



NOTES FROM SEA

The following are extracts from letters received from Engineer Officers of sea-going ships, together with remarks by the Engineer-in-Chief's Department, where appropriate.

Examination of Turbo Auxiliaries—H.M.S. Jamaica

Jamaica's Defect List for the present Annual Refit contained seventeen assorted pumps, T.Gs., Compressors, F.D. Fans, etc., to be overhauled, in addition to which twelve others were included on the list of Ship's Staff work ; to meet the original estimated completion date of seven weeks the Dockyard stated that only four of the pumps could be taken on. As this was quite unacceptable to the ship the refit period has had to be extended to ten weeks to enable the Dockyard to carry out all the defects listed.

Now, despite the fact that this ship has steamed the unusually heavy figure of 74,000 miles in the past two years (during which she has had two refits and one half-yearly self-refit and docking period) every opportunity has been taken to open up auxiliaries for examination and overhaul ; a high proportion of the pump ends (100% Oil Fuel Pumps, 85% F. & B. Pumps, and 75% Main Feed Pumps and Main Circulators for example) have so far been dealt with, during these two years, most of them by ship's staff.

The figures for the opening up of the turbine ends during the same period are not, however, so good, being as follows :—

2 (out of 4) Turbo Generators	1 Dockyard, 1 Ship's Staff
2 (out of 8) Boiler Room Fans	Dockyard
1 (out of 4) Extraction Pumps	Dockyard
1 (out of 4) F.L. Pumps	Dockyard
0 (out of 4) Main Circulators	—

5 (out of 9) Feed Pumps	Dockyard
0 (out of 4) Fuel Oil Pumps	—

Apart from Fuel Oil Pumps and Main Circulators these figures are of the same order as *Nigeria's*, allowing for the fact that they cover only half the time period ; as such they fully support the contention that it is impossible to comply with E.M. article 264.

This whole question needs to be reconsidered and covered on a more practical basis in the Engineering Manual.

Comment

This difficulty has been appreciated in re-writing the Engineering Manual and periods for opening up of Auxiliary Machinery have been adjusted to meet both the maintenance requirement and the time available.

It is pointed out that Article 264 in B.R. 16 (1932) refers only to Turbo-Generators.

Lubrication of Auxiliary Machinery—H.M.S. Indefatigable

Serious defects to auxiliary machinery such as Capstans and Pumps have been caused through lubrication of the ball and roller bearings of electric motors with the incorrect grease by engine room ratings.

This probably occurred while the ship was being worked up towards the end of the refit. It is difficult to see how this sort of trouble will be avoided in ships being brought forward from reserve in emergency when the personnel can be expected to be out of touch with current practice. A.F.O. 4041/47 refers to this problem, and the point was covered in Standing Orders, but it is extremely difficult to prevent zealous stokers from making this mistake, more especially as responsibility for the lubrication of the motors now rests with another department.

It is considered that while incompatible lubricants for similar bearings on the same machine have to be used, the only way to guard against incorrect lubrication is to provide differently shaped nipples. At the very least this A.F.O. should be embodied in the Engineering Manual forthwith.

Comment

A.F.O. 1459/49, which introduced standardization of greases, should obviate the use of incorrect grease or the mixing of two types in one bearing.

This A.F.O. together with A.F.O. 4002/40, which contains useful information, will be included in B.R. 1988—Mechanical Engineering Maintenance Instructions—which is now being compiled.

A useful tip to avoid using the wrong grease in a bearing is to allocate a colour to each type of grease and to paint the bearing (or a portion of it) and the grease gun the same colour.

Loss of Suction from Distiller—H.M.S. Jamaica

With reference to the mention in *Ceylon's* quarterly letter (P/29/A2) of the trouble with her Forward Distiller Pump, we experienced similar intermittent loss of suction from the After Distiller the level of which would rise until water was thrown out by the air ejector. The cause of this trouble was finally traced to the salinometer circulating system, the return of which joins into the suction side of the pump ; small leaks in this system, notably round the sight glass, were apparently sufficient to cause the pump to lose suction, as when shut off no further trouble was experienced.

Spare Gear—H.M.S. Ceylon

Considerable difficulty is being experienced in mustering and identifying spare gear ; particularly so since the more experienced E.R.As. and P.O.S.Ms. who could probably recognize a large part of the gear at sight, have not been available for this work. Responsibility for spare gear has thus devolved upon a Stoker Mechanic.

