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Working Paper 5, Page 5-1, Paragraph 1, Paragraph 3h

DETECTION OF UAPs BY RADAR

1. The incidence of visual occurences of UAP sightings, together with their coincidental detection on radar is extremely low. Conventional theory and radar system operation suggests that (given a radar sightline), the following conditions should occur for radar (UAP) detection to take place:

(a) The target must be radar-reflective. (See Appendix A5)

(b) A minimum detectable signal must return to the radar receiver to satisfy the radar receiver - S/N requirements (i.e. minimum detectable signal).

(c) The signal must be displayed (i.e. in a modern system which uses preset thresholds the display/processing threshold must be adequate for the target being inspected).

For a target track to be formed (a), (b) and (c) must be repeated at the radar's inspection (i.e. update) rate. In modern systems supposed 'spurious' random responses are likely to be rejected/filtered and unless they fulfil 'plot' requirements, will never be declared from successive plots into 'tracks'. Hence, they will not be seen as targets.

2. There is a significant absence of radar plots/tracks on UAPs. It should be borne in mind that, statistically, it is inconceivable that **all** UAPs in the UKADGE are reported by direct (human) sightings). In fact, there must be many more UAPs unreported which are within radar coverage but not within human sightlines (e.g. due to cloud cover, reduction of observers in sparsely populated parts of the UK etc.). Why, therefore, are not at least even a reasonable proportion of these reported by military or civil radars, either at sea, over land or by aircraft radars?

3. **Possible Explanations** A number of explanations are possible. The conditions at para 1 above are not being met for one or more reasons:

a. For some reason the radar reflectivities of these unidentified objects are extremely low.

b. Because they do not 'communicate' or appear where aircraft are expected, they are ignored by the operators (or the automatic processing systems) as spurious/short-lived observations.

c. Those seen are taken to be caused by flocks of birds.

d. When moving fast they exceed the upper Doppler/Velocity capability of the system. This may be, firstly, beyond the Doppler measurement capability of the particular type of radar XXXXXXXXXXXXX XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXX XXXXXXXX S.26

e. The target cannot be seen because there is no radar sightline (e.g. terrain screening/low altitude). This can only be the case on a limited number of occasions, subject to range.

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g. The object absorbs RF energy at least at the usual wavelengths in use and hence is not detected.

h. The radar rotation rate is so slow that fast objects do not remain within detectable coverage from one scan to the next so as to produce a series of plots or remain within detectable range. (For example a XRPM (XX sec) update rate would have a detection opportunity at range differences of ~XXkm on a MachX target). S.26

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