

From	To	Speech Transcription	Time
APR	RAD	Approach	14:45:22
RAD	APR	Radar inbound radar [Alpha Jet C/S]	14:45:23
APR	RAD	Approach	14:45:30
RAD	Alpha Jet	[Alpha Jet C/S] previously called [other ac type] now south east three miles tracking west flight level 77 climbing	14:45:30
Alpha Jet	RAD	<i>garbled</i>	14:45:39
RAD	Alpha Jet	[Alpha Jet C/S] ... <i>coughing</i> ... [Alpha Jet C/S] continue right turn to head 180 degrees	14:45:45
Alpha Jet	RAD	180 degrees [Alpha Jet C/S] and [other ac type] in sight [Alpha Jet C/S]	14:45:52
RAD	Alpha Jet	[Alpha Jet C/S]	14:45:57
RAD	APR	Got your [other ac type] in sight	14:45:58
APR	RAD	OK visual, visual with you go ahead	14:46:00
RAD	APR	Compton Abbas north north east 8 miles tracking correction heading 180 squawking [Alpha Jet C/S]	14:46:02
APR	RAD	Contact	14:46:09
RAD	APR	I haven't descended him yet because I wasn't sure what you wanted me to do with your guy	14:46:10
APR	RAD	OK err... OK turn left 110 degrees identified stud 4	14:46:14
RAD	APR	Left 100 do you want to descend him?	14:46:18
APR	RAD	50 please	14:46:20
RAD	APR	Roger	14:46:21
APR	RAD	Approach	14:46:22
RAD	Alpha Jet	[Alpha Jet C/S] turn left heading 110 degrees descend flight level 50	14:46:23
Alpha Jet	RAD	Left heading 110 degrees and <i>garbled</i>	14:46:29
RAD	Alpha Jet	[Alpha Jet C/S] contact Boscombe Radar stud 4	14:46:34
Alpha Jet	RAD	Stud 4 [Alpha Jet C/S]	14:46:38]

THE BDN APR CONTROLLER reports working 2 aircraft on a BS. RAD called with a hand-over for a radar recovery on the Alpha Jet, which had been turned S to avoid another ac at a similar FL. There were Primary Surveillance Returns (PSR) to the S, between Salisbury and Fordingbridge, all of which he believed to be gliders. The PSR were spaced quite widely apart and at no point were they a factor to the Alpha Jet for a radar feed in from the S. There was a sufficient amount of space to vector the Alpha Jet between the returns and sufficient time to call any relevant traffic. During the hand-over he turned the Alpha Jet onto 110° to vector him through the space. At this time another ac called up for recovery. He identified it, placed the pilot under a service and turned him to the NE. He called DIR to control this other ac. The Alpha Jet pilot, who was still high at about FL75-80 descending, then called up on APR. The controller noted that the Alpha Jet pilot seemed to take a while to establish contact, possibly due to the other ac calling for recovery. As the Alpha Jet pilot called on APR a PSR was

seen in his 12 o'clock and TI was passed on initial contact. The Alpha Jet pilot reported visual and continued with his recovery.

He perceived the severity of the incident as 'Low'.

[UKAB Note(2): The BDN APR/Alpha Jet RT was transcribed as follows:

From	To	Speech Transcription	Time
<i>Other ac RT traffic</i>			
Alpha Jet	APR	[Alpha Jet C/S] with you on heading 110 descending flight level five zero for a PAR <i>quelch</i>PAR approach for overshoot then visual join	14:47:00
APR	Alpha Jet	[Alpha Jet C/S] roger Boscombe Approach roger traffic twelve o'clock half a mile crossing left to right slow moving no height possible glider	14:47:08
Alpha Jet	APR	Just passed [Alpha Jet C/S]	14:47:14
APR	Alpha Jet	[Alpha Jet C/S] Boscombe Approach identified descending flight level five zero traffic service.	14:47:16
Alpha Jet	APR	Flight level five zero [Alpha Jet C/S]	14:47:20]

THE BDN ZONE CONTROLLER reports he was controlling on a busy afternoon when he received a free-call from the Ventus pilot who wanted to report an Airprox as a fast jet had just flown above him. He reported he was '17.5 miles East of Shaftsbury' at about 7300ft on QNH 1019hPa when the incident occurred. He was in a non-transponding ac, however, he did state that he believed the other pilot was visual with him. The controller asked whether he required a LARS service but he declined. He asked him to confirm his position, level, and registration, informed him he was potentially flying above the Boscombe MATZ and advised that a service would be beneficial for air safety. However, he again declined and free-called en route. The controller spoke to the Alpha Jet pilot later in the day to inform him that a civilian glider had filed an Airprox.

