;

(2) Acoustic emission testing; and

(3) Thermographic testing

15.1.2 Authorization

The supplier as to **15.1.1(1)** and **(3)** is to be authorized by the system designer to carry out the testing.

15.2 Quality System

15.2.1 Work Procedures

1 Suppliers engaged in the global vacuum testing of primary and secondary barriers are to carry out the testing in accordance with cargo containment system designer's procedures as approved by the Society.

2 Suppliers engaged in acoustic emission (AE) testing are to comply with the followings:

(1) The supplier is to have documented procedures based upon recognized national or international industrial standards to perform ultrasonic leak test using AE sensors for the secondary barrier of membrane cargo containment systems;

(2) The procedures following **1.2.4** are to include details of personnel responsibilities and qualification, instrumentation, test preparation, test method, signal processing, evaluation and reporting; and

(3) The differential pressure during testing should not exceed the containment system designer's limitations.

3 Suppliers engaged in thermographic testing are to carry out the testing in accordance with the cargo containment system designer's procedures as approved by the Society.

15.3 Operators and Supervisors

15.3.1 Qualifications

1 Suppliers engaged in acoustic emission (AE) testing

(1) Operators carrying out AE testing are to have the following competence and experience:

(a) Operators are to be certified to a recognized national or international industrial standard (e.g., Level I, *ISO*-9712 (as amended) or *SNT-TC-1A* (as amended)); and

(b) Operators are to have adequate knowledge of ship structures sufficient to determine sensor placement.

(2) Supervisors carrying out AE testing are to have the following competence and experience:

(a) Supervisors are to be certified to a recognized national or international industrial standard (e.g., Level II, *ISO*-9712 as amended or *SNT-TC-1A* as amended); and

(b) Supervisors are to have had one year of experience as an operator.

2 Suppliers engaged in thermographic testing

(1) Operators carrying out thermographic testing are to have the following competence and experience:

(a) Operators are to be certified to a recognized national or international industrial standard (e.g., Level I, *ISO*-9712 (as amended) or *SNT-TC- 1A* (as amended)) with additional certification in infrared/thermal testing. Certification by the supplier is not allowed and is to be obtained through an independent certification body.

(b) Operators are to have adequate knowledge of ship structures sufficient to determine position for each identified image, and of the containment system to understand the basis of the testing.

(2) Supervisors carrying out thermographic testing are to have the following competence and experience:

(a) Responsible supervisors are to be certified to a recognised national or international industrial standard (e.g., Level II, *ISO*-9712 (as amended) or *SNT-TC-1*A (as amended)) with additional certification in infrared/thermal testing. Certification by the supplier is not allowed and is to be obtained through an independent certification body.

(b) Supervisor are to have had one year of experience as an operator.

15.4 Equipment

15.4.1 Equipment

1 Equipment used for global vacuum testing of primary and secondary barriers is to be maintained and calibrated in accordance with recognized national or international industrial standards.

2 Equipment used for acoustic emission testing is to be maintained and calibrated in accordance with recognized national or international industrial standards or equipment manufacturer recommendations.

3 Equipment use for thermographic testing is to be as follows:

(1) Thermal cameras and sensors are to be in accordance with system designer procedures with regards to sensitivity, accuracy and resolution; and

(2) Equipment is to be in accordance with recognized standards (*IEC*, etc.) with regards their safety characteristics for the use in hazardous areas (i.e., in gas explosive atmospheres) as well as be maintained and calibrated in accordance with the manufacturer recommendations.

15.5 Evaluation of Testing

15.5.1 Evaluation of Acoustic Emission (AE) Testing

Evaluation of acoustic emission (AE) testing is to be carried out by a supervisor or an individual certified to a recognized national or international industrial standard (e.g., Level II, *ISO*-9712 (as amended) or *SNT-TC-1A* (as amended)) and have one year experience at Level II.

15.5.2 Evaluation of Thermographic Images

Evaluation of thermographic images is to be carried out by a supervisor or an individual certified to a recognized national or international industrial standard (e.g., Level II, ISO-9712 (as amended) or SNT-TC-1A (as amended)) with additional certification in infrared/thermal testing. Certification by the supplier is not allowed and is to be obtained through an independent certification body.

15.6 Reporting to the Society

15.6.1 Reporting

1 Reports for global vacuum testing of primary and secondary barriers are to contain the following:

(1) Date of test;
(2) Identity of test personnel;
(3) Vacuum decay data for each tank; and
(4) Summary of test results.

2 Reports for acoustic emission testing are to contain the following:

(1) Date of test;
(2) Supervisor and operator(s) certifications;
(3) Description of time and pressure of each cycle of the test; and
(4) List and sketch detailing location of possible defects.

3 Report for thermographic testing is to contain the following:

(1) Date of test;
(2) Supervisor and operator(s) certifications;
(3) Differential pressures of all phases;
(4) List and sketch detailing location of thermal indications;
(5) Thermographic images of all phases of testing for thermal indications; and
(6) Evaluation of thermal images indicating possible leaks.

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 January 2016.

2. Notwithstanding the amendments to the Rules, the current requirements may apply to manufacturing works and service suppliers approved by the Society before 1 January 2016 until 31 December 2018 or the expiry date of their certificate, whichever comes first.