AIRPROX REPORT No 2010014

Date/Time: 9 Mar 1942 (Night)

Position: 5804N 00602W (13nm SE Stornoway)

Airspace: Scot FIR/LFA 14 (*Class: G*)

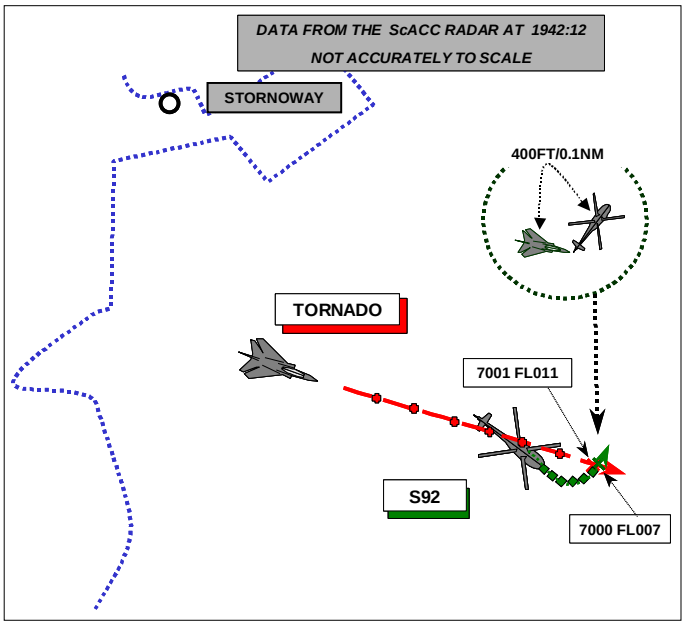
	Reporting Ac	*Reported Ac*
Type:	S92A	Tornado GR4
Operator:	Civ Com	HQ AIR (OPS)
Alt/FL:	1500ft (QNH 1034mb)	1500ft (N/K)
Weather:	VMC CAVOK	VMC CLBC
Visibility:	>10km	N/K

Reported Separation:

150-200ft V/0m H N/K

Recorded Separation:

400ft V /0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE S92A PILOT reports that they departed Stornoway Airport at 1933Z on a SAR training exercise, under IFR, in a TCAS(1) equipped ac, squawking 7000 with Modes C and S; nav lights and upper and lower red and white strobes were switched on. The sortie was planned to work with a surface vessel 23nm to the SE of Stornoway. They climbed to 1500ft on the Stornoway QNH of 1034mb and tracked 140° at 80kt towards the vessel. When they were about 10nm out from Stornoway they cleared from Stornoway APP since it was due to close and advised them that they would continue with Scottish Info on 127.275 as they would be clear of the Stornoway area (If they had been operating in the Stornoway area, they would have remained on Stornoway and transmitted blind calls even when ATC is closed). Prior to calling Scottish, they heard a Tornado on the APP frequency and heard ATC passing the Tornado crew details of their approximate height and position and suggesting that they (the Tornado) call Scottish for further information.

Thinking that at that point the Tornado was changing to 127.275 they checked in on the frequency and requested a BS. Shortly after their call to Scottish, they got a TCAS indication of an ac closing on them from directly astern at the same height (+00 separation). It was closing their position rapidly, so they turned left to try and acquire it visually and descended to 1300ft to achieve vertical separation. They broadcast their intention on 127.275 hoping that the Tornado would be listening. They then received a TCAS aural and visual TA at approx 0.25nm and they saw the Tornado as it flew directly overhead at about 150-200ft above. It appeared to be wings level and possibly climbing but they were not affected by Jet wash. They then observed the Tornado climbing and noted from TCAS that it then routed back around their area 2000ft above them. They reported an Airprox by RT to Scottish and assessed the risk as being high.

THE TORNADO GR4 PILOT reports flying a basic night low level TFR night training sortie in Night LFA 1BE/W, squawking 7001 with Mode C; night area 1BW was an RAF Lossiemouth allocated night flying area. At 1942 when they were about 22nm SE of Stornoway at 1500ft, heading 105° at 420kt, they came close to a Coastguard helicopter in Class G airspace over the sea. The pilot was not wearing NVGs but at the time of the incident the navigator was.

