

TROUBLESHOOTING SCENARIOS	
FORM NO	BUL002
SCENARIO NAME	COMPRESSED AIR SYSTEM MANEUVERING IN MANUAL MODE
SYSTEM NAME	COMPRESSED AIR SYSTEM
Max Time	10 min
SYSTEM DESCRIPTION	The Compressed Air system is designed to generate and supply compressed air for ship systems by: ■ Compressed Starting and Service Air System. ■ Control Air System. To ensure the functionality of the components in the compressed air system, the compressed air has to be dry and clean from solid particles and oil. The Starting Air System produces and supplies compressed air for starting ME and DEs. All engines are started by means of compressed air with a nominal pressure of 3 MPa (30 bar). The start is performed by direct injection of air into the cylinders through the starting air valves in the cylinder heads. The master starting valve is built on the engine and can be operated both manually and electrically. In automatic operating mode, when the pressure in the main receivers drops <25 bar the duty compressor automatically starts. If the pressure continues to reduce then the second compressor starts. When the pressure reaches 28 bar the stand-by compressor stops. The duty compressor stops when the pressure reaches 30 bar. The compressors can be also operated manually from the LOP.
Describe the problem	(P3) + (P4) Main air reservoir 1&2 pressure low. Pressure: (logic 0/1 – both below 22 bar)
Preparation	- Get familiar with compressed air system functionality - Check safety measure

SCENARIO ALGORITHM	Scenario chronology: 1. Heavy Alarm sound and Signal light column for machinery alarm is illuminated (Fig.7.) Message on ECR computer panel will appear: ALR_CA_001, ALR_CA_002, ALR_CA_003, ALR_CA_004, ALR_CA_005 with red letters (Fig.2. and Fig.3, local gauge Fig 4, Fig6) The alarm of the starting air compressor is acknowledged by the operator on the AMS menu. Student will have to press ACKNOWLEDGE BUTTON in ECR computer panel (Fig.5) It means just a mute alarm no off all system The alarm horn will SILENT (not power off ? Just Silent but still there is the power!!) and light on signal column will stop blinking but continuously ON (Fig.6.) The letters on message on ECR computer panel: alarm messages with change color to yellow letters (Fig.2. and Fig.3.) The starting air compressors don't respond to the engine control console commands given by the operator (fig.7). Student will physically have to go from ECR to ER in front of the local push button box together with the pressure switches of starting air compressor 1&2. (Fig.8.) Student will try to start locally Starting air compressor No1 but it is not able to be started from local station, but starting air compressor No2 responds (Fig.8). After few minutes of operation of the compressor and rising the pressure (P3 & P4) above 22 bar Messages on ECR computer panel will DELETE (Fig.2. and Fig.3.) Student will stop the compressor after (P3 & P4) reach 30 bar (Fig.8). The student informs the bridge for the compressor No1 failure and that starting air compressor No2 is operated manually. FINISHED SCENARIO
QUESTIONS	1. What is start air pressure? 2. What was exact alarm message? 3. How to start air compressors locally?
LEARNING OUTCOME	To understand principle of starting air system To understand operation mode of starting air compressors