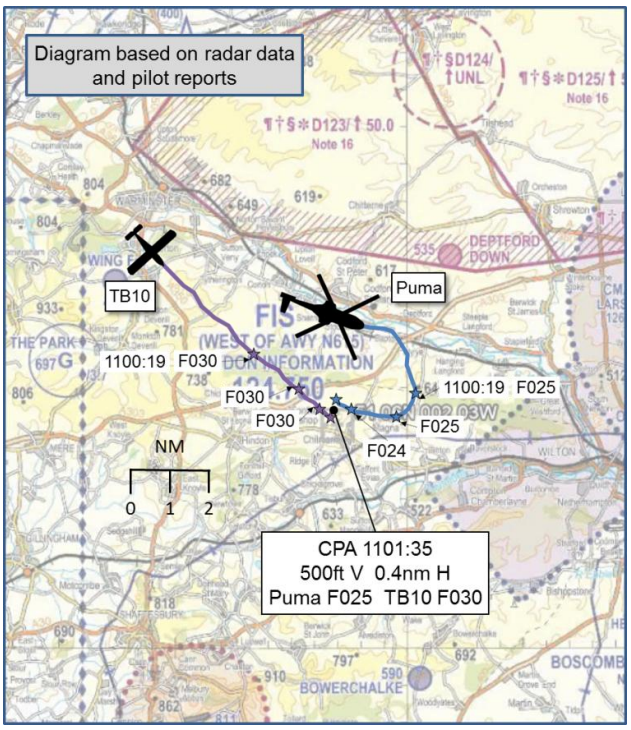
AIRPROX REPORT No 2014002

Date/Time: 10 Jan 2014 1101Z

Position: 5106NN 00203W (12.1nm SW of Boscombe Down)

Airspace: Lon FIR (*Class*: G)

	Aircraft 1	*Aircraft 2*
Type:	Puma	Socata TB10 Tobago
Operator:	HQ Air (Ops)	Civ Pte
Alt/FL:	3000ft QFE (1000hPa)	2700ft QNH (1013hPa)
Conditions:	VMC	VMC
Visibility:	NK	>10km
Reported Separation:	300ft V/0.5nm H	200ft V/0.75nm H
Recorded Separation:	500ft V/0.4nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE PUMA PILOT reports carrying out flight manoeuvres at height, including steep turns and autorotation. The green camouflaged aircraft had navigation, landing and white strobe lights selected on, as was the SSR transponder with Modes A, C and S. The aircraft was not fitted with TCAS[1]. The pilot was operating under VFR in VMC, in receipt of a Basic Service from Boscombe Approach. The right-hand seat pilot was flying in attitude-hold mode and maintaining lookout. The left-hand seat was occupied by a non-type-rated test-pilot who was also looking out. The centre seat was occupied by a type-rated crewman. The aircraft was rolled and levelled, heading 280° at 120kt and altitude 3000ft. After approximately 15sec straight-and-level flight, a low-winged light-aircraft, which 'appeared to be a PA28', 'suddenly appeared' on a reciprocal track, about 0.5nm away, in the 11 o'clock position, approximately 300ft above them. The light-aircraft pilot did not appear to see the Puma and passed 0.5nm to the left side. The Puma handling-pilot immediately upgraded to a Traffic Service and received immediate Traffic Information on the light aircraft, 2nm away, in their 6 o'clock and 500ft above. The pilot noted that this incident served as a reminder that see-and-avoid can fail even on a good 'VMC day'.

He assessed the risk of collision as 'Low'.

THE TOBAGO PILOT reports flying straight-and-level in good visibility, heading 135° at 117kt; he recalls receiving a Basic Service from 'either Yeovil[2] or Bournemouth', but was not certain which as he had been handed over at 'one point in the flight'. The green and cream aircraft's lighting state was not reported. The SSR transponder was selected on, with Modes A , C and S; the aircraft was not fitted with a TAS or ACAS. He saw a helicopter approaching from around his 10 o'clock position, at a similar height, about 2nm away, and, at the same time, ATC passed him Traffic Information about it. The Tobago pilot realised that the proximity would be 'too close for comfort' if both aircraft continued as they were, but the helicopter immediately began turning to its right. The Tobago pilot continued on his track and the helicopter passed behind and perhaps below him 'at a safe distance'; he informed ATC that he was visual with the helicopter passing to his left but he thought that, as the helicopter was military, it was likely to be using a UHF frequency and would not have heard this exchange. Although he assessed that he and the helicopter crew had seen each other at a safe distance, the

[1] Traffic and Collision Alerting System
[2] 'Yeovil' is the RT callsign for Yeovilton aerodrome ATC. The callsign for Yeovil aerodrome ATC is 'Westland'

Tobago pilot also noted that 'ideally' they should have seen each other earlier; commenting that the Traffic Information had been a welcome addition to the Basic Service, he resolved to request a Traffic Service 'by default' in the future to assist his own lookout.

