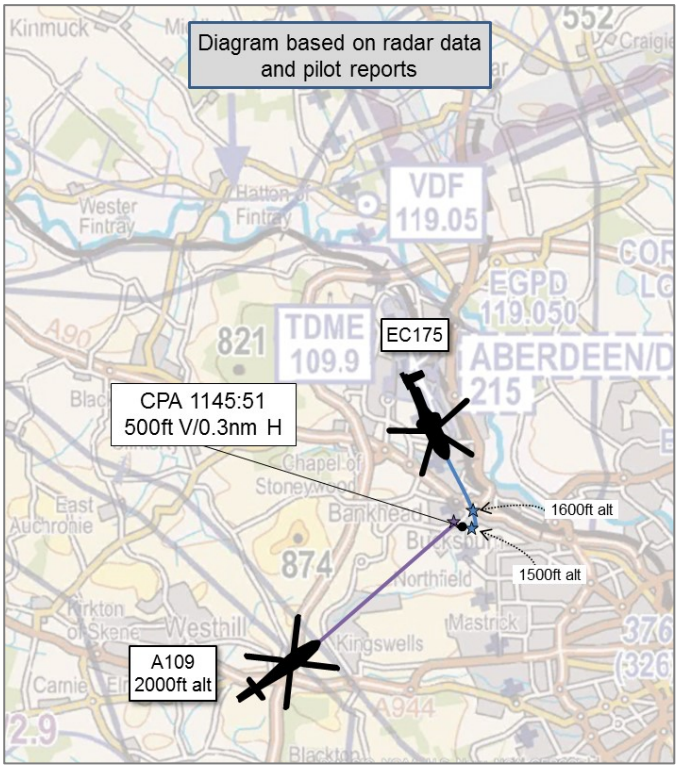
AIRPROX REPORT No 2019265

Date: 19 Aug 2019 Time: 1145Z Position: 5710N 00211W Location: 2nm south Aberdeen Airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EC175	A109
Operator	Civ Comm	Civ Helo
Airspace	Aberdeen CTR	Aberdeen CTR
Class	D	D
Rules	IFR	VFR
Service	ACS	ACS
Provider	Aberdeen	Aberdeen
Altitude/FL	1500ft	2000ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Not reported	White
Lighting	Not reported	Strobe Anti Col, Nav, Taxi
Conditions	VMC	VMC
Visibility	10km	>10km
Altitude/FL	1500ft	2000ft
Altimeter	QNH	QNH
Heading	Not reported	040°
Speed	Not reported	135kt
ACAS/TAS	TCAS II	TAS
Alert	RA	TA
Separation		
Reported	0ft V/1nm H	Not reported
Recorded	500ft V/0.3nm H	



THE EC175 PILOT reports that he had been cleared after departure to climb to 4000ft, turn right direct to BALID. He received Traffic Information on a C172 to the west tracking NW and was cleared to take-off. After climbing through 1000ft, the handling pilot saw traffic to the right and believed it to be the C172, it was not. Traffic on the ACAS turned from 'blue' to 'amber' and when the non-handling pilot then saw the traffic, an A109, to the right, it was less than 0.5nm away on a converging crossing track. They received an RA from the ACAS. They had received no information of this aircraft's position but had heard an aircraft calling visual with them. When they were clear of the conflict they continued the climb to 4000ft. The non-handling pilot advised the controller of the RA and the lack of traffic information and separation. The non-handling pilot stumbled a bit over his wording but eventually reported that it was a Resolution Advisory and they were clear of traffic.

