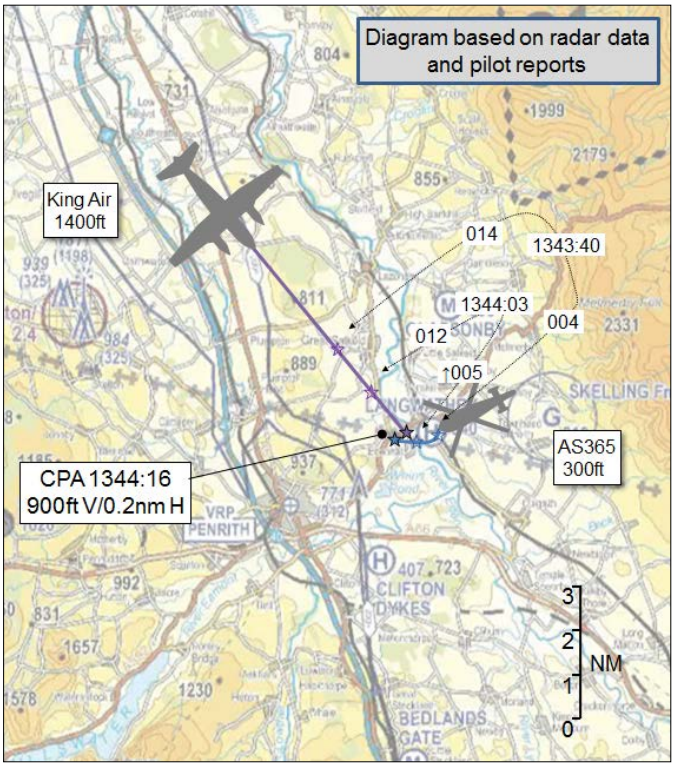
AIRPROX REPORT No 2016157

Date: 01 Aug 2016 Time: 1344Z Position: 5441N 00241W Location: Langwathby

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	AS365	King Air
Operator	HEMS	HQ Air (Trg)
Airspace	Lon FIR	Lon FIR
Class	G	G
Rules	VFR	VFR
Service	None	Listening watch
Provider		Carlisle App
Altitude/FL	FL005	FL014
Transponder	A, C, S	A, C, S
Reported		
Colours	White, Green	Blue, White
Lighting	Strobes, Landing	
Conditions	VMC	VMC
Visibility	25km	20km
Altitude/FL	300ft	1200ft
Altimeter	RPS (1009hPa)	RPS
Heading	270°	150°
Speed	100kt	180kt
ACAS/TAS	TCAS I	TCAS I
Alert	TA	TA
Separation		
Reported	600ft V/500m H	700ft V/500m H
Recorded	900ft V/0.2nm H	



THE AS365 PILOT reports that before departing on a HEMS tasking, their sortie was entered into CADS, and a potential conflict was noted giving the crew warning of a King Air low-level from the north; however, there wasn't enough time to interrogate the full details of the King Air, so its planned altitude was unknown. They climbed out of Langwathby base (which is displayed on CADS) and were passing between 200ft and 300ft, and about to call Carlisle for a Basic Service, when they received a TCAS warning about an aircraft 600ft above them and in the 2 o'clock position. They turned and descended, and, as they did so, spotted the King Air. After the avoiding action was taken, a call was made to Carlisle, who gave a warning about a King Air low-level in the area. The pilot opined that a lack of a VHF low-level common frequency prevented the crew from informing other low-level users that they were lifting on task. Although CADS had given them a warning about the confliction, he noted that the King Air's routing passed within 1km of the HEMS base.

He assessed the risk of collision as 'Medium'.

THE KING AIR PILOT reports the he was conducting a low-level training sortie in the Lakes, with an authorised minimum separation distance (MSD) of 500ft. They were receiving a Basic Service from Carlisle Approach (he recalled), and monitoring the UHF low-level common frequency. When approaching Penrith, a TCAS contact was obtained, indicating low-level, 200ft below, at a range of 5nm on the nose of the aircraft. The crew immediately climbed to increase separation to 5-700ft vertically, whilst looking out to acquire the traffic visually. No Traffic Information was given by Carlisle. A helicopter was sighted about 1nm away, very low altitude and appeared to be green in colour. They adjusted track to pass behind and assessed the separation at 700ft vertically; in the crew's estimation this was a safe distance and no TCAS RA was received. Shortly afterwards, they switched frequency to Leeming and were unaware that the helicopter crew considered the incident to be an Airprox.

