

Subject

Installation of VDR and AIS on Greek Flag Ships

ClassNK

Technical Information

No. TEC-0586

Date 14 June 2004

To whom it may concern

In relation to the installation of VDR systems and AIS systems on Greek Flag Ships, ClassNK has received instructions from the Ministry of Merchantile Marine Commercial Ships Control Branch.

Shipowners and Shipbuilders are requested to meet with the following requirements for their installation and inspection.

1. Voyage Data Recorder (VDR)

Instructions and clarifications for implementation of IEC Standard 61996 1st edition (2000-7) "Shipborne voyage data recorder (VDR) – Performance requirements – Methods of testing and required test results".

(1) Documents to be submitted

The following certificates/documents are to be submitted on a ship by ship basis to Material and Equipment Department of ClassNK at least 7 days prior to onboard verification of the VDR system:

- (i) Type approval of the VDR devices, including interfaces:
- (ii) Full list of VDR equipment (Central Unit, interfaces, alarms, power supply unit, etc):
- (iii) Electric diagram / Block diagram of the system including connection with the external power supply:
- (iv) General arrangement of all associated equipment:
- (v) Full list of installation devices connected to the VDR including sensors description, Signals description, Signals format, Relevant interface and Type and number of associated cables: and
- (vi) Any special information required by subject Standard (Manufacturer's document)
Information for use by an investigation authority.

(2) Operational data to be recorded by the VDR

The detailed description of operational data to be recorded is to be found on the attached sheets.

(To be continued)

NOTES:

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- (3) Installation and Inspection
 - (i) Power supply source
All VDR equipment (including interfaces, alarm units etc.), should be supplied by an emergency power source.
 - (ii) Position of alarm unit
The alarm unit of the VDR is to be installed on the bridge.
 - (iii) Inspection of the installation
 - (a) Installation is to be carried out by authorized workshops, which should submit relevant authorization from the VDR manufacturer.
 - (b) Manufacturers' instructions and relevant standards are always to be followed during installation.
 - (c) Before the survey of the installation, the VDR should be operated for at least 12 hours continuously and all required recordings should be confirmed.
 - (d) Deck Officers should be present at the time of inspection of the installation and should be familiar with the playback equipment for reproducing the recorded data.
2. Automatic Identification System (AIS)
Instructions for installation of AIS
 - (1) IMO Documents
 - (i) IMO Circular SN. 227 (2003-1) "Guidelines for the installation of a shipborne AIS"
Please note that in accordance with the Circular, instructions for the installation of AIS are defined by the IMO. The Circular is not mandatory. However, it is recommended it be followed in combination with the manufacturer's instructions for the efficient installation and use of the AIS.
 - (ii) IMO Resolution A. 917(22) "Guidelines for the onboard operational use of shipborne AIS"
Please note that the use of AIS onboard is defined by the IMO.
 - (2) Type-approval
 - (i) AIS should follow the specifications of European Directive 96/98/EC as amended and have the "wheelmark".
 - (ii) AIS other than those with the "wheelmark" that are installed should be type approved as per IMO MSC. 74(69). In this case, relevant type approval certificates are to be submitted to Material and Equipment Department of ClassNK.
 - (3) Onboard testing after installation
 - (i) By exchange of information with other ships, already equipped with AIS,
 - (ii) By portable AIS test equipment, or
 - (iii) By exchange of information with the nearest coastal station. (e.g. the AIS of Piraeus VTS and other VTS installed in Greek ports)

(To be Continued)

- (4) Installation and Initial inspection
- (i) The following documents are to be submitted prior to the initial inspection of AIS to Material and Equipment Department of ClassNK by the date that each ship is obliged to comply with according to the relevant Regulation V/19. 2. 4 as amended:
 - (a) Type approval certificate:
 - (b) Authorization of technician / company from the manufacturer: and
 - (c) Report of proper installation / testing from the manufacturer or the authorized technician / company, that will also include a description of all equipment installed.
 - (ii) After submission of the above documents, ClassNK will arrange to conduct an initial inspection of the installation in the presence of the responsible / authorised technician.
In the case that no coastal stations or other ships are in the area in order to verify proper operation of the AIS at the time of inspection, an extension for its testing may be granted upon request.
 - (iii) All components of the AIS should be supplied by both a main source of power and an emergency source of power which:
 - (a) Should not be the reserve source of the GMDSS:
 - (b) Should be sufficient so as both AIS and other connected equipment can operate normally.
 - (iv) Information given by the AIS and the checking of proper operation, are the responsibility of the bridge watch keeping officer.
 - (v) If the ship is equipped with ARPA, ECDIS or ECS, these may be connected to the AIS.
 - (vi) Connection of the AIS with ship's existing antenna should ensure the maximum performance of the device.

