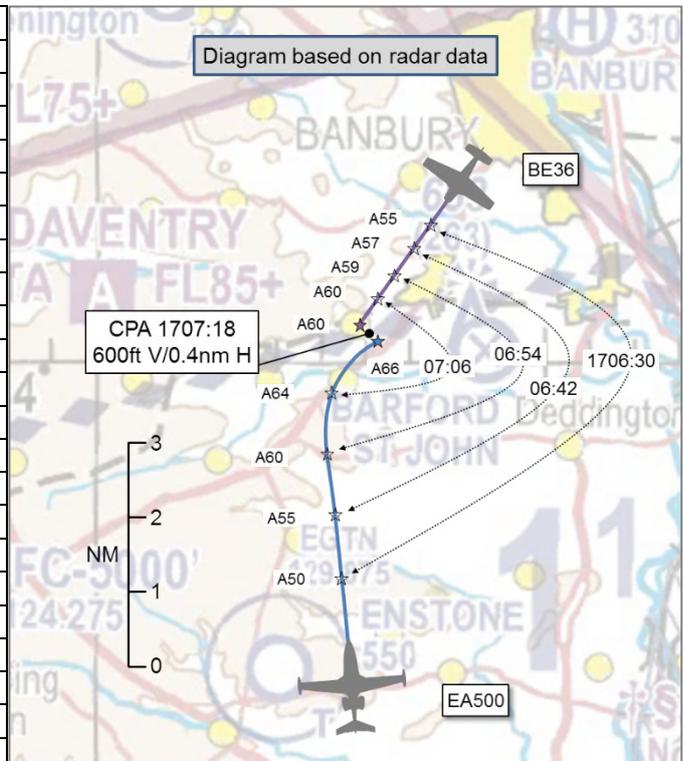


AIRPROX REPORT No 2019137

Date: 04 Jun 2019 Time: 1707Z Position: 5200N 00124W Location: 10nm N Oxford Airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EA500	BE36
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	VFR
Service	Basic	Basic
Provider	Swanwick	London Info
Altitude/FL	6600ft	6000ft
Transponder	A, C, S	A, C, S
Reported		Not reported
Colours	White, orange	
Lighting	Strobe, HISL, nav	
Conditions	IMC ¹	
Visibility	NK	
Altitude/FL	FL080	
Altimeter	SPS	
Heading	340°	
Speed	220kt	
ACAS/TAS	TCAS I	
Alert	TA	
Separation		
Reported	3-400ft V/0m H	Not seen
Recorded	600ft V/0.4NM H	



THE EA500 PILOT reports that he had been handed over to ‘London’ on departure and was cleared to climb to FL090 en-route IXURA under a Traffic Service [UKAB Note: actually only a Basic Service]. He saw the other traffic on TCAS at 10nm and was given Traffic Information by the ‘London controller’ at about 5nm. On changing the TCAS range display, it alerted so he disconnected the autopilot, stopped his climb, made a 90° hard-right turn and called ‘London’. He last saw the TCAS alert at ‘+500’ directly over his aircraft but did not see the other aircraft. The pilot stated that he was not looking to criticise the ‘London controller’, and that if the controller had not alerted him the outcome might have been different. He felt that it would be good to see whether this airspace could be operated differently.

The pilot assessed the risk of collision as ‘High’.

THE BE36 PILOT discussed the Airprox briefly with an Inspector and stated that he was operating under VFR and did not observe another aircraft in proximity. He declined to submit a completed form CA1094 Airprox report.

THE SWANWICK RADAR CONTROLLER reports that the [EA500 C/S] departed [departure airfield] for [destination] and called on frequency outside controlled airspace. He was given a Basic Service but was then informed of potentially conflicting opposite-direction traffic squawking 7000, which the pilot said he had on TCAS. A joining instruction was given, and the two aircraft continued to converge; the pilot made a broken comment regarding the 7000 traffic and further Traffic Information was passed. The pilot stated he was taking evasive action and then continued to join as instructed having passed the unknown aircraft.

¹ Clear of cloud but above 3000ft amsl and within 1000ft vertically and 1500m horizontally of cloud.

Factual Background

The weather at Oxford was recorded as follows:

METAR EGTK 041720Z 20010KT 9999 FEW023 BKN030 16/13 Q1000=

Analysis and Investigation

NATS Investigation

The pilot of [EA500C/S] reported onto the TC Cowly frequency (121.030) at 17:05:37, routing to IXURA at 5000ft. The pilot was instructed to squawk ident and issued with a Basic Service (BS) outside [CAS].

