These, though disappointing, were not entirely negligible; several Bombers were shot down in this area during the experimental period, and many discovered that they were pursued and turned back before reaching their objectives. Night Fighting Development work was also going on at the same time at the Fighter Interception Unit at Tangmere in Sussex.

248. A supplementary use was found for the A.I. by the installation of A.I. "Beacons" in the vicinity of Night Flying Aerodromes. These afforded a valuable Navigational aid for "Homing" in cases where any defect occurred in the R/T D/F system.

249. Shortly before I left the Command a new piece of Radio-Location apparatus became available in the shape of the "G.C.I." set with the Plan Position Indicator. This was an Inland-Reading Set which showed the position of all aircraft within its range on a fluorescent screen as the aerial was rotated.

250. The main advantages of this set were that it had a longer range than the G.L. set and it was possible to track the Bomber and the Fighter by the same apparatus instead of following one with the G.L. and the other by R/T D/F. Moreover it was found that in some circumstances the accuracy of the R/T D/F method was inadequate for night interceptions.

251. On the other hand, the accuracy of height readings by the G.C.I. apparatus was less than that obtainable with the G.L. I understand that this has now been improved.

252. Whatever the exact technical method of plotting positions and tracks of aircraft, the object was to place the Fighter behind the Bomber, and in such a position that the echo of the latter would show in the Fighter's A.I. set. The Fighter then tried to overtake the Bomber until it became visible to the naked eye.

253. At that time only multi-seaters could be fitted with A.I., and therefore, concurrently with the Night Interception experiments, methods were tried of using the Searchlights as pointers for Night Fighters, even if the target were out of range of the Searchlight Beam. Experiments were made with the Searchlights in "clumps" to increase their illuminating power and the visibility of their beams to Fighters at a distance.

254. A small Radio-Location set was designed to fit to the Searchlight itself, so as to get over the time-lag which was such an insuperable obstacle to the use of Sound Locators. It is probable that if Searchlights can substitute the speed of light for that of sound they may take on a new lease of useful life.

255. The disadvantage of relying entirely on Radio-controlled methods of Night Interception is that "saturation point" is quickly reached, and when mass raids are in progress only a limited number of fighters can be operated. Results obtained in the Spring of 1941 show that Day Fighters can obtain important results in conditions of good visibility, especially if attention is paid to all methods of improving the night vision of pilots.

256. During the Battle the "Intruder" system was initiated on a small scale. Night fighters without A.I. were sent across to France in an attempt to catch Bombers while taking off from, or landing at, their aerodromes; or to intercept them at points where they habitually crossed the French Coast.

257. I had to leave the Development of Night Interception at a very interesting stage; but it is perhaps not too much to say that, although much remained to be done, the back of the problem had been broken. The experiments had, of course, been carried out in a small area, and raiders which avoided the area could be intercepted only by previously existing methods; but the possibilities had been demonstrated and could be applied on a larger scale as soon as the necessary apparatus was provided.

258. The method is, of course, also applicable to the day interception of raiders making use of cloud cover, which have hitherto proved extremely elusive; and it is not too much to hope that the eventual development of very high-frequency A.I. may enable accurate fire to be opened against unseen targets, so that not even the darkest night nor the densest cloud will serve as a protection to the Raider.

259. The day may come when every Single-Seater Fighter is fitted with A.I., but this is not yet feasible. What can be done is to fit all Searchlights with Radio-Location apparatus so that every Searchlight Beam is a reliable pointer towards an enemy, even if the range is too great for direct illumination.* If then the Fighter can be informed in addition of the height of the Raider, Day Fighters will be able to join usefully and economically in night operations on dark nights.

* As a result of the experience gained during this period, all searchlight equipments have since been fitted with Radar control. This, combined with intensified training, has made them, since 1941, extremely accurate.

APPENDIX "A."

FIGHTER COMMAND.

Order of Battle, 8th July, 1940.

No. 10 GROUP.

Squadron.	*War Station.*	*Type of Aircraft.*
87	Exeter	Hurricane.
213	Exeter	Hurricane.
92	Pembrey	Spitfire.
234	St. Eval	Spitfire.