He assessed the risk of collision as 'Low'.

THE BOSCOMBE APPROCH CONTROLLER reports supervising a U/T[3] controller providing Traffic Service to several Tutor aircraft, and a Basic Service to the Puma, which was operating in good weather conditions to the West. The Puma pilot requested a service upgrade and the controller immediately identified the aircraft, confirmed the upgrade to Traffic Service and passed Traffic Information on a contact to the Puma's south indicating 500ft height separation; the Puma pilot reported visual with the traffic but did not report an Airprox on the frequency.

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

THE YEOVILTON CONTROLLER reports that he does not recall the occurrence, or the working conditions on the day, as he was not informed until some-time after the Airprox occurred.

Factual Background

The weather at Bosombe Down at 1050 was recorded as:

```
METAR EGDM 101050Z 19007KT 9999 FEW045 BKN200 05/05 Q1014 BLU NOSIG
```

The weather at Yeovilton at 1050 was recorded as:

```
METAR EGDY 101050Z 19007KT 9999 FEW025 BKN080 09/06 Q1014 BLU NOSIG
```

Analysis and Investigation

Military ATM

All heights/altitudes quoted are based upon SSR Mode C from the radar replay unless otherwise stated.

As part of the Puma flight test, manoeuvres had included steep turns and auto-rotations but, at the time of the incident, the Puma was in level flight. The right and left-hand seat pilots were looking out, as well as a crewman occupying the centre seat. The Tobago was initially spotted at 0.5nm in the Puma's 11 o'clock with 300ft of vertical separation. The aircraft was believed to be a PA28 but later traced as the Socata TB10 Tobago. The Puma crew did not think that the Tobago pilot had noticed them and it passed to the port side of the Puma; the Puma pilot upgraded to a Traffic Service and received Traffic Information on the Tobago.

The Tobago pilot was tracking to the southeast at approximately 2700ft, in VMC, with visibility of better than 10km. The Tobago pilot received Traffic Information on the Puma at about the same time as becoming visual with it. The Puma may have become visual around the same time because it took a turn to the right allowing the Tobago to continue on its flight path.

The Boscombe Down Approach controller was working with a trainee controller but was not aware of the Airprox report until three days after the incident. The Approach controller had a limited recollection of events, but the Supervisor has provided more detailed context to the air traffic situation. The unit was experiencing a medium-to-low workload and the Supervisor recalls the Puma being in good VMC but requesting an upgrade of service following a late sighting. The Supervisor had been monitoring all the frequencies and recalls the request for an upgrade but did not recall seeing any traffic in dangerous proximity.

[3] Under Training

At 1048:43 the Puma was placed under a Basic Service by the Boscombe Approach controller, who was providing Traffic Service to three other callsigns, including an IFR recovery, and regularly updated the traffic situation from the fully serviceable primary and secondary radar. Figure 1 shows the aircraft geometry at 1101:14 with 1nm horizontal separation.

