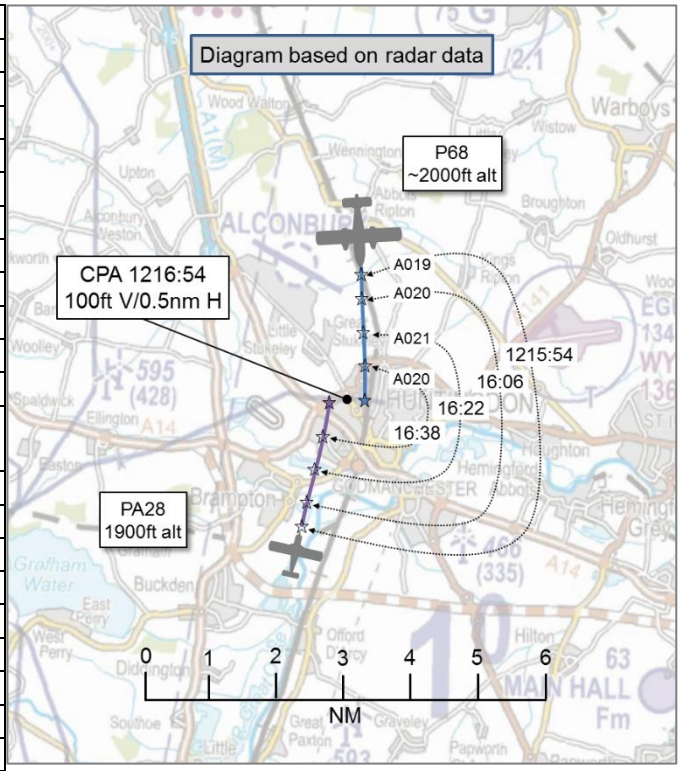
AIRPROX REPORT No 2019208

Date: 21 Jul 2019 Time: 1217Z Position: 5220N 00011W Location: Huntingdon

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	P68	PA28
Operator	Civ Comm	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Listening Out
Provider	London Info	Fenland
Altitude/FL	1800ft	1700ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White/Blue	Red/White
Lighting	Nav, red beacon	Strobes, nav lights, landing light
Conditions	VMC	VMC
Visibility	>30km	>10km
Altitude/FL	1800ft	2000ft
Altimeter	QNH (1019hPa)	QNH
Heading	358°	Not Reported
Speed	120kt	90kt
ACAS/TAS	Not fitted	PilotAware
Alert	N/A	Not Reported
Separation		
Reported	100ft V/35m H	Not seen
Recorded	100ft V/0.5nm H	



THE P68 PILOT reports that he was conducting single-pilot operations during a survey task when, upon completion of a northbound run, another aircraft passed under the right wing heading south [UKAB note: the radar replay shows the P68 heading south at the time of the airprox; the P68 pilot confirmed that his recollection of headings may be inaccurate as he was flying figure-of-eight patterns]. The pilot did not see the other aircraft; it was spotted by the task specialist in the rear of the cabin who thought that the PA28 passed within 100ft. With no LARS being available in the area at the weekend, the P68 pilot had agreed a Basic Service with London Information but would have preferred a [surveillance-based] Service. The pilot reports that the P68 is not equipped with a traffic alerting system and the operating company does not permit the carriage of unauthorized devices in its aircraft.

The pilot assessed the risk of collision as 'High'.

THE PA28 PILOT reports that he was in the cruise at 2000ft, routeing from North Weald to Fenland and that he did not see any aircraft close enough to warrant an Airprox. However, on further investigation of his PilotAware logs, he was able to confirm that the P68 had registered as a track on this equipment and that, shortly afterwards, he altered course approximately 300m to the west. During a telephone conversation with the Secretariat he stated that, although not linked to an audio output, he used PilotAware visual information to cue his lookout and, once visual, would then manoeuvre his aircraft if he deemed it necessary. So, whilst he could not specifically recall seeing the P68, it is entirely possible that he did see the aircraft, cued by his PilotAware, and manoeuvred left to increase lateral separation.

The pilot did not assess the risk of collision.

