

WORKING PAPER NO.9
'BLACK' AND OTHER AIRCRAFT
AS UAP EVENTS

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SPECIAL NOTE:

This working paper contains NATO RESTRICTED information on the UK low Flying Zone, for use in UAP report filtering and analysis, which must not be divulged to the public.

UAVs

9. There is a significant UAV programme in the USA and Israel and to a lesser extent in the European NATO Nations. It is possible that experimental versions may be flown principally over coastal or sparsely inhabited regions of the UKADR in the future. Some of these may be reported as UAP.

GLIDERS

10. Gliding objects are of particular interest in the UAP context, as they make very little sound. Further para-wings and hang-gliders often appear to an observer to hover, move, climb and descend. On occasions, depending on livery, a glider has briefly reflected light and has been reported as a UAP, insufficient of the rest of the machine being seen to permit the observer to recognise the sighting as a glider. Both freeflight and powered gliders fall in this category.

PARA-WINGS, HANG-GLIDERS & MICROLIGHTS

11. There is an increase in the use of sport para-wings and hang-gliders, both unpowered and powered. The small size (and often similar span to length ratio), make these more likely to be misreported as a UAP than ignored, as would be the case for a more conventional aircraft. Hang-glider avoidance areas are specified, therefore the possibility of an erroneous UAP report can be minimised by referring to Figure 10 and Figures 15 to 33. These types do not normally fly after dark.

MIXED AIR ASSETS

12. Except for towing aircraft for gliders, other fixed wing aircraft, especially fast low jet aircraft, are prohibited from glider and hang-glider sites. Hence, within those areas, a useful filter is that UAP events cannot be

misinterpreted as other military or civil operations. UAP reports from within these areas are therefore due to either gliders or hang-gliders, or other natural or man-made objects, which may enter the airspace, (e.g. birds, balloons); or 'genuine' UAP events. Note should be taken of the fact that these sport aircraft, though in use at all times during daylight, when weather conditions allow are more likely to appear at weekends and holidays.

HELICOPTERS

13. Although helicopters can be seen anywhere and under certain conditions (rotor disc illuminated from above or below) are reported as a disc-type UAP event, this is more likely to occur within the UK helicopter routes shown in Figures 11 to 14.

AIRCRAFT LOW FLYING ROUTES

14. Although, in principle, the whole of the UKADR is available for low flying (down to an altitude of 250ft), in practice, and excluding the prohibited and restricted areas, such as danger areas, major conurbations and other specified areas, low flying is limited to the designated low flying areas. In three areas aircraft can fly down to 100ft. Although they are theoretically available for 24hrs per day, low flying is prohibited **over land areas**, between 2300 and 0700hrs, with few exceptions for non-jet aircraft. This is rare enough to warrant special permission and then only for Monday to Friday. Weekend and Public Holiday flying is only permitted for small-scale, pre-arranged exercises, and only from 0800 to 1900, with the exception of some aircraft used for parachute training. An obvious exception is that of Search and Rescue operations and helicopter training over sea at weekends and on Public Holidays. Use of the UK Low Flying System is exclusively for UK aircraft, UK aircraft based in Germany and NATO aircraft on approved

flights. Special approval is required for other (non-NATO) nations, who must not fly below 2000ft AGL. Exceptionally UK light fixed wing aircraft may fly down to 50ft.

VISIBILITY FOR LOW FLYING

15. Strict rules apply to visibility for low flying. This is of interest in the UAP context, as clearly this filters out all manned aircraft if certain conditions exist:

- For low flying aircraft (in excess of 140kts), there must be a forward visibility of at least 5km and 150ft horizontal and 500ft vertical separation from cloud.
- Light aircraft must have a forward visibility of at least 2km, be clear of cloud and sight of the surface
- Helicopters, (flying at 140kts, or less) must either be clear of cloud and in sight of the surface, or apply the same rules as for low flying aircraft above.