At 17:06:09 (Figure 1), the controller instructed the pilot of [EA500C/S] to join Controlled Airspace on track IXURA in the climb to FL80. This was correctly read back by the pilot. The controller then passed traffic information “in your 1 o'clock, range 5 miles, opposite direction, 5500 feet unverified.” The pilot of [EA500C/S] reported that they had the aircraft on TCAS.

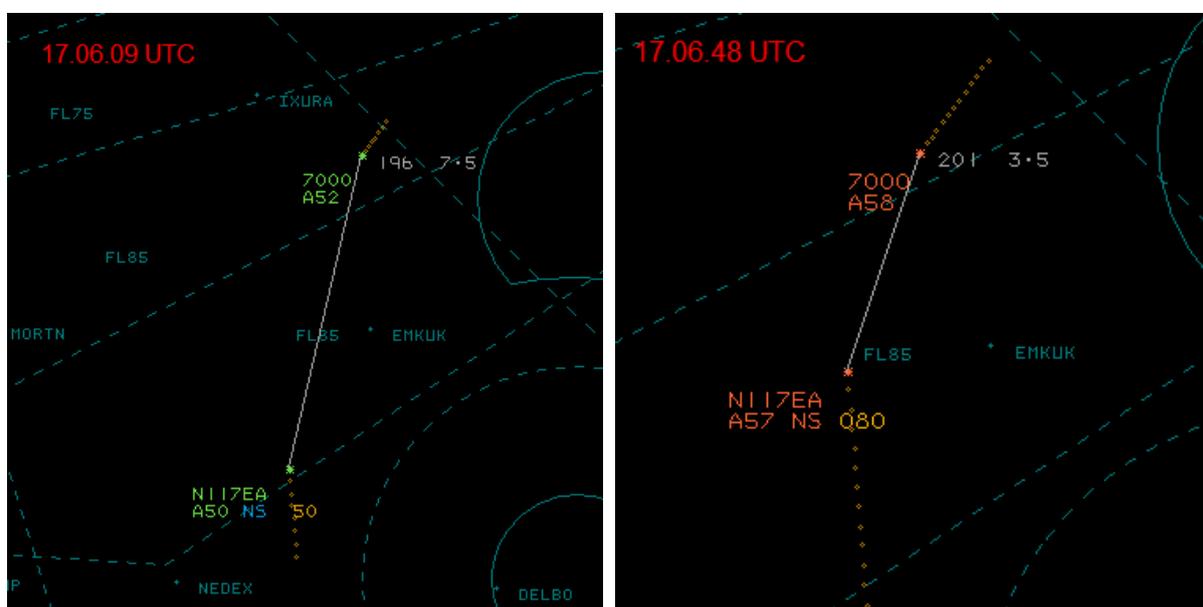


Figure 1

Figure 2

The low-level Short Term Conflict Alert (STCA) activated at 17:06:16, and the high-level STCA activated at 17:06:40.

The pilot of [BE36 C/S] reported onto the FIS frequency at 17:06:33. The pilot stated the aircraft type, gave a position report and confirmed that they were levelling at 6000ft. The pilot requested a Basic Service.

At 17:06:48 (Figure 2), the pilot of [EA500C/S] said “[partial EA500 C/S], that plane...”. The Cowly controller passed update Traffic Information “[partial EA500 C/S] traffic now in your 1 o’clock, range 2 miles, indicating similar level”. The pilot of [EA500C/S] responded “roger, we’re just turning right now to er take avoiding”.

CPA occurred at 17:07:03² (Figure 3), almost coincident with the London FISO (at 17:07:04 on a different frequency) issuing the pilot of [BE36 C/S] with a Basic Service and instructing him to remain outside Controlled Airspace. This was correctly read back.

² UKAB analysis indicated that CPA occurred at 17:07:18 with a vertical separation of 600ft and lateral separation of 0.4NM.

