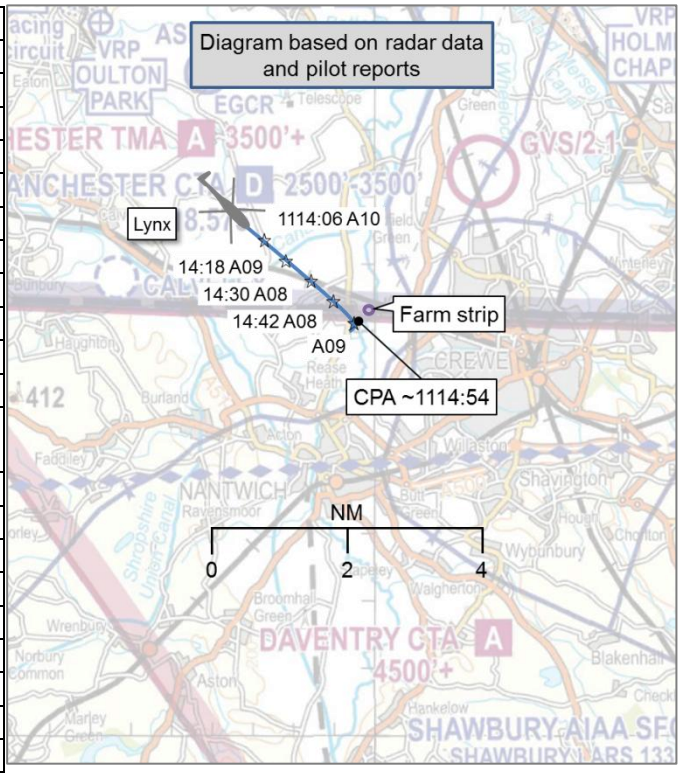
AIRPROX REPORT No 2015081

Date: 5 Jun 2015 Time: 1115Z Position: 5306N 00231W Location: 2nm W Crew

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Lynx	Rans S-6
Operator	HQ JHC	Civ Pte
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	None
Provider	Shawbury	N/A
Altitude/FL	900ft	NK
Transponder	A, C, S	Off
Reported		
Colours	Grey/Green	Red/White
Lighting	Strobes, nav, landing	NK
Conditions	VMC	VMC
Visibility	15km	10km
Altitude/FL	500ft	800ft
Altimeter	agl (1012hPa)	QNH (NK hPa)
Heading	140°	100°
Speed	120kt	45kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	20ft V/0m H	0ft V/25m H
Recorded	NK	



THE LYNX PILOT reports he conducted a training radar approach to Liverpool RW27 and departed en-route to Stafford HLS, under VFR, at 1000ft altitude on a track of 140º. On clearing from Liverpool's airspace, the crew continued to fly a heading of 140º and contacted Shawbury Low-Level for a Basic Service, still at 1000ft on the Shawbury QNH of 1012hPa. They were aware of the Wrexham to Stoke flow corridor[1] and the aircraft was descended to 500ft agl, he reported. The non-handling pilot, sitting in the left seat, saw an aircraft in the low eight o'clock position at a range of 10m travelling in a southerly direction approximately 20ft beneath their aircraft. He did not have time to warn or take control before the other aircraft passed beneath them. The handling pilot (HP), in the right seat, and the crewman, looked forward and right in order to identify the other aircraft. Nothing was seen and the HP began a right turn to establish the location of the other aircraft. After rolling out on an easterly heading, the crew saw the other aircraft, now heading in an easterly direction, and on closer inspection at a distance of approximately 300m it was believed to be a high wing Cessna 152, with a white upper and a red lower fuselage. At this point the HP transmitted an Airprox call on the Shawbury Low-Level frequency.

He assessed the risk of collision as 'Very High'.

THE RANS PILOT reports he had just taken off from a farm strip. He looked down at a local building for no more than 5sec when a helicopter appeared on his right at a steep banked angle, taking avoiding action. He assumed that the helicopter had also just taken off from a hotel about 400m to the south since neither of them had reached cruising altitude he thought.

He assessed the risk of collision as 'High'.

[1] See Analysis and Investigation – UKAB Secretariat.

THE SHAWBURY CONTROLLER reports he was the Low-Level controller working 2 frequencies when the Lynx pilot called for transit from Liverpool en-route to Stafford HLS through the [military] Dedicated User Area. Shortly afterwards, the Lynx pilot declared an Airprox. This was acknowledge and the pilot reported taking avoiding action after seeing what he thought was a red and white Cessna to the left of him at the same level at a distance of about 200ft. The other aircraft was later seen tracking 085° but neither aircraft were visible on radar at the time of the Airprox.

THE SHAWBURY SUPERVISOR reports that although he did not witness the incident, he was alongside the Low-Level controller as he was receiving the Airprox report from the Lynx pilot. As the report was being passed the Supervisor checked on the LARS position, and that controller did not appear to be working any aircraft in the vicinity of the reported Airprox. He also checked the radar screen, but there were no radar contacts in the reported area. The Lynx captain contacted the Supervisor via landline once he had landed and stated that although initially reporting the separation from the other aircraft as within 200ft, after discussions with his student, he now felt that the civilian aircraft was as close as 50ft from them.

