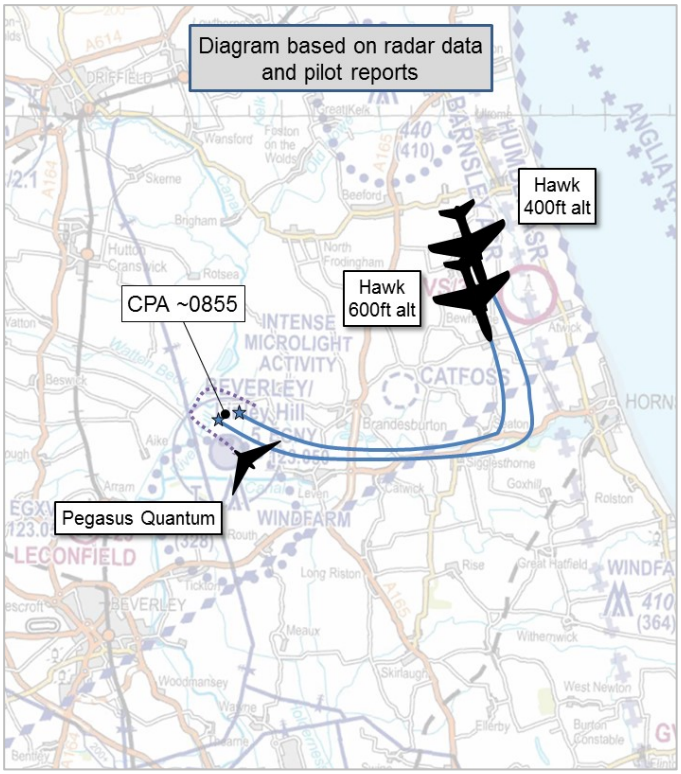
AIRPROX REPORT No 2018209

Date: 10 Aug 2018 Time: 0855Z Position: 5354N 00020W Location: Beverley Airfield

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Hawk x 2	Pegasus Quantum
Operator	HQ Air (Ops)	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	AGCS
Provider	UHF LL Common	Beverley
Altitude/FL	400ft/600ft	NK
Transponder	A, C, S	None
Reported		
Colours	Black	Red, White
Lighting	Strobe, Landing, Nav	None
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	350ft	700ft
Altimeter	RPS (1009hPa)	NK
Heading	270°	120°
Speed	420kt	52kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	500ft V/500m H	0ft V/200ft H
Recorded	NK	



THE HAWK PILOT reports that he was flying as the No2 of a fighting wing pair at low-level in LFA 11. At 0850Z, whilst flying on a westerly track to the north of Beverley/ Linley Hill minor aerodrome site, he spotted a microlight in his right 1 o'clock at a similar height. He turned left, climbed to increase separation and called the traffic to his leader. He assesses that he passed approximately 500m south and 500ft above the microlight.

He assessed the risk of collision as 'Low'.

THE PEGASUS QUANTUM MICROLIGHT PILOT reports that he was completing his third circuit with a student pilot. As he turned from crosswind to downwind, the Hawk passed on his right-hand side on a reciprocal heading. The Hawk was positioned between the runway centreline and his downwind leg. The microlight training school operate under an ATO at Beverley airfield alongside the aero club.

He assessed the risk of collision as 'High'.