THE LONDON FISO reports that he was informed that the P68 pilot intended to file an Airprox with a PA28. At the time, he was providing a Basic Service to the P68 pilot outside controlled airspace; the PA28 was unknown traffic to the FISO and had not reported on either FIS frequency.

The FISO did not assess the risk of collision.

Factual Background

The weather at RAF Wittering was recorded as follows:

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METAR EGXT 211150Z AUTO 23011KT 9999 BKN050/// 21/12 Q1019=
METAR EGXT 211250Z AUTO 22010KT 9999 FEW033/// BKN042/// 21/13 Q1019=
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Analysis and Investigation

Occurrence Investigation

NATS ATSI

The P68 pilot reported on the London Flight Information Service (FIS) frequency at 08:45:12, stating their intention to carry out a survey flight. A Basic Service was agreed and the aircraft was issued a Mode-A code of 1177. The aircraft proceeded to fly the survey flight, predominantly in north-to-south patterns, passing to the east of Peterborough.

At 12:16:14 the P68 was tracking southbound, maintaining an indicated altitude of 1800ft. The PA28 was tracking north and displaying a Mode-A code of 7000 at an indicated altitude of 1600-1700ft.

Both aircraft were operating outside controlled airspace and proceeded to fly into proximity approximately 7nm south-east of Peterborough airfield. The FISO did not pass any traffic information on the PA28 to the pilot of the P68.

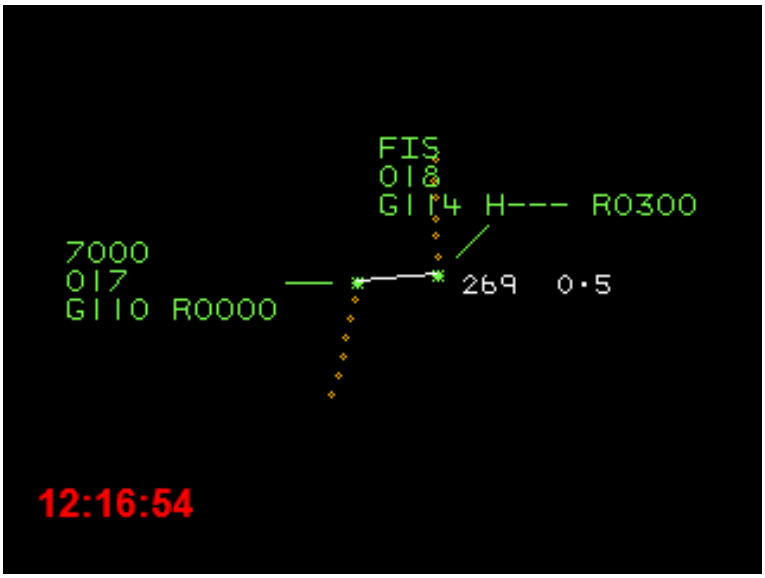


Figure 1 – 12:16:54

The CPA occurred at 12:16:54 and was measured on the LTCC Multi-Track Radar as 0.5nm and 100ft; see Figure 1. The P68 pilot made no reference to the encounter on the R/T prior to leaving the FIS frequency.

UKAB Secretariat

The P68 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]

Summary

An Airprox was reported when a P68 and a PA28 flew into proximity near Huntingdon at 1217hrs on Sunday 21st July 2019. Both pilots were operating under VFR in VMC, the P68 pilot in receipt of a Basic Service from London Information and the PA28 pilot not in receipt of a Service but listening out on Fenland's frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, radar photographs/video recordings, a report from the London FISO involved and reports from the appropriate ATC 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 first considered the actions of the P68 pilot and were informed that prior to conducting his task as a single-pilot operation he had considered the limitations of lookout and the availability of a surveillance-based Air Traffic Service to assist in his detection of other traffic. However, in his area of operation at the weekend, his options had been extremely limited. Some members wondered if he had considered calling Lakenheath and requesting a Service, and the Board heard from the USAFE advisor that, although Lakenheath is not a LARS provider, there may be the opportunity to provide a Service on an *ad hoc* basis if controller capacity allows. In the event, the pilot had requested a Basic Service from London Information, but this had the limitation that the FISO could only have informed the P68 pilot of traffic that had been known to him through position reports from other traffic; this would have depended upon other pilots contacting London Information and providing accurate position reports. Under the terms of a Basic Service, the FISO had not been required to monitor the progress of the P68 (**CF1**). The Board agreed that this had left the P68 pilot with only his lookout to detect other aircraft in the vicinity of his operating area and that although the PA28 had been spotted by the task specialist, this had been too late for the pilot to take any form of action to materially increase separation, especially since he did not see the PA28 himself (**CF6**). Ultimately, the task specialist's assessment of separation from the PA28 had led to the P68 pilot being concerned by its proximity (**CF8**), although subsequent analysis of the radar tracks indicated that the separation had been much greater.