Previously they had called Stornoway ATC for TI and they were warned that a helicopter was operating to the SE of the airfield at “about 1000ft and below” and it had now transferred to Scottish

Control on 127.275. Following the TI, the navigator thought he was visual with the traffic to the S of their track and that no confliction existed but as they coasted out he was not 100% certain that he was visual with the helicopter. That being the case and to ensure that there would be a minimum of 500ft vertical separation from the helicopter at "1000ft and below" they climbed to 1500ft Rad Alt. They were level at 1500ft for approximately 2 minutes when the helicopter was seen just to the right of the nose at their level and a further climb was initiated; they estimated that they cleared it by 500ft vertically.

They then spoke to the Helicopter crew on the Stornoway ATC frequency of 123.5 shortly after the incident and the safety of both ac was confirmed.

On checking after landing, they found that the coastguard helicopter regularly flies training sorties in the area in contact with either Stornoway or ScACC, without issuing a NOTAM and without or informing the military who also use that part of the NLFS extensively, normally flying at 2000ft and below.

He assessed the risk as being high

UKAB Note (1): The published hours of operation of Stornoway are 0700-1945 (Winter). There is a warning of Search and Rescue training from 0700-2100 within 30nm radius surface to 2000ft in the Stornoway entry in the UK Military ERS. There is no warning however in the UK Low Flying Handbook, LFA 14 'Helicopter Activity 1 SAR Over Sea and Coastal Training' or under Night procedures.

ATSI reports that at 1921 Stornoway TWR approved the S92 pilot's request for start-up clearance for a training flight to operate to the SE of the airport. Just over 4min later the subject Tornado contacted the TWR frequency, the pilot reporting, *"This is c/s transmitting blind singleton Tornado G R Four with you passing north of your field by about seven miles in approximately four minutes routeing out towards the west we'll be low level in it's a simulated night attack ????? out in the west side of the island and then en route to the south"*. The ADC replied, *"Station calling Stornoway picked up the last part of the transmission I'll have an aircraft departing to the southeast in approximately three to four minutes"*. The pilot confirmed *"that's copied we'll be to the north of your field and that won't be a factor many thanks and we'll call you when we're going en route"*. The controller advised the aircraft that it would be a BS, although this was not acknowledged. Note: Stornoway is not equipped with any surveillance equipment. The S92 was cleared for take off at 1932.

At 1937, the S92 was advised that there was no known traffic to affect it and was informed that the frequency would be closing in 10min. The pilot then reported changing to the ScACC frequency. Shortly afterwards, the Tornado contacted the TWR frequency, reporting, *"we're currently southwest of you ????? ????? ?????";* TI was reissued about the departing traffic, *"I've just had a Sikorsky Ninetytwo just go off the frequency he was heading out to the southeast and he will be low level about a thousand feet and below"*. Note: No mention of the S92's intended altitude had been stated either in the pre-flight details or on the TWR frequency. The controller subsequently explained that the S92 normally operated at that alt and he had given the Tornado the information 'to give them a rough idea where to look'. The Tornado was then advised of the ScACC frequency that the S92 would be working, the pilot responded, *"Roger"* although he then asked for confirmation of the frequency.

The S92 established communication with the ScACC West Coast Sector at 1940 reporting, *"just departed from Stornoway we're at Fifteen Hundred feet presently ten miles from Stornoway on the One Four Zero bearing shortly to descend to operate low level with a surface contact requesting a Basic Service please";* the service was agreed and read back by the pilot. Shortly afterwards, Stornoway telephoned the West Coast Sector to pass information about the Tornado, adding that it had been given the sector frequency. The Radar Controller issued TI about the Tornado, to the S92 pilot, *"just to let you know there is currently low level military jet traffic five miles to the south of Stornoway tracking southeast towards your general direction is reportedly at Five Hundred feet keep a good lookout please"*. The pilot responded, *"I've got him on TCAS the same height as me closing*

me four miles this time". He continued to update its distance as three, then two miles. Initially, the controller stated that the pilot would have to avoid at his discretion but in view of the pilot's increasing concern, he continued, *"that traffic looks like it is tracking southeast towards yourselves either avoid to the south or climb"*. The S92 pilot reported receiving repeated TAs, commenting that the Tornado was initially within a quarter of a mile at the same height and then one hundred feet below. He added that he had taken *"immediate avoiding action"*.