It is felt that a system of marking each part, either by engraving, or by means of a wired-on metal tag would be of great assistance, the maker's name, the number of the machine for which it is intended and the part number as (sometimes) listed in the drawings and instruction books would enable positive identification to be made by the most inexperienced person.

Spare pistons and spindles for Blakeborough and Klinger type drain valves are not listed in either the Rate Book, the list of Special Stores or the Spare Gear List.

In view of the large numbers in use in the service it is felt that they could be added to the Rate Book.

List " B " Spares

When the P.O. Main Circulator pinion bearings wiped the journals were severely scored and had to be ground undersize and the remetalled bearings made to fit. As the List " B " spare rotor was available time would have been saved if it could have been fitted. But when it was found the upper oil thrower would have to be transferred from the existing to the spare rotor, this idea had to be given up for fear of damaging the oil thrower in the process of transferring.

Again when the S.I. Main Circulator Impeller was severely damaged the List " B " spindle and impeller were available. The spindle was without its gland and again it was deemed less risky to transfer the impeller to the old shaft rather than the gland which entailed taking both driving couplings on and off.

It is suggested that all such fitted auxiliary fittings such as overspeed governors, pump worm drives, glands, etc., should be supplied assembled on the List " B " Spares.

Comment

The difficulty of identifying spare parts is realized by the S.P.D.Cs. and a system of part numbers is being evolved. All items supplied in future will be clearly identified.

Steps are being taken to include spare pistons and spindles for Klinger and Blakeborough drain valves in the Rate Book.

The suggestion on List " B " Spares will be borne in mind when such spares are ordered for new construction.

Spares for Pumps—Incorrect Size—H.M.S. Cockade

Considerable frustration and increase in man hours used has been experienced due to spare parts supplied to standard pumps being of incorrect size and incomplete manufacture. The impellers supplied for the Turbo-driven Distiller pump would not mate with the suction packing rings ; a key-way had not been cut in the impeller for the air pump. The impeller packing rings supplied for the turbo-driven Fire and Bilge pump were considerably oversize and required machining before they would enter the casing.

Comment

It is an unfortunate fact that pump casings are not all to a standard pattern and some adjustment of such items as impeller sealing rings will be necessary. Spares are being ordered to standard drawings and it is hoped that there will be few cases where machining will be necessary.

In all new construction, auxiliary machinery is being manufactured so that standard spares will fit without adjustment.

Safety Valves—Maintenance—H.M.S. Jamaica

During the past few months a considerable amount of maintenance work has had to be put in on the main boiler safety valves, and on their pilots particularly.

On each occasion when a wisp has shown at the waste steam pipes the first opportunity has been taken to discover and refit the offending control valve ; great care has recently been taken with this work, but even so, a newly refitted pilot valve has usually not held for more than a few days after refitting ; as a result it has been a frequent occurrence to return to harbour with at least three safety valve waste steam pipes feathering and make up feed figures risen accordingly.

This trouble appears to arise from two factors : (1) Due to the heavy pressure of the spring, the valve lids (Delta Metal Stampings) almost invariably develop grooves from the valve seats, which are of stainless steel ; when the valve lid and seats have faces of exactly the same width this grooving does not occur, but once a lid has been machined back this happy state of affairs is lost. (2) The clearance between the valve lid webs and the bore should be .004" according to the drawing and it is important that this dimension be adhered to if these valves are to behave properly ; frequently, however, a spare pilot valve is found to have too much clearance (up to .012" has been experienced) or too little, so that it will not enter its seat—to ensure tight control valves, paired lids and seats of the correct clearance and the same width of face are required.

With the modern Cockburn-Macnicoll type of safety valve, persistent leakage of the pilot valves leads to the erosion of the main valve chest recess and its mating shoulder on the main valve piston chamber ; all eight safety valves fitted in this ship have had to have these faces machined during the past fifteen months, and in addition, this erosion has been found to be so bad on one boiler this time that the chest recess is having to be machined out and a bush fitted.

Unfortunately although in theory this latest type of valve can have one side dismantled for overhaul by breaking two joints only, in practice it is not so simple and can only be undertaken when the notice for steam is extended. As a result, either in emergency, the main valves do not usually get disturbed except at proper refit periods.

Comment

New spare lids and seats for pilot valves will be of stellite steel, which will not groove.

Action is being taken to raise the permitted setting pressure of safety valves. This will substantially reduce the tendency to leak at working pressure.

For new construction, a number of safety valves of different makes are being tried, with the object of eliminating the very large amount of unnecessary work caused by leaking safety valves.