

Technical Dept.



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Onboard Inventory Management: Bar Coding

The purpose of the Onboard Inventory Management or Spare Parts Management is to provide the right part, in the right quantity, to the right place, at the right time and minimize the total cost of the ROB items.

The lack of inventory systems has a negative impact on equipment availability due to increased downtime and resource efficiency due to schedule interruptions. Also, it can cause a negative impact to the vessel's reliability.

To avoid this reality, it is important to have a good inventory system in place. The positive impacts on business performance may include:

- Reduced equipment downtime.
- Reduced Inventory Cost (no accumulation of an excessive amount of spare parts, which often leads to large amounts of capital expenditure).
- Increased availability of working capital
- Improved safety.

The Bar Coding utilizes handheld or mobile devices (smart phone or iPads) to scan a barcode on a part and a corresponding barcode on a storage location such as a metal box, shelf, or locker where the spare part is stored.

The benefit of bar coding is that it allows for accurate

and immediate updates to parts inventory tracking and makes the process of collecting parts inventory much quicker.



Evangelos Valsamis
PMS Snr. Engineer

BEFORE



AFTER



On November 2019, and having all the above in mind we attended MINERVA VERA sailing from Singapore to Ceyhan-Turkey. Twenty days voyage in which we had to implement a good and accurate spare inventory control system. MINERVA VERA was selected after its Dry Docking in China as a pilot vessel. In this effort VALAD INFOTECH experts in the marine inventory management projects, had an important contribution.

The project included the following steps:

- Identification of the onboard spare parts against NS5.
- Identification of the Storage Locations and the creation in NS5.
- Reconciliation of the Spare Parts stored in the correct locations with the correct quantities.
- Labels printing with bar codes through NS5 for each location and each spare part individually.
- Special Tools have been reconciled as well under the correct position.

For the Bar Coding scanning, a smart mobile phone is being used with **NS5 Mobile** application installed.

Through the same application using the mobile phone, the inventory is updated, the user can increase the quantities and decrease correspondingly when spare parts are used while a job is performed. The mobile phone is working as a stand-alone mode when WiFi is not available (i.e Engine Room). However, when the device detects a WiFi network it updates automatically the NS5 and vice versa. The NS5 and Mobile phone are synchronized.

For the label printing a special CODEX 300 printer is used which is installed in the Engine Control Room (ECR).

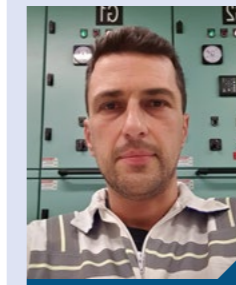
During the implementation phase, all the identified spare parts onboard must be assigned and linked to the correct storage location physically and in NS5. All the physical locations, Engine Store Rooms, Steering Gear Room, Electrical Room, Navigation Locker, ECR,



and sub-locations such as metal boxes, shelves, lockers etc should be mapped the same in NS5. In this way, anytime a PO is delivered by the user in NS5 the system "knows" exactly in which location the specific part should be stored updating the ROB at the same time. On the other hand, anytime we want spare parts to perform a job, we use the

mobile phone, scanning the bar code from the label and ROB is decreased accordingly.

Onboard inventory management with bar code scanning assists crew member to work easily having simultaneously an accurate picture of the ROB and the location of the spare parts.



Konstantinos Venizelos
Technical Superintendent Engineer

Regarding the implementation of the Inventory Management Software, the below was my recent experience when I was on board M/T Minerva Vera, as a C/E:

"This software, is an easy way for controlling the inventory of the spare parts. Any part, can be easily traced and found, by simply scanning the barcode – either this is placed outside of a spare part box or at any warehouse storage racks/shelve. With the same application, it is possible to increase/decrease quantities of spare ROBs while a job is performed. I believe that this will be a powerful tool in the hands of any C/E and will facilitate his job as this is an ongoing process that needs consistency from all the -signers-on (C/E&2nd Engineers) that will follow, in order for the warehouse to be maintained tidy and updated at all times."