[UKAB Note(3): The BDN ZONE/Ventus RT was transcribed as follows:

From	To	Speech Transcription	Time
Ventus	ZONE	Boscombe Golf, Boscombe [Ventus C/S].	14:48:06
ZONE	Ventus	[Ventus C/S] Boscombe Zone pass your message	14:48:13
Ventus	ZONE	[Ventus C/S] would like to report an Airprox with a fast jet that just passed over me about 50ft above. I'm 17km west err of Shafts... correction 17km east of Shaftesbury at 7300ft	14:48:16
ZONE	Ventus	[Ventus C/S] roger do you require a service from Boscombe as well	14:48:38
Ventus	ZONE	Negative, I'm VMC and err happy to continue but I think the jet saw me, I think he wagged his wings as he crossed over but I guess he'll report an Airprox	14:48:42
ZONE	Ventus	[Ventus C/S] roger, can I take your details your registration and your... where you were at the time	14:48:57
Ventus	ZONE	Roger you may be able to see me on radar it [Ventus registration], my position I can give you as latitude and longitude, I haven't moved significantly from the airmiss	14:49:05

From	To	Speech Transcription	Time
ZONE	Ventus	[Ventus C/S] or just your approximate position at the time of the Airprox and height	14:49:24
Ventus	ZONE	Roger height about 7300ft err on 1019 and I'm 17.5km east of Shaftesbury	14:49:30
ZONE	Ventus	[Ventus C/S] Roger, I think or believe I can see you nine miles South West of Boscombe in the inbound lane. Would you like a service err to keep you safe?	14:49:54
Ventus	ZONE	Negative no service required	14:50:05
ZONE	Ventus	[Ventus C/S]	14:50:09

THE BDN SUPERVISOR reports RAD was working 3 frequencies. When the Alpha Jet pilot called for recovery the SUP asked RAD if he wanted to hand-off to DIR but he indicated he was happy to continue 'with one in the pattern'. Moments later, another ac free-called RAD for recovery so the SUP directed that it should be given to DIR as the workload was becoming too high for RAD to maintain SA. The Alpha Jet pilot then contacted APR and TI was passed to which the pilot replied that he was visual.

Factual Background

The Boscombe Down weather was recorded as follows:

METAR EGDM 011450Z 32011KT 9999 SCT035 18/09 Q1017 BLU NOSIG

The event occurred within the Boscombe Down Advisory Radio Area (ARA). The CAA VFR chart, Edition 39, at Note 19 states:

BOSCOMBE DOWN ADVISORY RADIO AREA FL50-FL195. Pilots entering the area are strongly advised to call Boscombe Down on 126.700MHz to obtain information on test flight activity and if requested, advice on arranging a detour of the test area. For full details see UK AIP ENR 5.6.

ARA details for Boscombe Down in the current UK AIP are at ENR 5.2-8, dated 27 Jun 2013:

ARA BOSCOMBE DOWN 513135N 0030951W - 511617N 0012057W - 510417N 0012559W - 510045N 0013054W - 504124N 0031844W - 513135N 0030951W - BUT excludes Controlled Airspace.	Upper limit: FL195 Lower limit: FL50	Hours: Mon to Fri 0930 to 1730 Winter (Summer 1hr earlier). Remarks: Considerable test flight activity. Test flight activity often requires the pilots to fly profiles which limit their ability to manoeuvre their aircraft in compliance with the Rules of the Air. Such flights will receive a radar service from Boscombe Down or the Swanwick Military Special Tasks Cell. Advisory Measures: Pilots entering the area are advised to call Boscombe Down on 126.700 MHz to obtain information on test flight activity.
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The Ventus pilot was flying in a competition notified by the following NOTAM:

H2373/13 NOTAMN

Q) EGTT/QWGLW/IV/M /W /000/100/5051N00317W010

A) EGTT B) 1306290403 C) 1307062028 D) SR-SS

E) MAJOR GLIDING COMPETITION INCLUDING CROSS-COUNTRY RTE. INTENSE ACTIVITY WI 10NM RADIUS 505107N 0031639W (NORTH HILL, DEVON). UP TO 50 GLIDERS AND 7 TUG ACFT MAY PARTICIPATE. GLIDERS WILL NORMALLY OPR BLW THE INVERSION LVL OR BTN TOPS OF ANY CU

CLOUDS AND 500FT AGL. RTF 129.900MHZ. FOR INFO ON DAILY TASK RTE CTC GLIDER
COMPETITION CTL TEL 01588 650206 OR 07947 315860. 13-06-0742/AS 3
F) SFC G) FL100

Analysis and Investigation

Military ATM

All heights/altitudes quoted are based upon SSR Mode C from the radar replay unless otherwise stated; however, the incident was not visible on the NATS radar replay and, although there was an intermittent primary contact in the incident area, it has not been possible to determine whether this corresponded with the Ventus. Moreover, APR's description of the surveillance picture at the time was that there were multiple primary returns in the area, that he believed to be gliders, and thus the radar replay does not fully depict the situation.