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

THE A109 PILOT reports that he was on his second flight through the Aberdeen Zone to drop passengers at a private site. This leg was similar to the earlier one in that he had entered the Zone at Banchory RP on Aberdeen Radar and, he thinks, had been given a transit on track which was pretty close to the Airfield overhead "VFR not above 2000ft ". His clearance limit was to the hill with the aerials just SW of the Airfield (he cannot remember the name). As he approached this point, he was changed to Tower who informed him of, he thinks, a C172 departing on the Inverurie Lane and an EC175 getting airborne from the Southerly Runway. He saw the EC175 at about 1½ to 2nm climbing out as expected and informed Tower that he was visual. The EC175 was told about him and that he was VFR crossing not above 2000ft. He passed above and behind the EC175 and did not consider it to be an Airprox. Having passed the EC175 he heard its pilot talking to Aberdeen Tower about what sounded like a TCAS incident. This went on for several minutes as ATC continued to ask him to explain/confirm what he was saying. At no time was he or the Tower asked about an Airprox, nor was it mentioned by ATC later on

his return flight. At no time did he consider he was close enough for an Airprox. His recollection of the finer details are impossible to remember given that the flight was a month ago during a very busy period.

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

THE ABERDEEN CONTROLLER reports the EC175 was outbound towards BALID climbing to 4000ft with the A109, a VFR helicopter overflying from the west to a local golf course. Traffic was passed to both helicopters and they both stated they had the other in sight. The EC175 pilot shortly afterwards stated they had received a TA and that they "didn't need to go across the top of us" and were now climbing again. On clarification they stated it was a traffic resolution advisory and on further clarification that it was a resolution advisory and they had maintained 2000ft before climbing again.

Factual Background

The weather at Aberdeen was recorded as follows:

```
METAR EGPD 191150Z AUTO 25013KT 220V290 9999 BKN043/// //////CB 18/09 Q1002 NOSIG
```

Analysis and Investigation

Aberdeen Investigation Report

Shortly after departure from RW16 the pilot of an EC175 reported he had received a TCAS RA. The conflicting traffic was an A109, a VFR overflight at 2000ft. The pilots of both helicopters had earlier reported visual with each other.

1143:04: The EC175 was lined up for departure from RW16 having earlier been issued with an IFR clearance to leave controlled airspace climbing to 3000ft. The Aberdeen Tower controller (ADC) issued an after-departure instruction to the crew to turn right direct to BALID (throughout this event all pilot readbacks are correct). Traffic Information was then passed to the EC175 pilot on a C172 that had recently departed from RW16 and was commencing a right turn to the northwest, VFR not above 2000ft. Having received an acknowledgment of this information, ADC issued take off clearance to the EC175 pilot.

1144:05: The pilot of the A109 made his initial call to ADC as he was passing Peterculter en-route to a local golf course, located 2nm north of Balmedie. The aircraft was tracking approximately 060° with Mode C indication of 1900ft and a radar derived ground speed of 162kts. ADC passed traffic information to the pilot of the A109 on a C172 and also the EC175. The pilot replied he was not visual with the C172, but believed he was displayed on TCAS. ADC requested the pilot of the A109 adjust his track to be slightly more northerly in order to pass behind the departing EC175, adding that this traffic was "just passing the piano keys for RW34".

1144:53: The pilot of the A109 reported being in visual contact with the EC175.

1145:01: The ADC passed a wake turbulence warning to the A109 pilot. The pilot acknowledged this and confirmed he was visual with the EC175. The A109 was 3nm SW of Aberdeen Airport at 2000ft, track 060° and G/S of 160kts. The C172 was 2nm SW of Aberdeen Airport at 1600ft, track 300° and G/S of 80kts. The EC175 was <0.5nm S of Aberdeen Airport at 900ft, track 160° and G/S of 85kts (first surveillance contact).

1145:09: The ADC passed Traffic Information to the pilot of the EC175 on the A109. The pilot replied he was visual with this aircraft and added they were setting course direct to BALID. The aircraft were approximately 2.5nm apart.

1145:21: The ADC received a Stage 1 STCA alert.

1145:38: The ADC received a Stage 2 STCA alert. The A109 was 2nm SW of Aberdeen Airport at 2000ft, track 050° and G/S of 163kts. The EC175 was 1nm S of Aberdeen Airport at 1400ft (climbing), track of 160° and G/S of 97kts. This placed the aircraft 1.5nm apart.