Factual Background

The weather at Shawbury and Liverpool was recorded as follows:

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METAR EGOS 051050Z 23012KT 9999 SCT025 20/14 Q1012 BLU NOSIG
METAR EGOS 051150Z 24012KT 9999 FEW032 20/14 Q1012 BLU NOSIG
METAR EGGP 051120Z 25008KT 230V290 9999 SCT031 18/11 Q1012
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Analysis and Investigation

Military ATM

At 1113:08, the Lynx pilot was provided with a Basic Service. At 1114:55, the Lynx pilot declared an Airprox and the report at 1115:08 was of a fixed-wing red and white Cessna heading 085°.

The other aircraft was a primary only track and intermittent on the radar replay. The primary track was evident at 1115:00 by which time it was 0.5nm from the Lynx, which was at 800ft based on the London QNH of 1015 hPa.

The usual barriers to an Airprox in Class G airspace are lookout, ACAS/TAS and radar-derived Traffic Information. The Lynx was under a Basic Service below Shawbury's radar coverage and the other aircraft was only displaying an intermittent primary track. The barrier of ACAS/TAS was absent because the other aircraft did not appear to be transponding and the Lynx was not fitted with ACAS/TAS equipment. The Lynx NHP became visual with the other aircraft at CPA, reported at 20ft passing beneath, which led to a review of lookout skills at the home unit.

UKAB Secretariat

The Lynx and Rans pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[2]. If the incident geometry is considered as converging then the Lynx pilot was required to give way to the Rans S-6[3]. If the incident geometry is considered as overtaking then the Rans S-6 pilot had right of way and the Lynx pilot was required to keep out of the way of the other aircraft by altering course to the right[4]. The low-flying system in the area of the Airprox has a flow arrow, as depicted below, with eastbound aircraft required to remain below 500ft agl, and westbound aircraft above 1000ft agl. Flow arrows are a part of the UK Military Low Flying System (UKMLFS), and are applicable only to pilots flying under military regulations. Information pertaining to the UKMLFS is available in the

[2] SERA.3205 Proximity.
[3] SERA.3210 Right-of-way (c) (2) Converging.
[4] SERA.3210 Right-of-way (c) (3) Overtaking.

CAA Safety Sense Leaflet 18 – Military Low Flying, although this does not include flow arrow height information.

UK Low Flying Chart – Flow Arrow Depiction

Comments

JHC

This Airprox highlights the need to maintain a comprehensive lookout scan at all times. The lack of TAS on the Lynx, and the Rans' transponder not being utilised removed 2 barriers that could have prevented the situation. JHC aircraft remaining in service are undergoing TAS fitment programmes, but the Lynx is not included in the TAS programme as it is due out of service in 2018.

Summary

An Airprox was reported when a Lynx and a Rans S-6 flew into proximity at about 1115 on Friday 5th June 2015. Both pilots were operating under VFR in VMC, the Lynx pilot in receipt of a Basic Service from Shawbury, and the Rans pilot not in receipt of an Air Traffic Service.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

Members first considered the actions of the controller involved and agreed that without a radar response at the time of the Airprox it was not possible for him to pass Traffic Information to the Lynx pilot; neither was it a requirement under the terms of the Basic Service the Lynx pilot had requested.

Turning to the pilots involved, members agreed that, from the reported geometry of the incident, it could reasonably be surmised that the Lynx was overtaking the Rans as it got airborne and that it had been the Lynx crew's responsibility to keep out of the way of the Rans. However, the Board recognised that this was plainly not possible without visual acquisition or Traffic Information from an external or on-board source; the fact that they did not visually acquire the Rans earlier emphasised the need for an effective lookout from the crew. Members felt that the incident geometry, with the Rans below the Lynx, against the terrain and on a constant bearing, was a significant factor in the lack of timely visual acquisition.

For his part, the Rans pilot had just taken off and, with the Lynx above and behind him, would not have been able to visually acquire it in his high-wing aircraft. Members commented that the Rans pilot did not seem to be aware of the flow arrow in the vicinity of his airfield, with the associated requirement for eastbound military traffic to remain below 500ft agl. Had he been aware of this flow arrow, some members opined that he might have been extra vigilant in his lookout before getting airborne. It was noted that the Board had previously recommended to both the CAA[5] and HQ Air Command[6] that GA education with regard to understanding of the implications of flow arrows be reviewed. Both recommendations had been accepted and actioned through articles in flight safety publications. A military member further stated that the UKMLFS flow arrow layout was available in the UK AIP[7] although it was also noted that the height requirements for bi-directional flow were not included.

Members also noted that the Rans pilot had reported his SSR transponder was selected off, and commented that this represented a missed opportunity. Had it been selected on before takeoff, there was a possibility that the Shawbury controller could have detected his presence and issued Traffic Information to the Lynx crew. Members reiterated the importance of selecting the SSR transponder on, with all Modes, to enable other services or equipment to detect aircraft presence and help mitigate against mid-air collision.

In this instance, members agreed that neither pilot had seen the other aircraft in time to increase separation, effectively a non-sighting by both, and that the situation had only just stopped short of an actual collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Effectively, a non-sighting by both pilots.

Degree of Risk: A.

[5] Airprox 2013065.
[6] Airprox 2014167.
[7] ENR 6.5.1.2.