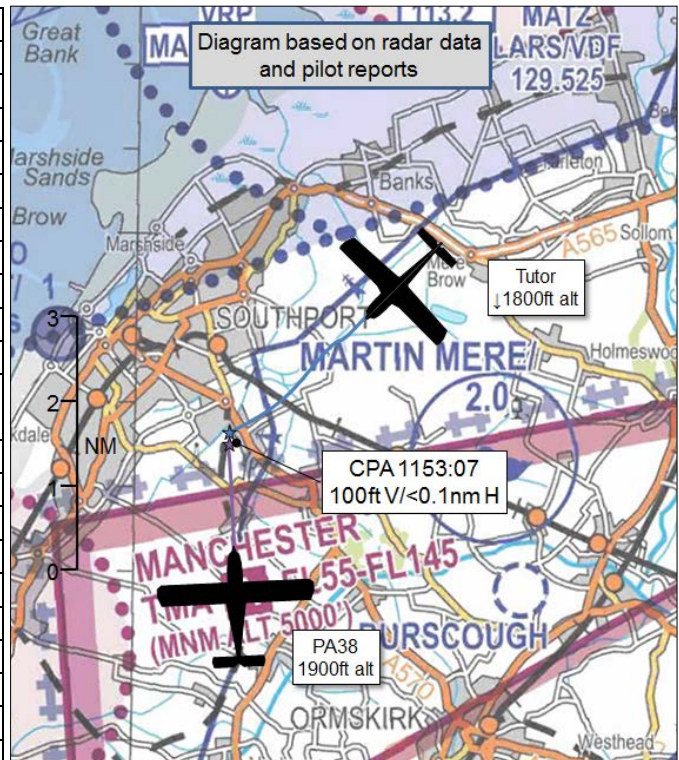


AIRPROX REPORT No 2016198

Date: 14 Aug 2016 Time: 1153Z Position: 5337N 00258W Location: 5nm NE Woodvale

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Tutor	PA38
Operator	HQ Air (Trg)	Civ Trg
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	NK
Provider	Woodvale	Blackpool
Altitude/FL	1800ft	1900ft
Transponder	On/C, S	On/C
Reported		
Colours	White	White, Red, Yellow
Lighting	NK	Nav, Strobe
Conditions	VMC	VMC
Visibility	50km	>10km
Altitude/FL	2100ft	2000ft
Altimeter	QNH	QNH
Heading	200°	360°
Speed	100kt	90kt
ACAS/TAS	TAS	Not fitted
Alert	TA	N/A
Separation		
Reported	100-150ft V/50m H	100ft V/2nm H
Recorded	100ft V/<0.1nm H	



THE TUTOR PILOT reports that he was descending for recovery to Woodvale when he conflicted with a northbound PA38 Tomahawk. He had commenced a cruise descent on a SSW heading and, whilst passing about 2200ft, he saw the PA38 between the 10 and 11 o'clock position tracking in a northbound direction, wings level, non-maneuvring. The conflicting traffic was vertically separated below him by an estimated 200ft. He made an immediate climbing break-turn manoeuvre to the right in order to gain separation. He assumed the PA38 continued northbound in a non-maneuvring manner at an estimated 2000ft. A TAS conflict was triggered coincidentally with the visual sighting. No pre-conflict proximate TAS indications had been noted prior to the descent or conflict. At no point throughout the Airprox encounter was a TAS audio alert received.

He assessed the risk of collision as 'High'.

THE PA38 PILOT reports that he was flying straight and level north of Southport with a passenger. He suddenly saw an aircraft in the 2 o'clock position. He changed the direction of the aircraft and made a right turn to avoid collision.

He assessed the risk of collision as 'High'.