After the event, the S92 pilot discussed the incident with the Stornoway Controller who had heard the proceedings on the ScACC frequency, the pilot stating his intention to file an Airprox. During this period, the pilot of the Tornado transmitted to the S92 pilot *"more or less to say that Tornado which had the Airprox we turned back to check you were okay we are visual with you now down beneath us"*. He then added, *"we spotted you and climbed we're at estimate we were told that you were a thousand and below a thousand feet we had climbed to above a thousand feet obviously we could have climbed a bit further"*.

The ScACC radar recordings show the situation with the Tornado proceeding SE towards the S92 with both ac at FL009 (1500ft on Stornoway QNH 1034mb). At 1941:48, the S92 is seen to be turning left from its SE track, 2.4nm ahead of the Tornado. This appears to be taking the S92 towards the projected track of the Tornado. As the two ac pass, 0.1nm apart, the S92 has descended to FL007 (1300ft) and the Tornado climbed to FL011 (1700ft).

At the time of the incident, which occurred in Class G airspace, the S92 was receiving a BS, which is defined as:

> 'A Basic Service is an ATS provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. Basic Service relies on the pilot avoiding other traffic, unaided by controllers. It is essential that a pilot receiving this service remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight. Pilots should not expect any form of traffic information from a controller, as there is no such obligation placed on the controller under a Basic Service outside an ATZ, and the pilot remains responsible for collision avoidance at all times. A controller with access to surveillance derived information shall avoid the routine provision of traffic information on specific aircraft, and a pilot who considers that he requires such a regular flow of specific traffic information shall request a Traffic Service. However, if a controller considers that a definite risk of collision exists, a warning may be issued to the pilot'.

On this occasion, the ScACC Controller considered that there was a definite risk of a collision. Under a BS a pilot is expected to discharge his collision avoidance responsibility without assistance from a controller. However, the concern manifested by the pilot, as the Tornado approached his helicopter, led the controller into taking the unusual step of suggesting an avoiding action manoeuvre i.e. by descending or turning. In the event, the helicopter was in a left turn, when the controller suggested turning to the S. It did commence a descent as the Tornado approached within close proximity.

ATSI Note: The following additional transcript was obtained regarding the conversation between Stornoway TWR and ScACC at 19:40:41:

> **WCST:** Antrim…Sorry West coast even.
> **STN:** Hi it's Stornoway. For the Coastguard one hundred, there's military traffic, a Tornado routing just south of the field at this time. I think he's about 500ft heading towards the coastguard's direction. I have given him your frequency.
> **WCST:** OK, I'll let the coastguard know.
> **STN:** Cheers
> **WCST**: Thank you

The Stornoway watch officially closed at 1955.

The 1920 Stornoway METAR was: 22006kt; 9999; wx nil; FEW030, BKN038; Ps05/Ps00 Q1034.

UK MIL Low Flying Ops did not comment.

HQ AIR (OPS) comments that both ac were operating in Class G airspace. The GR4 crew, under the misapprehension that the S92 was operating below 1000ft, climbed to build in 500ft vertical separation. This incident highlights the fact that inaccurate information is worse than no information; if "height unknown" had been passed the GR4 would most likely have taken lateral separation. The situation could also have potentially been avoided if a NOTAM/warning had been issued concerning the SAR Training.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, HUD, FLIR and radar recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board observed that although this was a serious incident, it could easily have been avoided. Had the Tornado crew been aware of the pre-planned training flight of the S92 it is probable that they would have given it a wide berth. Members were surprised that there was no interaction between the Coastguard operators and the Military (specifically the Low Flying Booking Cell); they were also surprised when they were informed that RAF Lossiemouth crews, the prime users of that part of the night low-flying system, were not aware of the Stornoway Coastguard activities. They considered this to be a significant breakdown in communication and agreed that the onus was on the Coastguard operators to inform the Military rather than the Military to seek the information. Far from being a quiet area, the NW of Scotland is widely used by Military ac at night. Members noted that, although the Military Low Flying Handbook Sect 3 (Night) warned of several SAR Helicopter Night Training Areas and night SAR procedures, Stornoway was not mentioned. The Board therefore recommended that this be reviewed. One Member also suggested that the CANP procedure (AIC Y028/2010 refers) could be extended to include Coastguard training flights.

