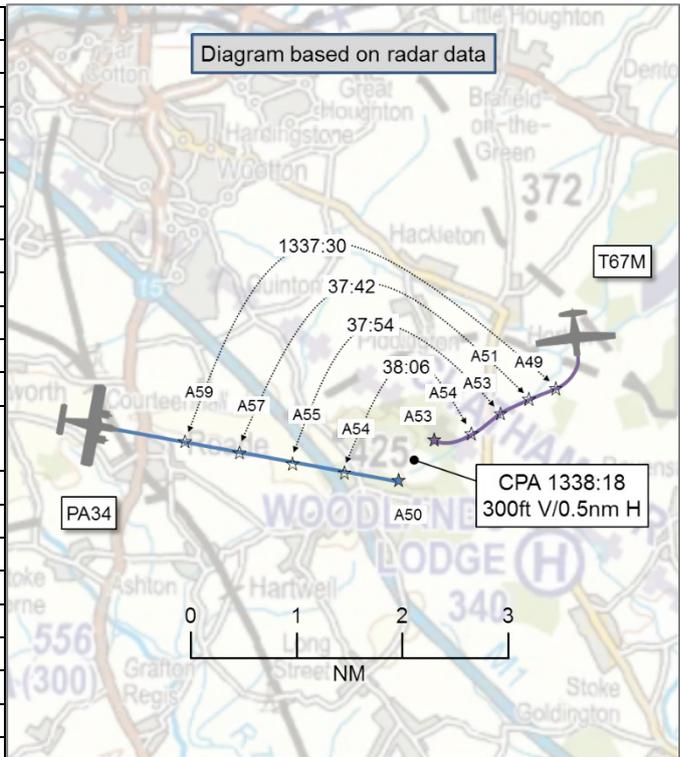


AIRPROX REPORT No 2019044

Date: 20 Mar 2019 Time: 1338Z Position: 5209N 00049W Location: 7nm E DTY

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA34	T67M
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	None ¹	Basic
Provider	N/A	Cranfield
Altitude/FL	5000ft	5300ft
Transponder	A,C,S	A,C,S
Reported		
Colours	White/Blue	Yellow
Lighting	Anti-coll, landing, taxi, nav	Strobes, landing
Conditions	VMC	VMC
Visibility	>10km	10km
Altitude/FL	4000ft	5000ft
Altimeter	QNH (1032hPa)	QNH
Heading	099°	280°
Speed	140kt	110kt
ACAS/TAS	TAS	PowerFLARM
Alert	TA	Information
Separation		
Reported	0ft V/1nm H	0ft V/0.25nm H
Recorded	300ft V/0.5nm H	



THE PIPER PA34 PILOT reports he was in Controlled Airspace at DTY at FL70 inbound to Cranfield, IFR. Shortly after turning onto the leg DTY-CIT, London Control instructed them to descend inbound to Cranfield and asked them to contact Cranfield once outside CAS by descent. Shortly after their initial call to Cranfield Approach, and before Cranfield had provided them with a Procedural Service, he noticed an aircraft appear on his TAS, approximately 1000ft below in his 10 o'clock. It was approximately 3-4nm away, closing at a moderate rate laterally but it appeared to be climbing and the vertical separation was reducing rapidly. The outside conditions were very good and he searched for the aircraft visually. Before he was able to identify the aircraft the TAS was indicating it to be separated by 200ft, a little more than 1nm away. He interrupted his descent and, while searching for the aircraft, saw it in his 10 o'clock, same level, converging 1nm away. He immediately closed the throttles to commence a steep descent. The other aircraft took avoiding action by banking right, remaining level, now above them. Once separation was restored he resumed a normal descent and notified Cranfield, who provided a Procedural Service after the Airprox. Upon notifying ATC, the pilot of the other aircraft let them know he was on frequency and had also been able to take action because of his TAS.

He assessed the risk of collision as 'Low'.

THE SLINGSBY T67M PILOT reports that he did not consider this was an Airprox. He commented that from his experience it was an everyday occurrence in the area. He added that he had good warning and acquired the other aircraft visually at 4nm. He considered that he did not need to take avoiding action because he had already turned north to give the other aircraft more space.

He assessed the risk of collision as 'None'.

¹ In the process of establishing communication with Cranfield.

THE CRANFIELD APPROACH CONTROLLER reports that he was operating Cranfield Approach with quiet levels of traffic. The PA34 pilot reported on frequency having been transferred by London routing to CIT. On leaving CAS the PA34 pilot was given clearance to ADSON for a training RNAV 21 approach. At approximately 5500ft, in the vicinity of Salcey Forest, the PA34 pilot reported an Airprox with a yellow 'Bonanza' [the T67M] aircraft. The T67M pilot reported that he had the aircraft on 'FLARM' for the duration of the incident and confirmed that it was indeed him as the second aircraft. The T67M pilot had been under a Basic Service following his departure and had not provided any details of his intended route or levels for his general handling, which was normal for training flights from Cranfield.

THE TC WELIN CONTROLLER reports that they could not recollect any details of the Airprox because the incident occurred after the PA34 had left the frequency.