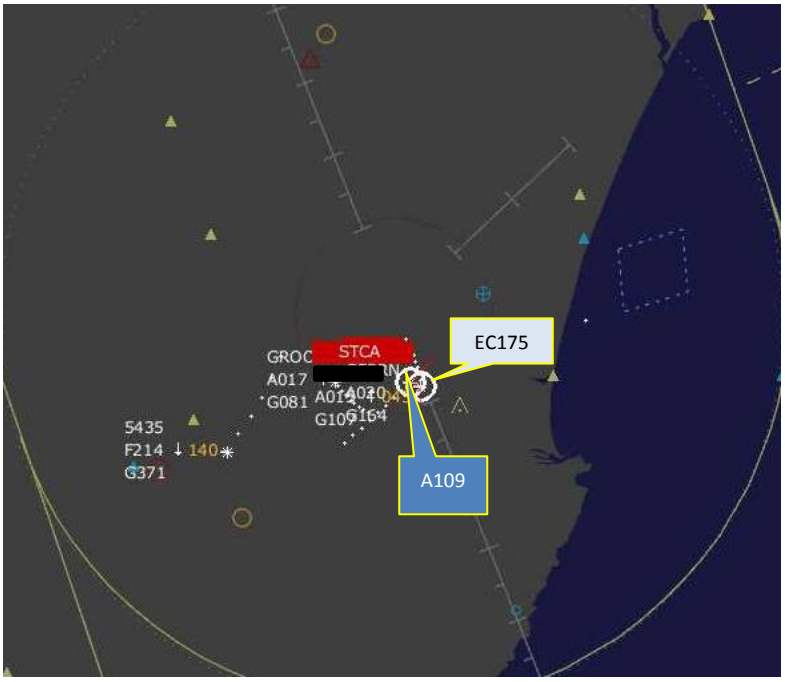


Figure 1:1145:51 CPA.

1145:58: The STCA alert cleared as the A109 at 2000ft passed approximately 0.25nm behind the EC175 at 1500ft. The pilot of the EC175 informed ADC that they had received a TCAS warning and had levelled off to avoid a confliction.

In a discussion with ADC the following points were noted:

- The A109 was checked in to him by the Approach Radar controller. At this point he observed on the ATM the relatively fast ground speed due in part to a tailwind component.
- ADC determined that the A109 should be able to get across the RW16/34 extended centreline quickly and that if he did elect to instruct this aircraft to hold to the southwest of the airfield, the radius of turn would be relatively wide due to the aircraft's speed. As a result, he elected to pass Traffic Information and allow the pilot to discharge his responsibilities to see-and-avoid but continued to monitor the situation.
- ADC recalled advising the pilot of the A109 to take up a more northerly track in order to pass behind the EC175.
- Looking out of the window he noted the two aircraft appeared closer to each other than he had expected, but he was visual with both helicopters.
- The controller did expect the pilot of the A109 would have taken up a more northerly track towards his destination landing site, which would also have reduced the potential for confliction with the EC175. Once he had passed behind the C172 there was nothing to affect a more northerly track being adopted. Despite this, having visually acquired both aircraft, he deemed there was adequate separation between them at the point they both reported visual with each other.
- If the pilot of the A109 had not reported becoming visual with the EC175 when he did, ADC would have intervened by instructing the A109 pilot to orbit or turn him towards the downwind right leg of the RW16 visual circuit. However, once he knew both pilots were visual with each other and he could visually monitor their relative positions, he did not feel there was any need for further intervention by him.

This report was originally submitted as an ATC MOR due to the pilot of the EC175 reporting that they had received a TCAS RA. However, a few weeks later, the unit was made aware that the crew of the EC175 had elected to file an Airprox. In this event the traffic situation was slightly complex, involving two VFR and one IFR aircraft on close crossing tracks at similar altitudes and in a critical phase of flight for two of them, i.e. shortly after departure. The ADC correctly discharged his responsibilities with respect to the passing of Traffic Information to all aircraft involved, with the pilots of both the A109 and the EC175 confirming that they were visual with each other whilst still 2.5nm apart. Although neither pilot requested traffic avoidance advice, The ADC had requested the A109 adopted a more northerly track in an effort to deconflict this aircraft from the EC175, with a slight left turn evident on the surveillance recordings following this advice. The lateral and vertical profile adopted by the crew of the A109 was such that the crew of the EC175 received a TCAS RA and considered the event worthy of filing as an Airprox.