He assessed the risk of collision as 'Low'.

Factual Background

The weather at Newcastle was recorded as follows:

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METAR EGNT 011320Z 24010KT 210V280 9999 FEW048 19/08 Q1015
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Analysis and Investigation

CAA ATSI

The King Air was on a low-level training exercise and had made an information call to Carlisle ATC, who do not have surveillance equipment, advising their level and intentions, and that a similar type was following them. No ATC service was requested.

The AS365 crew were in the process of climbing out from their base at Penrith, and had not yet called Carlisle ATC at the time of the Airprox, but when they did call subsequently, they were passed Traffic Information on the two King Airs.

UKAB Secretariat

A snapshot from the NATS radar display at CPA is at figure 1.

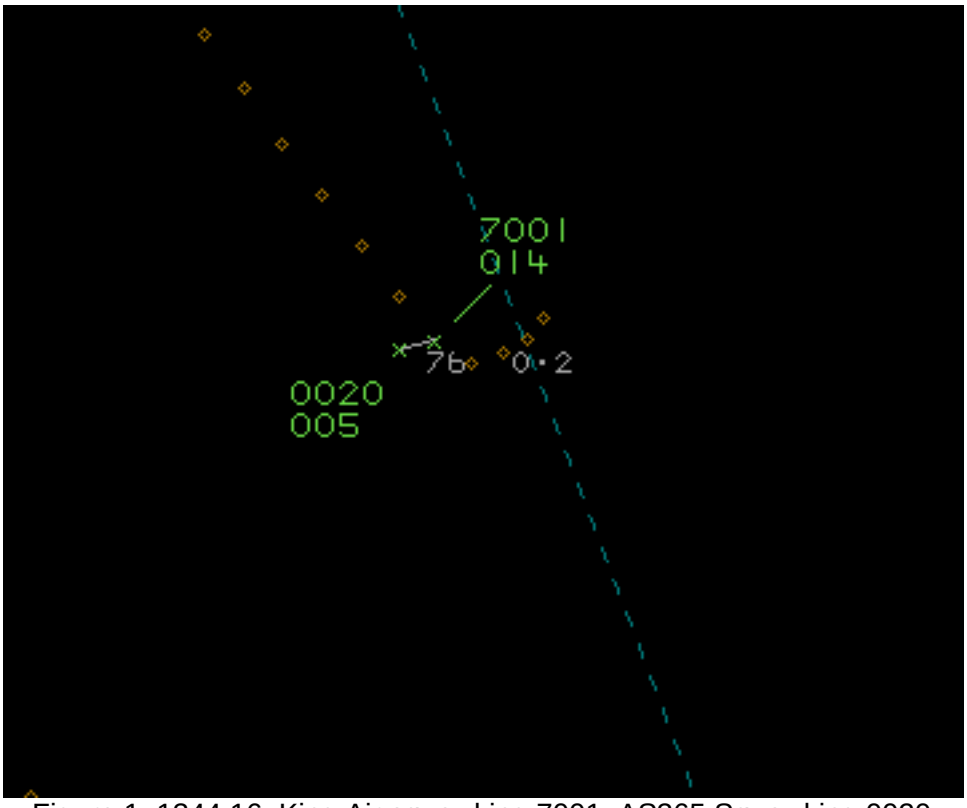

Figure 1, 1344:16, King Air squawking 7001, AS365 Squawking 0020

The AS365 and King Air 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].

Comments

[1] SERA.3205 Proximity.
[2] SERA.3225 Operation on and in the Vicinity of an Aerodrome.