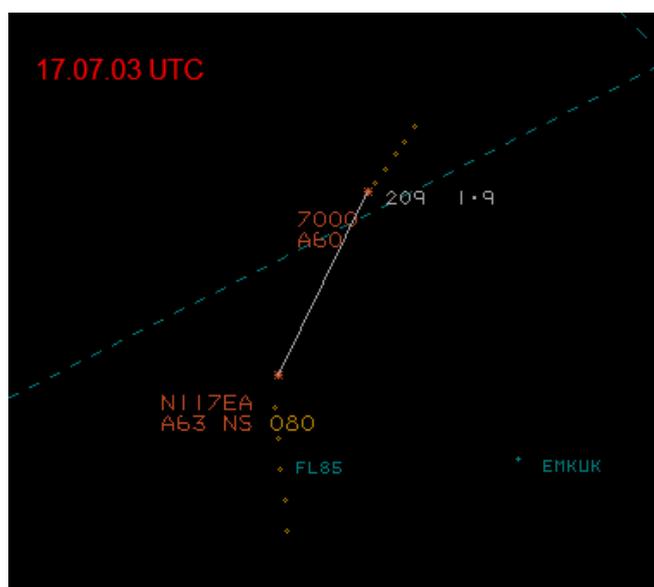


Figure 3

CAP774 states that:

2.1 A Basic Service is an ATS provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. This may include weather information, changes of serviceability of facilities, conditions at aerodromes, general airspace activity information, and any other information likely to affect safety. The avoidance of other traffic is solely the pilot's responsibility.

Basic Service relies on the pilot avoiding other traffic, unaided by controllers/ FISOs. It is essential that a pilot receiving this ATS remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight.

The pilot of [EA500C/S] filed an Airprox report in response to an encounter with [BE36 C/S] whilst 4.8nm south of IXURA. The incident occurred at approximately 6300ft as [EA500C/S] was climbing to FL80. ATSI reviewed the radar data and the closest point of approach, at 17:07:03, was recorded on the LTC Multi-Track Radar as 1.9nm and 300 feet³. This event occurred in Class G airspace where there are no separation requirements; separation was the responsibility of the pilots.

UKAB Secretariat

The EA500 and BE36 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard⁴. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right⁵. If the incident geometry is considered as converging then the EA500 pilot was required to give way to the BE36⁶.

Summary

An Airprox was reported when an EA500 and a BE36 flew into proximity at 1707Z on Tuesday 4th June 2019. The EA500 pilot was operating under IFR in IMC (but clear of cloud) in receipt of a Basic Service from Swanwick. The BE36 pilot reported operating under VFR.

³ UKAB analysis indicated that CPA occurred at 17:07:18 with a vertical separation of 600ft and lateral separation of 0.4NM.

⁴ SERA.3205 Proximity.

⁵ SERA.3210 Right-of-way (c)(1) Approaching head-on.

⁶ SERA.3210 Right-of-way (c)(2) Converging.

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 a report from the appropriate operating authority. 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.

Members first discussed the pilots' actions and comment was made about the EA500 pilot conducting IFR operations in busy airspace in receipt of only a Basic Service. Members were informed that it was not possible to obtain a Traffic or Deconfliction Service from Swanwick in that area below 7000ft, and that IFR traffic departing the associated departure airfield was routinely transferred to Swanwick as soon as possible so as to facilitate their coordination of CAS entry rather than being held on that airfield's frequency (and therefore with the potential for a Traffic Service) as they climbed. Additionally, airways joining clearance was only given once an aircraft was airborne, so the EA500 pilot was, in effect, forced to get airborne with only the provision of a Basic Service. Members expressed their dissatisfaction with this arrangement but acknowledged that, in the event, the Swanwick controller had provided Traffic Information to the EA500 pilot. However, the Board felt that passing of Traffic Information under only 'duty of care' whilst in receipt of a Basic Service was not a satisfactory substitute for a formal Traffic or Deconfliction Service.

For his part, the BE36 pilot was in receipt of a Basic Service from London Information and was unaware of the converging EA500. Notwithstanding, his transponder had enabled the barrier of a TAS alert to the EA500 pilot (**CF1**), who used that and the Swanwick controller's Traffic Information to make an avoiding turn.

Some members wondered why, having been told that the BE36 was in his right 1 o'clock, the EA500 pilot had elected to turn towards it; they wondered whether his TAS had been indicating a different bearing (TAS azimuth indications from the processing of SSR signals are notoriously unreliable). Similarly, the EA500 pilot had perceived that the other aircraft was '+500' (ft) above, and had reported levelling off, when in fact it was approximately co-altitude when he received the Traffic Information, and about 500ft below him thereafter as he commenced his turn. Members wondered whether he may have become somewhat confused about the TAS indications and whether this may have influenced his perception of the geometry; had he assimilated the actual altitude separation and his rate of climb, then the best course of action would probably have been just to expedite his climb instead.

