

# **RULES FOR APPROVAL OF MANUFACTURERS AND SERVICE SUPPLIERS**

**Rules for Approval of Manufacturers and Service Suppliers  
2016 AMENDMENT NO.1**

Rule No.39      30th June 2016  
Resolved by Technical Committee on 5th February 2016  
Approved by Board of Directors on 22nd February 2016

**ClassNK**  
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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:

Amendment 1-1

**Part 3 REQUIREMENTS FOR APPROVAL OF SERVICE SUPPLIERS**

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

**6.2 Quality System**

**6.2.3 Reference Documents**

Sub-paragraph -1 has been amended as follows.

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~~ *MSC.1/Circ.1516* and 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.

## 6.3 Operators and Supervisors

### 6.3.1 Training

Sub-paragraph (3) has been amended as follows.

Operators and supervisors are to have sufficient knowledge as to the following **(1)** to **(5)**:

- (1) Construction and services of fire fighting equipment and systems and breathing apparatus;
- (2) Operational methods of the equipment used for survey and maintenance;
- (3) *SOLAS* (as amended) and *MSC.1/Circ.1432* (as amended, including the amendments by *MSC.1/Circ.1516*);
- (4) Flag Administration requirements; and
- (5) Requirements and survey and maintenance instructions issued by the Society.

#### EFFECTIVE DATE AND APPLICATION (Amendment 1-1)

1. The effective date of the amendments is 30 June 2016.

## **Part 1 GENERAL**

### **Chapter 2 ASSESSMENT**

#### **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 in the following:

##### **1 Document examination**

- (2) For service suppliers intended to be approved under the Rules, one copy each of the following documents is to be submitted to the Society for examination to verify whether the quality system, etc. complies with the Rules.  
((a) to (c) are omitted.)

Sub-paragraph (d) has been amended as follows.

- (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) to (n) are omitted.)

# Part 3 REQUIREMENTS FOR APPROVAL OF SERVICE SUPPLIERS

## Chapter 1 GENERAL

### 1.1 General

#### 1.1.1 Application

Sub-paragraph -1 has been amended as follows.

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) Firms engaged in ~~servicing~~ inspection and testing of radio communication equipment
- (4) Firms engaged in performance testing of Voyage Data Recorders (hereinafter referred to as “VDRs”) and Simplified Voyage Data Recorders (hereinafter referred to as “S-VDRs”)
- (5) Firms engaged in ~~survey~~ inspection and maintenance of fire fighting equipment and systems
- (6) Firms engaged in servicing 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 and maintenance of lifeboats, launching appliances, 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
- (15) Firms other than those listed in (1) to (14) above

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~~ inspection work and provides services for a ship or a mobile offshore

drilling unit 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 and services.

5 “Agent” means a person or company authorised to act for or to represent a manufacturer or approved/recognized service supplier.

6 “Subsidiary” means a company partly or wholly owned by a manufacturer or approved/recognized service supplier.

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

## 1.2 Quality System

### 1.2.4 Work Procedures

Sub-paragraph -2 has been amended as follows.

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

### 1.2.5 Subcontracting Control

Sub-paragraph -5 has been amended as follows.

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

### 1.2.7 Documented Procedures, etc. for Reporting to the Society

Sub-paragraph -2 has been amended as follows.

2 Documented procedures and instructions are to be available for the recording of damage and defects found during surveys inspection, servicing and repair work.

## 1.4 Measuring and Testing Equipment

Paragraph 1.4.1 has been amended as follows.

### 1.4.1 Equipment and Facilities

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

2 When computers are used for the acquisition, processing, recording, reporting, storage, measurement assessment and monitoring of data, the ability of computer software to satisfy the intended application is to be documented and confirmed by the service supplier. This is to be undertaken prior to initial use and reconfirmed as necessary. Commercial off-the-shelf software (e.g. wordprocessing, database and statistical programmes) in general use within their designed application range may be considered to be sufficiently validated and do not require any subsequent

confirmation.

Paragraph 1.4.2 has been amended as follows.

#### **1.4.2 Records**

**1** The supplier is to keep and make available 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 results of calibration and verifications.

### **1.5 Verification and Reporting**

Paragraph 1.5.1 has been amended as follows.

#### **1.5.1 Verification**

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

**2** When the equipment used for providing services is found not to conform to the requirements, the Society assesses and records the validity of previous measuring results and requires the service supplier to take appropriate action on the equipment affected.

