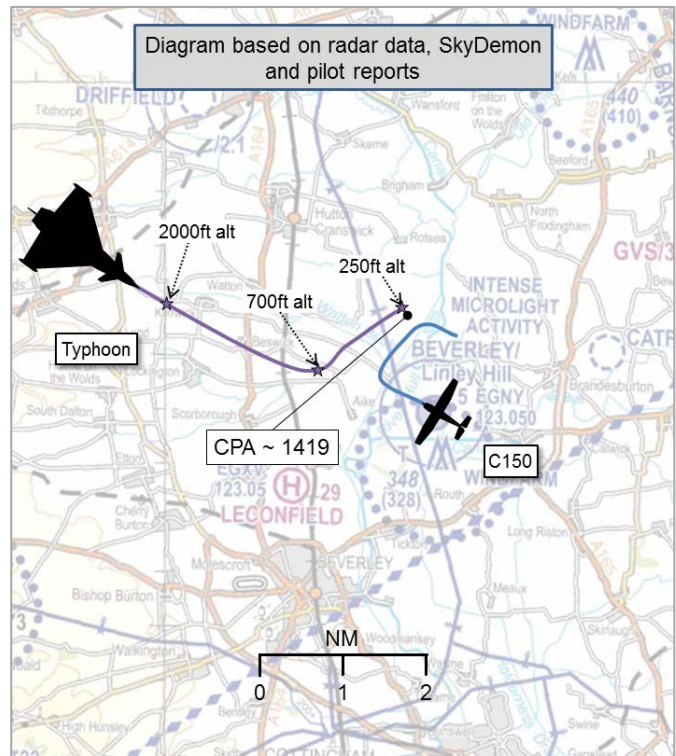


AIRPROX REPORT No 2017053

Date: 06 Apr 2017 Time: 1419Z Position: 5355N 00022W Location: Beverley Airfield

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C150	Typhoon
Operator	Civ Trg	HQ Air (Ops)
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	AGCS	Basic
Provider	Beverley	Humberside
Altitude/FL	NK	700ft
Transponder	On	On/C
Reported		
Colours	White, Red	Grey
Lighting	Beacon	All standard
Conditions	VMC	VMC
Visibility	10km	>10km
Altitude/FL	1000ft	700ft
Altimeter	QFE (1028hPa)	NK
Heading	120°	080°
Speed	80kt	420kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	0ft V/1nm H	300ft V/1nm H
Recorded	NK	



THE C150 PILOT reports that the student was the pilot flying; the reporter was the commander/examiner assessing the student for circuit competence at the time of the incident. The student had already performed two touch-and-go landings and was on the downwind leg preparing for another approach. He was 1000ft at circuit height and inside the circuit. About mid downwind the aircraft hit "turbulence" which was completely unexpected in the smooth flying conditions of the test. The starboard wing dropped rapidly to 30 degrees from the horizontal and the airframe shuddered. The commander took control and restored the aircraft to level flight. They looked at each other and said "what was that?" immediately the Typhoon was visible having completed his turn away. The commander notified the AGCS of military traffic in the circuit in the proximity of flight. The time was recorded at 1420 UTC by the ground station. The commander considers that if the pilot flying had been an inexperienced solo student with the upset recovery action required the incident could have been beyond the flight envelope of that low hours individual.



He assessed the risk of collision as 'Low'.

Figure 1: C150 SkyDemon track

THE TYPHOON PILOT reports that he was tasked to carry out a currency singleton sortie consisting of tactical training in the middle airspace followed by a short low-level portion prior to RTB for an instrument recovery. Whilst flying on a track of approximately 080 degrees and at approximately 2nm north of Beverley airfield boundary at 700ft AGL he visually acquired a white, high-winged single-engined civilian aircraft. The aircraft was in the 10:30, slightly high, and he perceived it to be travelling left to

right. A left turn was made onto north to increase the miss distance although there was no risk of collision on the extant aircraft tracks. After rolling out onto north, the pilot initiated a reversal turn to maintain visual with other aircraft. He gave a 'wing waggle' and continued on his route. He considered there to have been no risk of collision given the geometry of the tracks and the height difference. Planning was conducted using a standard 500K LFC taking all low-level avoids/hazards into account. The closest the planned track came to Beverley airfield boundary was 1.5nm. He received no ATC warnings, nor did he expect any given the operating altitudes.

