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12. On the days of the above fatal accidents no major clusters of UAP reports occurred on any day but single reports were filed elsewhere in the UKADR indicating that the conditions over the UK allowed phenomena to occur. The possibility that a UAP event was present, although low, cannot be ruled out. Such crashes occur on the sparsely populated low flying routes. It is noted from the statistics of duration and motion that it is unlikely that a UAP would still be present after a crash, by the time any witnesses arrived.(R)

13. It is of interest that all seven accidents which were finally considered occurred in day light. Although this might be seen initially as mitigating against the causes being due to sudden aircrew reaction to UAP appearance:

- There is much less likelihood of seeing a UAP in daylight unless it is very close. [The overall incidence of all UAP reports in daylight is only 19% and many of these are momentary. It is believed that UAP's are probably equally present in both darkness and daylight when the conditions exist for their creation].

- Very few UAP are reported as the solid' variety, hence if an accident is due to a UAP, the probability of encountering a UAP with a 'solid' appearance 'head-on', would be very low indeed, and if this ever were to occur over land, there would surely be physical evidence in the form of easily seen artefacts, and unfamiliar collision debris.[It is shown elsewhere in the report that, almost certainly, the phenomena has a plasma basis, which on occasions can appear to be visually (optically) 'solid'] (R)

AIRMISSSES

14. All aircraft near-miss reports, filed with the Joint (CAA & MoD) Airprox Section (JAS), at Uxbridge are rigorously investigated. On a small number of occasions the identity of one of the conflicting objects is never explained, despite exhaustive enquiries by a Working Group, with full access to all AIS(Mil) and CAA resources. These include careful track analysis, weather, other flight plans, radar contacts and cockpit/ATC voice recordings. Seven such events have occurred in the past 10 years. Table 2-1, based on inquiry reports, lists examples, from which the following observations are made:

- If an object is visually small, or not fully opaque, (e.g. in an indistinct form - even gaseous), it will not be seen in daylight until it is very close.
- The nature of close proximity misses at high closing speeds is that encounters are fleeting - a few seconds at the most.
- By the time the presence of an object is noted visually and a possible collision conflict is realised, indeed apparently imminent, it is too late for evasive manoeuvre.
- If an object is a plasma-type it may not be seen on civil aircraft radar
- A non-transponding target, if detected, may be taken to be due to weather - and disregarded.

(R)

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15. The descriptions of the unexplained objects at Table 2.1 by the civil aircrews are very similar to those typically received as UAP reports, both from the ground and from other airborne sightings which are not airmisses. In particular it should be noted that a coloured object is (naturally to aircrew in the absence of other information) reported as a 'navigation light' - on the assumption that all flying objects are manned aircraft. It is of interest to note that all are below 20,000ft and that despite good visibility, in all but one case, the sightings were always extremely close and closing fast. In all cases they were corroborated by at least two crew - and on occasions by other aircraft (i.e. a multi-independent witness scenario. Only on one occasion was a co-incident radar contact made, although for two of the scenarios, stationary radar contacts were observed. All of the colours seen are typical of UAP reports. If a two-colour object streaks past it is not unreasonable to describe it as having 'stripes'. If an object (for example, black) has a white part, it is not unreasonable to describe this as a white 'navigation light' (e.g. often reported as on the 'nose' or 'tail', even if the object is in fact spherical. The black 'lozenge' (Serial 4) and the 'wrinkled cylinder' (Serial 5), are again typical UAP shapes, described elsewhere in this report, at Volume 1, and in the supporting Working Papers at Volume 2.(U)

16. **UAP Event Correlation** The DI55 records were searched for correlation with the civil aircraft airmisss events listed at Table 2.1. No public or other reports were found for Serials 4, 5 or 6. Serial 2 was the only actual near miss report which had also been reported at the time as a UAP event and is held in the Departmental records. None of the other near-misses had resulted in a UAP report, which re-enforces the belief that many civil pilots have sightings but do not report them. However, June 7th was a busy UAP day, with 4 reports - from St Ives (Cornwall at 0010hrs), Sleaford (0013hrs), Manchester (1248hrs), and Hove (2350hrs). The Hove, St Ives and Sleaford reports all speak of multiple lights. The Royal Meteorological Society log reports extensive thunderstorms with hail and ball lightning reports on this date. (U)

17. On 14 January 1994 (Serial 3 at, Table 5), two separate reports were filed, respectively, from Glenrothes and Alness (Inverness), however, these were some eight hours after the airmisss report.(U)

18. Only one UAP report was received on the day of the remaining airmisss report (19 Jun. 1988). This was at 1740 hrs in the London area.(U)

19. It is impossible to correlate the airmisss and UAP reports because there is inadequate data. However, it should be noted that the weather reports at Table 2-1 are those at the scene of the respective sightings. Bearing in mind that on five of the seven occasions it is logged that dry hot and thundery weather was present (25-32 degrees C) in many areas of the UK on the days in question. It seems likely that the entities which were reported in good faith, on the assumption that they were 'solid' objects - were almost certainly various manifestations of atmospheric plasmas of one sort or another - including the optical phenomenon where the non-reflection of light can apparently give the appearance of black opaqueness. (U)

