

AIRPROX REPORT No 2014024

Date/Time: 19 Mar 2014 1318Z

Position: 5103N 00235W
(3nm NE Yeovilton)

Airspace: Boscombe ARA (Class: G)

Aircraft 1 Aircraft 2

Type: RJ100 Alpha Jet

Operator: MoD ATEC MoD ATEC

Alt/FL: FL105 NK

Conditions: VMC VMC

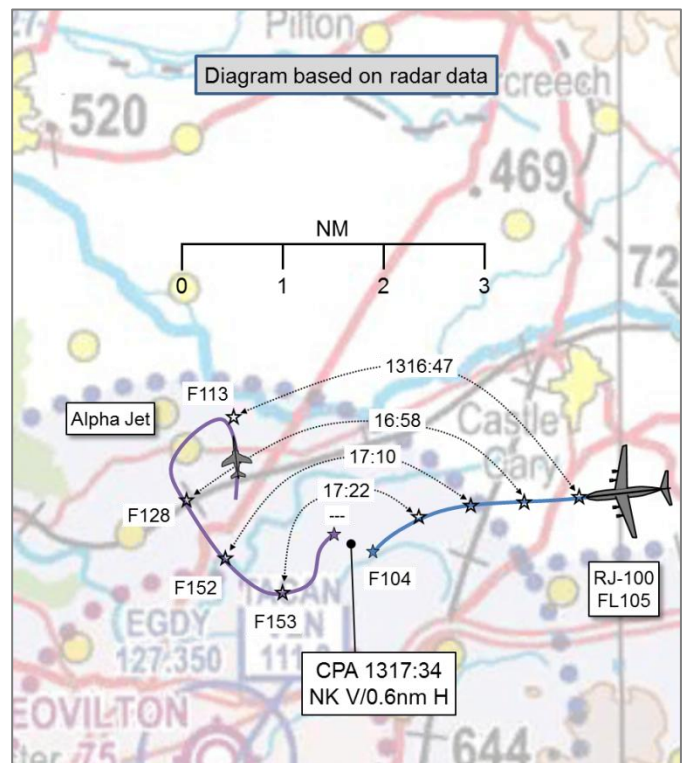
Visibility: 15km NK

Reported Separation:

‘400m’ ‘1500ft’

Recorded Separation:

NK V/0.6nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE RJ100 PILOT reports conducting a test-pilot student conversion sortie as aircraft captain. The black and white aircraft lighting state was not reported. The SSR transponder was selected on, with Modes A, C and S. The aircraft was fitted with TCAS. The pilot was operating under VFR in VMC, in receipt of a Traffic Service from Boscombe RAD. Following departure from Boscombe, the crew were in the climb passing approximately FL105. They were in the process of conducting a centre-seat crew change to put another student in that seat. The captain was asked by ATC to contact his Operations for a message. The PF (a student in the left seat) remained on the Boscombe RAD frequency while the captain called Operations on another frequency, whilst also listening on Boscombe RAD RTF. The captain came back to the Boscombe RAD RTF and almost immediately heard a TCAS TA. He looked at the TCAS display and saw a TA indication on the right side, at very short range, and zero differential altitude. He looked to the right and saw an Alpha Jet in the 2 o'clock position at approximately 400m range in a 30° nose down diving turn to its left. At that point there was no actual risk of collision as the aircraft was already passing through his level. The TA warning lasted for only about 3sec before it went off the display as the Alpha Jet descended rapidly. He did not receive an RA. The captain immediately questioned ATC about the conflict, who at that point confirmed the presence of the other aircraft. The crew did not hear any ATC call of the traffic prior to the event.

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

THE ALPHA JET PILOT reports conducting the medium-level roll in of a simulated dive attack. The black and white aircraft's lighting state was not reported. The SSR transponder was selected on, with Modes A and C, Mode S was not fitted. The aircraft was not fitted with a TAS or ACAS. The pilot was operating under VFR, in VMC, in receipt of a Traffic Service from Boscombe RAD. Whilst tracking approximately 270°, he was given Traffic Information stating 'traffic east 4nm, tracking west, FL105 [RJ100 C/S]'. The Alpha Jet pilot terminated the dive, recovered the aircraft, and proceeded to fly south for 1min prior to commencing a further roll in from FL150. After stabilising in the dive for about 2sec, he saw the RJ100, which was in the left 11 o'clock at a range of 1nm, about 2000ft below, crossing from left to right in a left hand turn. He terminated the dive and turned left to avoid the RJ100 resulting in a CPA of about 1500ft. At 13:17:30, the RJ100 pilot communicated to Boscombe RAD that they had just had an Airprox with an Alpha Jet.