He assessed the risk of collision as 'Low'.

Flying Club Head of Training reports that he witnessed the incident in question as one of students was approaching the end of his skill test. He can confirm that at 14:20 on Thursday 6th April a Typhoon encroached upon the circuit pattern at about 1000'. At the time the C150 was downwind for RW30RH. The military aircraft performed an abrupt avoidance manoeuvre and whilst a collision was avoided as a consequence, the jet engine exhaust disrupted the path of the light aircraft. Having spoken with the examiner he understands that he was required to take control of the aircraft momentarily. He can also confirm that the military aircraft made no attempt to contact Beverley Radio. Because an Airprox was to be raised, he did not seek to contact the operating station for the Typhoon as he supposed the ensuing investigation would established contact. He adds this is only one of a significant number of encroachments involving various military aircraft, notably including several recent incidents with A400 Atlas transport aircraft, albeit without need for Airprox reporting. He has made a number of efforts to instil recognition of status as a training airfield [as clearly marked on civilian charts] but this seems not to have been acted upon [UKAB Note: in fact, military low flying charts have the 'T' displayed to denote that training takes place at Beverley].

Factual Background

The weather at Linton-on-Ouse was recorded as follows:

METAR EGXU 061350Z 26013KT 9999 FEW032 13/05 Q1028 BLU NOSIG

Analysis and Investigation

UKAB Secretariat

The C150 and Typhoon pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard¹. An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation².

Occurrence Investigation

A unit investigation was carried out by the Typhoon operating authority. Figure 1 is a snapshot from planning data which highlights the Typhoon's track and shows that the closest it planned to come to the airfield boundary was not less than 1nm. HUD data shows the Typhoon at 700ft AGL when the Cessna comes into view, high in the left 10.30. Immediately after the Cessna appears in the HUD field of view, the Typhoon is manoeuvred through a left-hand turn.



Figure 1: Unit Investigation Snapshot

Comments

¹ SERA.3205 Proximity.

² SERA.3225 Operation on and in the Vicinity of an Aerodrome.

HQ Air Command

The Typhoon pilot planned, briefed and executed his mission in accordance with all current rules and regulations. For flight in Class G the acknowledged barriers to MAC are electronic conspicuity, an appropriate radar surveillance Air Traffic Service (ATS) and lookout. Additionally, military pilots have the facility to 'plan to avoid' each other through the Centralised Aviation Data Service (CADS).

The Typhoon pilot had entered his route onto CADS which would have permitted him to deconflict from known traffic. Unfortunately, not all users of Class G airspace have access to CADS so there was no opportunity to identify activity in the vicinity of Beverley airfield, nor to actively deconflict from it, prior to flight. Electronic conspicuity did not assist on this occasion since neither aircraft was equipped with TCAS or similar; identification of a technical solution for fitment to Typhoon aircraft remains in progress but it is likely to be some time before it will be available. Given the location of the incident, there was also no viable surveillance-based ATS available so more emphasis would have to be placed on lookout. The Typhoon pilot was aware of the level of activity at Beverley airfield (military charts have recently added a 'T' next to known unlicensed airfields that conduct training activity) and had planned to avoid it by sufficient margin. However, and notwithstanding the content of SERA 3225, one can only avoid (or remain clear of) that which one sees – when the Typhoon pilot did see the Cessna, and having assessed that there was no risk of collision, he manoeuvred to increase separation. It is worth noting that it is difficult to predict the circuit size and direction at unlicensed airfields so there will always be a chance that transiting aircraft may get close to the active circuit.

Summary

An Airprox was reported when a C150 and a Typhoon flew into proximity at 1419 on Thursday 6th April 2017. Both pilots were operating under VFR in VMC, the C150 pilot in receipt of an Air/Ground Service from Beverley and the Typhoon pilot in receipt of a Basic Service from Humberside.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board began by looking at the actions of the Typhoon pilot. The military member informed the Board that the pilot had planned a turn prior to Beverley, which he had conducted, and that Beverley was marked on Military charts as a training airfield, albeit without an ATZ. The radar traces showed that the Typhoon pilot had remained about 1.5nm clear of the airfield, but the Board agreed that he would probably have been better served by planning to turn earlier than he did to ensure he remained well outside the Beverley visual circuit. Regardless, the Typhoon pilot was entitled to operate where he was, as was the C150, and, given the absence of an ATZ, it was not obvious where the Beverley visual circuit track would be. Ultimately, the Typhoon pilot saw the C150 as he approached Beverley, and had turned to increase his separation as further mitigation.

