

the barrages would be out of action just when they were most needed.

103. The experience of the "pirate" raids revealed this danger. In consequence I overhauled the machinery which had been set up to inform barrage Commanders of the approach of hostile aircraft, and laid down the principle that some risk of damage to balloons by bad weather must be accepted and that all barrages must be kept flying by day unless there were really strong grounds for close-hauling them.

(iii) *Operations, March to December, 1941.*

104. At the end of February a decision was reached at the highest level to give absolute priority to the defence of shipping in the North-Western approaches, which was now dangerously threatened by a combination of U-boats and long-range aircraft.

105. The measures taken in consequence of this decision included the transfer to Northern Ireland of some Units of Coastal Command which had hitherto shared with my Command the task of protecting coastwise trade off the East Coast. Consequently, when announcing this decision on 28th February, the Air Ministry instructed me to provide additional "watch and ward" for this traffic, at the expense, if necessary, of other tasks. At the same time I was warned of the possibility of increased attention by the German bomber force to West Coast Ports.

106. These instructions were followed on 9th March by a directive which made the defence of the Clyde, the Mersey and the Bristol Channel my primary task.

107. As has been seen in discussing night operations, I made arrangements in consequence of these instructions to increase the A.A. and night-fighter defences of the West Coast Ports. At the same time, I increased the day-fighter defences of the Bristol Channel and the Mersey by bringing into operation Nos. 118 and 316 (Polish) Squadrons, which had been training for some time past at Filton and Pembrey, and by moving the newly-formed No. 315 (Polish) Squadron to Speke. I did not consider that any addition was necessary to the day-fighter defences of the Clyde, as No. 602 Squadron was already at Prestwick, while Nos. 43, 603 and 607 Squadrons at Turnhouse and Drem could quickly be made available as reinforcements.

108. On 5th March I gave instructions to all the Fighter Groups to allot a greater proportion of their effort to the protection of shipping and ports. The system of giving "escort", "protection" or "cover" to convoys, according to circumstances, remained in force, but I arranged that "escort" should be given more generously than hitherto in specially dangerous areas, and that, where attacks were likely to be made without warning, fighters giving "protection" should be kept airborne while the risk continued.

109. The practical effect of these instructions is best shown by a few statistics.

110. In February 1941, my Command devoted to the protection of shipping 443 sorties, or eight per cent. of its total defensive effort by day; in March 2,103 sorties, or eighteen per cent.; and in April 7,876 sorties, or 49 per cent. During April several Squadrons in No. 10 Group each spent more than 1,000 hours of flying time in the discharge of this

task. In no ensuing month of 1941 was the proportion of the total defensive effort of my Command by day which was devoted to the protection of shipping less than 52 per cent., the highest proportion being 69 per cent. (in August and again in September). The smallest number of daylight sorties expended on this duty in any month after March was 3,591 (in December) and the largest 8,287 (in May).

111. Besides providing this vastly increased scale of fighter protection, I surrendered from the resources under my operational control, a number of light A.A. weapons for installation in merchant vessels. Other forms of armament now provided for these vessels included rocket projectors and parachute-and-cable projectors.

112. In consequence of these measures the Germans were forced to make an increasing proportion of their attacks under cover of darkness or twilight. After rising to a peak of 21 ships in March, the number of ships sunk by an action in daylight within the radius of fighter action fell to negligible proportions.

113. Various means of protecting ships at night as well as by day were tried, but after dark fighters were at a disadvantage, since their presence tended to confuse the ships' gunners and thus do more harm than good. On the whole the best form of protection for merchant vessels after nightfall proved to be a combination of the A.A. weapons carried by the ships themselves and their escort vessels, and the orthodox use of night-fighters to intercept enemy bombers wherever they could be most conveniently engaged. On the other hand it was important not to withdraw escorting fighters too early, since the Germans were quick to seize opportunities of attacking ships at dusk. At the end of the last patrol of the day, therefore, fighters had to be landed in the dark. Conversely it was necessary for the earliest patrols to take off long before dawn in order to be in position by "first light."

114. A word of tribute is due to the pilots who undertook these unspectacular and often tedious duties. Convoy patrols gave pilots comparatively few chances of distinguishing themselves in combat with the enemy, yet they constituted an essential, often exacting, and sometimes hazardous task, since the possibility of a sudden deterioration in the weather, which might render the handling of a high-performance fighter a business requiring all the pilot's skill, was always to be reckoned with.

115. There remained the problem of protecting shipping outside the radius of action of the short-range fighter. Hitherto my Command had not been concerned with this; but in the Spring of 1941 the Air Ministry announced a decision to equip a number of merchant vessels as "Catapult Aircraft Merchant Ships". At least one of these "C.A.M. Ships" would form part of every Atlantic convoy. Each would carry a Hurricane fighter, which could be launched by rocket-catapult on the approach of an enemy aircraft. On completion of his patrol the pilot would either bale out, alight on the sea, or, if near the coast, make for an airfield on land.

116. In order to provide the necessary complement of pilots, the formation of the Merchant Ship Fighter Unit began at Speke, in No. 9 Group, early in May 1941. I also made arrangements to train a number of Naval Officers as