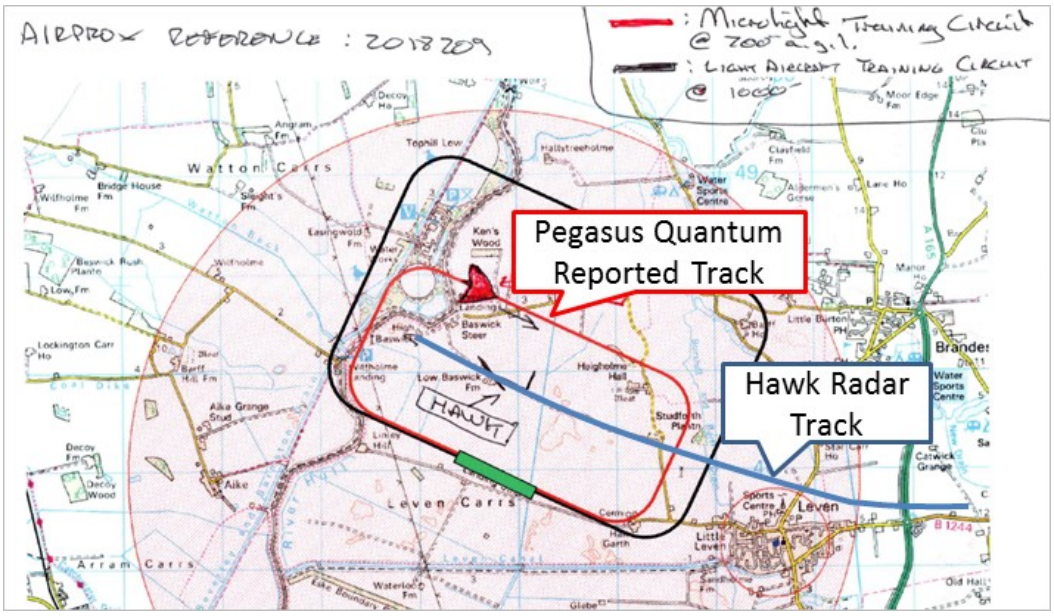


Figure 1: Pegasus Quantum pilot's diagram with Hawk Radar Track Overlay

Factual Background

The weather at Humberside was recorded as follows:

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METAR EGNJ 100850Z 24008KT 9999 FEW045 17/10 Q1014
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Analysis and Investigation

UKAB Secretariat

The Hawk and Pegasus Quantum 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]. 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 operation[2].

Occurrence Investigation

The military occurrence investigation report produced the following key points:

1. The rear aircraft pilot of the Hawk formation did not see the microlight until it was 1.5km away and therefore took avoiding action because of the rate of closure and perceived convergence of the Hawk aircraft track to the track of the microlight aircraft.
2. The UK Mil LFH did specify that Beverley/Linley Hill aerodrome was to be avoided but did not specify by what margins (height/distance).[3] However, the low-level chart being used by the aircrew only showed the aerodrome as a designated training aerodrome and not an avoid and there was no NOTAM in place for any additional airborne activity within that area to affect their sortie outside of the requirement to maintain normal visual flight rules (see and avoid).
3. It was commented that it was usual for aircraft transiting overhead or near to the runway to free call the aerodrome operations control room and tower on their air to ground Initial Call/Contact Frequency (ICF). However, this communication and information system is VHF-only and does not have a UHF capability.[4]

[1] SERA.3205 Proximity.
[2] SERA.3225 Operation on and in the Vicinity of an Aerodrome.
[3] **UKAB Note:** In fact, the UK Mil LFH avoidance is for Beverley town, Beverley/Linley Hill aerodrome is only referenced as a warning for being a light aircraft landing site, not that it must be avoided.
[4] **UKAB Note:** Whilst it is correct to say that Beverley/Linley Hill is VHF-only, the Hawk has both a UHF and a VHF capability.

4. The Hawk T Mk1/A aircraft were not fitted with a Confliction Warning System and the microlight aircraft was not fitted with a transponder or FLARM.
5. Historically, the airspace surrounding Beverley/Linley Hill aerodrome was de-classified as an Air Traffic Zone (2nm radius and 2000 feet avoid) and, as an unlicensed aerodrome, is now only designated or marked with the letter "T" inside a blue circle on Low-Level charts. The legend for the Low-Level chart does not give a range indication or radius distance for an avoid. Despite the aerodrome recording having circa 10,000 movements a year (microlight, light aircraft), is open 0800 -2100 hrs (local) during the summer months, and has a circuit height of 1000ft, there was no requirement for the Hawk formation to free-call when passing or to avoid by a specified distance.
6. Having turned the aircraft initially crosswind to turn onto the downwind leg the Pegasus Quantum pilot commented that his aircraft was pushed out wider than usual due to the prevailing wind (270/10).
7. The [Hawk] GPS in use was not updated with information that reflected the current Low-Level chart or AIP information. For example – still showing Leconfield as a live avoid.

This investigation resulted in the following recommendations, of which the first recommendation has been adopted and the second and third rejected:

1. Promulgation of the details of this incident to aid Aircrew SA.
2. Procurement of a Collision avoidance or collision warning system for the Hawk T Mk1/A aircraft.
3. Re licensing of Beverley/ Linley Hill minor aerodrome.

