AIRPROX REPORT No 2024038

Date: 20 Mar 2024 Time: 1945Z Position: 5110N 00230W Location: Shepton Mallet

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A400M	PA28
Operator	HQ Air (Ops)	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Listening Out
Provider	LL Common	Bristol Radar
Altitude/FL	1800ft	2300ft
Transponder	A, C, S+	A, C, S
Reported		
Colours	Grey	Blue and White
Lighting	Standard	Strobes, navigation, Landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1750ft	2500ft
Altimeter	QNH (1020hPa)	NK
Heading	265°	050°
Speed	240kt	90kt
ACAS/TAS	TCAS II	Not fitted
Alert	RA	N/A
Separation at CPA		
Reported	500ft V/1.0NM H	500ft V/0.5-1NM H
Recorded	500ft V/0.8NM H	

THE A400M PILOT reports that they had been conducting NVG procedural flying approximately 15NM northeast of Yeovilton at 1750ft AMSL routeing south. The crew noticed a TCAS conflict approximately 500ft above and about 10NM ahead. They had been unable to get positive visual contact with the traffic and it was deemed that at its current location the [A400M] route would turn them west before the traffic with about 5NM separation. However, during the turn visual contact had been made (they believed it to have been a helicopter) and the traffic had been crossing ahead on their planned route at approximately 2NM range still 500ft above. The A400M was manoeuvred laterally to increase separation but maintained at 1750ft AMSL due to 500ft MSD, weather below and the traffic 500ft above. Visual contact was maintained throughout this stage but the proximity caused a TCAS RA alert with 'Monitor Vertical Speed', in this case requiring them to maintain level. All TCAS RA actions were carried out as per the SOPs. The other aircraft was not on either Yeovilton LARS or LL Common frequencies. The sortie was continued with no further issues.

The pilot perceived the severity of the incident as 'Low'.

THE PA28 PILOT reports that they had been instructing a student in night flying techniques. They had planned their flight to include a Listening watch where available (Bristol) and had an active transponder. They note that they would normally have carried an electronic conspicuity device but could not recall if they had on this occasion. They recall the weather to have been 'very nice' with good visibility and minimal cloud to affect. They had first seen the other aircraft as it had appeared in their 11 o'clock at a distance of about 8-9NM and appearing to be about 500ft below them. They had discussed the likelihood of seeing other aircraft and the instructor had used this opportunity to talk the student through the important aspects of tracking it whilst continuing a good lookout for others. They had judged that on the current flightpaths, the aircraft would pass without affecting their planned route. As the other aircraft

had then turned towards them they had monitored its passage to their right and below maintaining the belief that it would remain clear. They judged that there had been no risk of collision.

The pilot assessed the risk of collision as 'None'.

Factual Background

The weather at Bristol was recorded as follows:

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METAR EGGD 201920Z AUTO 25007KT 2400 BR NCD 10/09 Q1021=
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Analysis and Investigation

