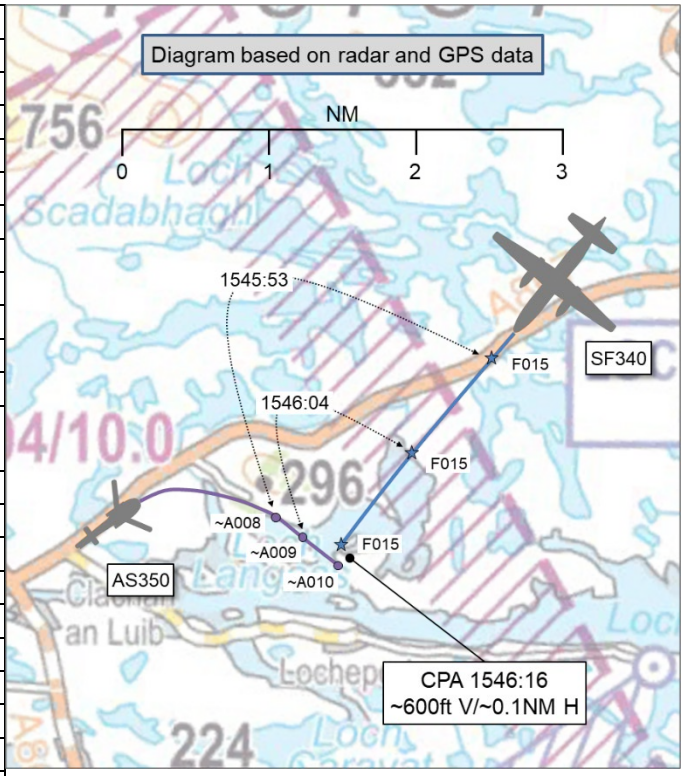
AIRPROX REPORT No 2022179

Date: 16 Aug 2022 Time: 1546Z Position: 5733N 00716W Location: 5NM NNE Benbecula

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	SF340	AS350
Operator	CAT	Civ Helo
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	VFR	VFR
Service	Procedural	Basic
Provider	Benbecula	Benbecula
Altitude/FL	F015	~1000ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White, black	Maroon
Lighting	Anti-col, nav, landing	Anti-col, HISL, nav, strobe
Conditions	VMC	VMC
Visibility	5-10km	>10km
Altitude/FL	1600ft	1000ft
Altimeter	QNH (1017hPa)	QNH (NK hPa)
Heading	220°	090°
Speed	200kt	100kt
ACAS/TAS	TCAS II	Not fitted
Alert	RA	N/A
Separation at CPA		
Reported	100ft V/0.5NM H	500ft V/0NM H
Recorded	~600ft V/~0.1NM H	



THE SF340 PILOT FLYING reports that they were on a visual approach into Benbecula at 1600ft from the northeast. No other traffic was heard on the frequency or reported. With approximately 5NM to run, a helicopter [AS350 callsign] came onto the frequency giving their position with reference to [a location that the SF340 pilot didn't recognise] and giving details of their intended routing etc. At almost the same time, [the AS350] appeared on their TCAS as a TA at their position, and in a second or two this became a TCAS RA with the instruction '*Monitor Vertical Speed*'. They became visual with the helicopter and it passed directly beneath them at an estimate of no more than a few hundred feet although they cannot remember exactly how close TCAS said it had been. The whole event happened in just a few seconds. ATC was advised.

THE SF340 PILOT MONITORING recalls that, whilst on a visual approach, routing towards a downwind position in level flight, a helicopter [pilot] came on frequency announcing that they had just departed from a private site. [The SF340 PM recalls that] ATC enquired what level they would be, and they replied 1500ft, ([the same as the SF340]). They looked out but couldn't see any traffic. They looked at the TCAS display and saw traffic at exactly their position. At this time, the TCAS announced "*TRAFFIC TRAFFIC*" and they looked out and saw the helicopter passing right-to-left at their 1 o'clock position, slightly lower (estimate 100-200ft below) and at maybe half a mile distant. It was obvious that it would pass close but without colliding. This was pointed out to the PF and at that moment TCAS announced "*Maintain vertical speed*" and they passed over the helicopter. ATC warned them of the helicopter and they informed them that they had now passed it.

The pilot assessed the risk of collision as 'Medium'.

THE AS350 PILOT reports that after lifting [from departure site] they began climbing away eastbound towards the mouth of Locheport. Two-way communication was established with Benbecula Approach very shortly after take-off. They believe they were in the process of levelling off at around 1000ft when

Benbecula advised [the SF340 pilot] (inbound from the northeast) that they were in the area. The position of the inbound [SF340] relative to them meant that the aircraft was obscured by the roof of [the AS350]. Upon hearing the ATC message to [the SF340 pilot], they began a search for the aircraft that was positioning downwind LH for RW06 at Benbecula. They had completed their level-off at this point and became visual with the inbound [SF340] in their 10 o'clock position and at what they considered to be well above their level. They had no cause for alarm and did not consider the proximity to be unsafe. They continued [their flight].

