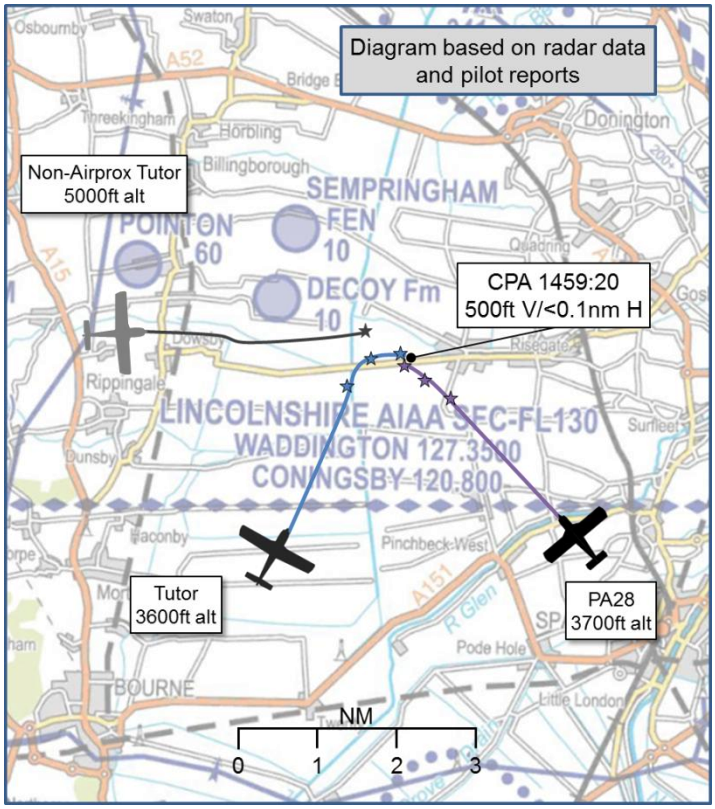
AIRPROX REPORT No 2015020

Date: 17 Feb 2015 Time: 1459Z Position: 5251N 00015W Location: 8nm SE Cranwell

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Tutor	PA28
Operator	HQ Air (Trg)	Civ Trg
Airspace	Lincs AIAA	Lincs AIAA
Class	G	G
Rules	VFR	VFR
Service	Traffic	Basic
Provider	Cranwell Departures	Coningsby
Altitude/FL	4000ft	5000ft
ACAS/TAS	Other TAS	Not fitted
Alert	TA	N/A
Transponder	A,C,S	A,C,S
Reported		
Colours	White	White and Tan
Lighting	Strobes, Nav landing light.	NK
Conditions	VMC	VMC
Visibility	40km	50km
Altitude/FL	4000ft	5000ft
Altimeter	RPS (1030hPa)	RPS
Heading	090°	315°
Speed	80kt	105kt
Separation		
Reported	200ftV 200m H	200ftV 0.25nmH
Recorded	500ft V/0.1nm H	



THE TUTOR PILOT reports that the student was flying a clearing/lookout turn to the right prior to conducting a stall. A TAS alert was received in the 1 o'clock position at +100ft and the Warrior was spotted by the instructor when in the 11:30 position. The instructor then took control and continued the right turn whilst initiating a descent. The cream-coloured Warrior passed down the port side 200ft above and 200m away. The pilot noted that at the time there was a fairly high volume of ATC information on frequency, so both pilots were looking out.

He assessed the risk of collision as 'Medium'.

THE PA28 PILOT reports that he saw a Tutor in his 11 o'clock at 1nm entering a vertical climb, this continued until they were approximately 1000ft above when they appeared to carry out a stall-turn manoeuvre. In the second half of the manoeuvre, it became apparent to him that they had sighted his aircraft because they carried out a quarter roll to their right to position parallel, level and in the opposite direction. The Tutor then appeared to manoeuvre aggressively towards his aircraft from the 7 o'clock position, level, before breaking away; his estimate of the closest position was during this manoeuvre, but he believed they had seen his aircraft by then. Had they not seen each other, and the planned stall turn gone ahead, the risk of collision would have been much higher because his planned track would have gone through the Tutor's planned exit altitude and track.

He assessed the risk of collision as 'None'.

