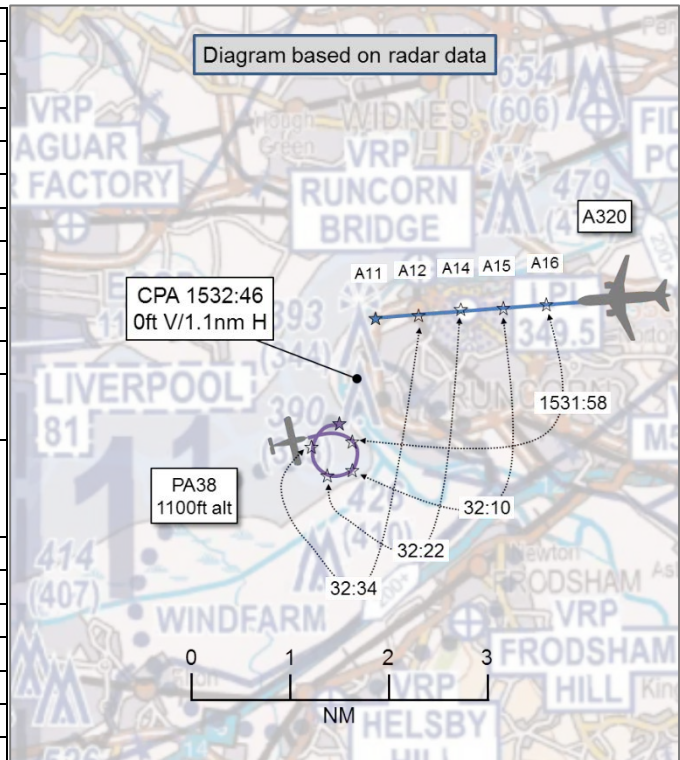


AIRPROX REPORT No 2018218

Date: 18 Aug 2018 Time: 1533Z Position: 5320N 00245W Location: 3NM E Liverpool Airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A320	PA38
Operator	CAT	Civ FW
Airspace	Liverpool CTR	Liverpool CTR
Class	D	D
Rules	IFR	VFR
Service	ACS	ACS
Provider	Liverpool Tower	Liverpool Tower
Altitude/FL	1100ft	1100ft
Transponder	A, C, S	A, C
Reported		
Colours	Company	White, red, yellow
Lighting	Landing, nav, strobes, beacon, taxi	Nav, strobes
Conditions	VMC	VMC
Visibility	10km	>25km
Altitude/FL	1000ft	1000ft
Altimeter	QNH (NK hPa)	QFE (NK hPa)
Heading	267°	Right hand orbits
Speed	135kt	90kt
ACAS/TAS	TCAS II	Not fitted
Alert	TA	N/A
Separation		
Reported	0ft V/1nm H	200ft V/1700m H
Recorded	0ft V/1.1nm (2040m) H	



THE A320 PILOT reports that ATC informed them of ‘light traffic’ holding on left base for RW27 as they approached 5nm on the ILS. The crew visually identified the traffic and noted that it was closer to the approach path than usual. The light-traffic was carrying out orbits at circuit altitude. As they approached 1000ft, they received a TCAS TA (whilst in TA Only mode due to altitude¹) with the traffic approximately 1nm to the left and at the same altitude. ATC were informed, and the traffic replied that he was visual with them on finals. The approach was continued with visual separation and a normal landing carried out. ATC was informed of the intention to file an Airprox for the incident.

He assessed the risk of collision as ‘Medium’.

THE PA38 INSTRUCTOR reports that the student was the PF and they were orbiting with ATC permission (and at their instruction) at the end of the downwind leg (left-hand circuits on RW27). ATC asked him to report visual with the Airbus, which he did almost straight after it broke through cloud at a distance of approximately 6-7 miles. Visibility was excellent in all directions, but particularly in the direction of the Airbus, because the sun was behind them. The student was carrying out continuous orbits at 30° AOB; the Instructor was satisfied that the spacing was normal and adequate. ATC informed the crew of the Airbus that a light-aircraft was orbiting to the south and was fully visual. No avoiding action was taken because the aircraft on approach was visible and at a safe distance at all times.

He assessed the risk of collision as ‘None’.

¹ For an aircraft in a descent, TCAS ‘Descend’ RAs only are inhibited below 1200ft Rad Alt and all RAs are inhibited below 1100ft Rad Alt.

THE LIVERPOOL CONTROLLER reports that the inbound A320 was established on the ILS for RW27. The RW27 left-hand visual circuit was active with the PA38 holding on left-base. Traffic Information was passed to the PA38 pilot and he reported visual with the A320. At 3nm final, the PA38 was in a right turn. The closest the 2 aircraft got was 1nm, the PA38 being one mile south of the A320 in a right turn. The A320 pilot reported getting a TCAS alert on the PA38. He informed him that the PA38 pilot was visual with him; however, the pilot of the A320 said they were too close. On landing, the A320 pilot stated that he would be filing an Airprox report on the PA38.