The Board commended the controller for providing Traffic Information in a situation that presented an increasing risk of collision despite only operating a Basic Service. Ultimately, members felt that his input and the actions of the EA500 pilot had resulted in an adequate degree of separation being obtained and the Board agreed that, ultimately, the risk of collision had been averted, although they noted that neither pilot saw the other aircraft (**CF2**).

PART C: ASSESSMENT OF CAUSE AND RISK

Contributory Factors:

2019137			
CF	Factor	Description	Amplification
	Flight Elements		
	• Electronic Warning System Operation and Compliance		
1	Contextual	• ACAS/TCAS TA	TCAS TA / CWS indication
	• See and Avoid		
2	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots

Degree of Risk: C.

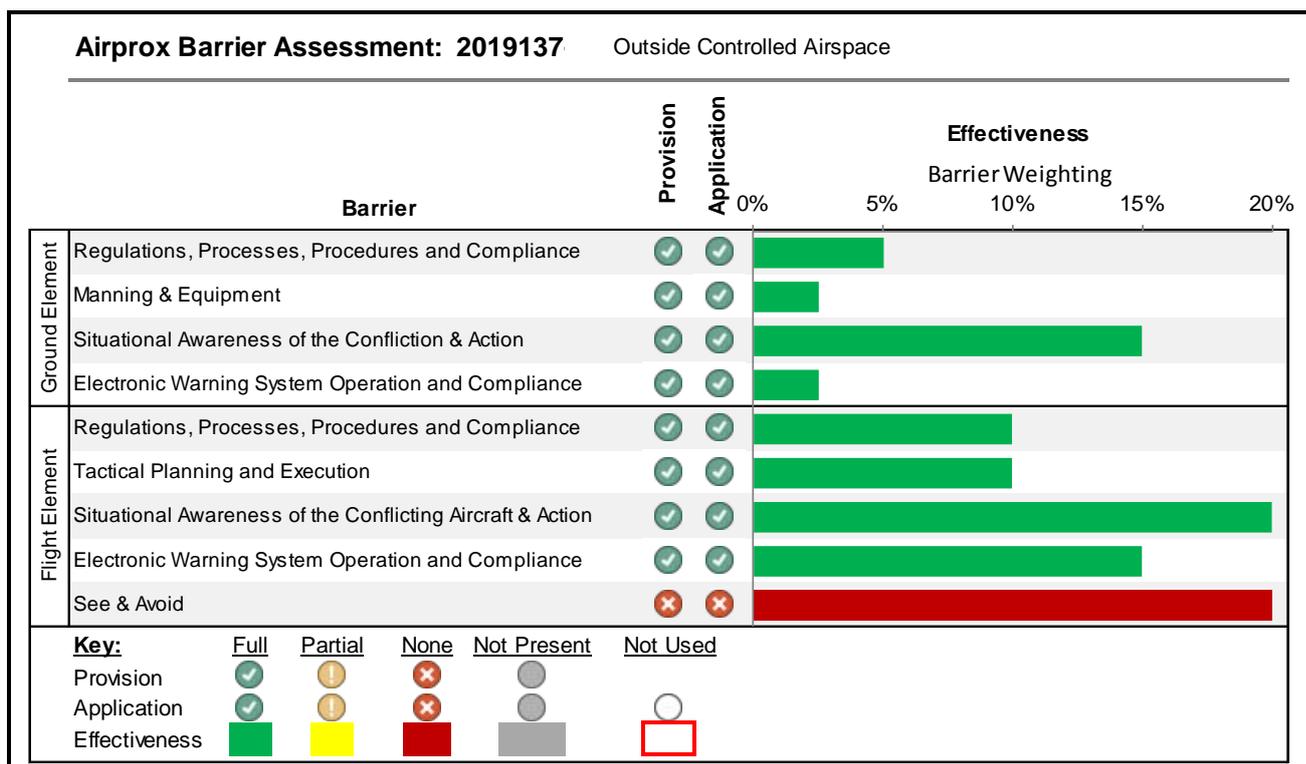
Recommendation: Nil.

Safety Barrier Assessment⁷

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

Flight Elements:

See and Avoid were assessed as **ineffective** because neither pilot saw the other aircraft.



⁷ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).