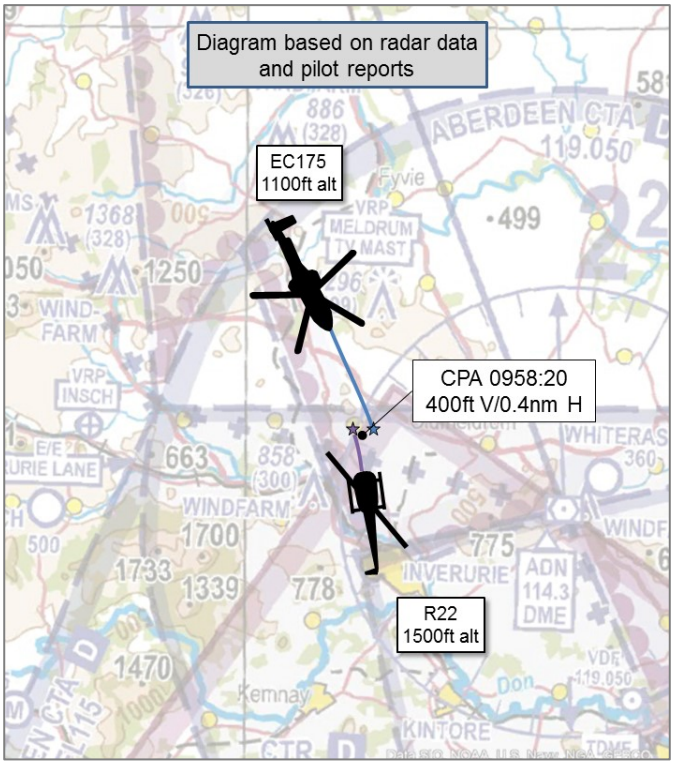
AIRPROX REPORT No 2019160

Date: 29 Jun 2019 Time: 0958Z Position: 5720N 00224W Location: 5nm NW ADN

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EC175	R22
Operator	Civ Comm	Civ Helo
Airspace	Aberdeen CTR	Aberdeen CTR
Class	D	D
Rules	VFR	VFR
Service	Radar Control[1]	Radar Control
Provider	Aberdeen	Aberdeen
Altitude/FL	1100ft	1500ft
Transponder	A, C, S	A, C, S
Reported		Not reported
Colours	Yellow	
Lighting	Landing, HISL	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	1000ft	
Altimeter	NK	
Heading	220°	
Speed	140kt	
ACAS/TAS	TCAS II	
Alert	TA	
Separation		
Reported	300ft V/0.5nm H	Not reported
Recorded	400ft V/0.5nm H	



THE EC175 PILOT reports that he had cleared lower clouds north east of Aberdeen and was continuing towards the Oldmeldrum mast. ATC informed them of an R22 leaving the Inverurie lane at 1500ft agl and said they would give them further information. They had the aircraft on ACAS and were aware of its position. With about 5nm separation they noticed the aircraft turn and start descending towards their position, they were not visual. They turned to the left away from the conflict. At this point a TCAS TA alert went off. The PM asked ATC to tell the R22 to stop descending, which it did. At about 3nm separation they had the R22 visual. The R22 was not visual with them (they thought), so the PM transmitted a relative bearing and distance which the R22 pilot responded to. The R22 passed non-standard right side with no further conflict.