APR described his workload and task complexity as moderate, providing BS to 2 pilots in addition to the Alpha Jet pilot. RAD did not assess his workload or task complexity but seemed to have been providing an ATS to the Alpha Jet pilot only; the unit has subsequently determined that RAD's workload was low and that he was indeed providing an ATS to the Alpha Jet pilot only.

The incident sequence commenced at 1446:02 as RAD commenced the handover of the Alpha Jet pilot to APR. APR requested that RAD descend the Alpha Jet to FL50 and turn it onto hdg 110°; the handover was completed at 1446:22. APR reported that RAD had vectored the Alpha Jet initially to the S of BDN to avoid a Gazelle that was operating at a similar level to the Alpha Jet. They further stated that 'there were primary returns to the south, between Salisbury and Fordingbridge, all of which [he] believed to be gliders. The primary returns were spaced quite widely apart and at no point were they a factor to [the Alpha Jet] for a radar feed in from the S. There was [a] sufficient amount of space to vector [the Alpha Jet] between the returns and sufficient time to call any relevant traffic to [the Alpha Jet] post handover'. Based on subsequent conversation with APR, the hdg of 110° passed by APR to RAD for the Alpha Jet was designed to allow the Alpha Jet to pass between 2 distinct groups of primary returns on their surveillance display.

UK Mil AIP entry for MOD Boscombe Down states that 'radar services within 15nm of Boscombe Down are automatically limited due to high traffic density and local airspace restrictions; standard separation may not be achieved on recovery profiles'. Thus BDN ATC will not re-iterate this reduction to the ATS to station-based aircraft.

At 1446:23, RAD instructed the Alpha Jet pilot to, "*turn left heading 1-1-0 degrees, descend Flight Level 5-0*" which was read-back. Immediately after, at 1446:34, RAD instructed the Alpha Jet pilot to contact APR which was acknowledged, the Alpha Jet pilot leaving RAD's freq at about 1446:40. RAD reported that at the point at which he transferred the Alpha Jet pilot to APR, he 'saw no conflicting traffic to effect' and no TI was passed to the Alpha Jet pilot on the 2 groups of PSR.

The Alpha Jet pilot commenced the L turn onto 110° at 1446:42, steadying on hdg at 1446:59. At 1446:44, one of the pilots of the 2 ac being provided with a BS by APR called for a SRA recovery; APR was then engaged in an RT exchange with this pilot until 1446:59. At the point that this pilot called APR for recovery, 3.4nm lateral separation existed between the Alpha Jet and the incident location. This separation was the basis for APR's assertion that 'sufficient time to call any relevant traffic to [the Alpha Jet] existed post handover.' At 1447:00, the Alpha Jet pilot made initial contact with APR stating that they were "*on heading 1-1-0, descending Flight Level 5-0 for a PAR...[squelch]...PAR approach for overshoot then visual join.*" APR replied "[Alpha Jet C/S] roger, Boscombe Approach, Roger, traffic 12 o'clock, half a mile, crossing left to right, slow moving, no height, possible glider." The Alpha Jet pilot replied that he'd "*just passed [the Ventus]*"; thus the CPA occurred at approximately 1447:14.

CAP 774 Chapter 3 Para 5 states that ‘the controller shall pass traffic information on relevant traffic...However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information’. The guidance material to this paragraph states:

‘Traffic is normally considered to be relevant when, in the judgement of the controller, the conflicting aircraft’s observed flight profile indicates that it will pass within 3nm and, where level information is available, 3000ft of the aircraft in receipt of the TS. However, controllers may also use their judgement to decide on occasions when such traffic is not relevant, e.g. passing behind or within the parameters but diverging. Controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5nm, in order to give the pilot sufficient time to meet his collision avoidance responsibilities and to allow for an update in traffic information if considered necessary’.

At 1447:26, a PSR becomes visible on the radar replay, directly within the trail of the Alpha Jet, indicating that the contact was in the vicinity of the Alpha Jet at 1447:16 and thus it is reasonable to argue that this contact was the Ventus. Extrapolation of the available radar data together with the Alpha Jet’s radar estimated ground speed, suggests that APR passed TI to the Alpha Jet pilot with approximately 1.1nm lateral separation between it and the Ventus.