This ClassNK Technical Information supersedes the previous ClassNK Technical Information No. TEC-0550 dated 6 October 2003.

For any questions about the above, please contact:

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Attachment: Operational data to be recorded by VDR

Attachment to
ClassNK Technical Information No. TEC-0586

Operational data to be recorded by VDR

1. Date and Time
As required by the relevant standard.
2. Ship's Position
According to the following:
 - (1) Data related to ship's position should be recorded on a suitable printer: and
 - (2) Source condition should be incorporated into the configuration data of the VDR device.
3. Ship's Speed
According to the following:
The designated equipment for measuring ship's speed, is the equipment that must be fitted according the Regulation to which the ship is subject to:
 - (1) If an indication device of speed through the water is not required to be fitted, it is acceptable that speed is given by GPS.
 - (2) In cases where the speed measuring device, already fitted is a speed log, which may not be compatible with the VDR, GPS as an alternative connection will be accepted.
4. Heading
As required by relevant Standards.
5. Bridge Microphones
As required by relevant Standards.
6. Communication through VHF
VHF radio installations to be connected to VDR, should be the one that is at the nearest location to where the officers on watch are standing.
7. Radar
X-band Radar is the preferred radar to be connected to VDR.
8. Echo Sounder
Recording of data related to scales and status may be made at a suitable printer, externally connected to the VDR.
9. Main Alarm
As required by the relevant Standards and according to the following:
 - (1) Bridge audio should record all IMO mandatory bridge alarms, and any visual data are to be recorded in a digital form (data parameters). In any case, the equipment connected to the VDR should be protected from any malfunctions due to VDR malfunctioning.

(To be continued)

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- (2) Regarding Mandatory alarms (Annex B), of the relevant Standards, the following are to be satisfied:
- (i) Steering gear alarm (item 1), short circuit protection alarm is not required.
 - (ii) Watertight door low hydraulic fluid alarm (item 9), this protection is required only in centralized hydraulic systems.
 - (iii) Shell door position indicator (item 13), inner doors and means for closing under the main deck are included.
 - (iv) Fire detection in engine room (item 16), fire alarm and fault alarm are to be separately recorded.
 - (v) Fire detection for sprinklers (item 17),
 - (a) Sprinklers of fixed fire detection alarms are to be recorded.
 - (b) Sprinklers activation alarms and fire alarms are to be separately recorded.
 - (c) Fault alarms are to be separately recorded.
10. Control of Steering
As per relevant standard and in accordance with the following:
All steering control order (follow up, non follow up, joystick) from all positions (steering on bridge, steering on bridge wings etc) as well as mode of operation, are to be recorded, if possible, according to the existing equipment characteristics.
11. Control of Engines
As per relevant standard and in accordance with the following:
- (1) In the case of engine telegraph, all orders related to feed back are to be recorded.
 - (2) In the case of direct control devices for RPM, CPP, etc, all systems such as follow-up, non-follow-up, joystick etc from all control positions are to be recorded, as well as the mode of operation and the command control position (bridge or engine room)
 - (3) All feed back related to emergency stop of engines, emergency disengage, emergency reduction, by-pass etc, are to be recorded.
 - (4) Feed back may either recorded in a form of “buzzer”, or “digital data”
 - (5) Thruster operation (running or not) is also to be recorded
 - (6) Propeller pitch is also to be recorded.
 - (7) In all cases, the VDR should not negatively affect the operation of any equipment it is connected to.
- 12 Hull openings
As per relevant standards, including all Safety Arrangements on bridge.
- 13 Watertight and fire doors
As per relevant standards.
- 14 Hull Acceleration and Stresses
As per relevant standards.
- 15 Wind speed/direction
As per relevant standard with the proper sensor.