Factual Background

The weather at Liverpool was recorded as follows:

```
METAR EGGP 181550Z 23012KT 9999 SCT023 BKN029 21/16 Q1017=
METAR EGGP 181520Z 22010KT 9999 SCT024 SCT029 22/17 Q1017=
```

Analysis and Investigation

CAA ATSI

At 1528.00, the PA38 pilot had been conducting visual circuits and was instructed by the Liverpool Aerodrome controller to orbit on left-base. The pilot complied with this instruction. At 1531.06, the controller passed Traffic Information to the PA38 pilot on the A320, advising that the A320 was on final approach at 6nm. The PA38 pilot responded that they were looking. At 1531.43, the PA38 pilot reported visual with the A320, the aircraft were 3.3nm and 700ft apart (Figure 1).

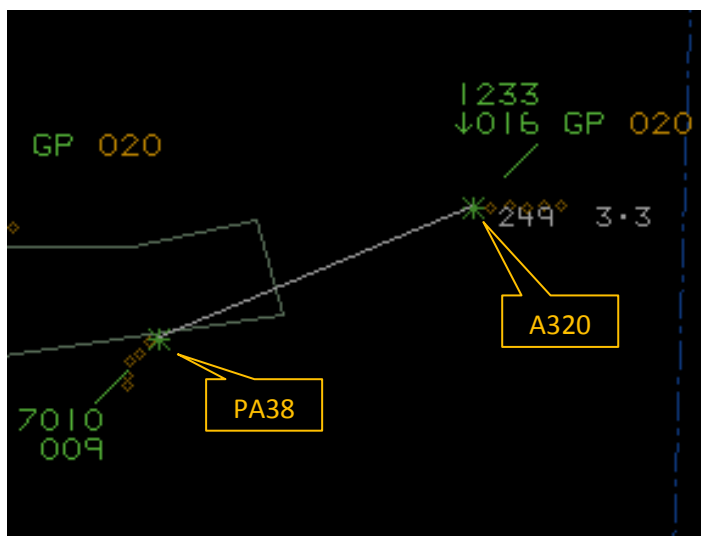


Figure 1 - 1531.43

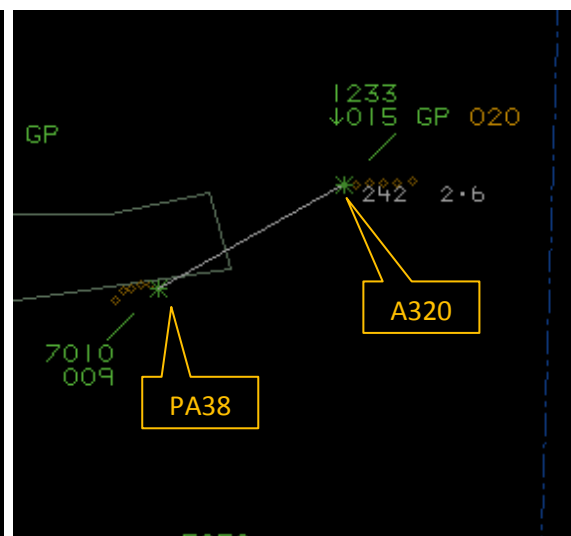


Figure 2 - 1531.57

At 1531.57 (Figure 2), the controller instructed the A320 to continue approach and passed Traffic Information on the PA38 as orbiting on left base. The A320 pilot read back the continue approach instruction. The pilot did not acknowledge the Traffic Information but in their subsequent report the A320 pilot stated that they had been informed of light-traffic holding on left-base as they were approaching 5nm final, and that the crew visually identified the traffic and noted that it was closer to the approach path than usual.

At 1532.03 the PA38 pilot again reported visual with the A320 traffic. CPA occurred at 1532.51 (Figure 3), with the aircraft separated by 1.1nm laterally and 100ft vertically. The controller cleared the A320 to land, the pilot read back the landing clearance and the pilot advised that they had just received a TCAS warning on the holding traffic. The controller acknowledged this and advised the A320 pilot that the PA38 pilot was visual with them. The A320 pilot then advised the controller that they could see the PA38 out the left window and that they felt that this was too close. The Airprox took place within Class D airspace.