AIRCRAFT LOW FLYING AT NIGHT

16. The UK Night Low Flying System (UKNLFS) is a source of potential UAP erroneous reports. Restrictions apply as shown at Table 1, with timing that can be taken into account for UAP event analysis. Normally, low flying night flights will show navigation lights.

AIRCRAFT IN FORMATIONS

17. In the UK Low Flying System a formation is not normally to exceed four aircraft, but North of 54 degrees North formations of up to 8 aircraft may be flown permitted for various operational activities.

Special permission is required to exceed these rules and the incidence of larger formations is very rare.

SPEED WHEN LOW-FLYING

18. The maximum speed (all aircraft types) is 520kts.

USE OF RE-HEAT OR AFTERBURNER

19.A characteristic of some UAP reports is that of glowing objects in the sky. Except for emergencies, it is unlikely that after-burners will be used overland at low altitude at less than 1000ft for most aircraft. The Jaguar is an exception (500ft)

FREE-FALL PARACHUTING

20.A brief glimpse of a parachute can be sufficient to produce a UAP report. Manned aircraft are prohibited from the designated parachuting areas. Normally, parachuting only takes place in daylight.

OBSTRUCTIONS & POWER LINES

21. During analysis it should be noted that while a UAP (e.g. Ball Lightning) may be observed near to tall structures, aircraft, the crews of which will be aware of these, can be eliminated, as they will not fly close by. UK towers below a height of 500ft are not lit. Slow inspection aircraft can be expected in the vicinity of electrical power lines.

PROHIBITED & AVOIDANCE AREAS

22. For the purpose of evaluation of UAP reports it is possible to filter out fixed wing aircraft (not withstanding any infringement), where sufficient UAP evidence exists to determine that its altitude was observed below the avoidance area minimum altitude (2000ft AGL)

MONTH	START	END
JAN	1630	0800
FEB	1730	0700
MAR	1830	0600
APR	1930	0430
MAY	2000	0330
JUN	2100	0300
JUL	2030	0330
AUG	1930	0430
SEP	1830	0530
OCT	1730	0600
NOV	1630	0700
DEC	1600	0800

NOTE: All times Zulu

TABLE 1 LOW FLYING NIGHT-TIME PERIODS



FIGURE 1: SR-71 IN FLIGHT (NASA PHOTO)