The Board then discussed other widely-recognised potential barriers to the mid-air collision risk, such as on-board collision warning systems (CWS) or augmenting the lookout capability through the use of another crewmember in the front cockpit, and noted that the P68's operating authority had tasked the aircraft to conduct a survey at the weekend in an area with little-to-no LARS coverage on Saturdays and Sundays, without an on-board CWS and with only a single pilot. Members went on to discuss the requirements of EASA Part-SPO[3] and, in particular, AMC2 SPO.OP.230 and wondered if the P68 operating authority's risk assessment for the activity took full account of the availability and effectiveness, or otherwise, of the barriers to MAC in all areas and at all times of their operations. Board members agreed that, given the nature of the task and the timing of the tasking, it was likely that the operating authority's Flight Operations Documentation permitted single-pilot operations at low-level with neither a serviceable on-board CWS nor a supplementary crewmember to augment lookout and that this had been a contributory factor in the Airprox (**CF2, CF3**). Additionally, the lack of on-board CWS or a surveillance-based ATS had led to the P68 pilot having no situational awareness of the presence of the PA28 (**CF4**). The Board therefore felt that there was scope for further mitigation, particularly given the operating areas and altitudes of aircraft routinely conducting survey work, and resolved to

[1] SERA.3205 Proximity.
[2] SERA.3210 Right-of-way (c)(1) Approaching head-on.
[3] https://www.easa.europa.eu/sites/default/files/dfu/Consolidated%20unofficial%20AMC%26GM_Annex%20VIII%20Part-SPO.pdf

recommend that, 'The P68 operating company considers further mitigations to MAC for survey operations' and that 'The CAA considers mandating additional cockpit crew to enable enhanced lookout for single-pilot survey operations'.

Turning to the actions of the PA28 pilot, the Board was heartened by his proactive use of PilotAware in that he had included a scan of the PilotAware display in his work-cycle, had used the information provided to cue his lookout and, once sighted, had likely then manoeuvred his aircraft to increase lateral separation from the P68 (**CF5**). Members noted that the PA28 pilot could not recall the P68 itself, but it was likely that he had taken sufficient and early enough action to remove any risk of conflict (**CF7**).

In considering the risk, the Board was of the view that, whilst the P68 crew was concerned by the proximity of the PA28, the pilot of the PA28 had likely seen the P68 at range, had manoeuvred to increase lateral separation and there had therefore been no risk of collision. Indeed, given a recorded separation of 0.5nm, members considered that normal procedures, safety standards and parameters for VFR flight in Class G airspace had pertained; risk Category E.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2019208		
CF	**Factor**	**Description**	**Amplification**
	Ground Elements		
	• Situational Awareness and Action		
1	Contextual	• Situational Awareness and Sensory Events	Not required to monitor the aircraft under the agreed service
	Flight Elements		
	• Regulations, Processes, Procedures and Compliance		
2	Organisational	• Flight Operations Documentation and Publications	Inadequate regulations or procedures
	• Tactical Planning and Execution		
3		• Any other event	**Absence of Safety Pilot**
	• Situational Awareness of the Conflicting Aircraft and Action		
4	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
	• Electronic Warning System Operation and Compliance		
5	Contextual	• ACAS/TCAS TA	TCAS TA / CWS indication
	• See and Avoid		
6	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots
7	Human Factors	• Perception of Visual Information	Pilot perceived there was no conflict
8	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: E

Recommendations:

1. The P68 operating company considers further mitigations to MAC for survey operations.
2. The CAA considers mandating additional cockpit crew to enable enhanced lookout for single-pilot survey operations.