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

THE BOSCOMBE RAD CONTROLLER reports two aircraft on frequency, the RJ100 and the Alpha Jet. The RJ100 had just taken off and was transiting to the TRA to manoeuvre in the block. The Supervisor asked RAD to contact the RJ100 pilot and to ask him to contact his Operations on a discrete RTF. This message was passed on. At this time the two aircraft were quite far apart and well separated by altitude and RAD did not think that swapping to the Operations frequency would be a problem. The aircraft started to converge, and RAD called the RJ100 to the Alpha Jet pilot. The controller then asked the RJ100 pilot if he was back on frequency. The controller heard no reply and so did not call the Alpha Jet to the RJ100 pilot. About 30sec later, the RJ100 pilot asked if the controller was aware of the Alpha Jet that had passed close to him. The controller replied in the affirmative and said that he had been trying to raise the RJ100 pilot on the Boscombe RAD RTF. The RJ100 pilot replied that they had been listening to both frequencies and stated that he would be filing an Airprox.

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

THE BOSCOMBE SUPERVISOR reports the subject Alpha Jet and RJ100 were working with the Boscombe RAD for GH in the BDN triangle. All control positions were manned and going through a period of handover as this was the allocated lunchtime controller changeover slot. During this period a message came through from the ATC Switchboard asking for the RJ100 pilot to 'contact Ops' on a discrete RTF, this message was passed to the RAD. Preceding the Airprox, the Supervisor was in ADC ensuring that the VCR was prepared and ready for the recovery of a UAS, and the necessary restrictions were in place. He arrived back in the ACR and bought himself back up to speed with the traffic situation with the Approach Controller. It was at this point that he heard the RJ100 pilot on the RAD frequency asking the controller if he was aware of the Alpha Jet which had got close to them, and that he was going to file an Airprox.

Factual Background

The weather at Yeovilton was recorded as follows:

METAR EGDY 191250Z 19009KT 9999 FEW018 BKN250 12/09 Q1024 BLU NOSIG
 METAR EGDY 191350Z 20007KT 9999 FEW018 BKN250 14/09 Q1023 BLU NOSIG

The Boscombe RAD transcript was recorded as follows:

From	To	Speech Transcription	Time
RAD	RJ100	[RJ100 C/S] now clear of Delta 122, if you require to manoeuvre in Delta 122 expect a deconfliction service.	13:04:07
RJ100	RAD	Copied Thank you	13:14:14
RJ100	RAD	Boscombe, [RJ100 C/S] will be ready for recovery to GCA into the visual in 5 minutes.	13:44:53
RAD	RJ100	[RJ100 C/S] roger, report ready for recovery	13:15:05
RJ100	RAD	Wilco	13:15:09
RAD	RJ100	[RJ100 C/S] Message	13:15:18
RJ100	RAD	Go ahead	13:15:19
RAD	RJ100	[RJ100 C/S] request you contact your Ops, stud 8.	13:15:20
RJ100	RAD	Stud 8 roger	13:15:23

From	To	Speech Transcription	Time
RAD	Alpha Jet	[Alpha Jet C/S] traffic east 4 miles tracking west flight level one-zero-five, the RJ100 currently at stud 8	13:16:20
Alpha Jet	RAD	[Alpha Jet C/S]	13:16:26
RAD	RJ100	[RJ100 C/S] are you back with me yet?	13:16:49
RJ100	RAD	Boscombe, [RJ100 C/S]	13:17:31
RAD	RJ100	[RJ100 C/S]	13:17:36
RJ100	RAD	Roger, are you aware of the Alpha Jet that just passed err about 400 metres away on our starboard side?	13:17:38
RAD	RJ100	[RJ100 C/S] affirm, I was err, I was err called him to you and err requested [pause] I told him you were on stud 8 and I've been trying to call you.	13:17:46
RJ100	RAD	We've been listening on this frequency for the whole time	13:17:54
Alpha Jet	RJ100	Apologies [Alpha Jet C/S], got visual with you at about err 30 seconds prior to you going through the horizon to make a manoeuvre to avoid, apologies for that	13:18:00
RJ100	RAD/Alpha Jet	That's ok, happy with that, and err and err radar just be aware we will be filing an Airprox	13:18:09
Alpha Jet	RJ100	[Alpha Jet C/S] climbing above you now and tracking south	13:18:17
RJ100	Alpha Jet	Thank you	13:18:20
RAD	RJ100	[RJ100 C/S], apologies, I did try and raise you a couple of times	13:18:23
RJ100	RAD	Ok well err we have two different radios listening on this frequency	13:18:26
*****	*****	***** No further relevant transmissions *****	*****

Analysis and Investigation

Military ATM

The Boscombe RAD had the two incident aircraft on frequency, both pilots were under a Traffic Service, and described the workload as 'low' and task difficulty as 'not difficult'. The Boscombe SUP agreed that the workload was 'low' for the controller and the unit. The SUP took the message for the RJ100 pilot to contact his Operations (Ops) frequency and passed it to the RAD, prior to then getting involved in the recovery of a Remotely Piloted Aerial System. The Supervisor did not witness the Airprox sequence.

