| TROUBLESHOOTING SCENARIOS | |
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| **F0RM NO** | ***BUL005. Rev. 2*** |
| **SCENARIO NAME** | ***STEERING GEAR "LOW HYDROLİC OİL PRESSURE"*** |
| **SYSTEM NAME** | ***STEERING GEAR*** |
| **Max Time** | **10 min** |
| **SYSTEM DESCRIPTION** | The STEERING GEAR SYSTEM is used to steer the ship during its movement to maintain a straight course, to make turns and when maneuvering to enter or leave a port, as well as for maneuvers when berthing to a quay and unberthing from a quay wall.<br>The system consists of two working cylinders with pistons that drive the rudder lever to deviate it at a certain angle from the central line to maintain a straight course of the ship or make turns to change the course.<br>Two hydropumps, driven by two electric motors create pressure in the working cylinders in the Steering Gear.<br>When the ship sails in the open sea, only one hydraulic pump works and creates the necessary pressure in the working cylinders. |
| **DESCRİBE THE PROBLEM** | ***Low Hydrolic Oil Pressure***<br>If the working hydraulic pump stops, the **pressure** in the cylinders drops bellfow 10-15 bars and the Steering Gear stops working.<br>The cause may be a failure in the Hydropump or a stoppage of the Electric Motor. |
| **PREPARATİON** | • Check emergency instructions.<br>• Check safety measures. |
| **SCENARIO ALGORITHM** | Scenario chronology:<br>1. Heavy Alarm sound and Signal light column for machinery alarm is illuminated. |

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| | 2. Message on the Bridge computer panel will appear: ‘’ABNORMAL CONDİTİON OF STEERİNG”<br>3. Student Press “Acknowledge” button on the keyboard.<br>4. Change over switch for Control Unit FU-1 (Follow-up No.1) to FU-2 (Follow-up No.2).<br>5. Still you cannot control the steering, next student have to change the position to NFU (Non Follow-up) of No.1 or No. 2 control unit.<br>6. In case you cannot control the steering with above procedures – Student proceeds to the Steering Gear Room. (It takes a few minutes you to go down).<br>7. Student nave to check electric power supply of HYDROPUMP Port side (HP-Ps) and HYDROPUMP Starboard side (HP-Stbs).<br>8. Student nave to Check fuse of the electric power supply in the pumps control panels.<br>9. Student Starts procedures to steer by Emergency Steering Handle:<br>10. Student nave to be sure that at least one Hydropump is running;<br>11. In case the control unit power is “ON” (if the student forget to turn “OFF” the control stand switch), turn “OFF” the switch inside the control unit switch board;<br>12. Student starts to **Steer by lever movement**. FINISHED SCENARIO. |
| **QUESTIONS** | 1. What is the purpose of the STEERING GEAR SYSTEM?<br>2. Hou many variants of the steering are established in the STEERING GEAR SYSTEM?<br>3. How to operate steering gear locally?<br>4. How to swap command from brdige to steering gear room?<br>5. What was exact alarm message? |
| **LEARNING OUTCOME** | To learn the construction and the principle of operation of the Steering Gear.<br>To understand remote and local steering.<br>To understand communecation with bridge for local steering.<br>To know and understand alarm messages. |