Safety Barrier Assessment[4]

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

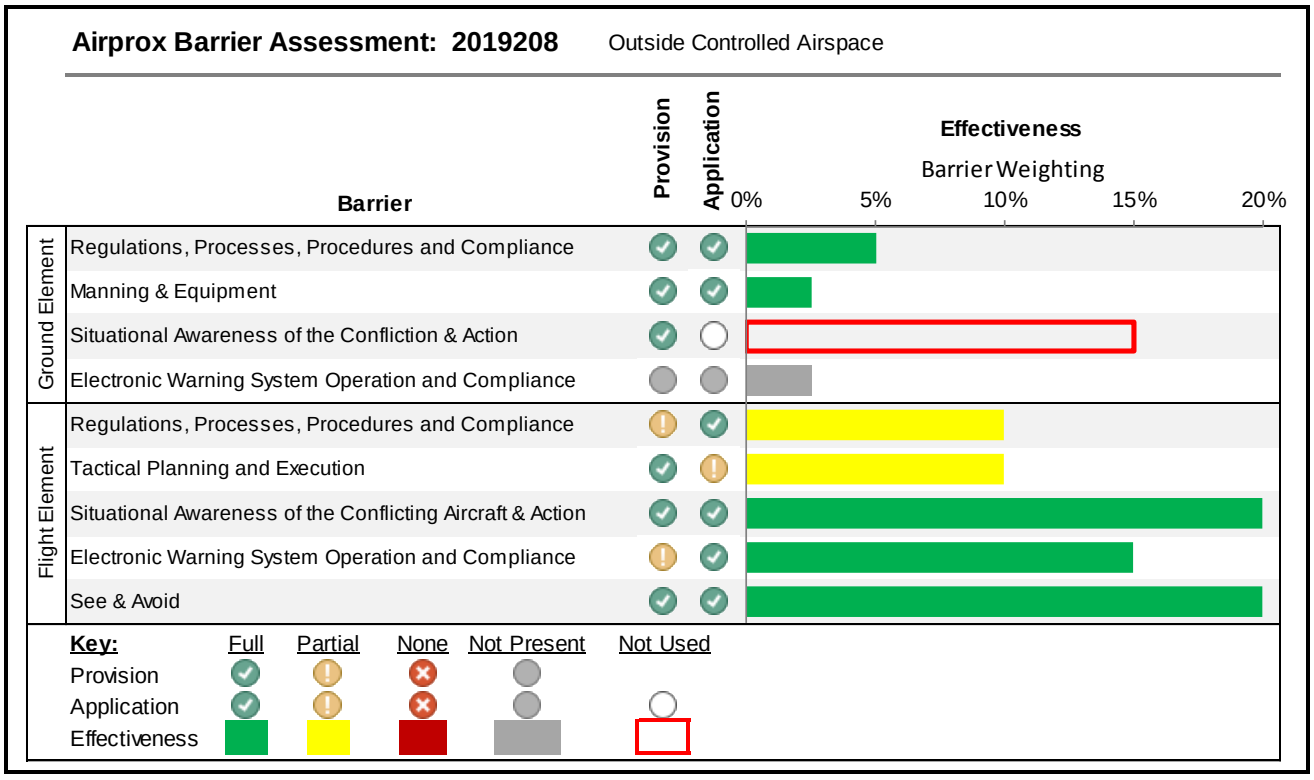
Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **not used** because there was no LARS available in that area of the UK at the time of the occurrence and so only a non-surveillance-based ATS was available.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the operating company had no procedures in place to mitigate the mid-air collision risk when operating as a single-pilot in an aircraft with no on-board CWS.

Tactical Planning and Execution was assessed as **partially effective** because the task was planned to be conducted utilising a single pilot and at the weekend, when the options for a surveillance-based Air Traffic Service are limited.



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