NOTES FROM SEA

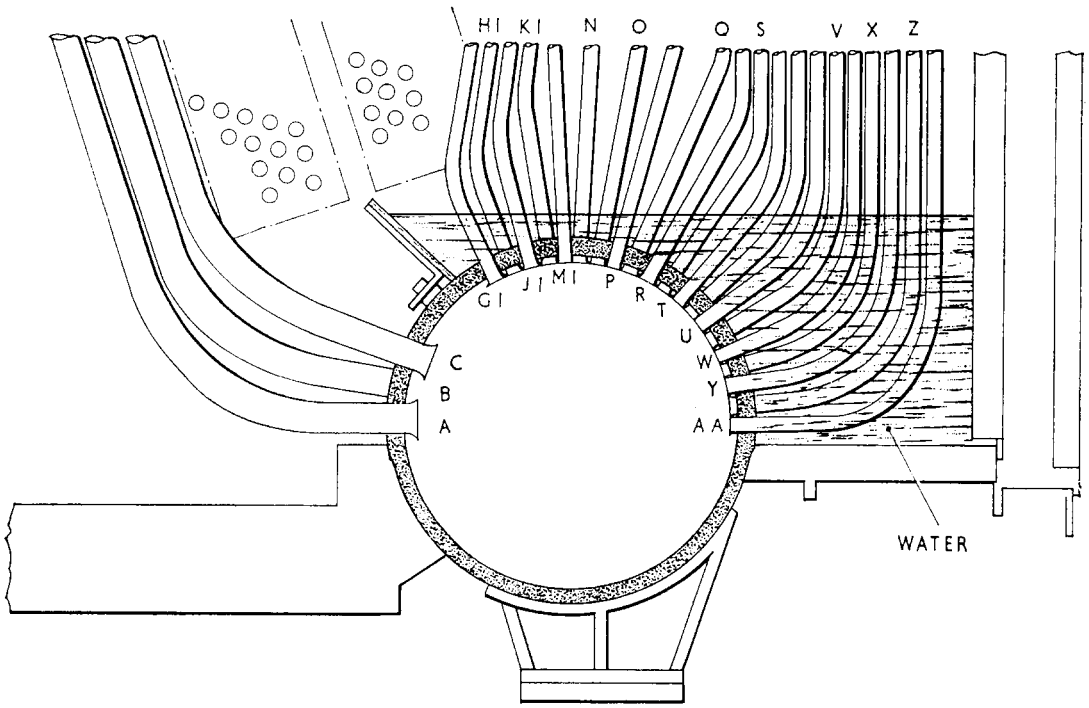

FIG. 1—SECTIONAL ELEVATION IN WAY OF STEAM WATER DRUM

Main Boilers—H.M.S. 'Pellew'

The provision of a cofferdam to soak the heavy soot deposits on the boiler generator tubes is described in the following report from H.M.S. *Pellew:*

On removal of the fire-row tubes to renew the water drum protection plates, heavy soot deposits were found at the roots of the superheated pass G1 to M1 tubes up to 18 inches above the water drum, and light deposits 4 inches high at the saturated pass E to J tubes. The deposits could only be seen after removal of the fire-row tubes.

Some of the soot in the superheated pass was removed with the aid of specially made stainless steel saws but the opportunity was taken to erect a cofferdam arrangement which was built round the tubes as shown in FIG. 1. The deposits softened after flooding the dam for 24 hours.

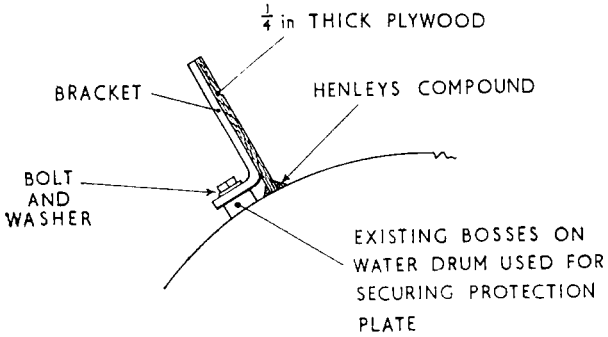

FIG. 2—DETAILS OF COFFERDAM

The lance with hook-shaped end as shown in FIG. 3 was provided by Rosyth Dockyard for use in gaining 'blind' access to the tube roots when water washing.