At 1315:20, RAD requested that the RJ100 pilot contact his Ops frequency, see Figure 1.

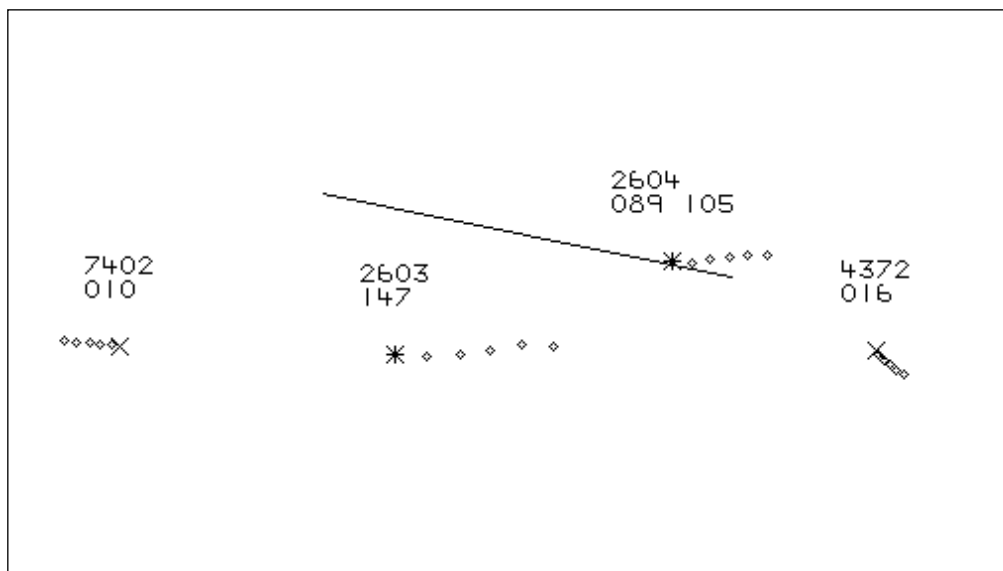


Figure 1: Aircraft geometry at 1315:20 (RJ100 squawking 2604; Alpha Jet 2603)

At 1316:20, RAD passed Traffic Information, “[Alpha Jet C/S] traffic east, 4 miles, tracking west, flight level 105, the RJ100 currently at stud .””, see Figure 2.

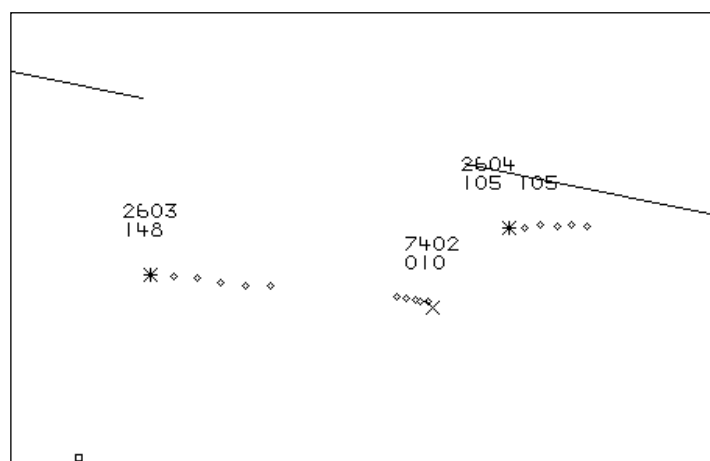


Figure 2: Aircraft geometry at Traffic Information at 1316:20

At 1316:49, RAD requested, “[RJ100 C/S] are you back with me yet?”, see Figure 3.

