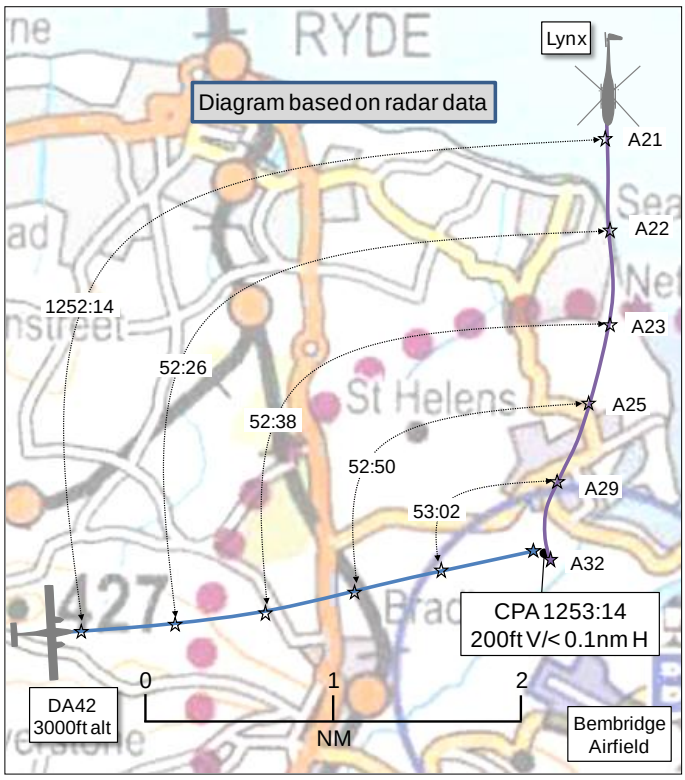
AIRPROX REPORT No 2013129

Date/Time: 11 Sep 2013 1253Z

Position: 5041N 00107W (1nm N Bembridge - elevation 53ft)

Airspace: Lon FIR (*Class*: G)

	Reporting Ac	*Reported Ac*
Type:	DA42	Lynx AH7
Operator:	Civ Comm	HQ AAC
Alt/FL:	3000ft NK	FL40
Conditions:	Intermittent IMC	VMC
Visibility:	NK	>10km
Reported Separation:	200ft V/1nm H	'300m'
Recorded Separation:	200ft V/<0.1nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE DA42 PILOT reports instructing an IF training flight, with IF screens fitted. The predominantly white aircraft had navigation and strobe lights selected on, as was the SSR transponder with Modes A, C and S. The aircraft was not fitted with a TAS or ACAS. The pilot was operating under IFR in intermittent IMC and was in the process of switching between ATC frequencies and therefore not in receipt of an ATS at the time. As he exited cloud, in level cruise at 3000ft, he was advised that he was at the edge of radar cover and to contact the 'next en-route frequency'. Very shortly afterwards he saw a green 'military' helicopter in the 11 o'clock position at the same level, passing from left to right across his nose, climbing and breaking left. The pilot stated that the helicopter was 'obstructed from view' by the IF screens, which had also been warped by the sun. He noted that although he had 'right of way' and that the helicopter pilot took 'non-compliant' avoiding action, it was the most appropriate course of action in the circumstances. The pilot opined that causal factors included a combination of 'radar handover' and intermittent IMC. He also noted that the front IF screens had been fitted after take-off, when the aircraft was already in cloud, and that he therefore had not been able to detect that the screens were warped to such a degree that it impeded his lookout. He also opined that if Southampton were to provide a LARS, it would be possible to have a radar based ATS along the entire route.

He assessed the risk of collision as 'Medium'.

THE LYNX PILOT reports conducting a post-maintenance test flight. The green camouflaged helicopter's lighting state was not reported; the SSR transponder was on with Modes A and C selected and Mode S off. The aircraft was not fitted with a TAS or ACAS. The pilot reported operating under VFR, in VMC, and was not in receipt of an ATS at the time of the incident. He elected to transit to an area southeast of the Isle of Wight in order to 'gain clear air'. He transited through the Bembridge overhead at 2000ft (below the cloud base) having made a 'blind call' to Bembridge Radio. He subsequently maintained a listening watch on Bembridge Radio frequency. A clear area of blue sky was prominent over the bay 2nm south of Bembridge airfield and a climb was conducted to FL40 maintaining VMC throughout. Having established level flight and set up for the engine checks the handling pilot in the right seat observed a twin-engine, light fixed-wing aircraft in his right 2 o'clock at about 1500m and at a similar height, passing in and out of the cloud base at the edge of the clear air that the helicopter was in. The light twin was heading north-northeast at about

180kt and assessed to be IMC due to his close proximity to cloud. The other aircraft took no avoiding action and, with a steady closing bearing, the handling pilot initiated an immediate decent and subsequent left-hand turn away from the approaching traffic. It was assessed to pass about 300m above and behind the right quarter. The crew attempted to call the light-twin pilot on Bembridge Radio frequency, with no success. The pilot observed that he was operating in a pocket of 'clear air' with a high workload, conducting engine testing, and that the other aircraft was flying 'non-quadrantal' in IMC, in and out of cloud.