THE CRANWELL CONTROLLER reports operating Cranwell departures with a VHF and UHF frequency with consistently high work levels. Coningsby were busy and at times were unable to

accept further aircraft, whilst Waddington and Wittering were SSR only and unable to accept GH traffic. All of the Cranwell control positions were manned and working close to capacity. Consequently, he had 2 aircraft general handling in the Wittering area, and another on a navex, all under a Traffic Service. A stream of VHF traffic called for recovery to an airfield just north of Cranwell, and within the MATZ. All of these aircraft needed to be de-conflicted from the radar training circuit because their route crossed the approach lane; therefore, although they were on a Basic Service he gave them priority. A further handover and MATZ crosser meant that he was now working 6 aircraft across 2 frequencies and a high level of RT calls was required. He recalled checking the aircraft under a Traffic Service before returning to the civil tracks; during this time the Tutor pilot called on the RT to say he had just got close to a Piper Warrior. At the time, he could see a number of Coningsby squawks around the Tutor and, when he moved the labels, he could see an aircraft at a similar level. He tried to get Traffic information from Coningsby, but they were too busy to reply. He opined that it was extremely busy throughout the day, with many of the Tutors conducting sorties in the same small area of airspace, through which the IF recoveries had to pass. This increased the controllers' workload exponentially because Traffic Information had to be given, and repeated, multiple times.

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

THE CRANWELL SUPERVISOR reports that he concurs with the controller's assessment of traffic levels and workload on the Unit. The incident was brought to his attention at the time, although no Airprox was reported on the RT.

THE CONINGSBY CONTROLLER reports that she was notified two days after the event that an aircraft that she had been working was involved in an Airprox. The PA28 was on a LARS transit at 4000ft and receiving a Basic Service. She could not recall any significant traffic to affect, and the aircraft was subsequently handed over to Cranwell. The pilot gave no indication that he has seen anything untoward.

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

THE CONINGSBY SUPERVISOR reports that he was also informed of the Airprox after the event therefore was unable to recall the Unit's, or the controller's workload.

Factual Background

The weather at Cranwell was reported as:

```
METAR EGYD 171450Z 28011KT 9999 FEW035 09/M01 Q1036 BLU NOSIG
```

Analysis and Investigation

Military ATM

The incident occurred between a Tutor under a Traffic Service with RAF Cranwell and a PA28 under a Basic Service with RAF Coningsby. At 1458:13 (Figure 1), the tracks were on a converging heading at similar altitudes.

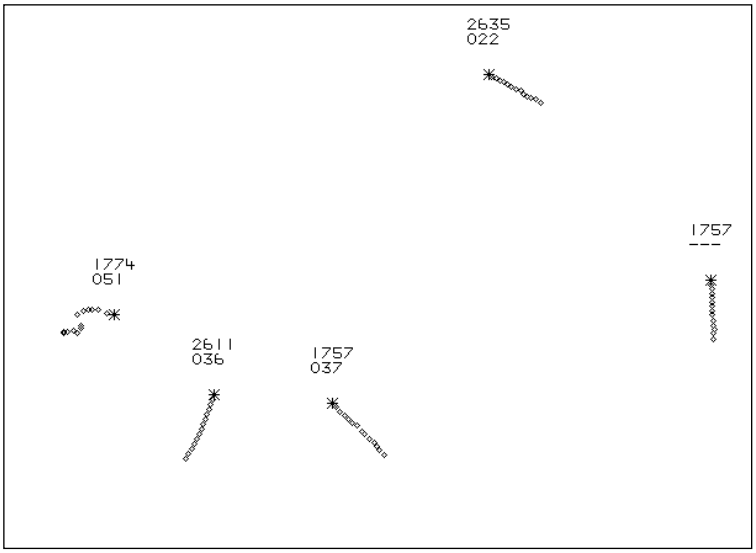


Figure 1: 1458:13 (Tutor squawking 2611; PA28 squawking 1757).

At 1458:39 (Figure 2), the Airprox aircraft had 1.6nm horizontal separation.

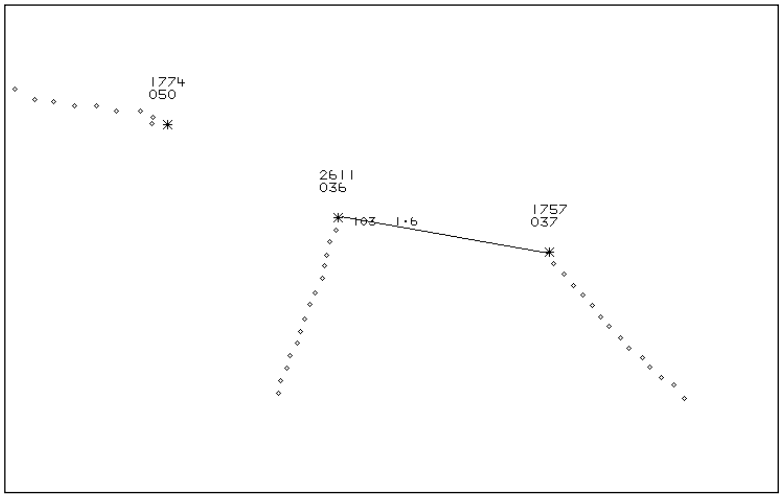


Figure 2: Geometry at 1458:39.

