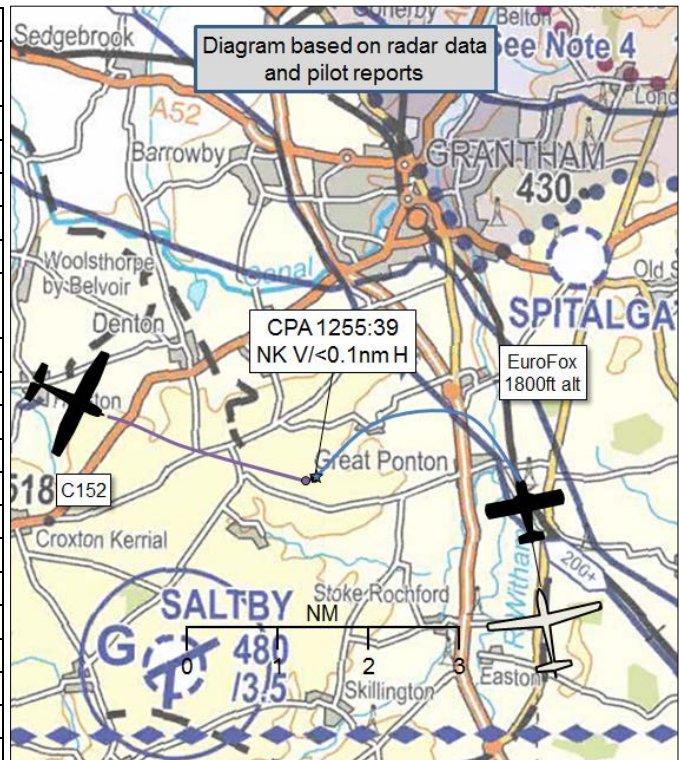


AIRPROX REPORT No 2016190

Date: 18 Aug 2016 Time: 1255Z Position: 5251N 00040W Location: NE Saltby

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EuroFOX (+Puchacz)	C152
Operator	Civ Club	Civ Trg
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Basic
Provider	Saltby	Waddington /Wittering
Altitude/FL	1800ft	NK
Transponder	On/S	Not Fitted
Reported		
Colours	Red	White, Blue
Lighting	Strobe, Landing	NK
Conditions	VMC	VMC
Visibility	20km	>10km
Altitude/FL	1600ft	NK
Altimeter	QFE (1031hPa)	NK
Heading	210°	NK
Speed	65kt	NK
ACAS/TAS	PowerFLARM	Not Fitted
Alert	None	N/A
Separation		
Reported	0ft V/40m H	NK
Recorded	NK V/<0.1nm H	



THE EUROFOX PILOT reports that he was towing a Puchacz sailplane from Saltby airfield and was in a gentle climbing left turn when a Cessna appeared in his 2 o'clock. He took immediate evasive action with a sharp right turn to pass behind the Cessna. He believes that if he had not done so the probability of a collision would have been very high indeed. Neither the pilot of the Puchacz (a very experienced instructor) nor he believes that the pilot of the Cessna saw the combination, even though they were quite close to the gliding club (where you should be keeping an extra sharp look out he opined) and in the Cessna's 10-11 o'clock, out of sun and slightly low.

He assessed the risk of collision as 'High'.

THE C152 PILOT reports that he was on the first section of his qualifying cross country flight. His route took him south to his first turning point at Belvoir castle, then ESE towards Bourne, his second turning point. It was on this leg that the alleged Airprox was reported, he planned to be no closer than 2nm from Saltby. He does not recall seeing any other traffic in his vicinity as he passed Saltby towards Bourne.

Factual Background

The weather at Cranwell was recorded as follows:

METAR EGYD 181150Z 07007KT 9999 FEW035 BKN250 23/12 Q1011 BLU NOSIG

Analysis and Investigation

UKAB Secretariat

The EuroFOX and C152 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard¹. The C152 pilot was required to give way to the EuroFOX towing the Glider².

Comments

BGA

This incident again reinforces the importance of keeping a particularly sharp lookout when transiting close to gliding sites.

Summary

An Airprox was reported when a EuroFOX and a C152 flew into proximity at 1255 on Thursday 18th August 2016. Both pilots were operating under VFR in VMC, the EuroFOX pilot was not in receipt of a Service, the C152 pilot was in receipt of a Basic Service from Waddington/Wittering.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft and radar photographs/video recordings.

