MODIFICATION TO DISTILLER PUMP

The bearing troubles peculiar to the Drysdale distiller pump have been overcome as a result of modifications* carried out in H.M.S. *Bermuda*. Figures 1 and 2 illustrate the original and modified arrangements respectively. The shaft, complete with air pumps and fresh water pump impellers, was assembled and the nut F tightened. This clamped all impellers and the stainless steel sleeves solid on the shaft. The shaft was then put in a lathe and the face of the nut F was turned true. A new distance washer E was made of mild steel, the diameter being such that it was a 2/1000″ clearance fit in the casing J where the original Perfect seal was removed. It was made a push fit on the shaft at X and recessed to take the shaft Y, the upper end being slightly reduced in diameter to correspond with the outside diameter of the inner portion of the race, and its length varied as necessary so as to position the air pump correctly. The sleeve C was made of mild steel and was a push fit on the shaft at Z, its external diameter being that of the outside diameter of the inner portion of the race. The cover D was bored, bushed, and built up by welding to suit the sleeve C. The coupling A was put on a mandrel and both faces at M and N machined true. The maker's drawing of the nut B gave the dimension across the corners. As such, it was considered that it did not give sufficient bearing area and, therefore, a special nut of section B was made.

It will be noted that the object of the modification was to provide a greater bearing surface between the shaft and the thrust race, and satisfactory running of the modified arrangement for a period exceeding 2,400 hours has been reported.

* The originator of this modification, Lieut. (E) W. J. S. Allen, R.N., received an award from the Lott Naval Efficiency Trust Fund, *vide* A.F.O. 733/48.

Engineer Officers are invited to report :

(i) to the Engineer-in-Chief's Department (Ref. EN.32) any similar bearing troubles which they may have experienced with these pumps, and

(ii) if the modified arrangement illustrated here is adopted, any results of such modification after a reasonable period of operation.