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

THE R22 PILOT reports that he was with a student conducting the first dual nav exercise. An extensive ground school brief of some three hours was given, with the flight being planned for the next day. A Navex track from the Loch of Skene to Turriff and return was briefed. In applying Threat and Error Management (TEM) all major features were identified and that Turriff was a VRP. In particular the brief included anticipating inbound helicopters returning from offshore, and that the Turriff turn had been placed on the chart to a point west of Turriff to be west of anticipated traffic inbound to Aberdeen. Also included in the brief was the use of the Inveruire lane which inbound aircraft would, in all probability, be using in the proximity of Inverurie. The track was planned at 1500ft altitude and 70kts IAS. This lower speed for a Navex was used to enable the student to have additional mental capacity for lookout, RT and maintaining track, altitude and airspeed. The student was on track and maintaining 1500ft at Inverurie. The RT was particularly busy. Radar advised that an R66 Helicopter was preparing to lift from a private site NW of Inverurie and shortly thereafter radar advised of a helicopter inbound to EGPD and

[1] Prior to entering the CTR the EC175 pilot was receiving a Traffic Service from Aberdeen.

that it was to the north east of their position at an altitude which was lower than the 1500ft being maintained by the student. The instructor prompted an ongoing lookout to the North and NE. In applying TEM the instructor also reminded the student from the brief that, if further information was received from radar, it might become necessary to break off from the track to the west, but no instructions were received from radar to deviate. Also, the instructor advised that if they had to deal with any emergency they would look to land to the west of track because of the inbound but also to be aware of the departing R66. The instructor became visual with the inbound off to the right or NE, in their 2 o'clock, range of about 5nm but, given the respective tracks, the inbound was well clear of their position and below. At the time, there was further busy RT. The instructor prompted the student (who was also now visual) to report 'visual', which the student did at the first opportunity upon the frequency becoming clear, but as this transmission did not appear to be acknowledged, the instructor repeated the message. The inbound helicopter thereafter passed to their right, east of and well clear and well below their position. As a CFI with 8500 training hours and, having used the track many times including having an acute awareness of and dealing with separation from inbound offshore traffic, he is entirely satisfied that, taking account of the distance between the aircraft as well as their relative positions and tracks, the safety of the aircraft was not compromised in any way whatsoever.

THE ABERDEEN CONTROLLER reports that the EC175 was inbound VFR from the Banff direction with a clearance to join the zone west of the Oldmeldrum mast for the Inverurie Lane not above 2000ft. The R22 was outbound from Peterculter to the Turriff area VFR not above 2000ft within the zone. When the EC175 was west-abeam Turriff, Traffic Information was passed to the pilot about the R22 who was still inside the zone near Inverurie. Traffic Information was also passed to the R22 pilot on the EC175. As the two aircraft approached each other the pilot of the EC175 asked for an update which was given along with updating the R22 pilot on the position of the EC175. There was a garbled transmission which he thought was the EC175 pilot reporting 'not in sight' whilst the R22 was reporting 'in sight' and the two aircraft passed abeam each other.

Factual Background

The weather at Aberdeen was recorded as follows:

```
METAR COR EGPD 290950Z 17009KT CAVOK 21/16 Q1015 NOSIG
```

Analysis and Investigation

Aberdeen ATC Unit Investigation

The EC175 was inbound to Aberdeen from the north, entering the Control Zone under a VFR clearance and routing towards Inverurie. The R22 was also operating VFR in the opposite direction to the EC175, towards Turriff. Traffic information was passed to both pilots by the student Aberdeen Approach Radar controller and updated when requested by the pilot of the EC175. The R22 was maintaining 1500ft with the EC175 at 1100ft. The pilot of the R22 reported visual with the EC175 approximately 1nm before the aircraft passed down each other's right-hand side, with the R22 still indicating 400ft above the EC175 (based on Mode C responses)

0930 - The pilot of the R22 contacted the Aberdeen Approach Radar Student controller (INT-S) to request a clearance to depart from Culter Heli site (6nm southwest of Aberdeen Airport). INT-S issued an approval to lift and enter the Aberdeen Control Zone (CTR), and to route north towards Turriff in accordance with their flight plan, but to remain west of Inverurie, not above altitude 2000ft VFR. An SSR code of 4250 was also passed.