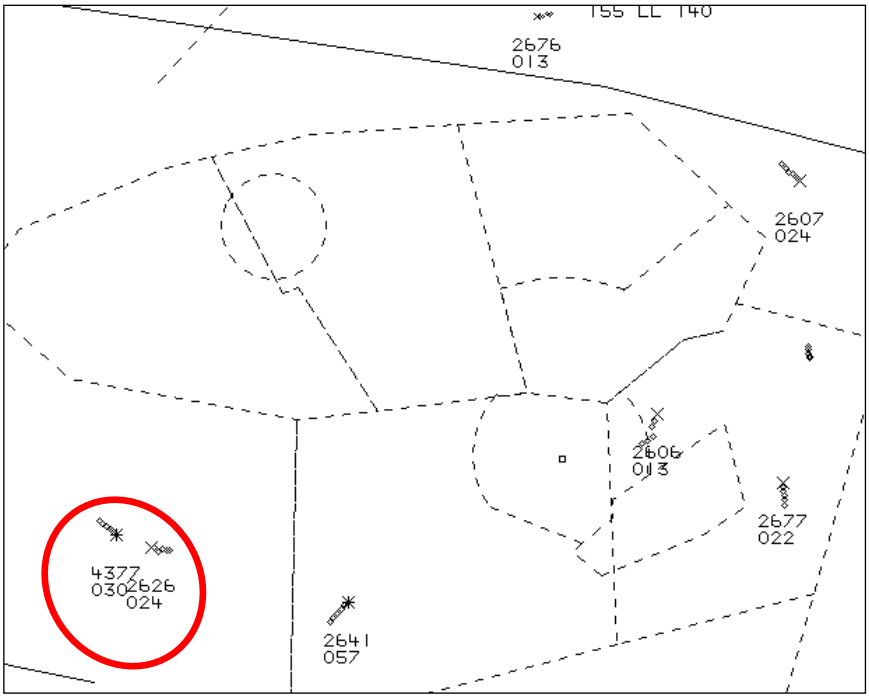


Figure 1: Approach traffic situation at 1101:14
(Puma squawking 2626; Tobago squawking 4377).

Figure 2 shows the aircraft geometry at 1101:20; the radar replay shows the CPA[4] between 1101:26 and 1101:35 at 0.5nm lateral and 500ft vertical separation.

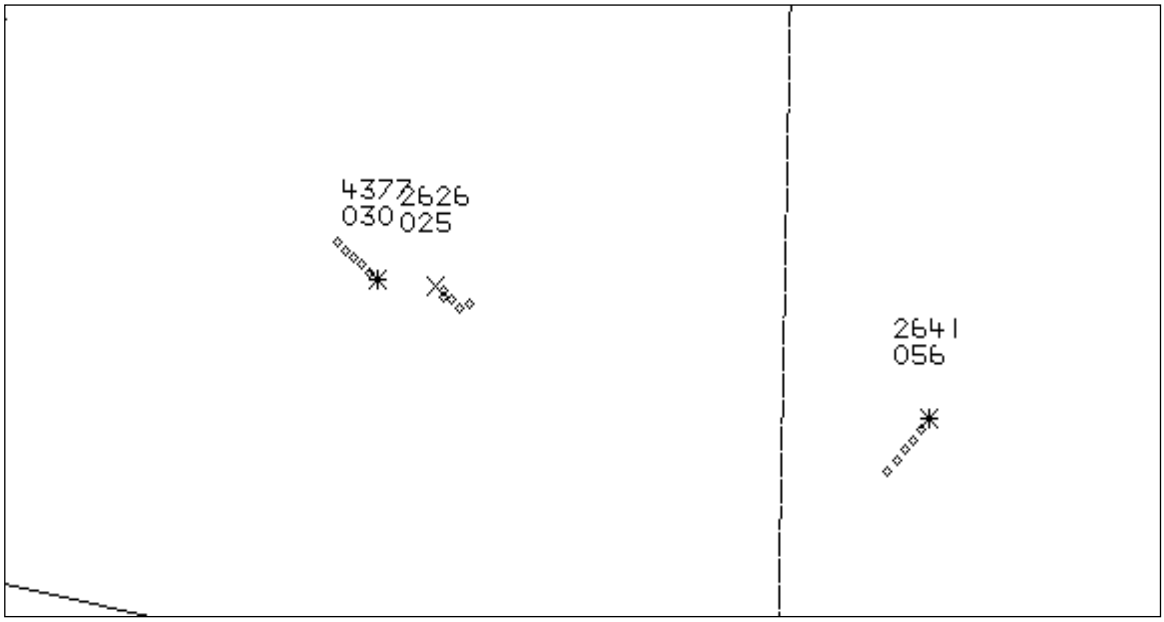


Figure 2: Aircraft geometry at 1101:20 with 0.8nm separation.

As per Figure 3, at 1101:37, the Puma requested an upgrade to Traffic Service. Approach immediately responded at 1101:42 with, "[Puma callsign] *roger, you are identified, traffic service*

[4] Closest Point of Approach

and traffic south 2 miles tracking southeast indicating 500' above." The Puma reported visual with the traffic.