HQ Air Command

The King Air was using all possible barriers during this sortie. The route had been entered into CADS earlier in the morning and the existence of the Helimed Base was positively acknowledged on CADS. The AS365's route was not entered onto CADS until a few minutes before the incident, which is understandable due to the nature of the tasking; however, it did give them warning of the King Air's presence. An early cue from TCAS for both pilots, and good lookout, enabled the King Air pilot to make timely adjustments to his track to avoid the AS365. The AS365 pilot makes a valid point about a lack of a VHF low-level common frequency, the King Air pilot was monitoring the UHF low-level common as well as being having made an information call to Carlisle. Following the successful trial of a VHF low-level common frequency in Scotland, the RAF Safety Centre is consulting with military users on the benefits and practicality of expanding this capability across the UK.

Summary

An Airprox was reported when an AS365 and a King Air flew into proximity at 1344 on Monday 1st August 2016. Both pilots were operating under VFR in VMC, neither were receiving an ATS, the AS365 pilot had not yet called Carlisle and the King Air pilot had made an information call to Carlisle.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, and reports from the appropriate ATC and operating authorities.

The Board first looked at the actions of the AS365 crew. They were on a SAR task and the Board could easily understand why it was imperative that they get airborne as quickly as possible. Notwithstanding, noting their use of CADS, some members thought it was a shame that, having found the time to look at it, the crew hadn't interrogated full details on the King Air. The helicopter member commented that when he had flown HEMS tasks in the past, the pilot was often one of the last to know the destination and was expected to go out and start up the aircraft as quickly as possible, only getting routing details later. The Low-Flying Booking Cell (LFBC) advisor commented that it was only a matter of minutes between the AS365 crew inputting their details and having the Airprox, and members wondered whether it was feasible for someone else, eg an ops clerk, to have done the CADS process on their behalf and relayed the information to the pilot. Ultimately, the Board thought that, on balance, the crew had done well to get any data from CADS at all given the likely urgency of their tasking. The Board noted the pilot's comments about the likely utility of a VHF low-level common frequency, and the military members informed the Board that this was very much the intention for the future. However, at the moment, there was some work to be done on promulgating a frequency that could be used across the country, and further research to be carried out on whether it would affect the use of other common frequencies. Nevertheless, it was hoped that the facility would be available sometime in the near future.

For his part, the Board noted that the King Air pilot was not actually receiving a Basic Service as he had reported, but was on a listening watch with Carlisle. However, without radar, Carlisle would not have been able to give any more information to the pilot because they didn't know the AS365 was airborne. Indeed, once the AS365 pilot had called them, Carlisle ATC immediately gave the AS365 pilot Traffic Information on the King Airs in the area and the Board commended them for that. The Board thought that the King Air pilot was probably well aware of the HEMS helicopter base because it was highlighted on CADS and it was necessary to acknowledge its presence as he inputted his routing. The Board therefore discussed whether he had flown too close to the base but, on balance, thought that because there was no ATZ to avoid, in routing to the SE of it he had probably discharged his duty in that regard. The Board also noted that because he was airborne well before the AS365 pilot had put his route into CADS, the King Air pilot had no way of knowing it would be lifting at the

time. Ultimately, it was the TCAS warning that had cued the King Air pilot to see the AS365 early and take appropriate avoiding action.

In looking at the barriers involved in this incident, the Board assessed that the following were key contributory factors:

- **Airspace Design and Procedures** was assessed as **partially effective** because of the lack of a VHF common low-level frequency.

- **ATC Conflict and Detection** was not applicable because Carlisle were not providing either pilot with an ATS.

- **Flight Crew Pre-flight Planning and Situational Awareness** were only **partially effective** because the King Air pilots were airborne before the AS365 was added to CADS, and because the AS365 pilot did not have time to fully access the CADS data.

- **Compliance with ATC instructions** was not applicable because there were no ATC instructions.

- **Onboard warning** and **See and Avoid** were effective barriers.

In determining the cause of the Airprox, the Board quickly agreed that both pilots had become aware of each other as soon as could reasonably have been expected and, as a result, had been able to take effective action to ensure 900ft vertical separation. Therefore it was agreed that the cause was probably best described as the AS365 pilot being concerned by the proximity of the King Air. The Board assessed that there had been no risk of collision, and that normal safety standards had pertained; Risk Category E.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The AS365 pilot was concerned by the proximity of the King Air.

Degree of Risk: E.

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.

Airprox Barrier Assessment: Outside Controlled Airspace