Factual Background

The weather at Blackpool was recorded as follows:

EGNH 141150Z 28008KT 240V320 9999 FEW030 BKN033 17/10 Q1027=

Analysis and Investigation

CAA ATSI

The Tutor was returning to land at Woodvale, receiving a Basic Service from Woodvale Approach. Woodvale does not have approach surveillance radar and were not aware of the presence of the PA38. The PA38 could not be positively identified on radar, although times and transponder codes, together with the PA38 pilot report provided a high degree of confidence that this was the second aircraft in the Airprox. The PA38 pilot stated in their report that they were receiving a Basic Service from Blackpool, but this could not be confirmed. The PA38 had been transponding the Liverpool Conspicuity code, but Liverpool ATC was unaware that an Airprox had taken place, because no report was made to them. Figure 1 shows CPA, with the aircraft separated by less than 0.1nm laterally and 100ft vertically.

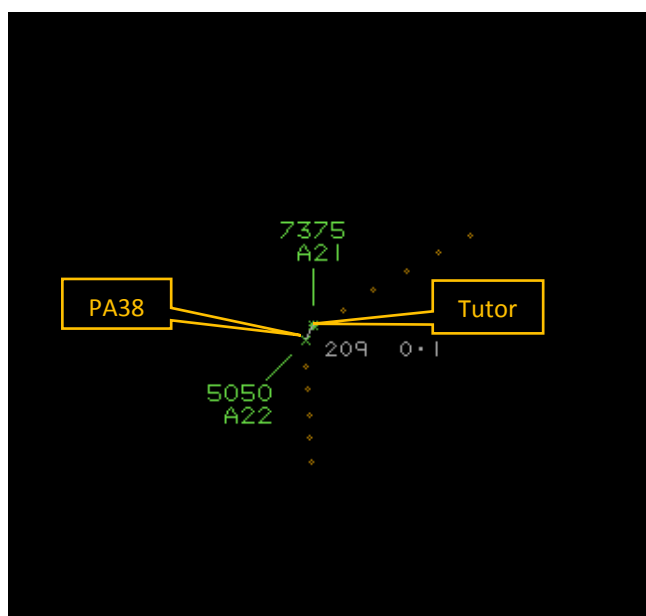


Figure 1 – 1153:07

In accordance with CAP774, a Basic Service relies on the pilot avoiding other traffic, unaided by controllers/ FISOs.

UKAB Secretariat

The Tutor and PA38 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard¹. If the incident geometry is considered as converging then the PA38 pilot was required to give way to the Tutor².

Comments

HQ Air Command

This is an event where it appears that some of the barriers available to MAC were either weak or did not perform efficiently. The TAS fitted to the Tutor appeared to be serviceable, but gave no advance indication of the presence of the PA38 even though this could have reasonably been expected given the relative altitudes and equipment of the 2 aircraft. A radar-assisted Air Traffic Service (ATS) was not available in that part of the UK on a Sunday – neither Blackpool nor Woodvale are equipped with a radar and Warton is closed at the weekend, thus a Basic Service

¹ SERA.3205 Proximity.

² SERA.3210 Right-of-way (c)(2) Converging.

was the highest level of ATS that either pilot could have hoped for (notwithstanding a procedural service, which was not appropriate in the circumstances). Visual acquisition was the only viable barrier that remained – this should not have been unduly impeded by the position of the sun as this incident was timed at around midday in August and both aircraft were operating below a BKN cloudbase at 3300ft. It seems that both pilots saw each other's aircraft at approximately the same time and both took action to increase separation. This incident serves as a reminder that there is no substitute for lookout, and also that on-board sensors do not always detect a threat in a timely fashion and so reliance on these systems must be tailored accordingly.

This incident prompted the staff at Woodvale to more actively engage with flying clubs in the local area to better understand each other's issues. It has been suggested that all aircraft passing close to the Woodvale ATZ contact the Woodvale approach frequency in order to increase shared awareness of the local traffic situation.

Summary

An Airprox was reported when a Tutor and a PA38 flew into proximity at 1153 on Sunday 14th August 2016. Both pilots were operating under VFR in VMC, the Tutor pilot in receipt of a Basic Service from Woodvale and the PA38 pilot in receipt of an unknown Service from Blackpool.

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 and reports from the appropriate ATC and operating authorities.