The Board began by noting the C152 pilot's inexperience and opined that because this was the pilot's solo qualifying cross-country flight he was potentially focusing on his navigation at the expense of lookout. Although members agreed that it was clearly the responsibility of the C152 pilot to avoid an aircraft towing another aircraft, if he had not seen the other aircraft then he could not avoid. Some members thought that this may have been exacerbated by the EuroFOX and Puchacz glider combination climbing from below the C152 pilot's 12 o'clock (potentially obscured) and then turning left back towards his aircraft (thus not presenting much of a visual crossing rate when they were reaching the Cessna's level). Ironically, in looking towards Saltby to ensure he was giving the glider site a wide enough berth, the Cessna pilot may even have been looking away from the tug and glider at the critical time. Board members felt this may have been a likely factor in the C152 pilot not achieving visual contact with the EuroFOX and Puchacz, especially given the C152 pilot's limited experience. The Board commented that a robust lookout was always required in see-and-avoid Class G airspace, not only when routing close to glider sites. Mindful that the C152 pilot was routing in the vicinity of Saltby glider site, members agreed that the C152 pilot had allowed sufficient margin from it but commented that the C152 pilot's relative inexperience meant he was probably not expecting a glider/tug combination to be flying in the surrounding area and this incident was a timely reminder to all of the need to anticipate increased gliding and tug activity in the airspace surrounding glider sites.

Turning to the EuroFOX and Puchacz pilots, the Board noted that they had been late in sighting the Cessna, possibly due to the EuroFOX's high-wing configuration, and some members wondered if they had been somewhat task-focused too. Recognising that they were relatively non-maneuvrable in their towing configuration, increased attention to lookout scan was desirable for both of them; acknowledging that the Puchacz pilot would be looking mainly at the EuroFOX with the Cessna approaching from beyond, members wondered whether there had been an opportunity for him to warn the EuroFOX pilot of the Cessna's approach.

¹ SERA.3205 Proximity.

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

The Board then looked at the safety barriers that were relevant to this Airprox and decided that the following were key factors:

- **Flight Crew Situational Awareness** was considered **ineffective** because neither aircraft was aware of the other; if the C152 pilot had requested a Traffic Service from an appropriate ATC unit he may have been alerted to the presence of the EuroFOX/Puchacz.
- **Onboard Warning/Collision Avoidance Equipment** was considered **ineffective** because, although the EuroFOX had P-FLARM, the C152 had no electronic warning system or Transponder fitted and therefore P-FLARM could not function due to the C152s lack of a compatible system.
- **See and Avoid** was considered only **partially effective** because the C152 pilot did not see the Eurofox/Puchacz at all, and the Eurofox pilot only saw the C152 late, evidenced through his need to conduct an immediate evasive action turn.

The Board then considered the cause and risk of the incident. Members quickly agreed that because the C152 pilot had not seen the Eurofox/Puchacz at all, and the Eurofox pilot had only seen the C152 late, the incident was caused by a late sighting by the Eurofox pilot and a non-sighting by the C152 pilot. Turning to the risk, they felt that although the last-minute avoiding actions of the Eurofox pilot had prevented this incident from being more serious than it could have been, safety had nonetheless been much reduced below the norm; they therefore assessed the risk as Category B.