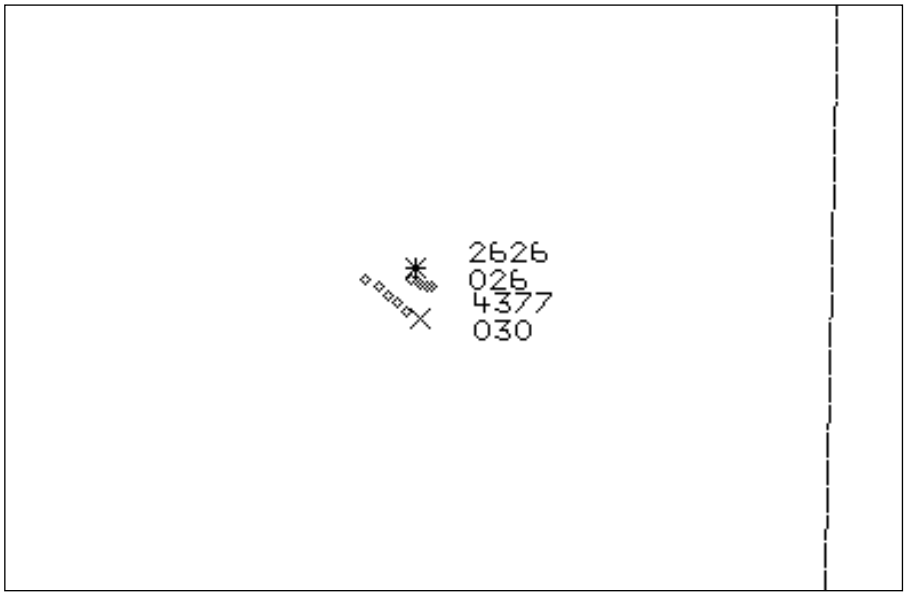


Figure 3: At 1101:42 when Traffic Information is passed.

The crew had been conducting complex manoeuvres but expressed their workload as 'low' as they had entered straight-and-level flight for approximately 15sec. The sudden and late sighting, by an experienced crew, highlighted the limitations of 'see and avoid' even in VMC. The Tobago pilot put the assessment of risk as 'low' but commented upon the beneficial use of a Traffic Service in future to provide an earlier proximity warning. Neither platform had an Airborne Collision Avoidance System fitted. A Traffic Service would have provided more situational awareness to the Puma crew, particularly when conducting a flight test.

A 3-day delay in reporting the Airprox to the Approach controller meant that his recollection was reduced. Approach had rightly prioritised service to crews receiving Traffic Services, and had been positioning an aircraft for an IFR recovery in the seconds leading up to the Airprox. Three tracks were operating to the east of Boscombe and the trainee Approach controller would have been expected to concentrate their scan in that area, and not towards the Puma operating to the west under a Basic Service. Once the Puma requested an upgrade, the Approach controller complied immediately and provided accurate Traffic Information.

UKAB Secretariat

The aircraft were approaching head-on so both pilots were required to alter course to the right[5]; the Puma crew altered course to the right, and the Tobago pilot was ready to do so but assessed that the conflict had been resolved

Comments

HQ Air Command

Although both pilots were entitled to operate under a Basic Service, this emphasises the importance of maintaining a sound lookout. If unable to do so due to a high workload or the nature of the sortie, they should consider upgrading the air traffic service. This is a matter published in June's "JHC Flash" publication to remind JHC aircrew to consider the ATC service that they request.

[5] Rules of the Air 2007, Rule 10, Approaching Head-on

Summary

The Airprox occurred occurred at 1100 on 10 Jan 14, 10nm west of Boscombe Down in Class G airspace between a Puma under a Basic Service with Boscombe Down Approach and a Tobago TB10 under a Basic Service with Yeovil Radar. Both pilots saw the other aircraft; the Tobago pilot received Traffic Information on the Puma coincidentally with his sighting of it. The Puma crew avoided the Tobago by turning right and the Tobago pilot, whilst ready to take action, assessed that the confliction had been resolved by the Puma pilot and took no action.

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 photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board noted that this Airprox was reported by an experienced crew who, whilst assessing the risk as 'low', felt they had learned a lesson and submitted an honest and open report in the hope that others could learn from it too. Members agreed with the crew that they would have been better served, given the nature of their activity, to have agreed a Traffic Service with Boscombe Approach. When they did upgrade the service after the CPA, Approach passed immediate and accurate Traffic Information, which suggests that an upgrade and Traffic Information would have been within the controller's capacity had the crew asked earlier. Given the range from Yeovilton, the Yeovilton controller had done well in giving unprompted and accurate Traffic Information to the Tobago pilot over and above the requirements of the Basic Service he was receiving. When discussing the cause and degree of risk, the Board agreed that, because the pilots had seen each other's aircraft in time to take effective action, and had achieved separation of 500ft vertically and 0.4nm horizontally in Class G airspace, this was a sighting report and the degree of risk was C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Sighting report

Degree of Risk: C

ERC Score[6]: 2

[6] 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.