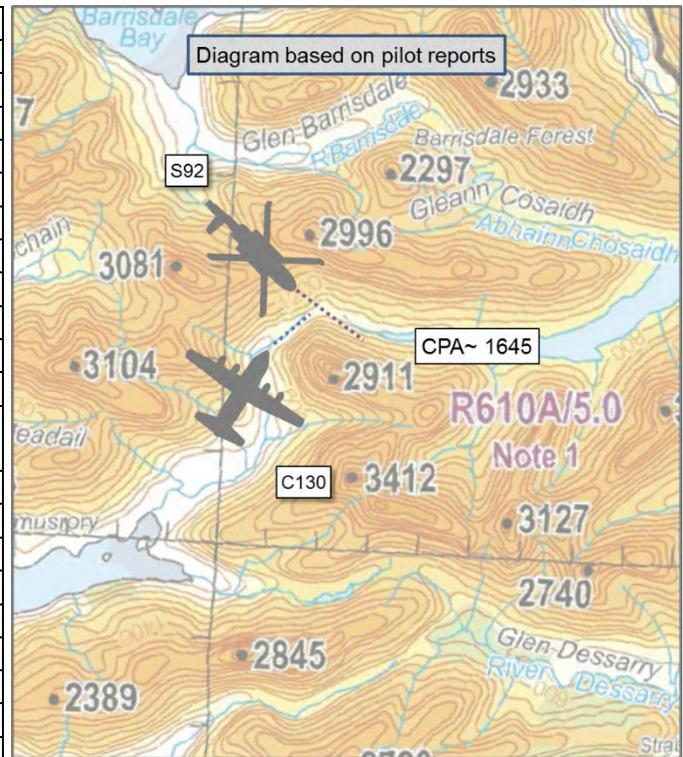


AIRPROX REPORT No 2018101

Date: 30 May 2018 Time: 1645Z Position: 5702N 00529W Location: IVO Isle of Skye

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C130	S92
Operator	HQ Air (Ops)	SAR
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	VFR	VFR
Service	None	None
Provider		
Altitude/FL		
Transponder	A, C, S	A, S, C
Reported		
Colours	Green	Red/White
Lighting	HISLs, Nav, Wing-tip	
Conditions	VMC	VMC
Visibility	10km	50km
Altitude/FL		2900ft
Altimeter	QNH (1015hPa)	Rad Alt
Heading	NK	135°
Speed	210kt	80kt
ACAS/TAS	TCAS I	TCAS II
Alert	RA	TA
Separation		
Reported	500ft V	1000ft V/0.5nm H
Recorded	NK	



THE C130 PILOT reports that the crew authorised their mission and briefed at 1230z. They plotted their route into CADS, and the planned route avoided all the warnings received. The crew took the transport to the aircraft at 1300z and departed Brize at 1425z. During their transit to the low-level entry point, they were given an ATS from Shawbury, Valley and Warton and they listened to VHF and UHF Guard throughout. During the low-level element of the sortie, at 1645z, the aircraft was manoeuvring in a system of valleys when a TCAS TA sounded for an aircraft in the 11 o'clock, 700ft above the C130 as it crested the ridgeline. This transitioned to a TCAS RA requiring the crew to level off. The other aircraft was identified as a coastguard helicopter which initiated a left turn. The crew held altitude, turning and continuing on intended track east until clear of the conflict. Once clear, the PNF tried to contact the helicopter crew on both UHF and VHF Guard with no response. On completion of the low-level portion of the sortie at 1705z, and receiving a service from Swanwick Mil, the incident was relayed. Swanwick Mil was unaware of the event. On return to base, the Captain contacted ARCC to inform them of the incident. He was told that they flew through an active TDA. On clarification, it became clear that the TDA had been requested and activated after the crew had departed (D&D¹ were informed at 1507z and a CADS entry detailed active times as 1514-2000z). No message had been passed to the C130 crew at any time during the sortie and they had been unaware of the TDA.

He assessed the risk of collision as 'Medium'.

THE S92 PILOT reports that he was climbing out from a SAR scene and routing to the mountain rescue pick-up point. As he crossed a mountain ridge, a TCAS TA sounded. He immediately looked in the direction of the traffic and saw a C130 flying low-level in the valley. It was a late-spot due to the low

¹ Distress and Diversion Cell based at RAF Swanwick.

height of the S92 and the narrow valley and he turned away in case the C130 climbed. A TDA had been established for the period of SAROps but it is common for traffic already at low-level not to be aware of it. He was aware of the potential for low-level traffic in Scotland due to his CADS briefing, albeit some hours earlier.

He assessed the risk of collision as 'Low'.

Factual Background

D&D are responsible for broadcasting pertinent information on activation of TDAs on the Guard frequencies. The D&D log book records that TDA799U was established at 1512z and an associated broadcast was made on Guard, passing the relevant details. A further broadcast was made concurrent with the expect arrival time of the SAR helicopter, and then 30 mins after that (3 transmissions in all). The TDA was extended at 1750z and eventually collapsed at 1952z, which was also broadcast.