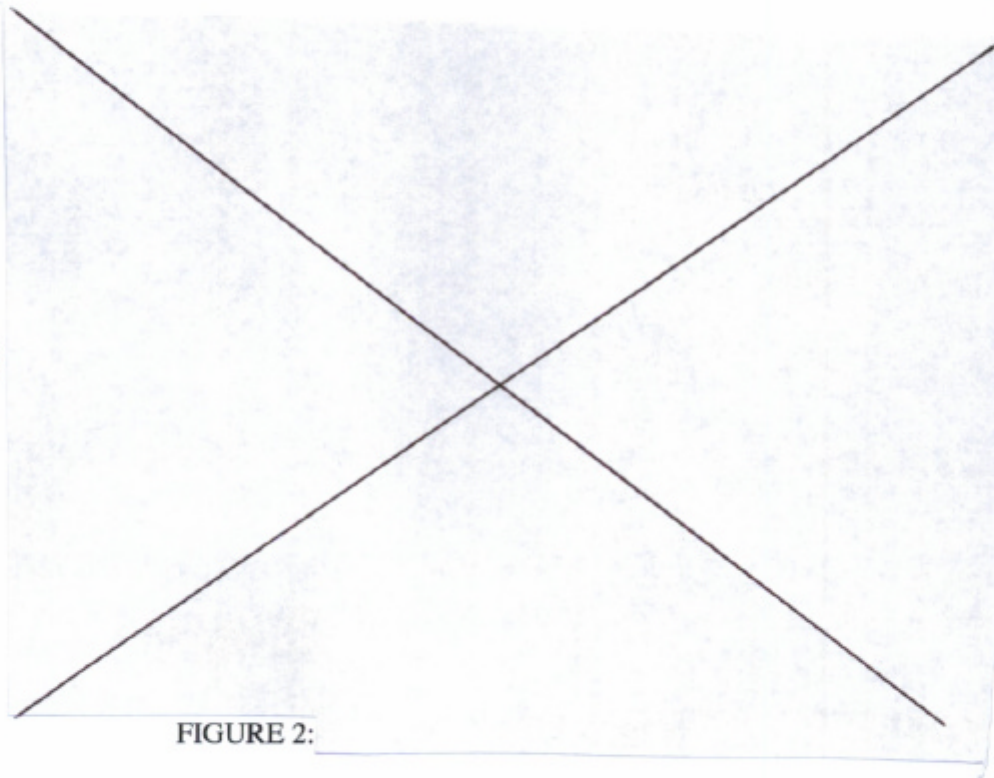


FIGURE 2:

