1940 had not proved as successful as had been hoped; the spacing of lights proved too great for continuous engagement so that night fighters still failed to intercept with searchlight assistance; low-flying raiders were often able to slip through unobserved and the anticipated increase in the range of beams was not noticeable.

In September, 1941, therefore, lights were redeployed on single sites. The basis of the redeployment was a mathematical conception known as the Fighter Box; this was the area within which a night fighter with nothing to aid him except his own eyes and the visual indication of searchlight beams could intercept a bomber which entered that area. After trials had been carried out the size of the box was established as being 44 by 14 miles. The Box system remained the basis of searchlight deployment for the rest of the war.

The country was divided into a complete system of boxes around the various Gun Defended Areas. In the centre of each Box was a stationary vertical searchlight beam around which a night fighter circled until he received an indication that a bomber was entering the Box. At the ends of each Box searchlights were spaced at about 6 miles intervals and in the middle the spacing was about 3½ miles. A series of boxes placed side by side thus created a continuous belt in which lights were thin at the edges, where they constituted an Indicator Zone and dense in the centre which was the Killer Zone.

Later, when enemy penetrations became so shallow that they often failed to reach the Killer Zone altogether the Indicator Zone spacing was thickened and the orbit beam was moved forward if it was thought to be necessary.

28. Just as in March, 1941, the responsibility for fire control had largely passed from Gun Operations Rooms to the gun sites themselves, so now the responsibility for searchlight control tended to shift from Sector Operations Rooms to the searchlight sites. The old form of control had done much to destroy initiative and it was only by degrees that it was possible to instil into the junior officers the sense of responsibility necessary for the successful operation of the new system. In addition there was at the outset a shortage of S.L.C. Radar equipment.

Consequently there developed a distrust of searchlight-assisted interceptions among R.A.F. night fighter crews and Commanders who preferred interceptions ordered on the findings of their own G.C.I. radar. It was towards the successful co-ordination of the two methods of interception that all our energies were now bent, and co-operation became steadily closer and more satisfactory as time went on.

29. Though the main use to which searchlights were put was naturally the illumination of night raiders, they were also employed for a number of other special purposes throughout the war, in an anti-minelaying rôle, to illuminate balloons for our bombers and to make meteorological observations of cloud bases at night. Especially worthy of mention was the system of homing beacons for friendly aircraft which operated from the end of 1939; figures were only kept for a period between September, 1942, and August, 1943, but in that time 525 aircraft were saved from imminent disaster, 600 were homed to alternative airfields and 184 were helped to base.

Re-organisation.

30. The organisation of Anti-Aircraft Command into three Corps and twelve Divisions remained until October, 1942, when a further reorganisation took place. This was prompted by a number of reasons; the desire to economise in manpower, the need for fewer intermediate formations between Command Headquarters and units allowing a quicker dissemination of orders, the need for still closer co-ordination with R.A.F. Groups and the desire to achieve a better balance of responsibility since the shifting of the emphasis in defence southwards had over-loaded 1st Anti-Aircraft Corps.

Corps and Divisions were therefore abolished altogether and were replaced by seven Anti-Aircraft Groups. There were three grades according to the operational commitments in the Group area and establishments appropriate to each grade were worked out. The system was extremely flexible since the grade of any one Group could be changed to meet current needs.

31. The seven groups were situated as follows:—

1st. London.

2nd: The Solent, south-east England and southern East Anglia (these two Groups coincided with 11 Group R.A.F.).

3rd. South-west England and south Wales (coinciding with 10 Group R.A.F.).

4th. North Wales and north-west England (coinciding with 9 Group R.A.F.).

5th. Northern East Anglia and the East Coast as far as Scarborough (coinciding with 12 Group R.A.F.).

6th. North-east England and Scotland (coinciding with 13 Group R.A.F. (except Northern Ireland) and 14 Group R.A.F.).

7th. Northern Ireland.

The defences of the Orkneys and Shetlands remained a separate organisation, responsible in operational anti-aircraft matters direct to Anti-Aircraft Command Headquarters.

In the later stages of the war there were at times concentrations of defences in certain areas quite beyond anything visualised in October, 1942, and the local Group Headquarters was not sufficient to deal with the tremendous increase of work. In these circumstances, group boundaries were altered to permit the insertion of an extra Group in the affected area.

Thus, 6th Anti-Aircraft Group took over the Solent area during the preparations for invasion, Scotland becoming the responsibility of a new 8th Group. 6th Anti-Aircraft Group was disbanded when its responsibilities in the South had ended.

The progressive reduction of defences in the North and West in 1944 enabled me to disband the 3rd, 4th and 7th Anti-Aircraft Groups and to extend the responsibilities of the 2nd and 5th Groups westwards into their areas.

A 9th Anti-Aircraft Group was especially created in southern East Anglia when, there was a heavy concentration of equipment there in the later stages of the flying bomb battle.

SECTION II.

Attacks by piloted aircraft.

32. In the first part of my despatch I referred to the cessation of heavy night raiding