

CORRESPONDENCE

SIR,

Spare Gear Allowance

The present list of equipment, portable fittings, spare gear and instruction books held by the Engineer Officer afloat is the D.787 ; but as this is *not* an allowance list, the possibility of having a particular item of spare gear on board or, in fact, that that item should be on board, is a chance whim of the Engineer Officer or his Spare Gear Staff. Lists of spare gear relevant to his ship or class are shown by sheets of Admiralty Interim Catalogues and the many already published Parts Identification Lists ; but with one exception : no publication gives an on-board allowance.

As time goes by, ships will of course have a complete list of spare gear carried giving the present Adrefnos in use—as each item delivered by S.P.D.C.s is given an Adrefno—on the D.151 Ledger pages, the nucleus of which were initially raised from the D.787. Although the pages of the D.155 ledger are amended for each transaction and alteration of drawing, part, Adcat to Adref numbers, the D.787 remains the list of spare gear held and eventually bears little relationship to actual present day Adrefnos or holdings.

The Class Authority Planned Maintenance Documentation gives a list of equipment fitted in any particular ship. Could not a similarly indexed list of spare gear for each relevant equipment be compiled and held on board as the Spare Gear Allowance ? These lists could be compiled from P.I.L.s or A.I.C.s or any publication that gives the present Adrefno, and the Class Authority could even raise the ships' 151 Ledger pages annotating the on-board allowance.

In short, the Engineer Officer would be responsible for items of spare gear listed from current publications that would be amended concurrently with S.P.D.C.s copies and these would give an up to date appreciation of the spare gear carried and with present Adrefnos. The Class Authority could recommend deletions and additions to these lists and pages for individual classes of ships, by usage rates, compiled from ships' normal routine returns of spare gear used.

(Sgd.) W. T. MORGAN,
Engineer Lieutenant, R.N.

Departmental Comment

The range and scale of spare gear to be carried on board ships is decided by the Admiralty, on advice from equipment manufacturers, and are listed in the D.787J.

However, it is appreciated that, for a variety of reasons, this does not fully satisfy the present day requirements of the Fleet and the whole system of documentation of equipment in ships is at present under review.

SIR,

C.R.B.F.D. Mk. 5—Tachometric Box Mk. 5 Mod. 1

I read with interest the comment on the faulty C.R.B.F.D. Mk. 5 Tachometric Box Mk. 5 Mod. 1 in H.M.S. *Belfast* (Vol. 13, No. 1).

I experienced the same troubles with section A.2 of the STAAGS in H.M.S. *Camperdown*.

On one occasion the rollers were worn and the plates grooved due to excessive tension on the springs holding rollers to plate. I have also read of this section A.2 being faulty on other ships.

Would it not be economical to introduce into the O.M.33 a quantity of 'Molyspeed', or the naval equivalent which I believe to be AE8/10084 ?

(Sgd.) G. HEATH,
Ordnance Artificer.

Comment by D.W.S.

It is appreciated that there have been several defects in section A.2 of STAAG mountings and C.R.B.F.D.s, but it is considered that these have been due to fair wear and tear and that they are not excessive. Spares lists in B.R.226(B) and (C) are being amended to include rollers.

Authoritative sources have tested MoS₂ when used as an additive to lubricating oils and it has been found that its value depends very much on the properties of the oil to which it is added. O.M.33 obtained from two different sources may be either improved or degraded by the addition of MoS₂. This could be overcome by providing a special supply of O.M.33 with MoS₂ already mixed in, but there is not yet a strong enough requirement to justify the expense that would be entailed.

SIR,

External Deposits in Boilers

With reference to Lieutenant-Commander Fox's article, 'External Deposits in Boilers', of which I have had a preview, the following may be of interest :—

Towards the end of last year, the boilers of two *Whitby* Class ships were found to have extensive deposits which defied the normal water-washing techniques. The quantity and type of deposit was very much the same in both cases. One ship, in full commission, arranged a routine whereby the deposits were kept wet with water, to which a little Teepol had been added, for 72 hours, after which a T.C.V. washed the boilers. In the other ship, which had only a very small ships staff, the T.C.V. had to do the washing without any pre-wetting. The boilers in the second ship took very much longer to clean than those in the first.

Although there is nothing really new or surprising about this, the direct comparison has confirmed once again that it takes time for moisture to penetrate the deposits. Therefore even where a T.C.V. is to do the actual cleansing, ships staff can contribute by pre-wetting for 72 hours or less, as dictated by operating conditions.

In the first ship quoted above, ships staff had also removed deposits by mechanical means wherever possible. This cannot but help, but at this stage (as distinct from towards the end of the washing process) is likely to give only a poor return for the sweat, swearing, and perhaps even blood expended !

(Sgd.) R. M. INCHES,
Commander, R.N.

SIR,

Marine Boiler Tube Failures

The article on boiler tube failures in Vol. 13. No. 2, 'Third Case History,' has solved, for me at any rate, the problem of fire-row tube failures in H.M.S. *Woolwich* in the period 1943-44. The *Engineer Officer's Note Book* showed a continuous previous history starting within a few years of commissioning (1935) and including a few failures at sea during the early part of the War.

The radiograph of A30 (FIG. 14) is absolutely typical of the failures we experienced, and the internal conditions of the tubes described in the article were all present. Remembering that this was before the days of doctored boiler water and when 500-hour cleaning was a routine, internal deposits consisted of a film of oxide bound together with the heavier fractions of the heavy mineral oil, so essential to the shuttles of Weirs feed pumps and reciprocating extraction pumps.

We found that an effective form of preventive maintenance was to clean the boiler and then with a new flexotube brush re-clean the last three feet of the A-row tubes. Your correspondent then entered the water drum with a powerful light source attached to a dentist's mirror on a four-foot stick and sighted the fire side internal surface of each A-row tube. The cracking was always inside the first three to four feet and under these conditions was quite easily visible with the naked eye. Tubes with extensive cracking were replaced, the boiler sighted and boxed up with considerable confidence of zero tube failures in the next 500 hours' steaming.

We had a microscope in *Woolwich*, and we managed to get about half way towards the solution stated in your 'discussion'; certainly I think we had adduced the fatigue nature of the failure across the lines of principal stress. (One's subsequent experience of corrosion-cracking in aircraft materials might possibly have taken one the whole way home!) Under the conditions in Trincomali, continuously providing power, steam, feed water and firemain to three hungry refitting destroyers, 167½ hours a week for a year, the loads on the steaming boiler room were high. There was vibration enough to account for any amount of fatigue (watchkeepers included, in 94 degrees F ambient !) and your contributor need not think I rely entirely on contraction-under-restraint as a cause.

I don't know whether *Woolwich* has been re-boilered since those high and far-off times but, if not, the foregoing and your article might be of help to anyone who serves in her. I'm sure they will find enough on their plates, without boiler tube troubles, to ensure that one lives up to her motto : ' Never a Dull Moment '.

(Sgd.) P. DOIDGE WILLCOCK,
Commander, R.N.

Although the last paragraph of this letter may not now apply to H.M.S. *Woolwich*, it may well be applicable to many other ships—even to the motto. (Editor).