The weather at Glasgow was recorded as follows:

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METAR EGPF 301620Z AUTO 08012KT 050V110 9999 NCD 22/15 Q1014=
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Analysis and Investigation

UKAB Secretariat

The C130 and S92 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard².

Comments

HQ Air Command

The limitations of line-of-sight when flying in valleys is well known. Here, neither crew was able to avail themselves of an Air Traffic Service due to their respective operating altitudes and radio/TCAS interactions were similarly limited by the topography. This incident took place in the Highlands where the use of a common low-level VHF frequency has been established for some time (135.475 MHz). It is unclear from the pilots' reports whether or not this frequency was being monitored/used by either crew; however, given the nature of the terrain where the Airprox took place it is unlikely that effective 2-way communications could have been established to perhaps prevent this incident taking place.

TCAS proved the decisive barrier – it appears that as soon as both aircraft became 'visible' to the TCAS installed in each then warnings were generated on the respective flight decks, permitting the pilots to take appropriate action to increase separation – the C130 crew in response to the issued RA and the S92 crew gaining visual with the C130.

Further investigation into why the C130 crew was unaware of the existence of the TDA has revealed that the C130's entry into the low-level system (in the Lake District) was coincident with the establishment of the TDA, thus increasing the likelihood that the crew would not receive the transmissions from D&D on Guard due to terrain screening.

Summary

An Airprox was reported when a C130 and an S92 flew into proximity at low-level at 1645hrs on Wednesday 30th May 2018. Both pilots were operating under VFR in VMC, neither in receipt of an ATS. The C130 was flying low-level and the S92 was engaged in SAR operations.

² SERA.3205 Proximity.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, and reports from the appropriate operating authorities.

The Board first looked at the actions of the C130 crew. They were informed by the Military member that the C130 had entered low-level in Lake District about 1min before D&D had made the first transmission on Guard about the TDA. The C130 was equipped with line-of-sight comms and, once in the low-level system, would be unlikely to hear the transmissions on Guard due to terrain screening. Furthermore, a controlling member who is current in D&D operations also informed the Board that it is standard practice for D&D to only transmit on the transmitters that are in the vicinity of the TDA, and not to transmit on 121.5MHz, due to complaints from CAT. In this case, the TDA was in Scotland so only the Scottish transmitters would have been used meaning that the C130 crew in the Lake District would have been unlikely to have heard the call even if they weren't at low-level. The Board wondered why D&D transmissions were thus constrained and a long discussion ensued about whether aircraft could be asked to re-broadcast the Guard messages to aid the dissemination of messages or whether other options were available. Some members felt that the Ops staff at the base airfield of low-level traffic should be responsible for passing on such messages but, overall, the Board agreed that there was very little the C130 crew could have done to avoid the Airprox; they were not aware of the TDA or the S92 until their TCAS alerted them to it. Concerned that only local-to-TDA transmitters were used to broadcast SAROps information rather than all transmitters in UK, and that SAROps alerts were not broadcast on VHF Guard (thereby denying the information to VHF-only aircraft such as GA) the Board resolved to make a recommendation that HQ Air Cmd investigate whether D&D should transmit SAROps/TDA activation messages on all transmitters, and on 121.5MHz.

For his part, the S92 pilot was reasonably sanguine about the incident. He was aware that the C130 was in the low-level system because he had seen the route on CADS earlier in the day, he also noted that he expected to see low-level traffic and knew that they weren't always able to receive messages about TDAs once low-level. Ultimately, his TCAS alerted him to the presence of the C130 and, once visual, he was content with the separation. [UKAB Secretariat note: The S92 pilot subsequently confirmed that he was indeed listening out on the VHF low-level frequency, but terrain screening prevented communication with the C130 crew.]

Turning to the cause of the Airprox, the Board agreed that the incident had transpired because the C130 pilot had unknowingly flown through the TDA and into proximity with the S92. Contributory was that the C130 pilot had not received the TDA activation broadcast because he was already at low-level. The risk was assessed as Category C, safety had been degraded, but it was agreed that there had been no risk of collision because TCAS had prompted both pilots to take timely action.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The C130 pilot flew through a TDA unknowingly and into proximity with the S92.

Contributory Factor: The C130 pilot did not receive the TDA activation broadcast because he was already at low-level.

Degree of Risk: C.

Recommendation: D&D transmit on all transmitters and on 121.5MHz.

Safety Barrier Assessment³

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

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

ANSP:

Regulations, Processes, Procedures & Compliance was assessed as only **partially available** because the TDA notification procedures were not robust.

Flight Crew:

Tactical Planning was assessed as **partially effective** because, through no fault of their own, the C130 crew had no knowledge of the TDA.

