

COMAS Electronics

Blue Ocean VDR – SVDR

Training for installation and maintenance personnel

Detailed Description of Annual survey

This text is to be used for the training of the technicians that will perform the annual survey of the COMAS SVDR-VDR. The purpose of the training is to make them fully qualified for this task. They must be able to check all aspects of the system, to gather the relevant data to be used for the issue of the certificate. The successful trainees will receive the relevant authorization documents. Only authorized technicians can perform these tasks.

The training includes hands-on experience on a system in a simulated environment. All following steps first will be demonstrated by the instructor and then are to be performed by the trainees. Various virtual failures will be introduced so that they will learn to identify them. The aim of the training is to produce technicians that on the one side certify only fully functional systems and on the other side are able to explain to the repair personnel the problems found.

The annual survey consists of 3 parts:

- Capsule check
- Cable check
- Main Unit Check
- Power supply check

First check the “Ship Data” configuration sheet used in first SVDR installation. If any item is changed a new sheet must be prepared. A copy should be left in the documentation remaining in the ship and a second should be returned to the company.

A. Capsule check

Please follow the procedures included in capsule documentation.

1. Functional test

Enter service mode in the SVDR.

Open Windows Explorer and connect to 222.222.222.110. This is the capsule IP address. You should see the capsule containing disk1 and disk2. If the capsule is of the 2 Gbyte type (no RADAR) only disk1 is functional, else if it is a 4 Gbyte type (RADAR active) both disks contain data. In every active disk there is an SVDR directory containing the data. Check that there are files from the last 12 hours observing the filenames.

2. Bit error rate test – do only if requested by the surveyor

Stop the SVDR program. Connect your computer to the capsule. Activate the special transfer program to read the data from the capsule (see Software setup for detailed instructions). Connect your computer to the main unit through the network connection. Copy to an other directory the same period of stored data from the main unit. Run windiff and check for differences. Ignore boundary files, e.g. the first and last file of every king, boundaries used may be marginally erroneous. Normally all data should match. Acceptable error rates are $< 10^{-8}$.

3. Hardware inspection

Go to the capsule.

Press the test button. A short flash will show that the EPIRB in the capsule is active.

Check battery expiration date.

Check that the capsule stands firmly on its hold.

B. Cable check

All cables should be checked optically for wear and tear. Cables in bad condition should be replaced with cables of the same type. Do not replace a cable carrying voltages over 42V or a power cable while power is applied. Disconnect all 3 supplies: 220V (or 110V), battery and ship's 24Vdc! Any of 3 supplies can generate lethal voltages or can cause malfunction if sorted.

The cables to check are:

- Connection to capsule
- Connection between the main unit and the power supply
- Signals from the ship

A worn cable must be replaced with exactly the same type cable.

C. Power supply check

- Charger

While the system is connected as normally measure battery voltage. It should be higher than 13,5 V.

- Battery

Disconnect positive pole. Voltage should drop a little, but not lower than 12 V

- Inverter

Connect battery again. Interrupt 220V supply. The system should revert to battery. Measure battery voltage. It should be higher than 11V. If not replace battery with ship-approved type.

D. Main Unit Check

Subsystems

- Alarms

Press the yellow button. An audible alarm will sound and the red lamp will be on.

Check the green lamp. If it is off, press it. It will light. See troubleshooting table.

- Main controller

Let the system run normally. The main controller should execute the BlueOcean main program. If it is not the case, an alarm will sound and the red lamp will turn on.

Reboot the system. It should automatically return to normal operation. If not check software setup.

- Screen

Turn the dimming to full. Check screen quality.

- PLC

See the lamps on the PLC board. They should blink. If not, run the PLC check tool from the maintenance menu. See relevant manual.

- NMEA concentrator

Run the NMEA tool. Check on the configuration of the ship for the connected NMEA channels. Check the script. It should be readable with lines from all connected channels.

- Microphones

Press the microphone test button. If it turns red at least one microphone failed. If the button turns green then all microphones passed the test.

The test is better done in a quiet environment but advanced signal processing techniques make it possible even in moderate loud noise conditions. If the environment is too loud check recording with earphones.

Remote test

It is possible to do all these software-assisted tests remotely. Connect the VDR to an available communications device. Activate remote desktop.

On the remote side connect to the IP address seen on the configuration notes for the machine.

The written report of the above tests should be send to our offices properly signed in order to issue a re-certification document.