

EXPERIMENTS IN NOISE REDUCTION.

Complaints have been received of the excessive noise made by the boiler room fans of H.M. ships. This has, on occasion, been found to interfere with work on the flag deck as well as with the receipt of orders at the A.A. guns. In one extreme case a cruiser was heard at a distance of several miles by a coast watcher.

Efforts to reduce the noise have been made on the following lines:—

(a) By fitting noise absorbing baffles at the top of fan downtakes.

(b) By fitting noise absorbing linings to the downtakes.

(c) By spacing the fan vanes at irregular intervals so as to avoid the cumulative effect of the regular beat of equally spaced vanes.

Trials with method (a) gave a small reduction in noise, but method (b) when applied to the forward downtake of a cruiser gave excellent results, reducing a noise of about 110 phons to 100 phons. When applied to the after downtakes the effect was less on account of the smaller wall area of the downtake available for absorbing the noise. A complication appeared as a result of spray which entered the after downtakes. This had a deleterious effect on the sound lagging and caused it to disintegrate in due course. Method (c) has recently been in service and results comparable with those obtained with lagging in the forward downtakes have been obtained. As the fitting of lagging involves an appreciable addition of top weight, method (c) is obviously preferable but the two methods can be combined.

Experiments have also been carried out in the lagging of main and auxiliary compartments but the results have been disappointing. This is due to the relatively small amount of wall area available to absorb the sound and the large number of pipes, fittings, etc., which reflect the sound and prevent it from reaching the absorbent material. Such lagging has been successfully used in merchant ships for absorbing the noise of machinery but it must be remembered that the machinery spaces in such ships are large as compared with H.M. ships and the large trunk which is usually carried up to the foc'sle deck level or higher gives a large area for this purpose.

There is scope for fitting sound absorbent linings to air trunks in order to reduce the noise caused by ventilating systems; this, however, means increasing the overall dimensions of the trunks.