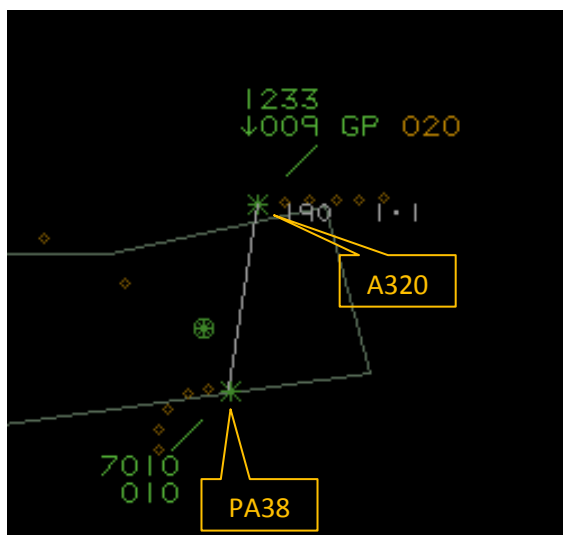


Figure 3 - 1532.51 CPA

The A320 pilot was operating under IFR and the Liverpool controller passed timely Traffic Information to the A320 pilot on the position of the PA38. This enabled the A320 crew to visually acquire the PA38. Traffic avoidance advice was not requested. The PA38 pilot was operating under VFR and the Liverpool controller passed timely Traffic Information to the PA38 pilot on the position of the A320. This enabled the PA38 crew to visually acquire the A320. The Liverpool controller effectively discharged the responsibilities for the provision of Radar Control Services to the pilots of both aircraft.

Liverpool ATSU

Two Supervisors reviewed the recording of the incident to assess the situation. As stated, Traffic Information was passed to the PA38 pilot and A320 pilot. The PA38 pilot reported visual with the A320 and the reporting ATCO was reassured of the traffic situation. At this point, the reporting ATCO's attention was diverted to the Main Apron, in trying to make contact with the Marshaller for a marshalling duty. As soon as the A320 pilot reported that the PA38 was too close and had received a TCAS TA, the reporting ATCO observed, out of the VCR, the position of the PA38 in relation to the A320. The ATCO reassured the inbound A320 pilot that the PA38 pilot was visual with them. The Pilot of the A320 said that he appreciated the fact that the PA38 pilot was visual with them, however, in his opinion, the aircraft was too close. This information was passed to the PA38 pilot, who acknowledged and widened the orbit to the south.

The surface wind reported on the METAR was 220/10kts, hence the PA38 may have been affected by a slight southerly upper wind. On reflection, the Reporting ATCO stated that if the PA38 pilot had not reported visual then they would have advised him to move further south of the approach. The Reporting ATCO feels they should and would in future advise circuit aircraft to position further south, albeit visual.

UKAB Secretariat

The A320 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 hazard². An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation³.

In Class D airspace (the Liverpool CTR):

² SERA.3205 Proximity.

³ SERA.3225 Operation on and in the Vicinity of an Aerodrome.

1. For aircraft other than helicopters flying at 140kt IAS or less, VFR flight below 3000ft amsl requires that the pilot is clear of cloud and in sight of the surface with at least 5km flight visibility⁴.
2. If the flight occurs within the ATZ then a VFR flight must be conducted with a special VFR clearance if the cloudbase is less than 1500ft or ground visibility less than 5km⁵.
3. An ATC Unit is required to:
 - (a) Separate IFR flights from other IFR flights;
 - (b) Pass traffic information to IFR flights and SVFR flights on VFR flights and give traffic avoidance advice when requested;
 - (c) Pass traffic information to VFR flights on all other flights and provide traffic avoidance advice when requested.⁶
4. Controllers at aerodromes located in Class ..., D ... airspace are to pass traffic information as shown in the table below [*extract*].

Aerodrome Located in Airspace	Traffic Information to be passed
Class D	a) to IFR flights on VFR flights*; b) to VFR flights on IFR flights; c) to VFR flights on other VFR flights; d) to VFR flights on Special VFR flights; e) to Special VFR flights on VFR flights

Note 2: In Class D airspace traffic avoidance advice must be given if requested by pilots of: (a) IFR flights against VFR flights, (b) VFR flights against all other flights.⁷

5. The minimum services provided to VFR flights in Class D airspace are specified at Section 1, Chapter 2, paragraph 2 [*paragraph 3 above*]. Separation standards are not prescribed for application by ATC between VFR flights or between VFR and IFR flights in Class D airspace. However, ATC has a responsibility to prevent collisions between known flights and to maintain a safe, orderly and expeditious flow of traffic. This objective is met by passing sufficient traffic information and instructions to assist pilots to 'see and avoid' each other as specified at Section 3, Chapter 1, paragraph 2A.2 [*paragraph 4 above*].⁸

The PA38 pilot passed 1.3nm to the south of a previous CAT arrival at the end of the downwind leg at 1531 and then took up a right hand hold prior to the Airprox event.