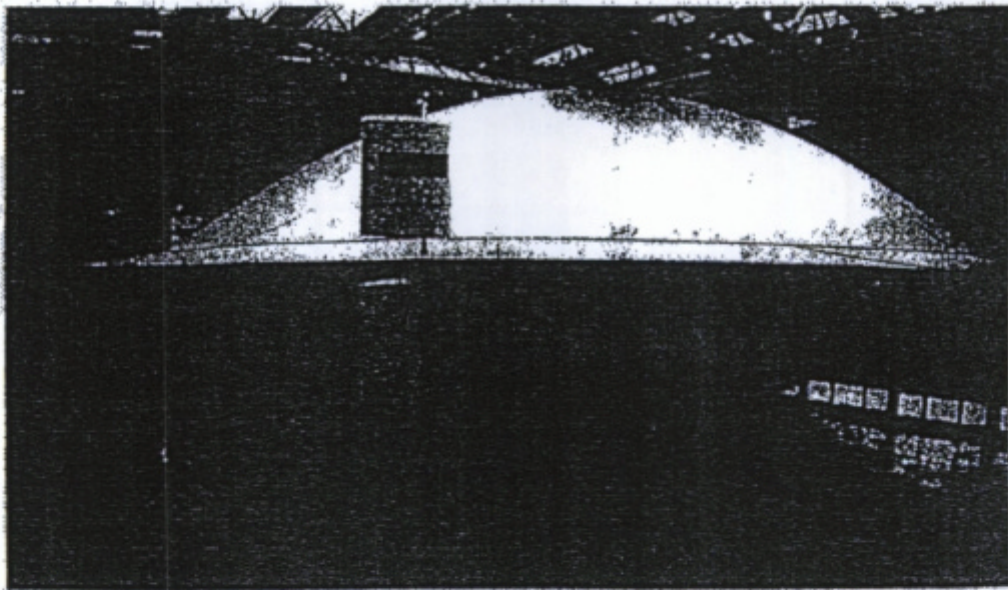
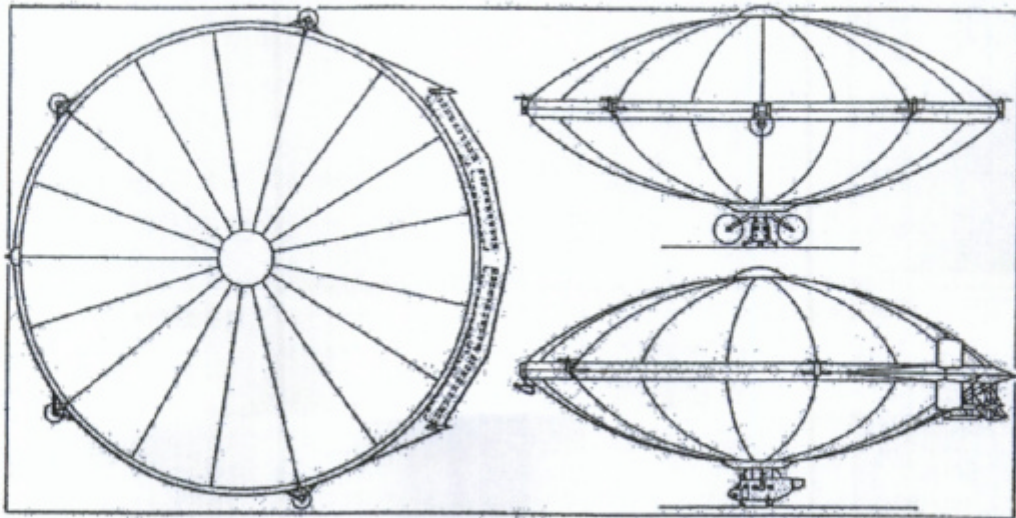
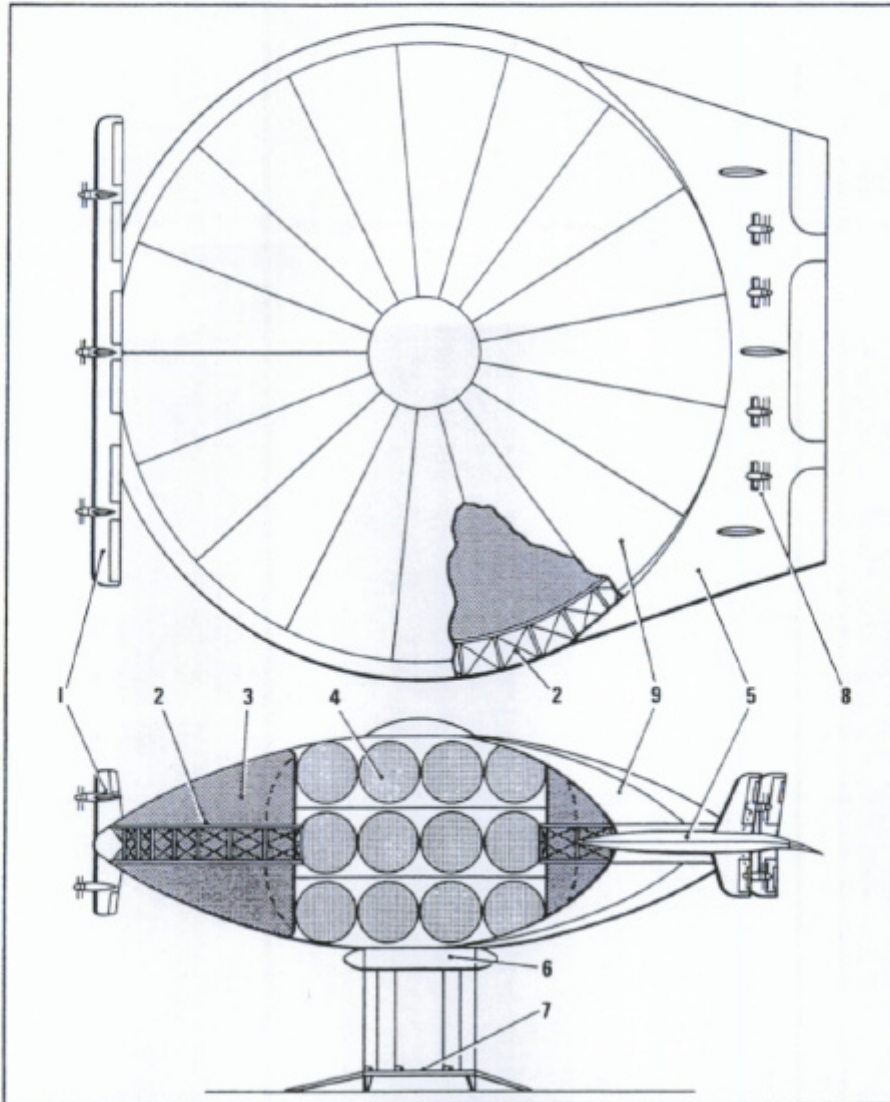


