

# **RULES FOR AUTOMATIC AND REMOTE CONTROL SYSTEMS**

GUIDANCE FOR AUTOMATIC AND REMOTE CONTROL SYSTEMS

**Rules for Automatic and Remote Control Systems**

**2010**

**AMENDMENT NO.2**

**Guidance for Automatic and Remote Control Systems**

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Rule No.88 / Notice No.97 15th October 2010

Resolved by Technical Committee on 6th July 2010

Approved by Board of Directors on 27th July 2010

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# **RULES FOR AUTOMATIC AND REMOTE CONTROL SYSTEMS**

## **2010 AMENDMENT NO.2**

Rule No.88 15th October 2010

Resolved by Technical Committee on 6th July 2010

Approved by Board of Directors on 27th July 2010

“Rules for automatic and remote control systems” has been partly amended as follows:

## Chapter 2 SURVEYS OF AUTOMATIC AND REMOTE CONTROL SYSTEMS

### 2.2 Registration Surveys

#### 2.2.5 Sea Trials

Sub-paragraph -2 has been amended as follows.

**2** Monitoring and control systems for periodically unattended machinery spaces are to be subjected to the following tests in addition to those tests specified in **-1** above.

- (1) It is to be confirmed that all machinery can be safely and surely monitored and controlled with monitoring and control systems for periodically unattended machinery spaces under normal sea going conditions as much as possible. In such cases, except in cases where operation modes are changed over, running conditions of machinery are not to be adjusted by means of manual operation from any control station other than the bridge.
- (~~2~~) In substitution of those tests specified in **-1(1)(a)** and **(b)** above, main propulsion machinery or controllable pitch propellers are to be confirmed to be safely and surely operated in all service ranges of outputs including starting and ahead-astern conditions, by means of centralized monitoring and control systems for machinery or bridge control devices.
- (~~3~~) Electric generating sets are to confirm the following while the main propulsion machinery is operating ~~at normal continuous cruise outputs~~.
  - (a) In cases where only one electric generating set is normally used, automatic starting of standby generators, automatic making of air circuit breakers and sequential starting of important auxiliaries are performed, in cases where main sources of electrical power are stopped by tripping circuit breakers.
  - (b) In cases where two electric generating sets are normally used, preference tripping of unnecessary loads is performed and any propulsion and steering of ships are to be maintained, when tripping the circuit breaker for either set.
- (~~4~~) Auxiliary machinery (excluding any auxiliary machinery for specific use and other auxiliary machinery) is to be subjected to the following tests while controlling main propulsion machinery or controllable pitch propellers from the bridge.
  - (a) Automatic starting tests of those standby pumps specified in **3.3.2-1(3)**, **3.3.2-2(3)(a)**, **3.3.2-3(3)**, **3.3.2-4(1)**, **3.3.3-2**, **3.3.5-1** and **18.2.2-2(3)**, **Part D of the Rules for the Survey and Construction of Steel Ships**, and automatic changeover tests for those circulating pumps specified in **3.3.2-2(3)(b)**.
  - (b) Tests to confirm that, while main propulsion machinery is operating under normal continuous cruise output, exclusive air reservoirs for control use, if fitted, are capable of supplying air for at least five minutes after operation of low pressure alarms for control air on the condition that the automatic starting functions of control air compressors is stopped.
- (~~5~~) In cases where exhaust gas economizers are used as sources of steam supply to turbines for

driving generators, the following are to be confirmed:

- (a) While any main propulsion machinery is operating under normal continuous cruise outputs, additional heating for boilers and automatic starting for diesel engine driven generating sets are to be performed in cases where any handles of main propulsion machinery are rapidly put back into stop positions.
  - (b) When the main propulsion machinery is operated from a stopping position to a normal continuous cruise output expeditiously, no critical condition occurs to water separator drums, piping, steam turbines and so on.
- ~~(5) After completion of those tests specified in (1) through (4) above, it is to be confirmed that all machinery can be safely and surely monitored and controlled with monitoring and control systems for periodically unattended machinery spaces under normal sea going conditions as much as possible. In such cases, except in cases where operation modes are changed over, running conditions of machinery are not to be adjusted by means of manual operation from any control station other than the bridge.~~

#### EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 15 October 2010.

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# **GUIDANCE FOR AUTOMATIC AND REMOTE CONTROL SYSTEMS**

**GUIDANCE**

**2010 AMENDMENT NO.2**

Notice No.97 15th October 2010

Resolved by Technical Committee on 6th July 2010

AMENDMENT TO THE GUIDANCE FOR AUTOMATIC AND REMOTE CONTROL SYSTEMS

“Guidance for automatic and remote control systems” has been partly amended as follows:

## Chapter 2 SURVEYS OF AUTOMATIC AND REMOTE CONTROL SYSTEMS

### 2.2 Registration Surveys

#### 2.2.5 Sea Trials

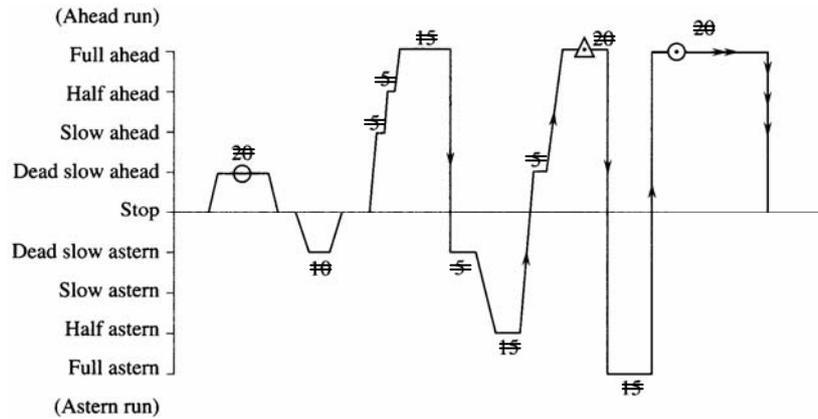
Sub-paragraph -2 has been amended as follows.

