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25. The search beam (with, say, an azimuth beam-width of 1.5 Deg.) takes ~40m.seconds to pass through the UAP target. However, the velocity of the target may be 10km per second, travelling some 400 metres in this scan time. If UAP travel is across the beam and the radar detection range, due to the small target size, is only, say, 20km, (at which range the beam is only ~525m wide), the actual beam velocity is also travelling (at that range) at over 13km per second. Hence, depending which way the target is moving, either the radar beam is chasing the target and just overtakes it or, if the target is moving in the opposite direction to the beam, the dwell time on the target is seriously curtailed, as the time-on-target could easily be halved. Either way a relatively small number of pulses hit the target. With a PRF of, say 265pps about 11 pulses are designed to hit the target in normal operation against aircraft. Against a UAP, not only is it a small target in all probability, it may only receive half the number of pulses which, integrated-up, may not reach a detection level.

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Of course, this is taking a fast target as an example, with an assumed small RCS. Slower targets might be detected if their RCS and aspects were favourable.(R)

26. **Operator Procedures & Thresholds**

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27. Several other factors are important:

- **Horizon Geometry** The inner rings around the sites at Figure 1-1 shows the horizon range rings for targets at altitude. Targets further away and those at less than altitude will not be seen. [These areas may or may not be those where visual witnesses happen to be present at the time].

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- **Correlation** Frequently, when a UAP is spotted from an aircraft (often civil air-traffic) it cannot be seen on the controlling CAA radar. There is only one UK event on the DIS record where 3 radar's (2 RAF and one CAA) had simultaneous contact with a UAP, which eventually faded and disappeared.

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(C)