HAZARD SUMMARY

20. There are no Service unexplained fatal air accidents where a collision has occurred with a solid object, leaving behind some sort of tangible artefact. Only those unexplained accidents which are known or thought to be due to sudden inexplicable control inputs where the aircraft,

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and the occupant(s) did not survive were investigated on the remote possibility that there might have been a potential UAP explanation. The key findings are as follows:

- About half the unexplained RAF accidents could not be correlated in location with UAP sightings, because many of the UAP records (1970-78 period) have been destroyed.
- The probability of the remaining accidents being caused by sudden aircrew reaction to avoid what they may have believed to be an apparently imminent collision is a possibility, although of the 11 events, four occurred on days on which atmospheric and electrical conditions may not have been conducive to UAP formation or UAP formed but were not reported.
- The frequency of UAP reports (notwithstanding the likelihood that many UAP events are never reported) is such that the probability of an RAF (or Civil) aircraft encounter with a UAP, at any altitude must be very low. (C)

21. Because there are no reports of RAF aircraft intercepting UAPs, there is no first-hand experience of the difficulty which reportedly occurs. The Department has no access to official reports from other nations. However, all indications are that a UAP can reposition itself faster than any aircraft can manoeuvre. The reader is referred to Chapter 4, where it is clear that any attempted manoeuvre may result in over-stressing the aircraft. (R)

CONCLUSION

22. In conclusion, the possibility exists that a fatal accident[1] might have occurred in the past due to aircrew taking UAP avoiding action, when flying fast and low. However, the probability of an encounter is extremely low, even if this was the case for any of the seven unexplained occasions where this potentially might have occurred in the last 30 years.(C)

23. It is of interest that no RAF incidents of subsequently unexplained air misses have apparently been reported to the Joint Airprox Section at Uxbridge[2].(R)

24. Data was provided for seven incidents reported by civil aircrews where the cause of the events could not be explained by the subsequent official inquiry. It is clear that unexplained air misses are discussed among crews and there is likely to be much more to be learned by interview. However, they are understood to be unwilling to speak to anyone who might be sceptical or repeat the conversations elsewhere. It is believed that many more civil events due to UAP remain unreported. This is because, firstly, the airline crews have most probably decided that the UAP are benign, secondly they are concerned about their individual reputations as professionals and finally the effect any publicity this might have on airline business. The airline crews are concerned when airmiss reports remain unresolved. It is further noted that since Pope's book has been published airline crews are unlikely to wish to take the matter further with SEC(AS2), or with the civilian UFO organisations.(C)

[1] For the purpose of this study one RAF Squadron Leader was made aware that aircraft accident data was required as part of a UAP investigation.

[2] The precise purpose of the study was not made known to the Airprox Section, which understood the data to be needed as part of a radar investigation.

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	Date	Time	FL	Visibility (km)	Weather	Colours/Shapes	Radar Contact	Aircraft Type	Location
1	7 Jun. 96	1800	90	10+ (VMC)	CuNb	Red/blue/white[6]	None	146[5]	STEVENAGE
2	6 Jan 95	1848	40	10+ (VMC)	Cu	Black/White[2][6]	None[1]	737[5]	MANCHESTER
3	14 Jan 94	0834	30	10+ (VMC)	-	Sparks/Flames[3]	None	Helo[4]	ABERDEEN
4	15 Jul. 91	1745	140	40+ (VMC)	-	Black(Lozenge)	Yes	737[5]	CRAWLEY
5	6 Jun. 91	1438	80	50+ (VMC)	Inversion /Unstable	Yellow/Orange (Cylinder)	None	737[5]	BRACKNELL
6	17 Oct. 88	2316	190	IMC	-	Green	None	VC9[7]	~DOVER
7	19 Jun. 88	1953	80	5 (VMC)	Haze	Grey/White	None	BAC- 111[5]	GATWICK

TABLE 5 REPORTED UNRESOLVED NEAR-MISS DATA.(R)

- Notes: [1] But stationary intermittent radar contact seen before or after.
 [2] 'Like a Christmas Tree'.
 [3] Possible Meteorite/SOYUZ re-entry debris.
 [4] Seen by 2 pilots of 2 other aircraft in vicinity..
 [5] Seen by both pilots.
 [6] 'Hawk' aircraft size.
 [7] Seen by three flight deck crew of the VC9.