Comments

HQ Air Command

This incident led to an in-depth unit-level investigation which identified a number of contributory factors; recommendations have already been made to address these. Ultimately, the only two viable barriers to MAC in this incident were plan-to-avoid and see-and-avoid: the Hawk aircrew planned and executed their mission in accordance with all current rules and regulations, including RA2307 – Rules of the Air. That said, the wisdom of passing so close to a minor aerodrome known to be a training establishment is questionable, and this led to the incident Hawk not 'conforming to the pattern of traffic formed……or keeping clear of the airspace in which the pattern is formed.' It is recognised in Regulation that it is impractical to expect every minor aerodrome etc to be avoided, and the Hawk crews had planned a margin of approx. 2nm from the edge of the airfield symbol which should have been sufficient. A larger margin would certainly have been planned had an ATZ been in place, but this is not the case at Beverley. It is also notable that the Pegasus pilot states that he was blown onto a wider downwind leg than would normally be the case at the airfield.

Turning to Air Traffic Services and Electronic Conspicuity (EC), although Humberside may have been able to offer a LARS, at the heights these aircraft were operating it is unlikely that any reliable TI could have been passed; equally, with no EC equipment fitted to the Pegasus, both the ATS barrier (had it been employed) and the EC barrier (had it been available in the Hawk) would have been defeated. An ACAS solution for Hawk T1 has been funded and is currently being sourced.

This Airprox was probably the result of too few MAC barriers being available, thus heavily relying on see-and-avoid/SERA to keep activity at the airfield separated from passing traffic. The RAF Safety Centre has already engaged with the CAA to enquire as to whether a review of the regulation pertaining to the licensing of aerodromes used by Air Training Organisations would be of benefit. Additionally, and since the date of this occurrence, the RAF Safety Centre has now published a leaflet intended to provide advice and enhance military crews' understanding of the pertinent rules and regulations with respect to flight in the vicinity of minor aerodromes (in response to the UKAB recommendation associated with Airprox 2018005).

Summary

An Airprox was reported when a Hawk and a Pegasus Quantum flew into proximity at Beverley/Linley Hill aerodrome at about 0855hrs on Friday 10th August 2018. Both pilots were operating under VFR in VMC, the Hawk pilot not in receipt of a Service and the Pegasus Quantum pilot in receipt of an AGCS from Beverley.

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 looking at the actions of the Hawk pilots. The military member reported that the Hawks had originally planned to fly to the north of Beverley/Linley Hill aerodrome but, unfortunately, they ended up slightly south of their planned track, which took them through the Beverley visual circuit. He noted that although the UKLFHB sometimes gave a distance by which to avoid minor airfields, this was not the case for Beverley/Linley Hill, although it was marked on the charts as a training airfield and therefore the Hawk crews should have avoided it by an appropriate margin. He went on to explain that the UKLFHB was being reviewed to ensure the information regarding the avoidance of individual minor airfields was suitable for their type of operation and number of movements. Noting the OSI comments about Hawk VHF radio capability, some members wondered if the Hawk pilots could have called Beverley when they realised their altered flight path would take them through the visual circuit; however, it was agreed that this was probably impractical due to the limited time available to the Hawk pilots once they had rolled out on track. The Board were heartened to hear that an information bulletin had been published to military pilots about minor airfield avoidance at low-level; the Board's view was that rather than adopt an attitude of 'avoid minor airfields if traffic is seen', military pilots would be much better served by an attitude of 'avoid minor airfields unless positive that there is no traffic'.

The Board then turned to the actions of the Pegasus Quantum pilot and noted that the OSI report had mentioned that he had commented that he had flown a wider then normal circuit due to being blown by the wind. Members were unsure why this was considered to have been a factor by the OSI team given that the Hawk had flown between the Pegasus and the airfield and so a wider circuit would have improved the separation between the 2 aircraft. Irrespective, even though he may have been wider than normal, the Board agreed that the Pegasus pilot was within the bounds of what would be expected as the pattern of traffic at Beverley/Linley Hill airfield.

The Board then entered into a prolonged discussion about the judiciousness of a busy airfield like Beverley/Linley Hill (10,000 movements a year, 7 days a week) conducting intensive training operations as an unlicensed aerodrome without an ATZ. Some members opined that such a busy training airfield should have an ATZ; although this was not a requirement, they felt that this would afford suitable protection to aircraft and student pilots operating there. Other members commented that it was not always financially viable for small airfields to bear the costs associated with having a licence and ATZ, and that the CAA red-tape challenge had fundamentally changed the regulations in this respect. Although the changed regulations provided more freedom for airfield operations, the downside was that safety had arguably been reduced in some instances due to the removal of ATZ protection at busy airfields. Ultimately, it was for the individual airfield operators to conduct a cost-benefit analysis of the desirability of being licensed and having an ATZ, but the Board were clear that this analysis should not be based on financial aspects alone at the expense of safety. In this respect, some members wondered whether there should be a regulatory requirement for airfields to have an ATZ relating to the number of aircraft movements and training activity rather than simply the size of the aircraft using the airfield.

