



R 100 seen from the stern. It will be noticed that the elevator is balanced, while the rudder is unbalanced. On the underside of the horizontal fin can be seen the opening provided for the legs of a man, who may be ordered to operate the elevator by hand in an emergency. There is a similar arrangement for his head on top of the fin. Normally both are closed. The picture brings out well the concave surface of the panels of fabric amidships, due to the internal tapes and wires. (FLIGHT Photo)

understand, have produced such an engine, and we British are not accustomed to be left behind for long in such matters.

I told Sir Dennistoun that I did not think that the public would stand for a further expenditure of £3,000,000 on the development of commercial airships. If these two proved technically successful, I thought it would remain for private interests to come forward with orders for ships. And, provided that the trials of these two airships warrant it, that is what I believe will happen.

A good case might be made out for the Government proceeding with naval airships, as they, if the present ships are a technical success, ought to be able to do much of the work of light cruisers at a very much smaller cost. Future airships ought not to cost as much as these two experimental ships have done, and one might perhaps take a quarter of a million as somewhere near the right price for one, especially if they were ordered by the dozen. The capital cost of a

cruiser, according to Sir Dennistoun Burney, who certainly ought to know, is about two million pounds. Therefore eight airships could be bought for the cost of one cruiser. The combined crews of those eight airships would be about 400 officers and men, as against 700 on the cruiser. When one considers the respective speeds and range of vision of airships and of surface ships, it seems obvious that the patrolling of the Empire trade routes in, say, the Pacific and Indian oceans, could be carried out very much more cheaply and effectively if a proportion of the cruisers employed were replaced by airships. But as for commercial airships, the Government will have done its part when the trials of R 100 and R 101 are completed, and if the results give promise of commercial profits, we may feel sure that private interests, probably shipping companies, will not be slow to take the matter up.

F. A. DE V. R.

R 101 in Dock

THE State airship R 101 was removed from the mooring mast at Cardington on November 30, and docked in the hangar, where a number of modifications will be made, as a result of which it is hoped that she will gain about five tons in disposable load. These modifications will include the enlarging of the gas bags (by letting out the protective netting) and elimination of the Servo motor operating the controls.

Many other alterations, indicated by the recent flying trials, will be made.

Graf Zeppelin Resting

THE *Graf Zeppelin* has been temporarily withdrawn from service for overhaul and adjustment. Since it was first launched in September, 1928, the airship has completed 73,116 miles.