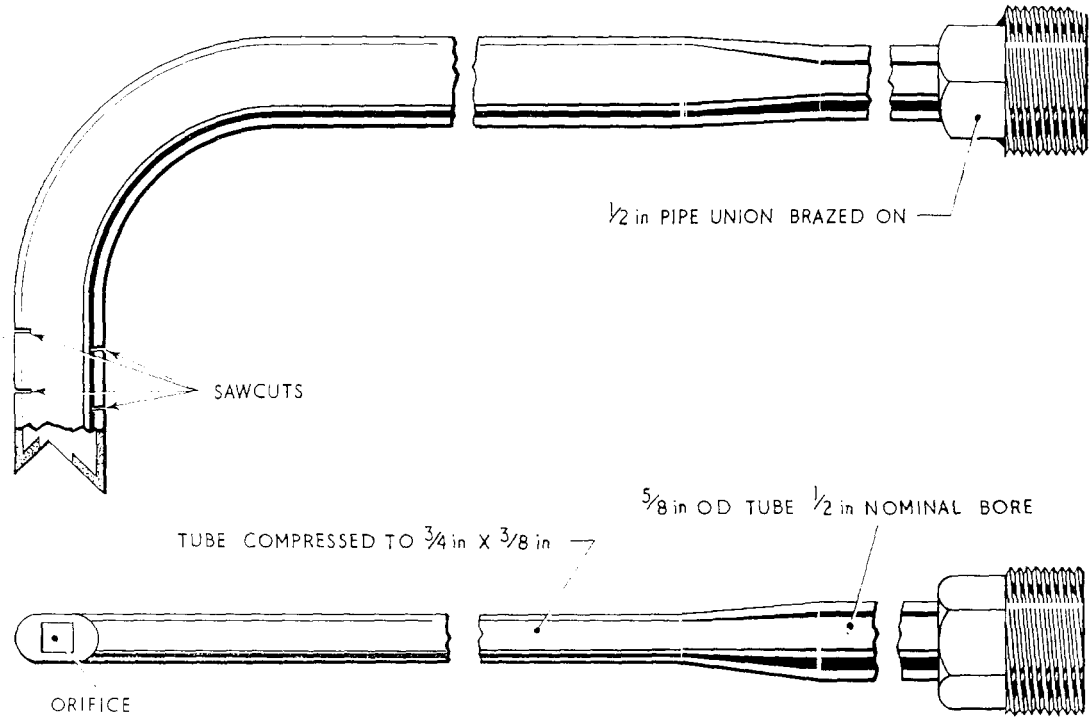

FIG. 3—DETAILS OF LANCE

Comment by D.M.E.

The soaking or even better the complete submergence of deposits in water is usually very helpful in removing difficult deposits. It is almost invariably found that the addition of one per cent Teepol or other wetting agent assists the process. It may well be found that soaking or submergence for more than 24 hours is required and other navies specify up to 72 hours' soaking.

Soaking by spraying the deposits every four hours is easier to do but submerging the deposits, as done in H.M.S. *Pellew*, produces more effective results. Even after soaking or submergence, however, very thorough cleaning, with a good deal of hand poking, will be necessary to get rid of these deposits.

The lance is a good example of a special type which can be fairly easily manufactured and is useful for special purposes. The local manufacture of such equipment is to be encouraged (B.R. 3001, Art. 1206, para. 12 refers).

Bullet Brush Boiler Cleaning Gear—H.M.S. 'Belfast'

The following extract from a report received from H.M.S. *Belfast* describes a modification to the bullet brush push gun for internal boiler cleaning devised by Lieutenant R. S. Scotford and used successfully in H.M.S. *Bermuda*, and for which an award has been made from the Herbert Lott Naval Trust Fund:

'When firing a bullet brush through a boiler tube, the gun is pressed hard against the tube end. The rubber pad piece should form a seal round the stem of the gun. It has been found, however, that the build up of pressure on top of the brush causes the rubber to expand, the internal air pressure forcing the rubber away from the central stem and allowing air leakage. Unless the gun is exactly square on the tube end and is pressed home rapidly and hard, the brush will not be fired.

To overcome this a modification was devised to utilize the expansion of the rubber pad piece for sealing. The stem of the gun was modified to include a

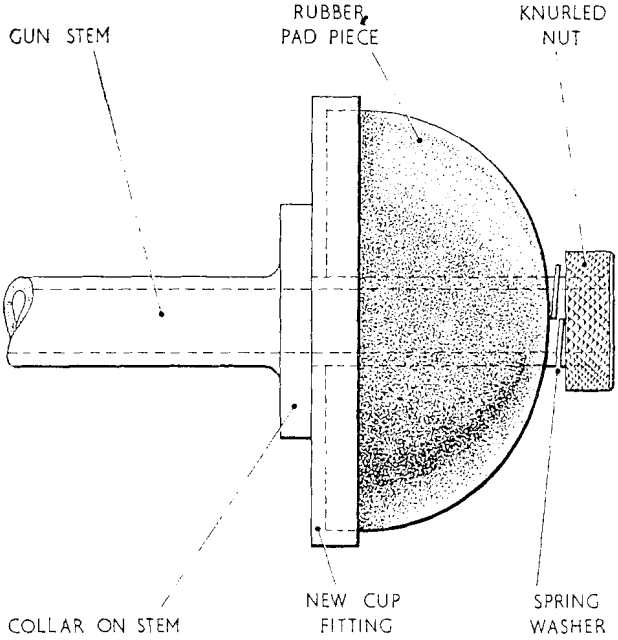

FIG. 4

cup fitting as shown in FIG. 4, so that the air pressure forced the pad against the cup thus forming a seal—the sealing force is, in fact, proportional to the air pressure on top of the brush'.

Comment by D.M.E.

This trouble has not been reported from other ships and the general adoption of this modification is not therefore considered justified.

However, if air leakage between the pad piece and the gun stem does occur, this appears to be an effective cure which could be produced locally as required.