The Tutor had initiated the right hand turn by 1459:07 (Figure 3).

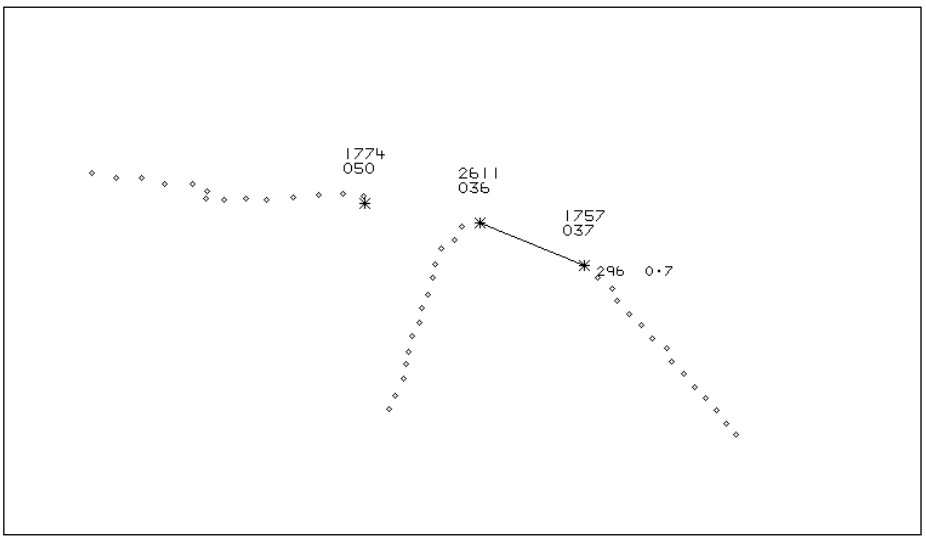


Figure 3: Geometry at 1459:07.

The CPA was estimated at 1458:19 (Figure 4) with 0.1nm horizontal separation and 300ft vertically.

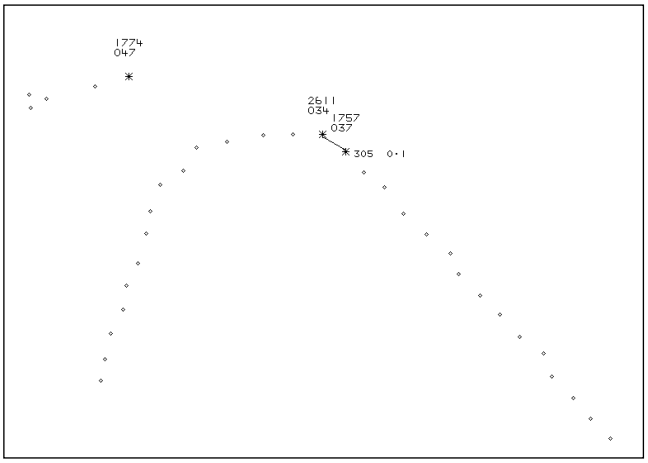


Figure 4: CPA at 1459:19.

At 1500:11, the Tutor pilot declared, "We just had a Piper Warrior pass fairly close to us, I think we are going to call it an Airprox, it was a couple of hundred feet above us and I turned right to avoid."

From the Cranwell transcript, the high workload was evident, and Traffic Information on other aircraft had been called twice previously to the Tutor. At the time of the CPA, the Cranwell controller was handling MATZ crossers on the VHF frequency and attempting to keep aircraft coordinated with the busy circuits within the MATZ. The controller was providing a Traffic Service to the Tutor and, as per the CAP774, Ch.3, the provision of Traffic Information is subject to controller workload and RTF loading. The controller reported high traffic levels and the fact that this did affect the level of service. As per the CAP413, Ch 6.74, the controller could have reduced the Traffic Information for controller workload or high traffic density. The Coningsby controller did not recall the specifics of the Airprox; the PA28 was under a Basic Service.

Both crews were responsible for their own separation operating VFR in Class G airspace. The PA28 pilot was visual at 1nm and continued to monitor the Tutor manoeuvres; avoiding action was not deemed necessary because the Tutor altered trajectory. As the PA28 was in straight and level flight, the instructor was able to maintain visual acquisition. The Tutor crew had a TAS alert on the transponding PA28 at 1nm in the right one o'clock position (Figure 3 demonstrates the geometry at 0.7nm). The PA28 was spotted in the 1130 position, indicating from the geometry that it was a late sighting and the instructor continued right, in the descent.