#### 2 Monitoring and control systems for periodically unattended machinery spaces

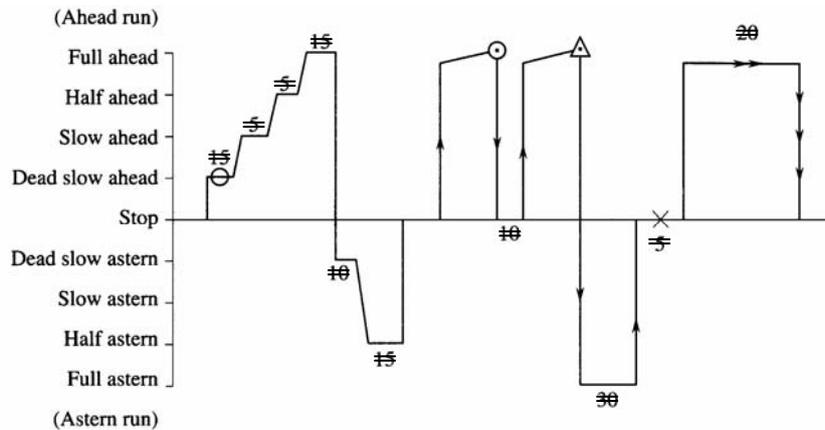
- (1) The tests specified in **2.2.5-2(1) of the Rules** are to be carried out under the condition of unattended machinery operation for more than 4 hours. In addition, according to circumstances, the Surveyor may allow persons for safety purposes and persons in charge of measurements to enter machinery spaces
- ~~(2)~~ Regarding those test procedures specified in **2.2.5-2(2) of the Rules**, test procedures carried out using centralized monitoring and control systems for machinery installed on bridges or bridge control devices are, as standard practice, to be in accordance with those procedures shown in **Fig.2.2.5-1(1)** (for diesel ships) or **Fig.2.2.5-1(2)** (for steam turbine ships). In addition, ~~in cases where such tests are carried out under the condition of unattended machinery operation, it may be accepted that testing times are included within the period of 6 hours specified in (4) below~~ In addition, make sure to confirm machinery conditions of steam turbine ships when transferring between harbour mode and ocean mode.
- ~~(3)~~ In cases where two engines are coupled with one shaft, the following tests are to be carried out in addition to those tests specified in **2.2.5-2(2) of the Rules**.
- (a) While both engines are running at their maximum output, one engine is to be stopped by adequate means such as the emergency stop button in order to verify the engine can be stopped in safe condition and no abnormal conditions occur on the other engine. Tests are to be carried out on both of engines.
- (b) While one engine is running, the other engine is to be put into parallel running, if the propulsion systems are designed to be operated by such sequence.
- (c) While two engines are running at 85% or more of their maximum output, the clutch attached to one engine for the controllable pitch propeller is to be released in order to verify no abnormal conditions occur on the other engine. Tests are to be carried out on both of two engines.
- ~~(4)~~ Regarding those tests for controllable pitch propellers specified in **2.2.5-2(2) of the Rules**, those test procedures given in ~~(2)~~ above are to be applied.
- ~~(5)~~ ~~Regarding those tests for periodically unattended machinery operations specified in **2.2.5-2(5) of the Rules**, such operations are, as standard practice, to be kept up for a period of 6 hours.~~ The tests specified in **2.2.5-2(3) of the Rules** are to be carried out while main propulsion machinery is operating at normal continuous cruise output. However, in cases where the main propulsion machinery is operating at outputs other than normal continuous cruise output, the

tests specified in **2.2.5-2(3) of the Rules** may be carried out while main propulsion machinery is operating at said output on the condition that all active peripheral equipment are operating at outputs that are the same as the normal continuous cruise output of the main propulsion machinery.

**Fig 2.2.5-1(1) Trial Procedures for Diesel Ships**



**Fig 2.2.5-1(2) Trial Procedures for Turbine Ships**



Remarks:

- (1) (—⊗—) signifies putting over the rudder to hard port or hard starboard while proceeding at dead slow ahead.
- (2) ➔ signifies to operate as quick as practicable.
- (3) ➡➡ signifies to cut off the power supply (electric, pneumatic or hydraulic) for the remote control systems and to confirm that the preset speed and direction of the propeller thrust for main propulsion machinery or controllable pitch propellers will be maintained and any abnormal condition will not take place.
- (4) ➡➡➡ signifies to stop the main propulsion machinery to that of the normal service condition.
- (5) ⊙ signifies to raise the output of main propulsion machinery to that of the normal service condition.
- (6) △ signifies to raise the ship's speed to that of the normal service condition.
- (7) × signifies to stop the rotating of the main shaft.
- (8) ~~Numerals signify running hours (in a unit of minute).~~ To confirm the soundness of the driving performance of the main propulsion machinery after it has been stabilized.

## EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 15 October 2010.