Factual Background

The weather at Cranfield was recorded as follows:

METAR EGTC 201320Z 21011KT 9999 BKN014 12/09 Q1032=

Cranfield was not equipped with radar surveillance.

UKAB Secretariat

The PA34 and T67M pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard². If the incident geometry is considered as converging then the T67M pilot was required to give way to the PA34³, which he did.

Occurrence Investigation

Cranfield ATSU

The Cranfield ATS investigator reported that he had spoken to the pilot of the T67M on the 27th March. He stated that he had seen the PA34 after FLARM had alerted him, and thought that they had got no closer than 3-400ft vertically and 'hundreds of metres' laterally. The T67M pilot had been operating from Cranfield for more than 15 years and was familiar with the route from DTY-CIT and, as such, kept a good lookout in accordance with the Class G see-and-avoid rules. He did not expect Traffic Information on the PA34 to be passed to him by the ATCO because he was in receipt of a Basic Service.

Historically, ATC has sought no further information from locally based pilots who depart into the local training area under a Basic Service regarding their position and level. The feeling was that this was due to the movement numbers that Cranfield used to handle and has simply endured. Following consultation with the flying school, it was clear that the local training area that was used for general handling meant aircraft had the potential to be in conflict with those leaving the airways at DTY and routing to either ADSON or the CIT. With hindsight, review and discussion, it could be reasoned that more could have been done prior to the incident that would have enabled the ATCO to view the T67M as a potential conflict and therefore have satisfied his duty of passing Traffic Information to the PA34 pilot in receipt of a Procedural Service. It was suggested that more information was gleaned during the PPR process in order to clarify whether aircraft would be operating in the local training area or departing the area on a nav-ex. This would enable ATCOs, even in times of high workload, to transmit even generic Traffic Information when required ("e.g. 4 in the local training area at various levels").

Cranfield has requested that their UK AIP entry is amended to note that there is an active local flying area to the north and west of the airfield at various levels.

² SERA.3205 Proximity.

³ SERA.3210 Right-of-way (c)(2) Converging.

NATS Ltd Swanwick ATSI

The TC WELIN East (WELIN) controller provided a Radar Control Service to the pilot of the PA34 maintaining FL70, inbound to Cranfield routing to Daventry then CIT. Following coordination with Cranfield Approach reference an acceptance altitude, the WELIN controller instructed the PA34 pilot at 13:34:57 “Cranfield will accept you in the descent to altitude four thousand feet, QNH one-zero-one-three, you’re cleared to leave Controlled Airspace in descent” which was correctly readback.

Note: In accordance with LTC procedures, UK AIP ENR 1.6 - 1.3.1.2 states ‘Pilots should note that no Deconfliction Service or Traffic Service will be available on any London Control Frequency below FL 70.’

CAP774 1.1 states ‘Regardless of the ATS being provided, pilots are ultimately responsible for collision avoidance.’

The PA34 pilot initiated descent and, at 13:26:08, the WELIN controller instructed the pilot “you’ll shortly be leaving controlled airspace, where my radar service terminates, squawk seven-four-one-seven [Cranfield Airport conspicuity].”

The PA34 pilot vacated Controlled Airspace in the descent passing FL64 at 13:36:22. At this time, the T67M displaying Mode-A code 7000 code was operating to the northwest of Cranfield at an indicated 3200ft, tracking north in the climb.

At 13:36:27 the WELIN controller instructed the PA34 pilot “my radar service terminates, contact Cranfield” passing the relevant frequency. At the time they were 5.8nm apart horizontally and 3000ft vertically and the aircraft trajectories were such that the PA34 would transit significantly behind the T67M.

The PA34 continued on the previous track in the descent to the agreed 4500ft. The T67M pilot however initiated a sharp right turn and continued climb on a track that took the aircraft into proximity with the PA34 as the tracks converged (see Figure 1, PA34 squawk 7417).

As the aircraft came into close proximity, the T67M pilot initiated a right turn of approximately 80°. The pilot’s Airprox report stated this was not a critical avoidance manoeuvre. The rate of descent of the PA34 increased, briefly indicating a descent rate of 3200fpm.



Figure 1



Figure 2

ATSI assessed that the closest point of approach occurred at **13:38:18** (see Figure 2), and was recorded on the LTC Multi-Track radar as **0.5nm** and **300 feet**.

Summary

An Airprox was reported when a PA34 and a T67M flew into proximity near Daventry at 1338hrs on Wednesday 20th March 2019. The PA34 pilot was operating under IFR in VMC, the T67M pilot was operating under VFR in VMC. The PA34 pilot was in the process of establishing contact with Cranfield and the T67M pilot was in receipt of a Basic Service from Cranfield.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, transcripts of the relevant R/T frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC 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 first looked at the actions of the PA34 pilot. He was inbound to Cranfield on an IFR training flight. On leaving CAS at DTY he was transferred to Cranfield Approach and the Board noted that, at the time, the T67M was 5.8nm away from the PA34 and vertically separated by 3000ft, with the PA34's routing indicating it would be behind the T67M. Subsequently, the T67M pilot turned and climbed, taking him into the proximity of the PA34. Shortly after their initial call to Cranfield, and before any service had been agreed, the PA34 pilot was concerned to see an aircraft (the T67M) appearing on his TAS approximately 1000ft below in his 10 o'clock, approximately 3-4nm away. Before he could obtain visual contact, TAS indicated that vertical separation was 200ft just over 1nm away, and the PA34 pilot became concerned by its proximity without visual contact having been established (**CF1**). Ultimately, the PA34 pilot only obtained visual contact with the T67M when it was in his 10 o'clock, same level, converging 1nm away. (**CF2/CF3**).