The situation was aggravated by the delay experienced in establishing 2-way RT between the Alpha Jet pilot and APR, due to the unrelated ac calling APR for a SRA recovery and, potentially, by the delay between the Alpha Jet pilot being issued the vector and commencing the turn. Consequently, whilst cognisant that controllers may use their judgement to decide when not to pass TI, given the proximity of the PSR to the Alpha Jet’s projected track and that their intentions were unknown, it is reasonable to argue that the Alpha Jet pilot could have received TI prior to being transferred to APR.

Comments

HQ Air Command

This incident highlights the risk inherent in any aviation activity, even when all parties are complying with their respective best practice. Whilst the crew might have received TI earlier and they might have spotted the glider earlier in any case, the steady flight profile and colour scheme made sighting much less likely. It is unfortunate that APR did not assimilate that the multiple contacts he could see, and which he assumed to be gliders, were part of a wider grouping on a competition route, and that a generic warning to the Alpha Jet pilot was not issued as a result. Had any of the competition organisers communicated their route for the day to Boscombe Down, or other airfields whose local traffic might be affected, such a warning may have been possible. Equally, a call from any one of the gliders involved, in advance of an Airprox occurring, would have served the same purpose. Of note, pilots entering the area are strongly advised to call Boscombe Down to obtain information on test flight activity and, if requested, advice on arranging a detour of the test area.

Summary

A Ventus and an Alpha Jet, both operating in Class G airspace under VFR and IFR respectively, came into close proximity at about 1447 on 1st July 2013, 10nm SW of Boscombe Down. The Ventus pilot was listening out on the BGA cloud-flying frequency and the Alpha Jet pilot was in receipt of a reduced TS, having just transferred from Boscombe RAD to APR for an instrument recovery. Both pilots had equal responsibility for collision avoidance, and the Ventus pilot had right of way.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, radar video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board first considered the regulations pertaining to the occurrence location. The pilots were both in Class G airspace, albeit within the BDN ARA. The Board noted that there was no requirement for pilots to contact BDN when within the lateral and vertical boundaries of the ARA but that they were 'strongly advised' to do so. Board glider pilot members also noted that there was no requirement for a glider pilot to be in receipt of an ATS from BDN and that most gliders lack SSR, which would obviate a radar-based service. The issue of glider pilot radio usage was discussed with members pointing out that whilst increasing numbers of gliders were equipped with a radio, many were not. Additionally, many glider pilots were not in possession of an RT license and so could not use the radio on a non-BGA allocated frequency. Notwithstanding these limitations, the Board felt that those glider pilots who were able, would be well served by contacting busy local airfields when in the vicinity with a simple call to pass routeing information. Equally, it was felt that a more comprehensive notification system would increase all pilots' SA. Board members opined that non-powered aircraft competitions, organised under the auspices of a parent organisations, could be more pro-active in promulgating their task routeing in a timely fashion to airspace users on or near the task track before the event. The Board spent some time discussing how this could be accomplished and ultimately decided that promulgation by the competition organisers through the NOTAM system would help achieve the desired coverage. It was recognised that this 'code of practice' would have to be incorporated into parent organisations' procedures so the Board decided to make a recommendation that the CAA investigate how this could best be achieved.

The Board then turned to the pilots' actions. They were both entitled airspace users; the glider pilot operating under VFR and the Alpha Jet pilot operating under IFR. The Board noted that the glider pilot contacted BDN by RT to file the Airprox, and commended him for doing so; they also noted that he would have been well-served by planning to do so before he entered the ARA, iaw the CAA VFR chart. A Board adviser stated that on this occasion the gliding competition was not using task routeing but rather, 'enterprising tasks', consisting of flexible routeing between a selection of way-points in Devon and Dorset. Nonetheless, Board members remained of the opinion that prior promulgation would have been of assistance. The Alpha Jet pilot received TI, most probably on the subject glider, very shortly before CPA, but was not able to obtain visual contact until after the last opportunity to affect the outcome, as the glider disappeared under his left wing. The Board was somewhat perplexed by his risk assessment of 'Low'. The Ventus pilot did not see the Alpha Jet until after it had passed and, given his detailed description of the receding Alpha Jet's engine exhaust 'glow', the Board decided that the situation had stopped just short of an actual collision and that chance had played a major part in events where nothing more could have been done to improve matters.

PART C: ASSESSMENT OF CAUSE AND RISK

<u>Cause:</u>	An effective non-sighting by the Alpha Jet pilot in Class G airspace.
<u>Degree of Risk:</u>	A.
<u>ERC Score:</u>	100 ¹ .
<u>Recommendation:</u>	CAA GA unit consult with non-powered aircraft parent organisations to review prior promulgation of task routeing and way-points to Airspace Information Service and airfields close to task track.

¹ Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.