Some time passed and they believed that the [SF340] was now on the ground and taxying in. They heard the pilot mention to ATC that their aircraft had announced a TCAS RA against [the AS350]. Both aircraft were in Class G airspace and in contact with Benbecula Approach. No avoiding action was taken by [the AS350 pilot] as, upon becoming visual with the [SF340], they didn't feel it necessary. The [SF340 pilot] also appeared to take no avoiding action and continued to join downwind LH to RW06.

The pilot assessed the risk of collision as 'None'.

THE BENBECULA CONTROLLER reports that at 1544, [the SF340 pilot] was cleared for a visual approach for RW06 to join left-hand downwind. At 1545, without prior warning, [the AS350 pilot] called ATC informing them that they had lifted from a site NNE of the field. The controller asked for their exact range from the field, intended operating altitude and routing. On receipt of this information from [the AS350 pilot], the controller passed the Traffic Information immediately to the inbound [SF340 pilot]. The pilot of [the SF340] acknowledged the information and informed ATC that they had now passed above the traffic. The pilot of [the AS350] confirmed that the [SF340] had passed overhead. The [SF340 pilot] continued with a visual approach and landed on RW06 at time 1551. After landing, taxying and shutting down on the apron, the crew called ATC on the RT to inform them that they had a TCAS RA during flight and would be filing an ASR.

Factual Background

The weather at Benbecula was recorded as follows:

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METAR EGPL 161550Z 02014KT 9999 SCT024 SCT046 14/07 Q1016
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Analysis and Investigation

THE BENBECULA AIRPORT UNIT reports that they investigated the incident with reference to the ATS reports, ECCAIRS report, pilot reports and the RT tape transcript.

Sequence of events:

1515 [The AS350] landed at a site NE of Benbecula airport for refuel.

1531 [The SF340] departed [departure airfield] for Benbecula.

1541 [The SF340 pilot] reported at 25NM from BEN and was descended to 3100ft and cleared for the VOR/DME approach to RW06 from the overhead.

1543 [The SF340 pilot] reported at 18NM from Benbecula and requested to carry out a visual approach for RW06 to join LH DW. [The SF340 pilot] was cleared for the visual approach.

1545 [The AS350 pilot] called ATC informing them that they had lifted from their fuel site and would be routeing east initially before routeing generally northbound. The duty ATCO established their exact position and intended operating altitude and immediately passed Traffic Information to [the SF340 pilot] who acknowledged the report and advised that they had just passed that traffic. [The AS350 pilot] then confirmed that they were also visual with [the SF340].

1551 [The SF340] landed.

1557 [The SF340 pilot] advised ATC that they had received a TCAS RA for [the AS350] and would be filing an ASR.

Analysis: There is a real danger of hindsight-bias when analysing this event. However, a gap which would have mitigated the event is for the helicopter crew to have contacted ATC prior to lifting. An extract from an email to [the helicopter operator]: "*May I request that in future, you advise your crews to make contact with Benbecula ATS prior to lifting from private sites in the vicinity of the airfield, either by telephone or RTF? This will enable us to provide traffic information to you and any other aircraft flying in the vicinity. If your Benbecula operations are intended to become a regular occurrence, may we consider drafting a Letter of Agreement (LoA) or similar in order to formalise our coordination arrangements?*". Benbecula ATS staff have also been briefed and emailed to request that helicopter crews operating in the vicinity of the airfield make contact with Benbecula ATS prior to lifting from private sites in the vicinity of the airfield, either by telephone or RTF. This will enable provision of traffic information to them and any other aircraft flying in the vicinity.

Conclusion: [The AS350] lifted from a private site northeast of the airfield with [the SF340] carrying out a visual approach from the northeast of the airfield. Prior notice of intention to lift would have mitigated against the event.

Endorsement comment: The analysis, conclusion and summary detailed in the report assert that had the pilot notified ATC of their intention to lift, prior to lifting, ATC could have coordinated a safer departure and mitigated the Airprox. I agree with this assertion. Moreover, since ATC would have been expecting [the helicopter pilot] to lift from [their fuel site], they could have anticipated and catered for the likelihood of airborne conflict by instructing the pilot to call ATC (by phone or RT as appropriate) before lifting. Insufficient procedure has been recognised by the SATCO and addresses through changes to MATS Part 2 and MAFIS in respect of similar operations in the vicinity of the airport, and through arrangement with [the helicopter operator]. I endorse the safety recommendations. I note however, that communication is identified as the primary root cause, but I believe insufficient procedure, detailed and/or applied, more correctly identifies the cause, demonstrated by the actions taken by SATCO.

Final comment: Participation in an ATS within Class G airspace outside of the ATZ is not mandated, however, as [the AS350] had received an ATS prior to landing then there is a reasonable assumption that the pilot would do so again after lifting from the private site. Furthermore, as this practice is not routine then there was no procedure in place to attempt to mitigate such occurrences with [the helicopter operator] or Benbecula ATS.