PART C: ASSESSMENT OF CAUSE AND RISK

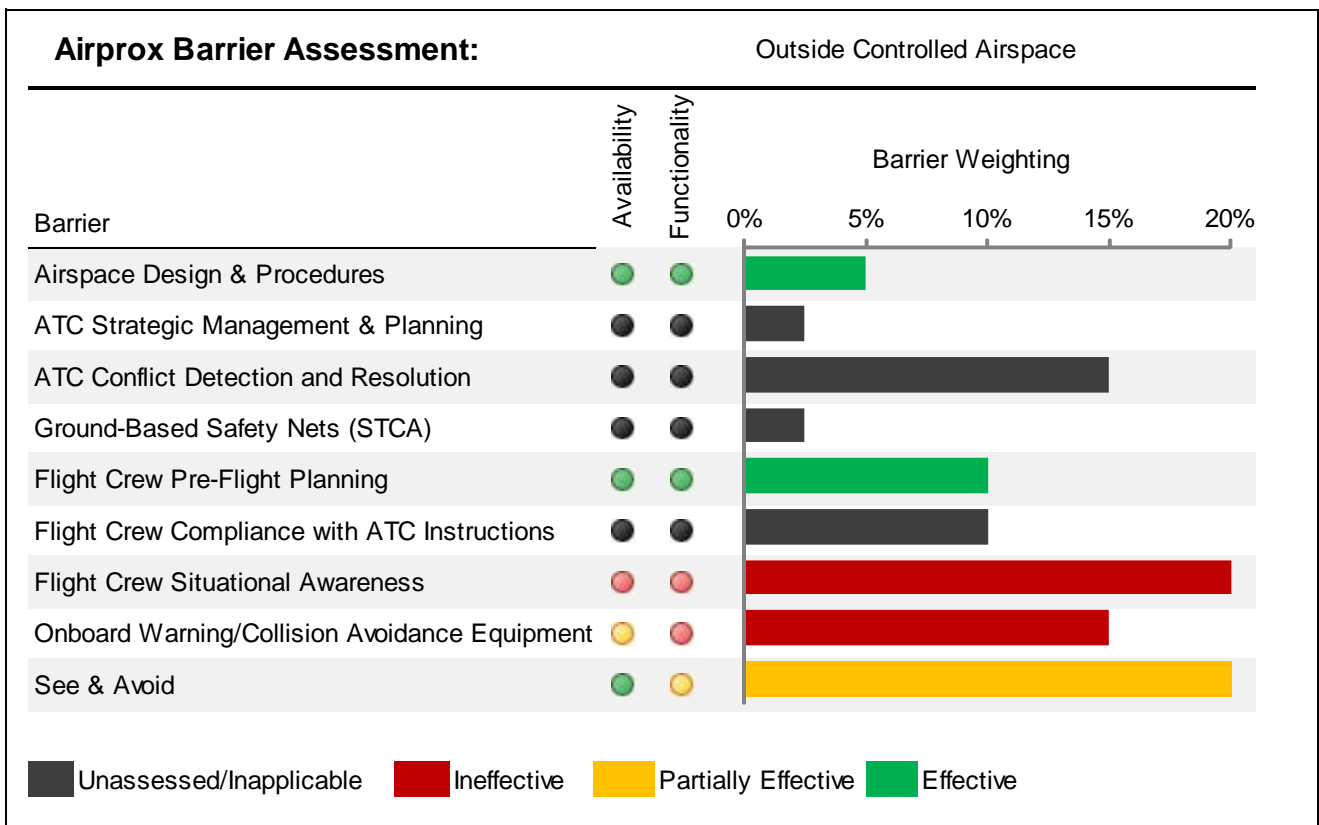
Cause: A late sighting by the EuroFOX pilot and a non-sighting by the C152 pilot.

Degree of Risk: B.

Barrier Assessment:

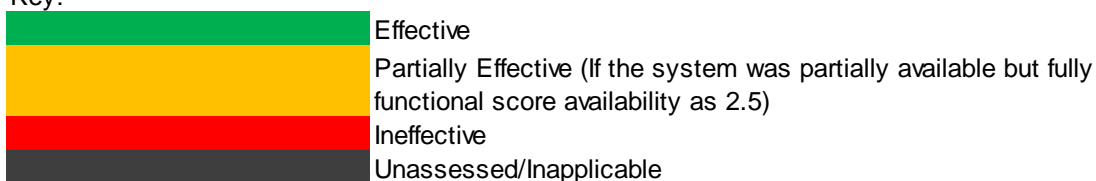
Modern safety management processes employ the concept of safety barriers that prevent contributory factors or human errors from developing into accidents. Based on work by EASA, CAA, MAA and UKAB, the following table depicts the barriers associated with preventing mid-air-collisions. The length of each bar represents the barrier's weighting or importance (out of a total of 100%) for the type of airspace in which the Airprox occurred (i.e. Controlled Airspace or Uncontrolled Airspace).³ The colour of each bar represents the Board's assessment of the effectiveness of the associated barrier in this incident (either Fully Effective, Partially Effective, Ineffective, or Unassessed/Inapplicable). The chart thus illustrates which barriers were effective and how important they were in contributing to collision avoidance in this incident.

³ Barrier weighting is subjective and is based on the judgement of a subject matter expert panel of aviators and air traffic controllers who conducted a workshop for the UKAB and CAA on barrier weighting in each designation of airspace.