Turning to the C150 pilot, the Board were perplexed about the wing drop that he had experienced given that the C150 was higher than the Typhoon at all times, as demonstrated by both the radar recordings and, reportedly, the Typhoon pilot's HUD recording. Coupled with the radar showing the Typhoon turning prior to flying through the C150's SkyDemon log track, they wondered whether the wing-drop was more of a coincidence rather than being caused by the Typhoon itself. The Board noted that the C150 pilot had not seen the Typhoon until after CPA, when the Typhoon pilot had already turned away.

The Board then considered the cause and risk of the incident. They agreed that the Typhoon pilot was entitled to fly where he had and that the radar traces showed that he had seemingly remained outside the Beverley visual circuit. The Board also noted that he had seen the C150 as he

approached Beverley, and had turned away to increase his separation. Nevertheless, the C150 pilot had been concerned by the Typhoon's presence, although members felt that the wing-drop that the C150 pilot had experienced was probably not caused by the Typhoon given that it was always below the C150. Turning to the risk, members noted that the Typhoon pilot was visual with the C150 and had turned away to increase separation even though he reported that there had been no risk of collision; this had been backed up by reports of the HUD display showing the Typhoon manoeuvring when the C150 had been sighted in the high 10:30 position. Noting also that both pilots had reported the risk of collision as low, the Board therefore agreed that there had been no risk of collision and assessed the risk as Category C.

The military member said that he would ensure that Beverley users were invited to the next Regional Airspace Users Working Group so that Beverley's operations were highlighted to local users and that all participants were aware of each other's operational requirements. The Board were heartened to hear that this would take place as an effort to increase mutual cooperation and area knowledge.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Typhoon pilot flew close enough to cause the C150 pilot concern.

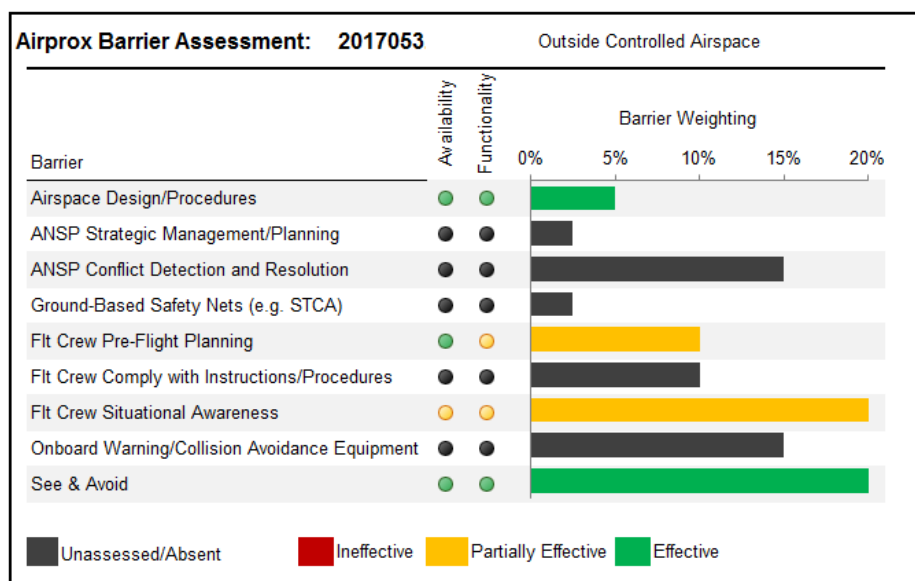
Degree of Risk: C.

Safety Barrier Assessment³

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

Flight Crew Pre-Flight Planning was assessed as **partially effective** because although the Typhoon pilot was aware of Beverley as a training airfield, as marked on the Military Low Flying Charts, he could have avoided the airfield by a greater margin to ensure he did not infringe the visual circuit.

Flight Crew Situational Awareness was assessed as **partially effective** because both pilots were generically aware of other airspace users but did not have specific information on each other.



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