The normal barriers to an Airprox in Class G would be ACAS, 'see-and-avoid' and possible Traffic Information from ATC. The PA28 was not fitted with ACAS and the Tutor TAS provided a warning at 1nm. No Traffic Information was passed to either aircraft due to the type of service chosen; high controller workload; and traffic density. The Tutor appears to have spotted the PA28 at 200 metres horizontally, but the PA28 had been visual with a Tutor for longer than this and had monitored the Tutor manoeuvring in case of the need to avoid.

UKAB Secretariat

Both pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[1]. If the incident geometry is considered to be head-on then both pilots were required to turn to the right[2], if it was considered to be converging then the Tutor pilot was required to give-way,[3] which he did.

[1] SERA.3205 Proximity.
[2] SERA.3210 Right-of-Way (c) (1) Approaching head-on.
[3] SERA.3210 Right-of-Way (c) (2) Converging.

Comments

HQ Air Command

The standard barriers to an incident of this nature are radar-derived Traffic Information, ACAS and 'see-and-avoid'. Due to increased workload, Traffic Information was not available to the Tutor pilot from the Cranwell Controller; the crew were aware of the high volume of traffic and were maintaining lookout. Traffic Information was not provided to the PA28 pilot because he was under a Basic Service from Coningsby. Thankfully, some degree of situational awareness was provided to the Tutor pilot through a TAS alert leading to the crew becoming visual at late notice. This, in turn, led to the Tutor instructor manoeuvring to increase separation.

Although the PA28 pilot reports becoming visual with the Tutor at 1nm, he indicates that this aircraft was some 1000ft above in a stall turn. As a result, it is questionable whether he became visual with the conflict Tutor at any stage during the incident and it is highly likely that he had observed another Tutor operating in close proximity to the North. If the PA28 pilot had observed the conflict Tutor, an opportunity may have existed to increase separation both vertically and horizontally. Notwithstanding, the decision to maintain his flightpath, whilst remaining visual, created predictability and allowed the Tutor pilot to manoeuvre to avoid confliction.

Summary

An Airprox was reported on 17th February at 1459 between a Tutor and a PA28. The Tutor was receiving a Traffic Service from Cranwell Departures and was operating under VFR in VMC in a level band between 3000 and 5000ft. The PA28 was flying at 4000ft and receiving a Basic Service from Coningsby LARS. Neither pilot received Traffic Information from ATC, although the Tutor pilot received a TAS alert.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of 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 looked at the actions of the Tutor pilot; he was receiving a Traffic Service from the Cranwell controller but, because the controller was busy, did not receive any Traffic Information. However, he did receive a TAS alert, and this enabled him to look for the conflicting traffic and take action, albeit at a late stage either coincident with, or just before, CPA.

Turning to the PA28 pilot, he was receiving a Basic Service from Coningsby and also did not receive any Traffic Information. Given the disparity between the described manoeuvres of the aircraft, the Board considered it probable that he didn't see the Tutor involved in the Airprox, but saw another one slightly further away. This aircraft was conducting stall turns, and the radar replay indicated that it turned to the SW and then back towards the PA28's 7 o'clock as described by the pilot, whereas the Tutor involved in the incident descended and continued on a southerly heading. The incident highlighted the need for good look-out in busy airspace such as the Lincolnshire AIAA and, although there was no guarantee that he would have received one if Air Traffic were busy, a Traffic Service might have increased his situational awareness.

Finally, in assessing the role that the controllers played in this incident, the Board noted that, under a Basic Service, the Coningsby Controller was not required to monitor the flight or pass Traffic Information unless they considered that a definite risk of collision existed.[4] Similarly, it was obvious from the RT transcript that the Cranwell controller was extremely busy, and was rightly protecting his Director's radar pattern from the stream of aircraft requiring MATZ crossings. Notwithstanding, the Board thought that had he limited the Tutor's Traffic Service due to the high traffic density, the pilot

[4] CAP774 chap 2 Basic Service

may have been forewarned of the need to increase his look-out accordingly; as a result, the Board decided that this was a contributory factor in the Airprox. In the end, the Board assessed that the cause of the Airprox was a late sighting by the Tutor pilot and a probable non-sighting by the PA28 pilot. Given the Tutor pilot's late sighting (coincident with or just before CPA); it was unclear to the Board how much effect his avoiding action had had. Some members thought that the incident warranted an assessment as Category A; however; the majority thought that his continued turn had increased separation and so the Board assessed the risk as Category B, safety margins had been much reduced.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by the Tutor pilot and a probable non-sighting by the PA28 pilot.

Contributory Factor(s): The Cranwell controller did not limit the Traffic Service.

Degree of Risk: B.