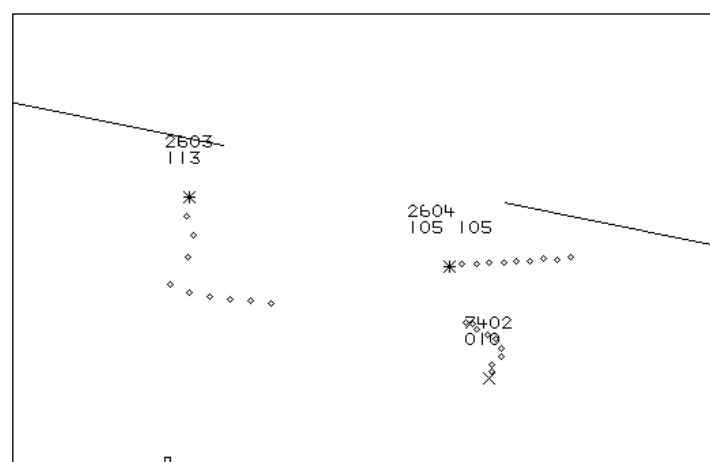


Figure 3: Aircraft geometry at 1316:49

No immediate reply was received from the RJ100 pilot; the aircraft geometry about 30sec later, at 1317:18, is at Figure 4.

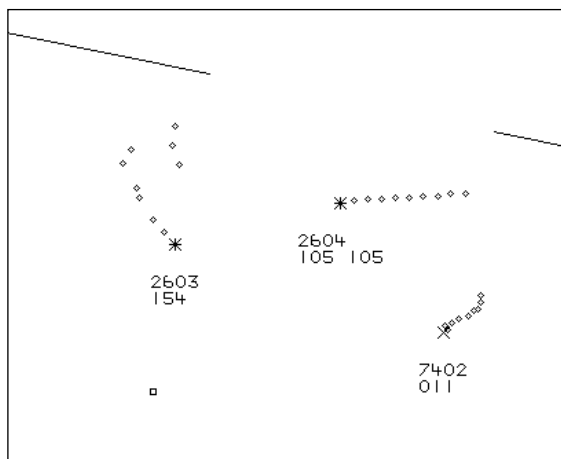


Figure 4: Aircraft geometry at 1317:18

At 1317:31, the RJ100 pilot called RAD with, “Roger, are you aware of the Alpha Jet that just passed err about 400 metres away on our starboard side?”. The CPA from the radar replay was at 1317:34, with 0.6nm lateral separation and the Alpha Jet height readout not available, see Figure 5. RAD replied that the RJ100 had been called to the Alpha Jet pilot and that RAD had been trying to call the RJ100. The RJ100 pilot replied that they had been listening on the frequency the whole time and the Alpha Jet commented at 1318:00, “Apologies, [Alpha Jet C/S] got visual with you at about err 30 seconds prior to you going through the horizon to make a manoeuvre to avoid, apologies for that.”. The RJ100 pilot declared his intention to file an Airprox report.

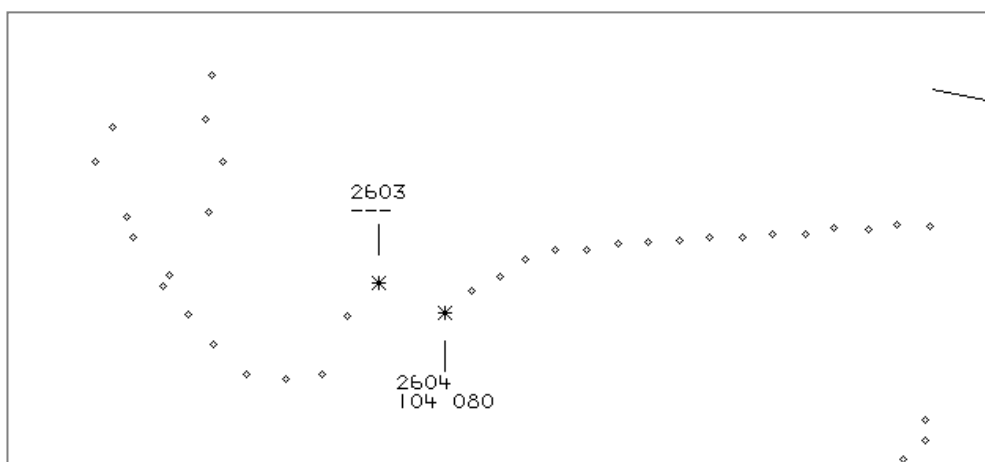


Figure 5: Closest Point of Approach at 1317:34

The RAD passed accurate Traffic Information to the Alpha Jet pilot but did not provide any further updates. Chapter 3 of CAP774 outlines the responsibilities of a Traffic Service and it stipulates that:

‘The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard.’