Turning to the T67M pilot, the Board noted that he had departed from Cranfield into the local training area, in receipt of a Basic Service. Because Cranfield was not equipped with radar surveillance the controller was unaware of the T67M's position and its proximity to the PA34. The T67M pilot later reported that he had first observed the PA34 on his PowerFLARM, then visually at 4nm, and had kept visual contact throughout.

Turning to the risk the Board quickly agreed that there had been no risk of a collision. Although the PA34 pilot reported carrying out a steep descent, the T67M pilot had obtained visual contact at 4nm and had not considered that avoiding action had been necessary because he had already turned away from the PA34. With a CPA recorded as 300ft vertical and 0.5nm horizontal, the Board considered that normal procedures for see and avoid in Class G airspace had occurred; accordingly they assessed the risk as Category E.

Notwithstanding the benign nature of this encounter as determined through subsequent analysis, the incident met the requirements for reporting and, as a result of the PA34 pilot voicing his concerns, the Board was heartened to hear that a positive outcome was that Cranfield now intended to ascertain whether departing training flights would be remaining in the local training area to the north and west or proceeding on a nav-ex. Being aware that aircraft would be operating in the training area would then allow the controllers to pass at least generic Traffic Information to flights approaching from DTY.

PART C: ASSESSMENT CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

CF	Factor	Description	Amplification
	Flight Elements		
	• Situational Awareness of the Conflicting Aircraft and Action		
1	Human Factors	• Interpretation of Automation or Flight Deck Information	Pilot was concerned by the proximity of the other aircraft
	• See and Avoid		
2	Human Factors	• Monitoring of Other Aircraft	Sighting report
3	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: E.

Safety Barrier Assessment⁴

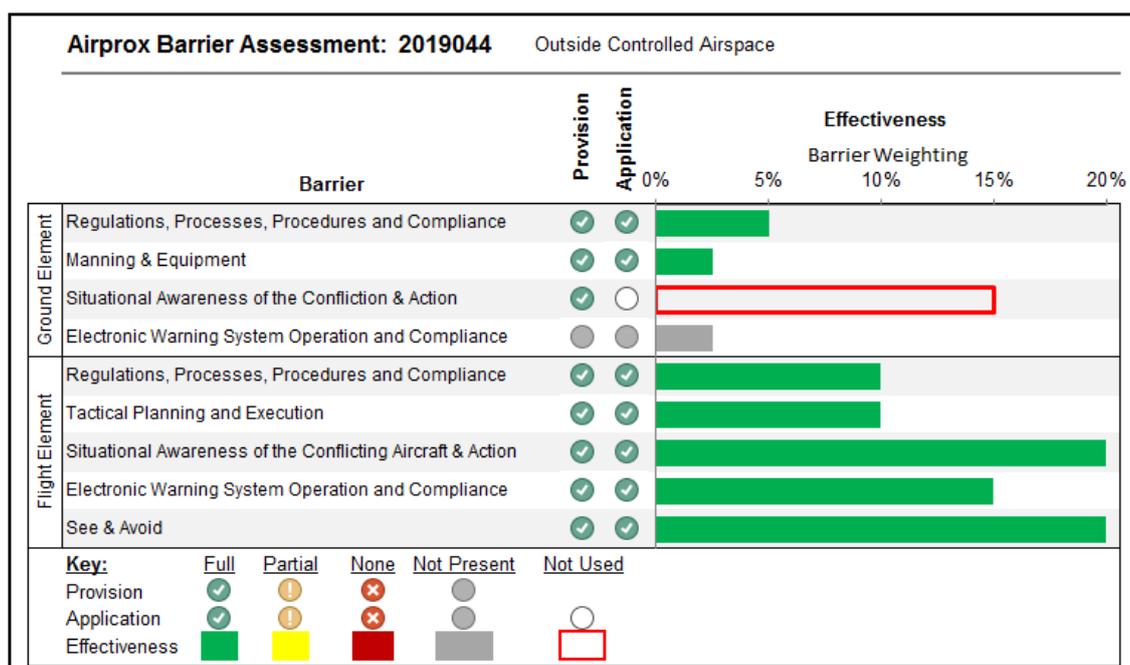
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had all been effective:

Ground Elements:

Situational Awareness and Action was assessed as **not used** because the incident occurred before the Cranfield controller and PA38 pilot had agreed a service.

Flight Crew:

See and Avoid were assessed as **effective** because the T67M pilot had seen the PA34 at a range of 4nm and had maintained visual contact.



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