#### **1.5.2 Reporting**

Sub-paragraph -2 has been amended as follows.

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

## **Chapter 2 FIRMS ENGAGED IN THICKNESS MEASUREMENTS ON SHIPS**

### **2.2 Quality System**

Paragraph 2.2.1 has been amended as follows.

#### **2.2.1 Work Procedures**

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

- (1) ~~Survey~~ Inspection preparation;
- (2) Selection and identification of test locations;
- (3) Surface preparation and protective coating preservation;
- (4) Calibration checks; and
- (5) Reporting measurement results in writing and using electronic data as well as obtaining Society surveyor verification.

## Chapter 3 FIRMS CARRYING OUT IN-WATER SURVEY OF SHIPS

### 3.2 Quality System

Paragraph 3.2.1 has been amended as follows.

#### 3.2.1 Work Procedures

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

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

Title of Chapter 4 has been amended as follows.

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

**4.1 General**

**4.1.1 Application**

This chapter applies to the following firms:

Sub-paragraph (1) has been amended as follows.

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

Title of Chapter 6 has been amended as follows.

## **Chapter 6 FIRMS ENGAGED IN ~~SURVEY~~INSPECTION AND MAINTENANCE OF FIRE FIGHTING EQUIPMENT AND SYSTEMS**

### **6.1 General**

Paragraph 6.1.1 has been amended as follows.

#### **6.1.1 Application**

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

((1) to (5) are omitted.)

Paragraph 6.1.2 has been amended as follows.

#### **6.1.2 Approval**

**1** Firms engaged in ~~survey~~inspection 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~~inspection; 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~~inspection 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~~inspections 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**

Paragraph 6.2.1 has been amended as follows.

#### **6.2.1 Work Procedure**

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

- (1) The preparing and implementing of ~~surveys~~inspections and maintenance of fire fighting equipment and systems;
- (2) The recording of conditions of defects found during ~~surveys~~inspections and maintenance;
- (3) The reporting the results of ~~surveys~~inspections and maintenance and verification by a Society's surveyor;
- (4) The issuing of ~~survey~~inspection 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.

Paragraph 6.2.3 has been amended as follows.

### **6.2.3 Reference Documents**

**1** Reference documents by firms engaged in ~~surveys~~inspections 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) to (15) are omitted.)

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

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

((1) and (2) are omitted.)

## **6.3 Operators and Supervisors**

Paragraph 6.3.1 has been amended as follows.

### **6.3.1 Training**

Operators and supervisors are to have sufficient knowledge as to the following **(1)** to **(5)**:

- (1) Construction and services of fire fighting equipment and systems and breathing apparatus;
- (2) Operational methods of the equipment used for ~~survey~~inspection and maintenance;
- (3) *SOLAS* (as amended) and *MSC.1/Circ.1432* (as amended);
- (4) Flag Administration requirements; and
- (5) Requirements and ~~survey~~inspection and maintenance instructions issued by the Society.

Paragraph 6.3.2 has been amended as follows.

### **6.3.2 Qualifications, etc.**

**1** As for competence and experience, operators are to comply with the requirements specified in the following **(1)** and **(2)**:

- (1) Operators are to have qualifications for the ~~survey~~inspection 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 ~~survey~~inspection and maintenance.

**2** Supervisors carrying out ~~survey~~inspection and maintenance are to have at least 2 *year* experience as an operator.

## **6.4 Equipment**

Paragraph 6.4.1 has been amended as follows.

### **6.4.1 Equipment**

**1** If suppliers undertake shore-based ~~surveying~~inspecting 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~~inspecting 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** Suppliers are to have the equipment for ~~survey~~inspection and maintenance specified in the following **(1)** to **(5)**:

((1) to (5) are omitted.)

## **6.5 Demonstration**

Paragraph 6.5.1 has been amended as follows.

### **6.5.1 Demonstration**

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

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

## **Chapter 12 FIRMS ENGAGED IN LUMINANCE MEASUREMENTS OF LOW LOCATION LIGHTING 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)**:

Sub-paragraph (1) has been amended as follows.

- (1) ~~Survey~~Inspection preparation; and
- (2) Selection and identification of test locations.

### **12.4 Equipment**

Paragraph 12.4.1 has been amended as follows.