The controller did not believe that the RJ100 pilot was still on frequency to provide information to. A radio call and lack of reply reinforced his belief that the RJ100 pilot was still on the Operations frequency and not on the RAD frequency. The RJ100 was equipped to select and monitor both frequencies and there are many factors that may have masked the RAD RT call, especially in a busy cockpit. The information passed by RAD must be seen in the context of the radio issues and the dive being undertaken by the Alpha Jet which may have obscured the Mode C readout on the RAD radar screen and would have rapidly changed the separation between the aircraft.

Boscombe has a large number of diverse aircraft operations and the radio capability and frequency management of each aircraft will not always be obvious to controllers.

Following Traffic Information, the Alpha Jet pilot initially manoeuvred north and then south but this did not resolve the potential conflict and updates from Traffic Information and ACAS were not available. The Alpha Jet pilot took avoiding action on the RJ100 and prioritised the turn and separation above announcing his visual acquisition on RT. The RJ100 pilot was conducting a crew change and the radio check transmission from RAD, which was clear on the transcript, was not picked up in the cockpit. As a result, the RJ100 pilot was not aware of the Alpha Jet until receiving a TCAS TA.

Traffic Information helped as a barrier but was only provided to the Alpha Jet pilot, who's aircraft was not TCAS equipped, the pilot therefore relied upon a combination of lookout and Traffic Information to become visual with the RJ100. TCAS provided the RJ100 pilot with special information on the Alpha Jet but Traffic Information would have provided information at a greater range.

UKAB Secretariat

Both pilots shared an equal responsibility for collision avoidance and for not flying into such proximity as to cause a danger of collision¹.

Comments

HQ Air Command

This incident illustrates that, although both aircraft were in receipt of a Traffic Service on the same frequency with the same controller, an Airprox can still occur. It is unfortunate that the RAD was not aware that the RJ100 pilot was still monitoring the ATC frequency; but even so, the RJ100 crew did not hear the transmission from RAD asking if they were back on frequency. The initial Traffic Information call to the Alpha Jet pilot was sufficient to prompt him to terminate the dive and reposition. However, no subsequent Traffic Information was passed; when the Alpha Jet pilot repeated the dive he visually acquired the RJ100 and had to take avoiding action. A more prudent course of action for the Alpha Jet crew might have been to confirm the position of the previously called RJ100 with ATC prior to commencing an exercise with a high ROD (and thus rendering the Alpha Jet's detection on the RJ100's TCAS less likely).

Summary

An Airprox was reported when an RJ100 and an Alpha Jet were flown into proximity at 1318 on the 19th March 2014. Both pilots were operating under VFR, in VMC, in the Boscombe ARA, and both were in receipt of a Traffic Service from Boscombe RAD.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board first considered the actions of the Alpha Jet pilot. He was engaged in a handling exercise involving dynamic manoeuvring of his aircraft and had received Traffic Information on the RJ100. His subsequent turns on to north, southwest and southeast resulted in him remaining in essentially the same location, while the previously called RJ100 closed from the east. His subsequent dive manoeuvre then took him into conflict. Members agreed that the Alpha Jet pilot could have used ATC assistance more proactively, for example with an information call to them prior to commencing

¹ Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions).

the dive manoeuvre thereby alerting them of potential conflict. The Board agreed that the Alpha Jet pilot seemed to have been preoccupied with the manoeuvre and had not assimilated fully the Traffic Information on the BAe146 in relation to his manoeuvring area; they opined that this was contributory to the Airprox.

The RJ100 pilot stated that he and the crew had been monitoring the Boscombe RAD frequency but neither the captain, nor the PF responded to Boscombe RAD's query as to whether they were "back with [him] yet". This caused the RAD to form the opinion that the RJ100 crew were not listening to the RAD RTF and therefore he did not pass Traffic Information to them. The Board were unable to determine why no one on the RJ100 had heard the Boscombe RAD, but noted that there appeared to be many distractions occurring in the cockpit at this time with seat changes and off-frequency calls which had ultimately resulted in the loss of the Traffic Information safety barrier, which the Board considered was also contributory to the Airprox.

When discussing the cause and risk, the Board agreed that it was the Alpha Jet pilot's responsibility to clear his flight path before commencing the manoeuvre, and that in not doing so he had flown into conflict with the RJ100. Notwithstanding, the Board also agreed that he had seen the RJ100 in time to take effective and timely action to avoid the other aircraft, albeit startling the RJ100 pilot in the process.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Alpha Jet pilot flew into conflict with the RJ100.

Contributory Factor(s): 1. The Alpha Jet crew did not fully assimilate the Traffic Information.
2. The RJ100 crew did not hear the Boscombe RAD radio calls.

Degree of Risk: C.

ERC Score²: 21

² 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.