The Board then turned to the cause of the Airprox. Members quickly agreed that the cause was that the Hawk pilots had flown through the pattern of traffic at Beverley and into conflict with the Pegasus Quantum. Turning to the risk, members agreed that although safety had been degraded, the pilots were visual with the other aircraft and therefore there was no risk of collision; Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Hawk pilots flew through the pattern of traffic at Beverley and in to conflict with the Pegasus Quantum.

Degree of Risk: C.

Safety Barrier Assessment[5]

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

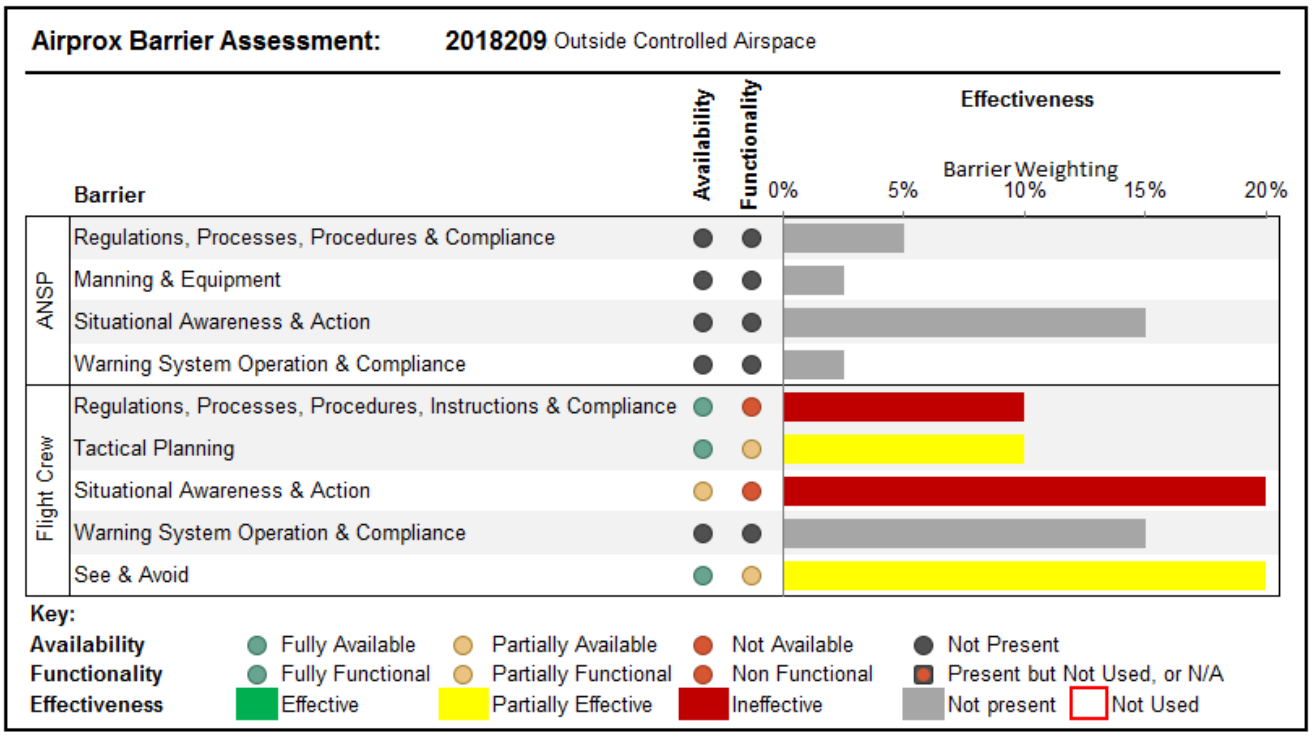
Flight Crew:

Regulations, Processes, Procedures, Instructions and Compliance were assessed as **ineffective** because the Hawk pilots did not avoid the pattern of traffic at Beverley airfield.

Tactical Planning was assessed as **partially effective** because the Hawk pilots' execution of their plan did not avoid Beverley by an adequate margin.

Situational Awareness and Action were assessed as **ineffective** because the Hawk pilots had only generic knowledge that there might be aircraft operating at Beverley, and the Pegasus pilot had no knowledge of the Hawks.

See and Avoid were assessed as **partially effective** because the Pegasus and Hawk pilots saw each other later than desirable.



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