UKAB Secretariat

The EC175 and A109 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].

The A109 pilot maintained 2000ft alt throughout. At 1045:48, the EC175 was displaying 1600ft climbing and the aircraft were separated by 400ft V/0.5nm H. At CPA, 1045:51, the EC175 was displaying 1500ft alt and the aircraft are separated by 500ft V/0.3nm H.

CAP 493 Section 1, Chapter 5 Integration of VFR Flights with IFR Traffic in Class D CTR/CTA/TMA states:

3.1The minimum services provided to VFR flights in Class D airspace are specified at Section 1, Chapter 2, paragraph 2. Separation standards are not prescribed for application by ATC between VFR flights or between VFR and IFR flights in Class D airspace. However, ATC has a responsibility to prevent collisions between known flights and to maintain a safe, orderly and expeditious flow of traffic. This objective is met by passing sufficient traffic information and instructions to assist pilots to 'see and avoid' each other as specified at Section 3, Chapter 1, paragraph 2A.2.

3.2 Instructions issued to VFR flights in Class D airspace are mandatory. These may comprise routeing instructions, visual holding instructions, level restrictions, and information on collision hazards, in order to establish a safe, orderly and expeditious flow of traffic and to provide for the effective management of overall ATC workload.

Summary

An Airprox was reported when an EC175 and an A109 flew into proximity near Aberdeen at 1145hrs on Monday 19th August 2019. The EC175 pilot was operating under IFR in VMC and the A109 pilot was operating under VFR in VMC, both pilots in receipt of an Aerodrome Control service from Aberdeen Tower.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and reports from the air traffic controller involved. 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.

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

The Board began by looking at the actions of the A109 pilot. He had received both suitable Traffic Information and a TAS TA **(CF2)** which had both enabled him to see the EC175 at about 1½ to 2nm. Responding in part to the controllers request, he was able to turn behind to ensure adequate visual separation, although, in a subsequent comment to the Board, he agreed that, in hindsight, a slightly larger turn would have removed the possibility of his flight vector triggering the EC175's TCAS and generating an RA.

The Board then considered the actions of the EC175 pilot. He had received a TCAS RA **(CF1)** and reacted accordingly. Members opined that although he also had Traffic Information and was visual with the A109, because he was IFR, he may have expected it to have avoided him by more. However, the A109 pilot was only required to ensure adequate VFR separation, and although would ideally avoid triggering TCAS, this was not a requirement. Members wondered whether the EC175 crew had been startled by the associated TCAS RA, because their estimate of separation was at significant variance to the recorded radar separation **(CF4)**.

The Board noted that this incident highlighted the issue of TCAS interactions between IFR and VFR flights where both pilots were acting within their respective rules and procedures. Being designed for IFR-IFR interactions, the TCAS had determined that there was a conflict between the aircraft despite the A109 pilot fulfilling his responsibilities under VFR flight. This demonstrates the importance of VFR pilots allowing a greater margin of separation from IFR aircraft than they would perhaps normally allow for other VFR aircraft in order to prevent inadvertent TCAS alerts and subsequent unnecessary avoiding action by IFR aircraft **(CF3)**.

Turning to the risk, the Board agreed that there had been no risk of collision and that normal procedures and safety parameters had pertained; risk Category E.