Barrier Effectiveness		Functionality		
		Non-functional	Partially Functional	Functional
Availability		1	2	3
Completely Unavailable	1	1	2	3
Partially Available	2	2	4	6
Available	3	3	6	9

Key:



Barrier	Availability			Functionality			Unassessable / Absent
	Fully (3)	Partially (2)	Not Available (1)	Fully (3)	Partially (2)	Non Functional (1)	
Airspace Design and Procedures	Appropriate airspace design and/or procedures were available	Airspace design and/or procedures were lacking in some respects	Airspace design and/or procedures were not appropriate	Airspace design and procedures functioned as intended	Airspace design and/or procedures did not function as intended in some respects	Airspace design and/or procedures did not function as intended	<p>The Board either did not have sufficient information to assess the barrier or the barrier did not apply; e.g. TCAS not fitted to either aircraft or ATC Service not utilised.</p> <p>Note: The Board may comment on the benefits of this barrier if it had been available</p>
ATC Strategic Management and Planning	ATM were able to man and forward plan to fully anticipate the specific scenario	ATM were only able to man or forward plan on a generic basis	ATM were not realistically able to man for or anticipate the scenario	ATM planning and manning functioned as intended	ATM planning and manning resulted in a reduction in overall capacity (e.g. bandboxed sectors during peak times)	ATM planning and manning were not effective	
ATC Conflict Detection and Resolution	ATS had fully serviceable equipment to provide full capability	ATS had a reduction in serviceable equipment that resulted in a minor loss of capability	ATS had a reduction in serviceable equipment that resulted in a major loss of capability	The controller recognised and dealt with the conflict in a timely and effective manner	The controller recognised the conflict but only partially resolved the situation	The controller was not aware of the conflict or his actions did not resolve the situation	
Ground-Based Safety Nets (STCA)	Appropriate electronic warning systems were available	Electronic warning systems is not optimally configured (e.g. too few/many alerts)	No electronic warning systems were available	Electronic warning systems functioned as intended, including outside alerting parameters, and actions were appropriate	Electronic warning systems functioned as intended but actions were not optimal	Electronic warning systems did not function as intended or information was not acted upon	
Flight Crew Pre-Flight Planning	Appropriate pre-flight operational management and planning facilities were deemed available	Limited or rudimentary pre-flight operational management and planning facilities were deemed available	Pre-flight operational management and planning facilities were not deemed available	Pre-flight preparation and planning were deemed comprehensive and appropriate	Pre-flight preparation and/or planning were deemed lacking in some respects	Pre-flight preparation and/or planning were deemed either absent or inadequate	
Flight Crew Compliance with Instructions	Specific instructions and/or procedures pertinent to the scenario were fully available	Instructions and/or procedures pertinent to the scenario were only partially available or were generic only	Instructions and/or procedures pertinent to the scenario were not available	Flight crew complied fully with ATC instructions and procedures in a timely and effective manner	Flight crew complied later than desirable or partially with ATC instructions and/or procedures	Flight crew did not comply with ATC instructions and/or procedures	
Flight Crew Situational Awareness	Specific situational awareness from either external or onboard systems was available	Only generic situational awareness was available to the Flight Crew	No systems were present to provide the Flight Crew with situational awareness relevant to the scenario	Flight Crew had appropriate awareness of specific aircraft and/or airspace in their vicinity	Flight Crew had awareness of general aircraft and/or airspace in their vicinity	Flight Crew were unaware of aircraft and/or airspace in their vicinity	
Onboard Warning/Collision Avoidance Equipment	Both aircraft were equipped with ACAS/TAS systems that were selected and serviceable	One aircraft was equipped with ACAS/TAS that was selected and serviceable and able to detect the other aircraft	One aircraft was equipped with ACAS/TAS that was selected and serviceable but unable to detect the other aircraft (e.g. other aircraft not transponding)	Equipment functioned correctly and at least one Flight Crew acted appropriately in a timely and effective manner	ACAS/TAS alerted late/ambiguously or Flight Crew delayed acting until closer than desirable	ACAS/TAS did not alert as expected, or Flight Crew did not act appropriately or at all	
See and Avoid	Both pilots were able to see the other aircraft (e.g. both clear of cloud)	One pilots visibility was uninhibited, one pilots visibility was impaired (e.g. one in cloud one clear of cloud)	Both aircraft were unable to see the other aircraft (e.g. both in cloud)	At least one pilot takes timely action/inaction	Both pilots or one pilot sees the other late and one or both are only able to take emergency avoiding action	Neither pilot sees each other in time to take action that materially affects the outcome (i.e. the non-sighting scenario)	