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CHAPTER 3 - POTENTIAL FOR EXPLOITATION OF UAP-ASSOCIATED EFFECTS

1. One of the reasons for making an analysis of UAP reports was that of identifying any phenomena which could be robustly generated and provide a military advantage. XXXXX

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2. **Exotic Vehicles** In order to take an unbiased scientific approach the possibility of some sort of exotic vehicle, either terrestrial or from space could not be ruled out until all available evidence had been examined. While it was clear that there are no artefacts on which any hands-on technical assessment can be made the possibility of technologies beyond the scope of human engineering and conception could not initially be ruled out. Even if it was discovered that such craft actually exist and were the product of other intelligence beings, any attempt to reproduce the exceptional performance achievements attributed to UAP could only be attempted using existing technology. Secondly, it seemed possible that other military applications might be found if the effects could be replicated in a controlled way. The problem then became one of identifying the precise physical effects and making a judgement as to whether there are credible roles in which they might be employed. The effects observed visually, on radar or through the apparent radiating field from UAP might be advantageous, for example as a countermeasure or decoy. Exceptionally, it was postulated that if the existence of some form of extra terrestrial technology was in fact proven, then (possibly) recommendations could be made as to the way ahead. For example, it would be necessary to focus on these capabilities in order to deduce and possibly, what sort of technologies might be necessary to achieve the reported almost instant accelerations, decelerations, manoeuvres and high velocities. At the level of human understanding this level of performance appears to imply the negation of inertia. Even if this was possible to achieve at some stage in the future in technological terms it would have to take place in an unmanned vehicle. Humans could not withstand (at least with our current knowledge of aviation medicine), the significant acceleration and deceleration forces which would be involved.(U)

3. Any attempt at the description of possible or probable technologies to construct a vehicle would be at the limits of current human understanding and involve technologies which may appear (one day) to be possible. They might include such ideas a propulsion by the use of anti-matter, gravitational or torsion fields or of particle phenomena and fields or waves which are not currently known in science or technology. One would have to concede that if extra terrestrial activity is involved, (the statistical analysis reported at Volume 1 makes this unlikely) not only would the originators of such vehicles have technologies developed over thousands of (earth) years - in any case they would have to travel very large distances to reach earth or other planets.(U)

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4. The conventional scientific expectation, when searching for extra terrestrial life, is that this might be revealed by searching for oxygen, nitrogen or other specific spectral lines. Of course, this supposition is based possibly/probably erroneously on the assumption that there could only be biological life elsewhere in the form which we conventionally understand it. So far unsuccessfully, the USA have spent millions of dollars (in the SETI programme) in this search. Lateral thinking soon shows that any other 'inhabited' part of the universe may conceivably contain entities which bear no resemblance to ourselves whatsoever. Clearly, if they exist, they may not 'breathe' as humans or have any of the usual attributes - hence, one could argue, they could, perhaps naturally, withstand the enormous gravity forces involved in the manoeuvres described. The logic soon changes again when it is suggested that, in the limit, these entities may have no mass! Several UAP (UFO) researchers have concluded, for example, based on what they have taken to be reliable incident reports, that these entities must also have the ability to materialise and de-materialise. Further, the reported aerodynamic gymnastics implies that their technology of using, apparently, near drag-less, noise-less flight, can be achieved most of the time. All of these exceptional characteristics can be explained if the objects are gaseous buoyant charged plasmas (U)

5. Propulsion UAP noise is only usually reported as a 'whine', 'hum', crackle or 'buzz' at 'take-off'. The method of propulsion of the objects does not, reportedly, produce the familiar noise which is made by air thrust, turbulence or motion by an aerofoil through the air, as we know it - despite the fact that the 'craft' size reports imply the presence of a significant mass given the enormous dimensions often described. If, however, as is believed, there are many reports which are of plasma/charged mass in characteristic, then they would be virtually inertia-less, and would therefore not push masses of air aside in order to move; while others are purely manifestations of visible light moving about. Further, allowing for variations in human descriptions, these sounds are those usually associated with electrical discharge and oscillation. If fields are present which can cause neurological disturbance, as reported at Volume 2 Working Paper No 25, it is quite likely that other sounds will be sensed rather than heard acoustically. (U)

6. There is the question of the frequently reported merging and demerging of smaller craft with larger ones. These are usually triangular and sometimes 'oblong' or 'diamond'. In air operations we currently have at least some caution in linking up flying platforms for the comparatively simple task of air to air refuelling - and yet these smaller triangular UAPs seem to have little trouble in merging or separating rapidly into or from their so called 'mother ship'. Finally, as these entities can also reportedly appear and disappear at will and have intelligence, one could surmise that they could also decide when and whether to be visible to humans or not. The classic reporting dilemma exists as to whether the witnesses are reporting what they are actually seeing or, alternatively reporting what they think they should be seeing. Finally, one must consider whether they are being affected in some way so as to distort their reporting.

7. In conclusion, from all the evidence examined in the UAP reports held in DI55, there is no indication that craft of extra-terrestrial origin exist. Any exploitation of technologies, resulting from this study, will clearly have to be based on those phenomena exposed and discussed at Volume 2. Those worth a brief examination are shown at Table 3.1. There are, as shown in the working papers, tens of natural and man made phenomena that can lead witnesses to believe that they have observed something quite extraordinary. The majority of the causes of known UAP sightings cannot be replicated and used for military purposes. (U)

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POTENTIAL APPLICATIONS

8. As a result of the UAP studies, the radar detection aspects have shown that there are three possible related potential applications:

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9. **Earthlight Replication** While the production of light by fractured rocks is an interesting natural phenomena, no military applications can be seen, lightning itself does not, of course, reflect radar energy, and there is no other known effect discovered as a result of studying the UAP data available, that could be used advantageously.

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