He assessed the risk of collision as 'Low'.

Factual Background

The weather at Bournemouth and Southampton was recorded as follows:

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METAR EGHH 111220Z 34010KT 9999 BKN032 17/10 Q1022
METAR EGHH 111250Z 34009KT 9999 BKN038 17/10 Q1022
METAR EGHI 111250Z 30008KT 250V350 9999 FEW025 SCT033 15/08 Q1022
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The Rules of the Air 2007 (as amended), Rule 34 (Quadrantal rule and semi-circular rule) states:

> '…an aircraft in level flight above 3,000 feet above mean sea level or above the appropriate transition altitude, whichever is the higher, shall be flown at a level appropriate to its magnetic track, in accordance with Table 1 or Table 2, as appropriate.'

Table 1 is the 'Quadrantal Rule', which applies below 19,500ft and Table 2 the 'Semi-circular Rule', applicable above 19,500ft.

Analysis and Investigation

UKAB Secretariat

Both pilots were equally responsible for collision avoidance[1] and the Lynx pilot was required to give way to the DA42[2]. In doing so he was required to avoid crossing ahead of it, unless passing well clear of it[1]. For flight outside CAS above 3000ft and below FL100, the weather limitations for operation under VFR are as follows:

> '…at least 1,500 metres horizontally and 1,000 feet vertically away from cloud and in a flight visibility of at least 5 km.'

It follows that below these limits, the IFR apply.

Comments

HQ AAC

This was a disappointing incident from a professional flying organisation's perspective; the Lynx commander should have been more mindful of the selected service and the effective separation distance under the prevailing conditions. His operation in, at best, marginal conditions for adequate sighting and avoidance reduced the reaction headroom to a level where only an improvised manoeuvre provided active separation.

[1] Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions) and MAA RA 2307
[2] ibid., Rule 9 (Converging), and MAA RA 2307

Summary

A DA42 and a Lynx flew into confliction at 1253 on 11th September 2013. Both pilots were operating in Class G airspace, the DA42 pilot under IFR and the Lynx pilot under VFR. Neither pilot was in receipt of an ATS at the time of the occurrence.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac and radar video recordings.

The Board first considered the actions of the DA42 pilot. His IFR flight was conducted with IF screens fitted. These were fitted after take-off and in this case, as the pilot noted, obscured his lookout. The Board noted that it is now CAA policy that the Initial IR Skill Test, and IF flight in general, does not require fitment of screens, but that 'a means of limiting external visual reference for the applicant that ensures all required manoeuvres and procedures are conducted by sole reference to instruments' must be provided by the Head of the ATO[3]. Members expressed their grave reservations about the DA42 pilot's decision to conduct an IFR flight in IMC without an ATS, and opined that an alternative routeing, with the ability to maintain a radar based ATS, would have been preferable. Members also reiterated the need to declare an Airprox on the frequency in use, or the next available frequency; in this case, useful recorded information from the DA42 pilot's departure airfield had been lost due to the delay in notification.

Turning to the Lynx pilot, the Military Helicopter member opined that a post-maintenance test flight required a greater degree of pre-flight planning than was evident in this case. The flight would require a significant amount of 'heads-in' time and therefore required careful selection of operating area, weather conditions and ATS. Board members reiterated the need for careful pre-flight planning and, in the case of an air-test, the benefits of careful selection of operating area and an appropriate ATS (preferably radar based). The Board were unable to correlate the Lynx pilot's narrative of position and height with the radar picture, and members opined that the area of clear air that the Lynx pilot had selected for his task was not large; the appearance of the DA42 as it broke cloud at close range gave weight to that opinion. After his initial sighting (reportedly at 1500m), instead of manoeuvring away at an early stage, the Lynx pilot then allowed his aircraft to converge with the DA42 when it was his responsibility to give way; this inaction substantially increased the risk to both crews and resulted in the need for the Lynx pilot to conduct a break-away manoeuvre.

The Board concluded that the Lynx pilot's inaction had resulted in him flying into conflict with the DA42 and that, as a result, safety margins had been much reduced below normal. Members also opined that the Lynx pilot's selection of operating area and lack of ATS, and the DA42 pilot's choice of flight profile whilst IFR without an ATS were both contributory factors.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Lynx pilot flew into conflict with the DA42.

Contributory Factor(s): 1. Lynx pilot's selection of operating area and lack of ATS.
2. DA42 pilot's choice of flight profile whilst IFR without an ATS

Degree of Risk: B.

ERC Score[4]: 21

[3] IN-2013/111, Acceptable Means of Simulating IMC for Initial IR Skill Tests, dated 22nd July 2013.
[4] Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.