#### **12.4.1 Equipment**

Suppliers are to have the measuring instruments used for ~~surveys~~inspections 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  $10^{-4} \text{ cd/m}^2$  to  $10 \text{ cd/m}^2$ .

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

### **13.2 Quality System**

Paragraph 13.2.1 has been amended as follows.

#### **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~~inspection preparation, calibration, selection and identification of test locations.

## **Chapter 14 FIRMS ENGAGED IN MEASUREMENTS OF NOISE LEVEL ONBOARD SHIPS**

### **14.2 Quality System**

#### **14.2.1 Work Procedures**

**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)**:

Sub-paragraph (1) has been amended as follows.

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

#### **EFFECTIVE DATE AND APPLICATION (Amendment 1-2)**

- 1.** The effective date of the amendments is 1 July 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 July 2016 until 30 June 2019 or the expiry date of their certificate, whichever comes first.

## **Part 1 GENERAL**

### **Chapter 3 APPROVAL**

#### **3.1 Issuance of Approval Certificates and Official Announcement**

##### **3.1.1 Manufacturing works**

Sub-paragraph -1 has been amended as follows.

1 As a result of initial assessment or renewal assessment, if the quality system, etc. of a manufacturing works is found in conformity with the Rules, the manufacturing works is approved and an approval certificate, which states the approval number, approval date, valid term, and the articles and approval conditions, etc., be issued to the manufacturer's management.

## **Part 2 REQUIREMENTS FOR APPROVAL OF MANUFACTURERS**

### **Chapter 4 ADDITIONAL REQUIREMENTS FOR MANUFACTURERS OF MASS PRODUCED PRODUCTS**

#### **4.2 Diesel Engines**

##### **4.2.1 General**

Sub-paragraph -1(1) has been amended as follows.

###### **1 Scope**

(1) The requirements in this 4.2, in general, apply to diesel engines ~~having a cylinder bore not exceeding 320mm~~ manufactured at the same manufacturing works.

##### **4.2.2 Initial Assessment**

Sub-paragraph -2 has been amended as follows.

###### **2 Approval tests**

(1) One set of test engines selected from the production line is to be subjected to the trial run specified in 2.6.1-2, Part D of the Rules for the Survey and Construction of Steel Ships.

~~(1) Trial run and overhaul inspection~~

~~The trial run and the overhaul inspection are to be carried out under the test conditions as specified in the following (a) through (c). In this case, reduction gears and flexible couplings to which 4.2.1-3 applies, as a standard, are to be subjected to the trial run after being assembled into the engine.~~

~~(a) Selection of test engine~~

~~One set of test engine is to be selected from the production line.~~

~~(b) Testing programme~~

~~The testing programme is, in principle, to be as follows:~~

~~Maximum continuous output test 80 hours~~

~~110% overload test 8 hours~~

~~1/4, 2/4, 3/4 and 9/10 partial load test 10 hours~~

~~Intermittent load test 2 hours~~

~~Starting test~~

~~Reverse running test (direct reversing engine only)~~

~~Performance test of overspeed protection device~~

~~Performance test of low L.O. pressure alarm and automatic stopping system~~

~~Exhaust gas turbocharger out of action test~~

~~Minimum speed test (main engine only)~~

~~Idling speed test (auxiliary engine only)~~

~~The tests at the above mentioned outputs are to be combined together in working cycle which are to be repeated subsequently with the whole duration within the limits indicated.~~

~~The overload is to be alternately carried out with followings.~~

~~110% output and 100% rpm of the maximum continuous output~~

~~110% output and 103% rpm of the maximum continuous output~~

~~(c) Condition of tests~~

~~The following items are to be recorded at time of test:~~

~~Ambient air temperature~~

~~Ambient air pressure~~

~~Atmospheric humidity~~

~~External cooling water temperature~~

~~Fuel and lubricating oil characteristics~~

~~(d) Measurements and records~~

~~The following values of measurement are to be recorded at test:~~

~~Rotational speed of engine~~

~~Brake horsepower~~

~~Torque~~

~~Maximum combustion pressure~~

~~Indicated pressure diagrams (if practicable)~~

~~Exhaust smoke~~

~~Lubricating oil pressure and temperature~~

~~Exhaust gas temperature in exhaust manifold~~

~~Cooling water pressure and temperature (for each cylinder, if practicable)~~

~~The following items are to be added for engines with a turbocharger:~~

~~Rotational speed of exhaust gas turbocharger~~

~~Air temperature and pressure before and after air cooler~~

~~Exhaust gas temperature and pressure before and after exhaust gas turbocharger~~

