ENGINE ROOM LOG

- During the watch a log is kept of the various parameters of the main and auxiliary equipment. This may be a manual operation provided automatically on modern vessels by a data logger.
- A typical log book page for a slow speed diesel driven vessel is shown below.
- The hours and minutes columns are necessary since a ship, passing through time zones, may have watches of more or less than four hours. Fuel consumption figures are used to determine the efficiency of operation, in adittion to providing a check on available bunker quantities. Lubricating oil tank levels indicate engine oil consumption. The sump level is recorded and checked that it does not rise or fall, but a gradual fall is acceptable as the engine uses some oil during operation. If the sump level were to rise this would indicate water leakage into the oil and investigation into the cause must be made.

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- The engine exhaust temperatures should all read about the same to indicate an equal power production from each cylinder. The various temperature and pressure values for the cooling water and lubricating oil should be at , or near to, manufacturer's designed values for the particular speed. Any high outlet temperature for cooling water would indicate a lack of supply to that point.
- Various parameters for the main engine turbo-blowers are also logged. Since they are high speed turbines the correct supply of lubricating oil is essential. The machine itself is water cooled since it is circulated by hot exhaust gases.
- Various level and temperature readings are taken of heavy oil tanks, both settling and service, sterntube bearing temperatures, engine room temperature, etc.
- The operating diesel generators will have their exhaust temperatures, cooling water and lubricating oil temperatures and pressures logged in much the same way as for the main engine. Of particular importance will be the log of running hours since this will be the basis for overhauling the machinery.

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- Other auxiliary machinery and equipment, such as heat excahngers, fresh water generator (evaporator), boiler, air conditioning plant and refrigeration plant will also have appropriate readings taken.
- There will usually be summaries or daily account tables for heavy oil, diesel oil, lubricating oil and fresh water, which will be compiled at noon. Provision is also made for remarks or important events to be noted in the log for each watch.
- The completed log is used to compile a summary sheet or abstract of information which is returned to the company head office for record purposes.

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Q&A

1. In addition to the various duties, what is the watch engineer in charge of ?
2. How are instruments readings taken and recorded in automated plants ?
3. Why must engine operation constantly be monitored ?
4. What parameters are entered in the log book ?
5. Besides main engine particulars, what other data must be logged ?
6. What is important to know about diesel generators ?
7. What do daily account table indicate ?
8. What is also noted in the log book besides particulars relating to engines and
9. equipment ?
10. What must the Chief engineer prepare on the basis of the engine room log book ?

I. State what elements require an accurate record of the following parameters:

- temperature
- pressure
- leve
- consumption
- rpm

II. Log records give a picture of the engine condition and the efficiency of its operation. Any variation of values is an indication of malfunction.

Give reasons for the abnormal readings of the following parameters:

- exhaust temperature too high
- high outlet temperatures of cooling water
- increased fuel consumption
- level rise in sump
- charge-air pressure too low
- charge-air pressure too high
- thrust bearing too hot
- low lube oil pressure

III. The terms below refers to measuring instruments commonly used in the engine room. State which of them are:

- thermometers
- pressure gauges (manometers)
- level indicators
- flow meters
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Where required complete the terms filling in the blanks with the suitable words

- U – tube ……
- Sight (gauge) glass
- Bimetallic strip
- Float …….
- Bourdon tube
- Thermocouple …….
- Liquid in glass ……
- Pneumatic gauge …….
- Rotating element …….
- Diagram …… gauge
- Pyrometer …….
- Venturi tube …….
- Bellow …… gauge
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