

the shooting. Now, for the first time in the war, the guns were presented with a target which did not take evasive action and which obeyed all the assumptions upon which Anti-Aircraft gunnery had been based. It might have been expected that exceptional results would at once be obtained but this was not the case and successes were less than 10 per cent.

74. The whole question had been carefully examined as far back as February, 1944, and it was believed that the targets could satisfactorily be dealt with, especially if certain new American equipments could be acquired in large numbers, provided—and this was especially emphasised—that good results were not expected at heights between 2,000 and 3,000 feet, where the target would be too high for light guns and too low for heavy guns and where the effectiveness of Anti-Aircraft fire was likely to be small. I was therefore perturbed to find that it was exactly in this 1,000 feet band that the targets were almost invariably flying.

Arrangements were made immediately for a personal representative to fly to America to speed up, if possible, the delivery of the new American equipment, and General Marshall, who interviewed him, promised to send at once 165 of their latest radar sets, the SCR.584, together with all the necessary ancillaries including the No. 10 Predictor. This promise was fulfilled.

75. There were many other difficulties. The spheres of influence of guns and fighters overlapped, and a most awkward system of limiting one or the other according to meteorological conditions was worked out. The radar sets, which had been sited in hollows to avoid enemy jamming, were cluttered up with spurious breaks caused by contours of the ground. The balloon barrage was extended and many guns had to be re-sited, with resulting difficulties over the radar.

76. Above all, the low height at which the targets flew required a higher rate of traverse by the guns than the mobile 3.7-inch was capable of giving. The static 3.7-inch gun, on the other hand, though capable of traversing sufficiently quickly, required an inordinate length of time for its emplacement on concrete. It was at this point that Brigadier J. A. E. Burls, C.B.E., and the R.E.M.E. Staff produced a platform on which the static 3.7-inch guns could be emplaced quickly, which was portable, and which in the end proved to be one of the keys to success. It consisted of a lattice work of steel rails and sleepers filled with ballast.

I must here pay a sincere tribute to the work of R.E.M.E. from the day the Corps was first formed. Under Brigadier Burls' inspired leadership there was no job they did not tackle.

77. We decided to replace all the mobile 3.7-inch guns with the static version, and the first 32 had been emplaced and were showing improved results when the whole policy of the co-ordination of guns and fighters was changed.

Neither fighters nor guns were being given full scope, for the guns had to ensure that the break on their radar tube was not a friendly plane before opening fire, while the fighters in pursuit of a V.I often had to give up the chase when approaching the gun zone. Lieut.-Colonel H. J. R. J. Radcliffe, M.B.E., at that time my Technical Staff Officer, suggested that we should re-examine the plan of locating the

guns on the coast. This plan had always seemed to us to have great advantages from the gun point of view, but there were difficulties from the fighters' point of view in that their scope was thereby limited by having to break off an engagement on approaching the coast and start it again if the target got through the gun zone.

It was, however, now very clear that without some very radical re-arrangement, two-thirds of the V.I.s would continue to get through to London. The fighters were still having only a limited success, though that success was much better than the guns were experiencing.

Fighter Command were evidently thinking on the same lines, for at a meeting called on the afternoon of 13th July, at their H.Q., after a lengthy discussion the C.-in-C. Fighter Command decided that the guns should be moved to the coast, and orders to that effect were given.

78. The new belt was to extend from Cuckmere Haven to St. Margaret's Bay, and the first guns began to move on 14th July, 1944. Apart from the move of all the equipments in the existing belt to the coast, there was a simultaneous move of 312 static guns coming in to replace the mobile guns and a further move of 208 Heavy, 146 40-mm Bofors and over 400 20-mm guns in a deployment on the Thames Estuary to which I shall refer later. The moves involved 23,000 men and women, for with the introduction of the static 3.7-inch gun came the Mixed Batteries and 30,000 tons of ammunition and a similar weight of stores; 3,000 miles of cable were laid for inter-battery lines alone.

In four days the move to the coast had been completed.

79. There were various advantages in this new coastal belt. First, radar sets were freed from the clutter of inland interferences and, since the enemy was not using active jamming methods, they were able to be put to the best possible use; secondly, there was a good chance that many bombs destroyed by the guns might now fall in the sea instead of on land; thirdly, the existing defences on the South coast, including those of the R.A.F. Regiment, could now be incorporated in one scheme, and fourthly, the unsatisfactory and alternating limitations on guns and fighters, introduced because of mutual interference arising from the fighters' inability to identify the position of an inland belt, could now be dispensed with, since the line of the coast would clearly reveal the position of the belt to aircraft. The move to the coast was the second of the keys to success.

80. Almost immediately after this the new American equipment, which we were so anxiously awaiting, began to arrive, and as soon as troops could be trained in its operation it was deployed along the belt. Not only was the SCR.584 the most suitable of all the radar equipments available, but its use, in conjunction with the No. 10 Predictor, directed fire with a degree of accuracy hitherto unattained. At the same time the problem of exploding the shells at the correct height was solved by the introduction of the proximity fuze. This equipment provided the third of the keys to success.

81. As soon as the coastal deployment was in action results began to improve, but although I have emphasised three points which in my opinion did more than anything else to