FIGURE 3: THE ALA-40 PROOF OF CONCEPT THERMOPLANE UNDER TEST AT ULYANKOVSK IN MID-1992 (P. DUFF)



Structural details of the Thermoplane ALA-600:

- | | |
|--|--------------------|
| 1. Front vertical and horizontal stabilisers | 6. Fuselage module |
| 2. Internal hull construction | 7. Cargo platform |
| 3. Hot air/natural gas volume | 8. Engines |
| 4. Hydrogen or helium spheres | 9. Hull skin |
| 5. Rear stabiliser | |

FIGURE 4: ALA-600 THERMOPLANE (RUSSIA)

~~SECRET~~
UNCLASSIFIED
NATO RESTRICTED

S.27

FIGURE 5:



9-8
UNCLASSIFIED
NATO RESTRICTED
SECRET

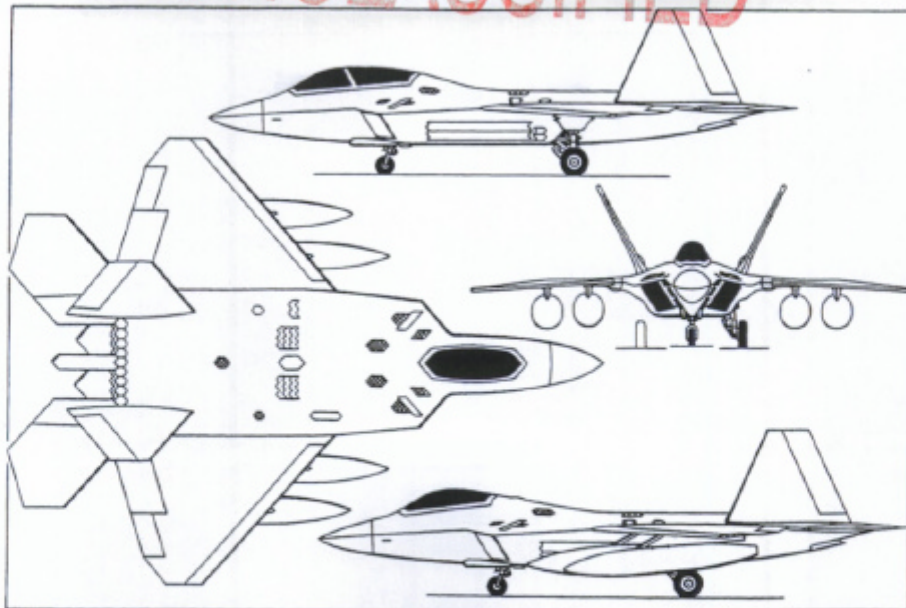


FIGURE 6: PRODUCTION CONFIGURATION OF LOCKHEED F-22A WITH ADDITIONAL SIDE VIEW (TOP) OF TWO-SEAT F-22B (JANES)

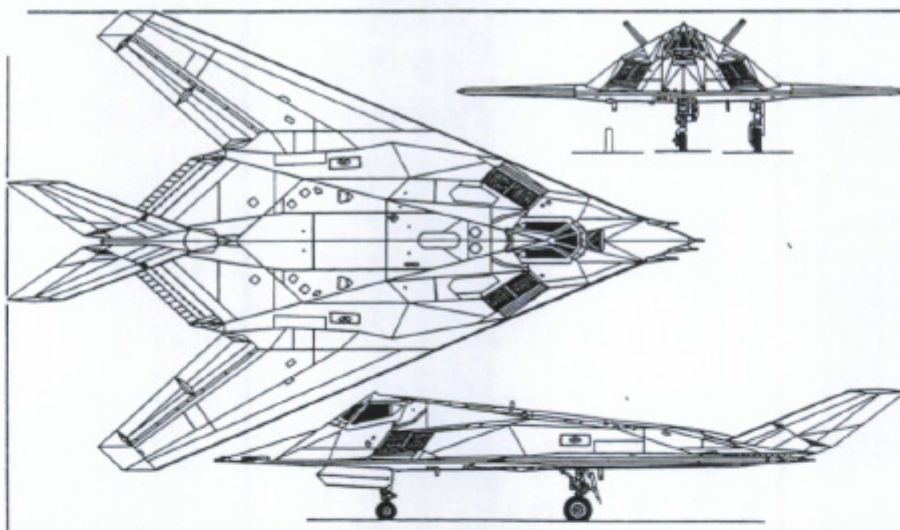


FIGURE 7: LOCKHEED F-117A STEALTH ATTACK AIRCRAFT (JANES)

