parts of the offensive organisation as the 6 in. director tower. A large number of casualties on EXETER'S bridge were caused by splinters from the hit on "B" turret ricochetting off the roof of the bridge. Immediate steps should be taken to pad the under surface of bridge roofs.

- 95. The II in. shells that fell short made a black splash and in the vicinity of bursts a black dust like soot was found.
- 96. The enemy 6 in. fire was ragged and ineffective and caused little, if any, anxiety.
- 97. There is some evidence that GRAF SPEE fired time-fuzed H.E. possibly from her high angle guns.

Aircraft.

- 98. The flying off of AJAX'S aircraft with "X" and "Y" turrets firing on a forward bearing while the aircraft was waiting was a gallant and most resolute effort. The handling of both AJAX and her aircraft during subsequent recoveries was also very well carried out. During the past two months I have been most impressed with the rough weather capabilities of the Seafox type of aircraft.
- 99. EXETER'S Walrus aircraft had been refuelled for the dawn phase, and it was unfortunate that both were hit by splinters before either could be flown off. It was extremely fortunate that the petrol which was being sprayed all over the after part of the ship did not cause any fires. This danger must always be present when an unexpected encounter occurs. Again it emphasizes the necessity for emptying the aircraft of petrol should a night encounter be likely and for the ability to be able to fuel and defuel quickly.
- 100. Another point that comes out is the need for speeding up the catapulting process.
- 101. The aircraft, once up, though extremely valuable at times, was not entirely successful.
- 102. GRAF SPEE'S aircraft was out of action before the battle and did not take part.

Increased Protection.

103. There must always be a tendency for a cruiser to desire increased protection and most of the claims must, generally speaking, be resisted. Nevertheless, there are portions of the control and of the offensive armament that I feel very strongly should be protected against splinters.

- (a) The killing or wounding of nearly the whole of EXETER'S bridge personnel is one example. The bullet-proof plating, backed up by the instrument plate was more or less successful in keeping out most of the splinters. It should, however, be made thicker and, as mentioned before, the underside of the bridge roof should be padded to prevent splinters ricochetting off it. It was this latter factor that was the main cause of the casualties.
- (b) The hitting of ACHILLES director control tower was most unfortunate, and I consider that, particularly in those ships with only one director tower it should be made splinter proof and also that the leads to it should be in a protected tube.
- (c) The After Conning Position. This position was used throughout most of the action in EXETER, but its communications failed, and Captain Bell had to con the ship through a chain of messengers. In AJAX casualties from splinters occurred in this position, though it appears they were downwards from a hit on the main-topmast. I consider that the after conning position should be protected and more attention paid to the security of its communications.
 - (d) Other exposed personnel liable to attack from splinters. I consider that the experience of this action shows that some protection should be given to torpedo tubes' crews, H.A. guns' crews and 0.5 in. machine guns' crews.

(Signed) H. H. HARWOOD,

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