UKAB Secretariat

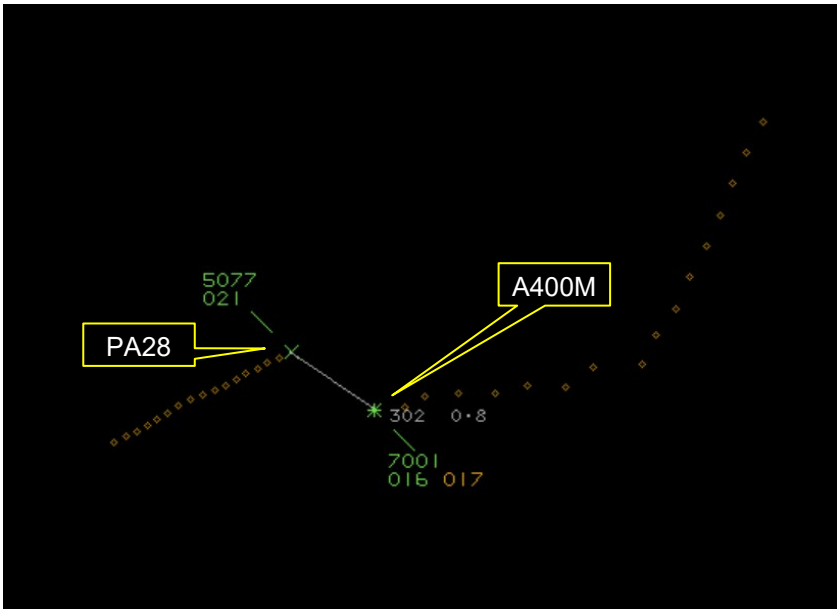


Figure 1: CPA minus 2sec – 1944:34

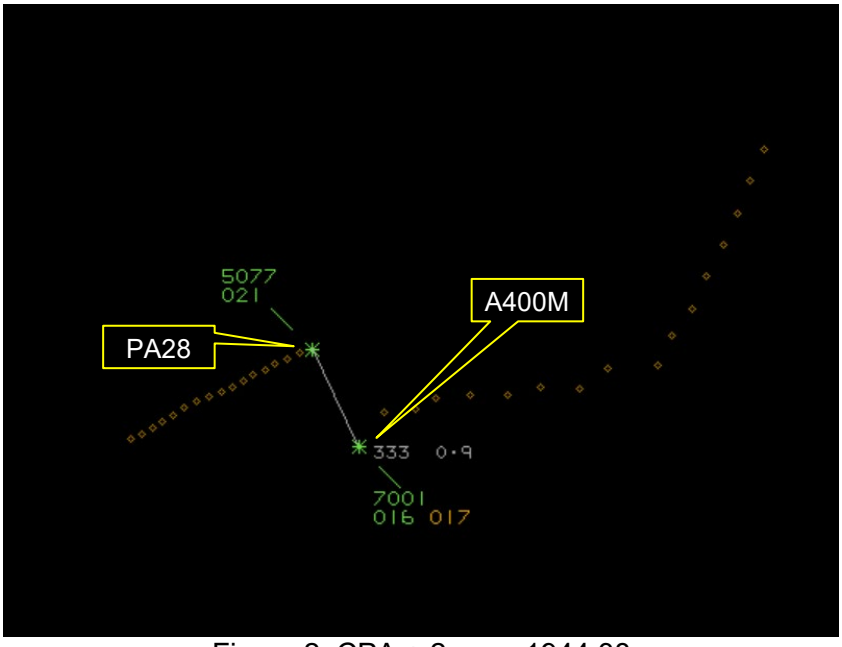


Figure 2: CPA + 2sec – 1944:38

Both pilots report as having identified the other aircraft at a good distance and monitored their relative paths as they passed.

The A400M and PA28 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 as head-on or nearly so then both pilots were required to turn to the right.[2]

Comments

HQ Air Command

The PA28 appeared on the A400M TCAS, providing the crew with early awareness. Once visual, they were able to monitor the situation and adjust track accordingly to increase lateral separation. There was no risk of collision but, due to the proximity of the two aircraft, the TCAS alerted with an RA.

AOPA

It would appear both pilots saw each other at a similar distance of approximately 10km allowing plenty of time for each pilot to assess a course of action, with a closing speed of 300kt, TCAS overrode this process.

Summary

An Airprox was reported when an A400M and a PA28 flew into proximity at Shepton Mallet at 1945Z on Wednesday 20th March 2024. Both pilots were operating under VFR in VMC, the A400M pilot had been Listening Out on the Low-Level VHF Common Frequency and the PA28 pilot had been Listening Out on the Bristol Radar Frequency and utilising their Frequency Monitoring Squawk.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and reports from the appropriate operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board discussed the actions of both pilots and agreed that both had followed normal procedures. They noted that the A400M pilot had been alerted by their onboard TCAS at a range of 10NM which had enabled a focussed lookout and, ultimately, visual acquisition as they had turned toward the oncoming PA28 with the TCAS offering full instruction for the situation (**CF2**). The PA28 pilot had visually acquired the A400M at a range of approximately 8-9NM despite having had no situational awareness of its presence (**CF1**) and had used the opportunity to discuss with their student the actions required in such circumstances. The A400M pilot had gained visual contact with the PA28 as they had turned towards the west at a range of approximately 2NM and approximately 500ft above. The PA28 pilot had initially judged that the respective flight paths would not be a factor but had continued to monitor as the A400M had turned toward them, maintaining a good lookout and assessing that the aircraft would pass without conflict.