~~Cooling water temperature at cooler inlet~~

~~(e) Examination after test~~

~~After testing, overhaul inspection is to be carried out on main parts.~~

Notes:

- ~~1. For engines that are to be approved for different purpose (multipurpose engines), and that have different performance for each purpose. The programme and duration of test will be modified to cover the whole range of the engine performance taking into account the most severe values.~~
- ~~2. The maximum continuous output for which the engine is to be tested is the output corresponding to that declared by the manufacturer and agreed by the Classification Society, i.e. actual maximum power which the engine is capable of delivering continuously between the normal maintenance intervals stated by the manufacturer at speed and under the stated ambient conditions.~~

(2) Additional tests

Notwithstanding the requirements of (1), tests such as torsional vibration measurement considered necessary by the Society may be additionally required for the engine, and special tests may be carried out for reduction gears, flexible couplings and turbochargers.

## 4.6 Exhaust Gas Turbochargers

Paragraph 4.6.2 has been amended as follows.

### 4.6.2 Initial Assessment

Approval tests

- (1) The approval tests are to be carried out on the standard turbocharger randomly selected one for each type from the production line.
- (2) The tests ~~items of the~~ carried out during approval tests are, ~~in general, to be as follows~~ to be the dynamic balancing tests specified in 2.6.1-4 and the overspeed tests specified in 2.6.1-5, Part D of the Rules for the Survey and Construction of Steel Ships.
  - ~~(a) Hot running test for 1 hour under maximum permissible speed and maximum permissible temperature~~
  - ~~(b) Overspeed test~~
  - ~~(c) Performance test~~
  - ~~(d) Overhaul inspection (carrying out after the running test)~~
- ~~(3) For manufacturers who have facilities in their works for testing the turbochargers on an engine for which the turbocharger is intended, the hot running test prescribed in (2)(a) may be replaced by a trial run on the engine for 1 hour at 110% of the maximum continuous output of the engine.~~

Paragraph 4.6.3 has been deleted.

### ~~4.6.3 Subsequent to the Approval~~

~~Examination on individual turbochargers~~

- ~~(1) For cooling space of each gas inlet and outlet casings, a hydraulic test, at a pressure of 0.4MPa or 1.5 times the maximum working pressure whichever is the greater, is to be carried out.~~

~~Note:~~

~~The hydraulic test is, in general, to be carried out as indicated in the above. Special consideration, however, will be given by the Society, where design or testing feature necessitates modification of the test requirement.~~
- ~~(2) For rotating parts such as rotor shafts, bladed wheels, etc. or their complete rotating assembly, a dynamic balancing test is to be carried out in accordance with the approved procedure for the quality control.~~

- ~~(3) For impellers and inducers, an overspeed test for the duration of 3 *minutes*, at 120% of the maximum speed under a room temperature or at 110% of the maximum speed under the working temperature, is to be carried out.~~
- ~~(4) As for forged impellers and inducers which are subjected to the quality control through the approved non-destructive test method, the overspeed test may be dispensed with.~~
- ~~(5) Trial run~~
- ~~(a) A mechanical running test for 20 *minutes* at the maximum speed is to be carried out. However, the Society may reduce the duration of the test taking the result of the developing tests into consideration.~~
- ~~(b) In case where the turbochargers are produced under an approved quality system and the type of the turbochargers has sufficient test records, the test in (a) may be carried out on a sample basis.~~
- ~~(c) For manufacturers who have facilities in their works for testing the turbochargers on an engine for which the turbocharger is intended, the trial run may be replaced by a trial run on the engine for 20 *minutes* at 110% of the maximum continuous output of the engine.~~

#### EFFECTIVE DATE AND APPLICATION (Amendment 1-3)

1. The effective date of the amendments is 1 July 2016.
2. Notwithstanding the amendments to the Rules, the current requirements apply to the surveys for which the application is submitted to the Society before the effective date.
3. Notwithstanding the provision of preceding 2., the amendments to the Rules may apply to the surveys for which the application is submitted to the Society before the effective date upon request by the manufacturer.