The Board began their discussion by highlighting that the TAS on the Tutor had not alerted to the PA28 despite the latter's SSR being present. The military member commented that the Tutor's TAS aerial position may, on occasion, hinder the functionality of the TAS equipment, and GA members opined that this and the under-fuselage transponder aerial position on the PA38 may have resulted in the reduced Tutor TAS functionality; the opposing aircraft configurations may have blocked the Tutor's TAS from receiving the PA38's transponder. Notwithstanding, the military member reassured the Board that the Tutor TAS works well the majority of the time and, whilst TAS is an important tool for detecting other aircraft, see-and-avoid is emphasised to military pilots as the most important tool a pilot should employ.

The Board were heartened to hear that Woodvale had implemented an airspace user group for local flying clubs as a means of understanding each other's operations; Dir UKAB offered his services to come and brief on Airprox issues at a future meeting if desired. Members agreed that such forums had been highly effective in other areas by informing other airspace users of local issues and initiatives such as greater use of local frequencies to pass information on routing and intentions. The Board agreed that increased use of Woodvale's frequency by passing traffic would be especially beneficial at weekends when the provision of a LARS is not available in the local area.

The Board then considered the actions of the PA38 pilot. Members agreed that the PA38 pilot could have called Woodvale, and that this may have alerted other airspace users to his position and route; they also agreed that this would have likely served to alert the PA38 pilot of the Tutor activity. However, the Board recognised that this was not a requirement for aircraft transiting in the area, and that it may not have prevented the Airprox on this occasion if the 2 aircraft had not coincidentally been on the same frequency. Although the Tutor pilot would likely have transferred to Woodvale's frequency anyway as part of his joining procedure, the Board felt that the availability and use of a VHF common frequency for low-level flights and transits in areas where air traffic services are limited would potentially have been useful in increasing the information available to both pilots regarding the other's presence in other situations. Notwithstanding, in the spirit of the comments above, they encouraged the PA38 pilot to call Woodvale if he were transiting in that area again, especially at weekends.

The Board then looked at the safety barriers that were relevant to this Airprox and decided that the following were the key factors:

- **Flight Crew Situational Awareness** was considered **ineffective** because the pilots were on different frequencies and therefore unaware of each other. Neither pilot could request a Traffic Service due to the non-availability of radar services at weekends, although the PA38 pilot could have called Woodvale as he routed past in order to increase his and other's situational awareness.
- **Onboard Warning/Collision Avoidance Equipment** was assessed as being only **partially effective** because, even though the PA38 was transponding, the two aircrafts' system fitments may have resulted in the late TA for the Tutor pilot.
- **See and Avoid** was considered **partially effective** because both pilots saw the other late and both pilots turned to avoid the other.

The Board then considered the cause and risk of the incident and members quickly agreed that both pilots had seen each other late and had carried out avoiding action turns. Ultimately, it had been the lookout of both pilots that had effectively prevented any risk of collision, and the incident was therefore assessed as a late sighting by both pilots. Turning to the risk, members agreed that safety had been much reduced and the actions of both pilots had been taken at the last minute; accordingly, they assessed the risk as Category B.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by both pilots.

Degree of Risk: B.

Barrier Assessment³:

Modern safety management processes employ the concept of safety barriers that prevent contributory factors or human errors from developing into accidents. Based on work by EASA, CAA, MAA and UKAB, the following table depicts the barriers associated with preventing mid-air-collisions. The length of each bar represents the barrier's weighting or importance (out of a total of 100%) for the type of airspace in which the Airprox occurred (i.e. Controlled Airspace or Uncontrolled Airspace).⁴ The colour of each bar represents the Board's assessment of the effectiveness of the associated barrier in this incident (either Fully Effective, Partially Effective, Ineffective, or Unassessable/Absent). The chart thus illustrates which barriers were effective and how important they were in contributing to collision avoidance in this incident.

³ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#)

⁴ Barrier weighting is subjective and is based on the judgement of a subject matter expert panel of aviators and air traffic controllers who conducted a workshop for the UKAB and CAA on barrier weighting in each designation of airspace.

Airprox Barrier Assessment: 2016198.

Outside Controlled Airspace