Although the A320 was descending near to the TCAS RA inhibit height, analysis of the encounter using Eurocontrol TCAS emulation software indicated that a TCAS RA would not have been generated in any case because the aircraft were not in such proximity.

Comments

PA38 Operating Company

The Safety and Compliance Manager spoke with the PA38 pilot who is an experienced Instructor based at Liverpool. He was orbiting at the end of the downwind leg in what he believed to be a

⁴ CAP 493 (MATS Part 1), Section 1, Chapter 2 (Flight Rules), Paragraph 4 (Visual Flight Rules) and ORS4 No. 1282 (superseding ORS4 No. 1195)

⁵ SERA.5005(b)

⁶ CAP 493 (MATS Part 1), Section 1, Chapter 2 (Flight Rules), Paragraph 2 (Classification of Airspace).

⁷ CAP 493 (MATS Part 1), Section 3, Chapter 1 (Approach control), paragraph 2A.2 (Information to Aircraft, Traffic Information and Avoidance).

⁸ CAP 493 (MATS Part 1), Section 1, Chapter 5 (Integration of VFR Flights with IFR Traffic in Class D CTR/CTA/TMA), Paragraph 3 (Control of VFR Flight).

position with normal spacing from approaching instrument/visual traffic. He was visual with the approaching traffic, and satisfied that the spacing remained adequate.

Summary

An Airprox was reported when an A320 and a PA38 flew into proximity at Liverpool at 1533hrs on Saturday 18th August. Both pilots were operating in VMC in receipt of an Aerodrome Control Service, the A320 pilot under IFR conducting an ILS approach and the PA38 pilot under VFR holding in a right-hand orbit at the end of the downwind leg.

PART B: SUMMARY OF THE BOARD’S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from the air traffic controller involved and reports from the appropriate ATC and operating authorities.

Members first discussed the PA38 pilot’s actions and agreed that he had routed as requested, operating under VFR, had seen the approaching A320 and had remained clear, as was required under VFR in Class D. The Liverpool controller had directed the PA38 pilot appropriately to deconflict with the approaching A320 and had passed Traffic Information to the A320 pilot, who subsequently sighted the PA38. Nevertheless, the A320 pilot had been concerned by the proximity of the PA38. Members wondered whether the A320 pilot’s concern had been heightened as a result of the TCAS TA on final and noted that TCAS was not designed for interaction with VFR traffic. The requirement for VFR traffic in Class D is to see-and-avoid IFR traffic but members noted that the VFR see-and-avoid margin can easily be inside TCAS alarm parameters. Hence the TCAS TA at what members agreed was an entirely safe separation. The Board noted that it was not for them to second-guess the concerns of an airliner captain on final approach but felt that, in this instance with each pilot sighted on the other aircraft and with a separation of more than 1nm at CPA, normal procedures, safety standards and parameters had pertained.

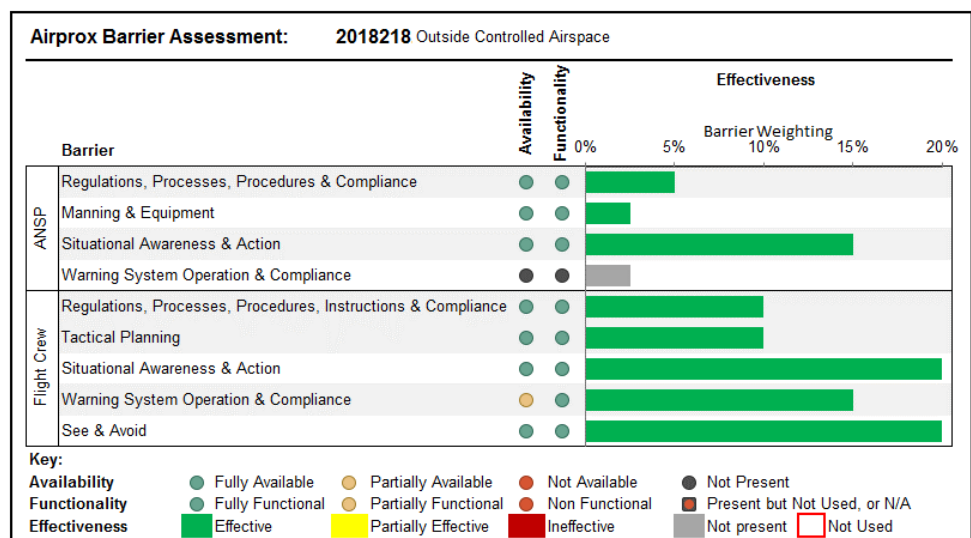
PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A sighting report.

Degree of Risk: E.

Safety Barrier Assessment⁹

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that all the safety barriers operated effectively.



⁹ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](http://www.ukab.co.uk).