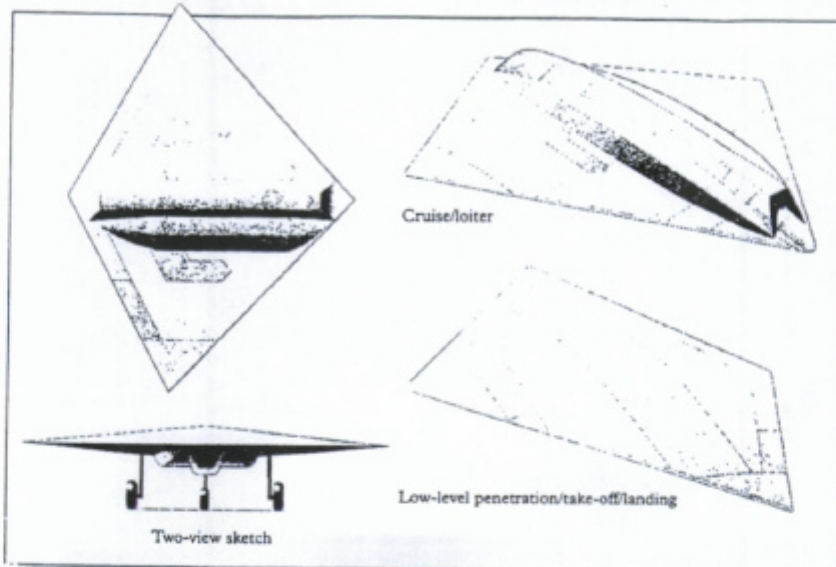


FIGURE 8: A STEALTHY UCAV CONCEPT DEPICTING THE 'ROLL-OVER' TECHNIQUE FOR REDUCING RADAR CROSS SECTION (TOP RIGHT)

(JANES)

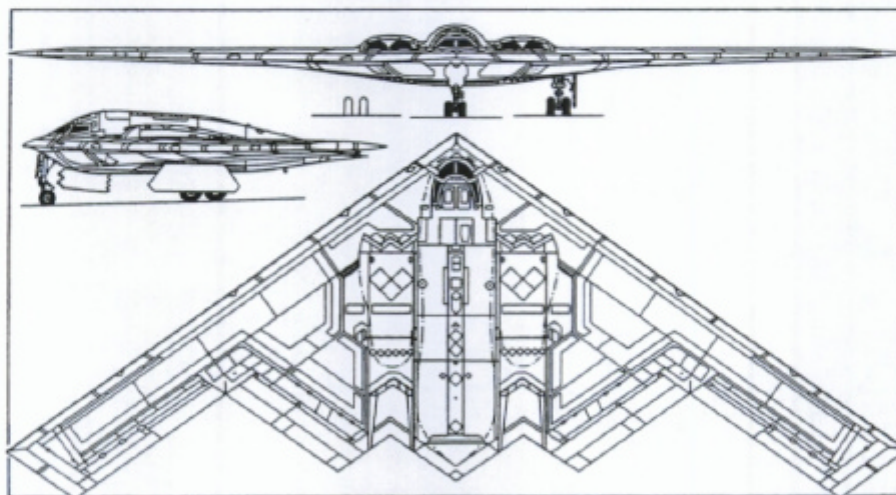


FIGURE 9: B-2 'SPIRIT' STEALTH BOMBER (USA)

(JANES)