

# Correspondence

## MARINE RADAR

SIR,

The symposium on *Operational Aspects of Marine Radar*, appearing in your April number, must have been of special interest to all your members who are serving in vessels fitted with radar; it most certainly was to me, and I would like to comment on two sections of the paper entitled 'The operational value of Shipborne Radar', by F. J. Wylie and M. W. Kaye: (a) Relative and True displays, and (b) Radar Maintenance.

(a) My experience with regard to bearings of ships, ever since I went to sea, both in the Merchant and Royal Navies, is that relative bearings are much more quickly appreciated than true ones. Lookouts, in both services, always give the bearings of an object when sighted, as relative, e.g. Red 15, or Green 70 or, in some cases in the Merchant Navy as so many points on either bow; but always relative. This has to be so because the lookout seldom knows even the course the ship is steering and I have never seen a lookout provided with a repeater compass and an azimuth mirror. Whoever is keeping watch on the radar screen, whether an officer or rating, is really, for the moment, taking on the job of a lookout and when the bearing is passed on to the officer in charge of the watch or the captain of the ship, it seems to me that the relative bearing is much more quickly understood than a true one. In many cases, with regard to land, especially when course is to be altered on a particular true bearing (which is not necessarily abeam), it might be much more convenient to be able to read the true bearing at once from the radar screen, but as far as the open sea is concerned it would appear to be more useful to have a relative bearing.

(b) On the maintenance side it is stated (page 133, line 16) that 'immediate rectification of all fuse failures would be simple and speedy.' If a fuse fails, or 'blows' as it is usually called, it is very necessary to find out what the cause is. If a defective fuse, then it is, as a rule, a simple matter to put in another, but if the fuse has been blown through a defect somewhere in the circuit, it can be a very perplexing problem to find the fault and may quite easily call for high technical knowledge to find even the cause let alone to remedy it. There are of course types of fuses which give an outward indication on the fuse itself when they have failed, but immediate rectification of the failure to carry the current is, as I have already said, not always easy. It would be interesting to know what percentage of the 14% fuse failures quoted were due to defective fuses or to circuits which the fuses were protecting. After all, a fuse is really an electric safety valve.

I think the paper is arranged and written in a most interesting way. The relative or true bearing question, as the writers say, is a matter of opinion, but I am sure that a large number of masters will agree that relative bearings are favoured by those who have to use radar at sea.

I am, Sir,

Yours obediently,

C. B. OSBORNE,

Cunard Buildings,

Liverpool.

Commodore R.D., R.N.R. (retd.)

Master, Cunard Liner *Parthia*.

*Captain Wylie writes:*

Mr. Kaye and I are grateful for the opportunity of commenting on the interesting letter by Commodore Osborne.

In fact, Commodore Osborne's observations on the question of the comparative advantages of relative and true displays are very much in line with the opinions we expressed in the paper. It should be remembered, however, that the gyro-stabilized display gives several technical advantages which may be of importance and which he does not mention.

With an unstabilized display any yaw shows up on the radar screen by blurring the picture and, while this is unlikely to be serious when no land echoes are on the P.P.I., it becomes a problem of considerable importance when a ship is proceeding close to the shore. As Commodore Osborne points out, it is also useful when in the presence of landmarks to have the display stabilized so that direct transfer of bearings can be made between the P.P.I. and the chart.

This subject is an extremely interesting one and of some importance because it may be said that the Merchant Navy as a whole is in the gradual process of transition from the magnetic compass to the gyro. The mental processes involved in the problem under consideration are largely matters of habit and it will no doubt be agreed that it would be undesirable to perpetuate habits born mainly of the awkwardness of the quadrantal markings of the magnetic compass.

Without wishing to appear in disagreement with Commodore Osborne, we would like to suggest that perhaps it would not be difficult to form the habit of using a stabilized display and referring the comparatively inaccurate reports of lookouts to it by means of the ship's head marker. It is of course agreed that lookouts will always make relative reports. In the experience of some, the officer in charge of the watch, on receipt of a lookout's report, invariably takes a compass (in this case gyro) bearing of the object. It would be interesting to know whether this is a general practice and whether the reference of this true bearing to the display would not lead to the habit of using the stabilized display on the majority of occasions. Additional advantage is obtained from the use of a stabilized display when a plot of ship echoes is being made. When true bearings are used, the necessity of redrawing the plot on each alteration of course by one's own ship is obviated.

The second point raised in this letter concerns the 'immediate rectification of all fuse failures'. The statistical evidence which was mentioned in our paper, and published by the American Federation of Shipping, stated the 14% of all failures were 'Fuse Failures'.

We understand that in all these cases the fault lay solely in the fuse. Cases in which damage due to the failure of other components was successfully limited by fuses blowing were not placed in this category.