Members were satisfied that there had been sufficient separation between the aircraft and that there had been no risk of collision. It was therefore agreed that normal safety parameters had pertained and, as such, the Board assigned Risk Category E to this event. Members agreed the following factors (detailed in Part C) had contributed to this Airprox:

CF1: The PA28 pilot had no situational awareness of the A400M.

[1] (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.
[2] (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on. MAA RA 2307 paragraph 13.

CF2: The A400M pilot had received a TCAS RA due to the proximity of the PA28.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024038			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
1	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
	• Electronic Warning System Operation and Compliance			
2	Contextual	• ACAS/TCAS RA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system resolution advisory warning triggered	

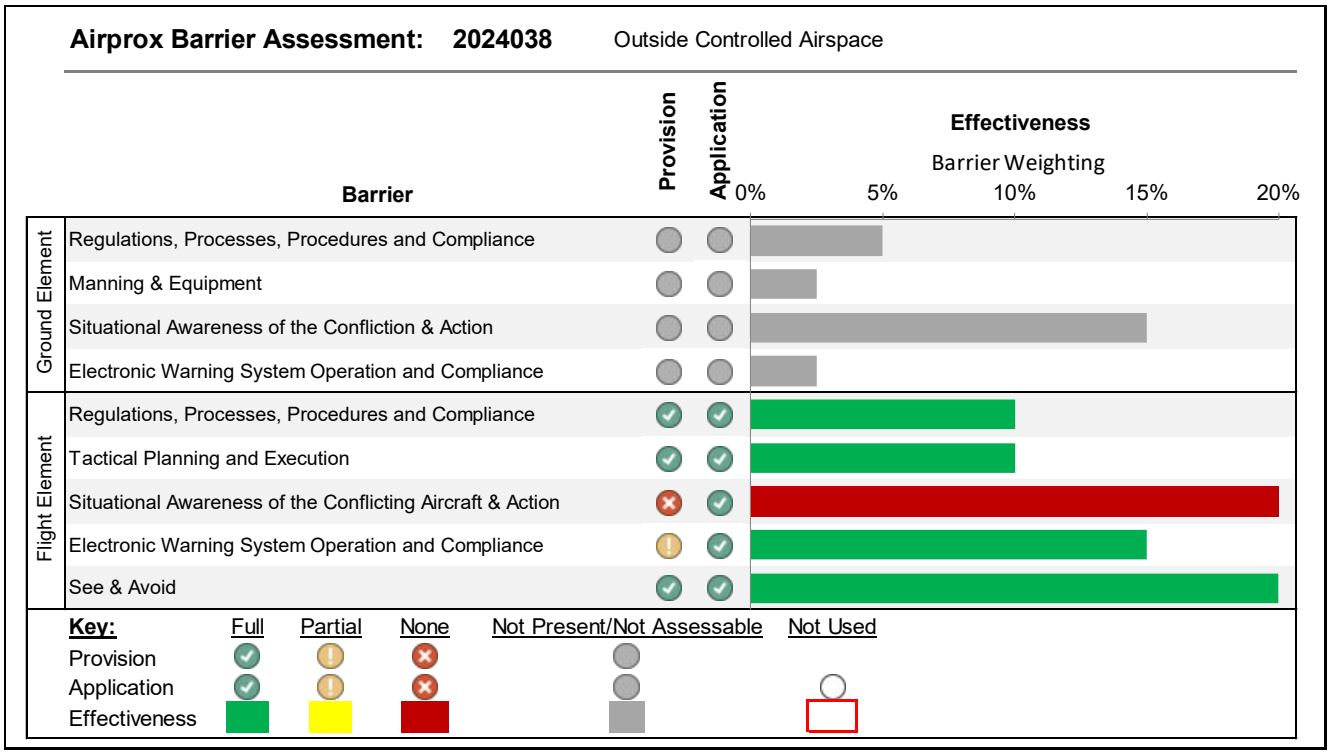
Degree of Risk: E.

Safety Barrier Assessment[3]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the PA28 pilot had no situational awareness of the presence of the A400M.



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