Although the Tornado crew wisely called Stornoway as they passed close to the airfield, giving their intentions, the first call did not give the controller a clear and unambiguous picture of their intended routeing; this was, at least partially, rectified by their second call. Only at that stage, as they were coasting out tracking to the SE, did the controller have enough information to recognise that there was going to be a confliction and react accordingly by informing ScACC who were by then working the S92. However the information passed to the Tornado that the S92 was at 'about 1000ft and below' was not correct; neither was the information passed to ScACC and subsequently the S92 that the Tornado was 'about 500ft'. These, the Board agreed, had been key factors in determining the altitudes that the respective pilots elected to fly i.e. the S92 maintaining 1500ft and the Tornado climbing to 1500ft (and into conflict). That being the case, Members agreed unanimously that this had contributed to the cause of the incident.

Given that both ac had been operating legitimately in Class G airspace under the 'see and avoid' principle, the Board concentrated on determining why the crews had not seen the opposing ac until a late stage. Despite being aware of its presence from TCAS, until the last few seconds of the encounter the S92 had been 'tail on' to the rapidly overtaking Tornado; that being the case, Members agreed that the helicopter crew could not reasonably have been expected to see it. Even after the S92 turned, the Tornado would have been 'head on' to it and still difficult to see in the final few seconds before the ac crossed. The S92 crew did, however, change track, which, although it reduced the extant lateral separation, altered the aspect of the helicopter to the Tornado, and enabled its pilot to see their lights and react.

Since the Tornado was the overtaking ac, under the Rules of the Air, it should have given way to the S92. The Tornado crew believed they had given way by climbing to 500ft above the helicopter and were surprised when it was seen late, at the same height, crossing from right to left. The radar and videos showed that the Tornado initially approached the S92 from almost directly astern. The S92

would therefore have been obscured to the Navigator by the pilot's seat and ac framework; also its lights were not visible to the Tornado pilot until a late stage [from the HUD video 12sec before the ac pulled up]. The videos also showed that this corresponded with the S92 turning left and its lighting regime suddenly becoming much more effective from almost the beam rather than the stern. This left turn undoubtedly assisted the Tornado pilot in seeing the S92 and reacting to it, albeit late, by climbing to take visual, vertical separation. Although the reaction was significantly later than the crew would have desired, due to the circumstances, Members agreed that the Tornado crew could not reasonably have been expected to see the S92 any earlier. That being the case, Members agreed unanimously that the cause of the Airprox had been a conflict in Class G airspace. In assessing the risk, the Board agreed that, although there had been an erosion of normal safety standards, the S92's descent and the Tornado's climb had removed the risk of a collision.

There was discussion about the advisability of flying low-level operations under IFR at night (without a radar service); the civil helicopter Member, however, informed the Board that this is routine, as the operator's AOC does not give exemption from the civil regulations prohibiting VFR operations at night. He went on to say that the difference is minimal, as the 'see and avoid' rules still pertain and are the principal means of collision avoidance.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Conflict in Class G airspace resolved by both crews.

Degree of Risk: B.

Contributory Factors: Incorrect TI passed by Stornoway TWR.

Recommendation: 1. The MoD is recommended to amend the Low Flying Handbook to provide more comprehensive guidance on SAR training flights.

2. The Maritime Coastguard Agency considers using existing CANP procedures to notify military cews about Coastguard training flights.