PART C: ASSESSMENT OF CONTRIBUTORY FACTOR(S) AND RISK

Contributory Factor(s):

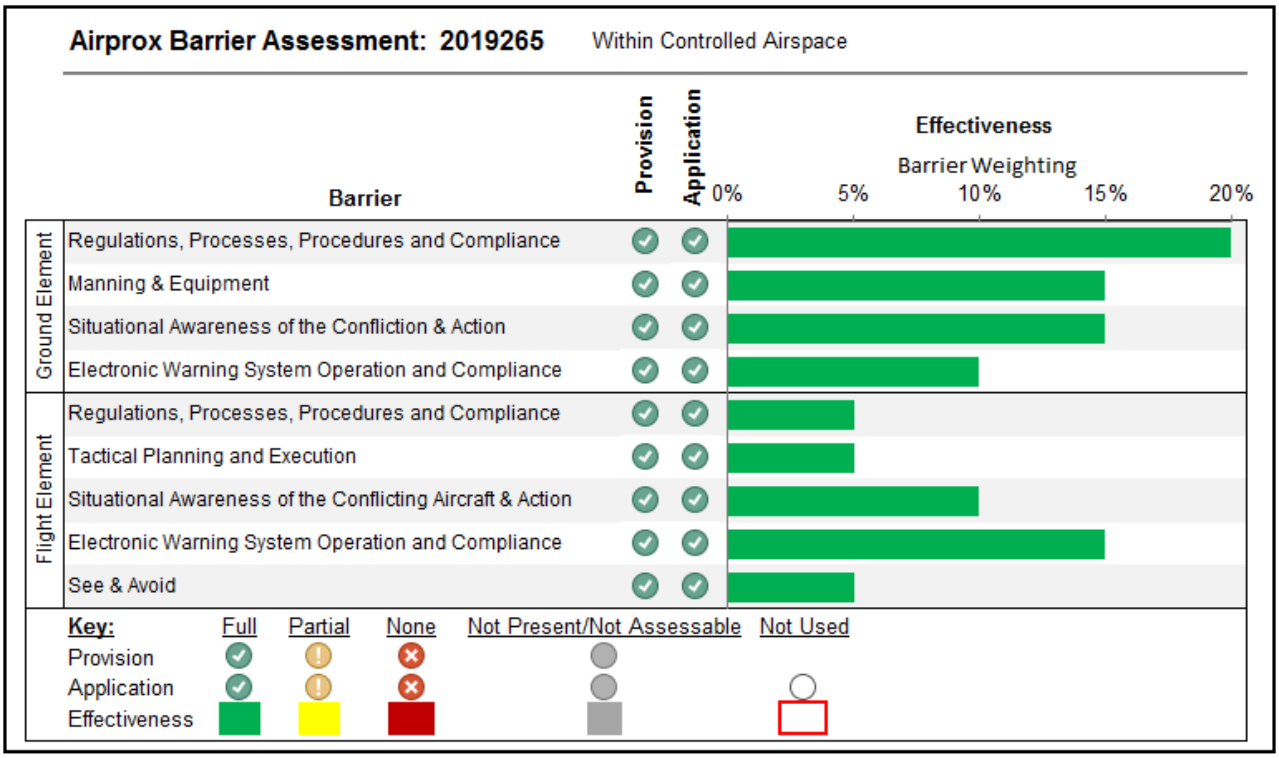
	2019265		
CF	**Factor**	**Description**	**Amplification**
	Flight Elements		
	• Electronic Warning System Operation and Compliance		
1	Contextual	• ACAS/TCAS RA	TCAS RA event
2	Contextual	• ACAS/TCAS TA	TCAS TA / CWS indication
3	Technical	• ACAS/TCAS Nuisance Alarm	CWS alerted inaptly for VFR flight
	• See and Avoid		
4	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: E.

Safety Barrier Assessment[3]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that all the relevant safety barriers had functioned appropriately.

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


Airprox Barrier Assessment: 2019265
Within Controlled Airspace
Barrier
Provision
Application
Effectiveness
Barrier Weighting
0%
5%
10%
15%
20%
Ground Element
Regulations, Processes, Procedures and Compliance
Manning & Equipment
Situational Awareness of the Confliction & Action
Electronic Warning System Operation and Compliance
Flight Element
Regulations, Processes, Procedures and Compliance
Tactical Planning and Execution
Situational Awareness of the Conflicting Aircraft & Action
Electronic Warning System Operation and Compliance
See & Avoid
Key:
Full
Partial
None
Not Present/Not Assessable
Not Used
Provision
Application
Effectiveness