UKAB Secretariat

Analysis of the NATS radar replay was undertaken as well as analysis of a GPS data file kindly supplied by the AS350 pilot. The SF340 could be positively identified on radar from Mode S data. The AS350 was not observed on radar until after CPA (see Figure 1) and could subsequently be positively identified from Mode S data. The CPA was assessed and the diagram constructed with reference to the radar and GPS data sources.

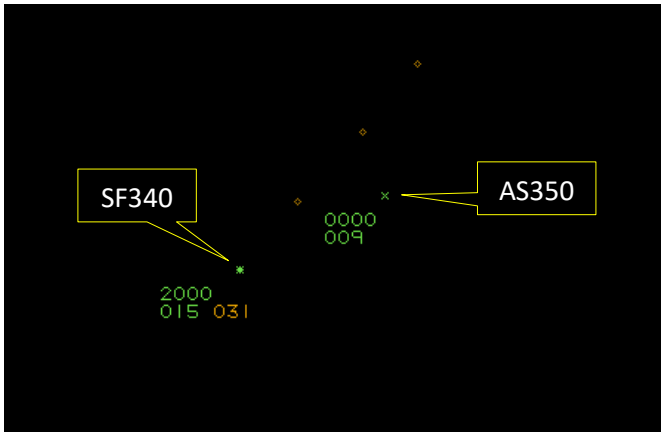

Figure 1 – The AS350 was observed on radar at 1546:30, after CPA

The SF340 and AS350 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] If the incident geometry is considered as converging then the SF340 pilot was required to give way to the AS350.[2]

Summary

An Airprox was reported when an SF340 and an AS350 flew into proximity 5NM north-northeast of Benbecula at 1546Z on Tuesday 16th August 2022. Both pilots were operating under VFR in VMC, the SF340 pilot in receipt of a Procedural Service from Benbecula and the AS350 pilot in receipt of a Basic Service from Benbecula.

PART B: SUMMARY OF THE BOARD'S DELIBERATIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS track data, reports from the air traffic controller involved and reports from the appropriate operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first evaluated the actions of the Benbecula controller and agreed that, with the knowledge that the pilot of the AS350 had landed to refuel, it may have been prudent to have requested the pilot call before they intended to depart. Nevertheless, members agreed that the controller had acted quickly to ascertain details of the AS350's position and the pilot's intentions and to have relayed Traffic Information to the pilot of the SF340 as soon as possible.

The Benbecula Airport Unit's investigation had identified that communication and insufficient procedure had been the primary root causes of this incident and the Board concurred with that analysis. Members were encouraged that the safety recommendations arising from the investigation had been endorsed.

In conclusion, the Board was satisfied that the separation between the aircraft had been sufficient to ensure that there had been no risk of collision. Members agreed that normal safety standards and parameters had pertained and, as such, the Board assigned Risk Category E.

Members agreed that the following factors (detailed in Part C) had contributed to this Airprox:

CF1. Absence of an agreement, or non-compliance with an existing agreement, that prior notice should be given by a helicopter pilot operating in the vicinity of Benbecula that they intend to become airborne.

CF2. Traffic Information on the AS350 had been passed late to the pilot of the SF340.

CF3. The Benbecula controller had late Situational Awareness of the AS350 having departed their refuelling site.

CF4. The pilot of the AS350 had no Situational Awareness of the SF340. The pilot of the SF340 had late Situational Awareness of the AS350.

CF5. The pilot of the SF340, having received a TCAS RA, was concerned by the proximity of the AS350.

CF6. A TCAS RA was triggered due to the proximity of the AS350.

CF7. Both pilots had sighted the other aircraft late.

CF8. The SF340 was momentarily obscured from the view of the pilot of the AS350.

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3210 Right-of-way (c)(2) Converging.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022179			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Regulations, Processes, Procedures and Compliance			
1	Organisational	• Aeronautical Information Services	An event involving the provision of Aeronautical Information	The Ground entity's regulations or procedures were inadequate
	• Situational Awareness and Action			
2	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
3	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
4	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
5	Human Factors	• Unnecessary Action	Events involving flight crew performing an action that was not required	Pilot was concerned by the proximity of the other aircraft
	• Electronic Warning System Operation and Compliance			
6	Contextual	• ACAS/TCAS RA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system resolution advisory warning triggered	
	• See and Avoid			
7	Human Factors	• Identification/Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
8	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other

Degree of Risk: E

Safety Barrier Assessment[3]

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

Ground Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because there had been no prior notice from the pilot of the AS350 that they had intended to become airborne.

Situational Awareness of the Confliction and Action were assessed as **partially effective** because the Benbecula controller had late Situational Awareness of the AS350. Traffic Information was passed quickly to the pilot of the SF340, albeit late in context of the CPA.

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

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the pilot of the AS350 had no Situational Awareness of the SF340 and the pilot of the SF340 had late Situational Awareness of the AS350.

See and Avoid were assessed as **partially effective** because both pilots had sighted the other aircraft late. The SF340 was momentarily obscured from the view of the pilot of the AS350.