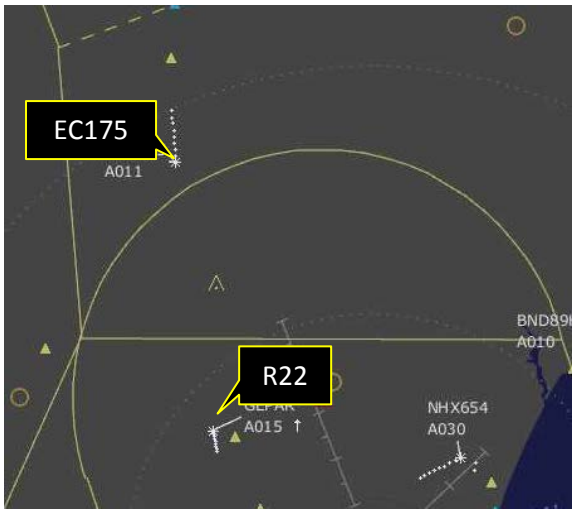
0944:23 - The pilot of the R22 reported airborne. INT-S requested the pilot squawk ident and checked their altitude, which was given as 1000ft and correlated with the Mode C seen. INT-S informed the pilot they were identified.

0950:07 - The pilot of the EC175 made his initial call to INT-S. This aircraft was 8nm north of SMOKI and descending from 3000ft to make a VFR join to land at Aberdeen Airport. A CTR joining

clearance to route west of the Oldmeldrum Mast to join the Inverurie Lane, VFR not above 2000ft had been issued earlier.

0952:16 - INT-S passed Traffic Information to the R22 pilot on an R66 helicopter on the ground near Inverurie.

0953:39 – The EC175 was at Turriff tracking south at 1000ft with the R22 1nm southwest of Inverurie at 1500ft.

0955:13 INT-S passed traffic information to the EC175 pilot on the R22 stating the aircraft was 1nm west of Inverurie routing north to Turriff and added that he would keep the pilot updated.	
0956:09 INT-S passed Traffic Information to the R22 pilot on the EC175 stating it was an EC175 just approaching west of the Oldmeldrum Mast to join the Inverurie Lane and currently at 1100ft. At this time the R22 was 1.5nm northwest of Inverurie with the EC175 6nm north of the R22, opposite direction.	
0957:20 The pilot of the EC175 asked INT-S for an update on the position of the R22. INT-S advised the pilot the R22 was in his 12 o'clock, opposite direction at 3nm and 300ft above. The pilot asked INT-S "Can you tell him to stop descending, we are not visual at this time".	

0957:40 - The Approach Radar Mentor (INT-M) transmitted to the R22 pilot "Opposite direction previously mentioned helicopter, just slightly right of your 12 o'clock at two miles, little bit lower, do you have them in sight?". The pilot responded "Negative".

0957:52 A crossed transmission was received by INT-M where the instructor on the R22 can be heard to state he was visual with the other traffic and the pilot of the EC175 stated he was on R22's right hand side, 300ft below. The instructor on the R22 then reiterated he was visual with the other traffic.	
0958:18 The aircraft passed each other, with the closest recorded separation being 0.5nm and 400ft at this time.	

The R22 was conducting a VFR training flight on a direct track between Culter Heli site and Turriff VRP but had been issued with a clearance that required the aircraft to route to the west of Inverurie and remain not above 2000ft QNH. This is not a frequently flown track, but still a legitimate one.

The EC175 was inbound to Aberdeen from an offshore oil installation and had been issued with a CTR clearance to pick up the Inverurie Lane not above 2000ft QNH under VFR. The technique of routing VFR inbound helicopters to the west of Oldmeldrum Mast to Inverurie to join the Inverurie Lane is common practice.

The event occurred approximately 1nm within the Aberdeen Class D CTR. The use of a 'not above 2000ft' clearance is standard for such flights within Aberdeen CTR.

MATS PART 1 REQUIREMENTS

ATC obligations for such a VFR-VFR confliction in Class D airspace as stated in CAP493 MATS Part 1 are:

> *Pass traffic information to VFR flights on all other flights and provide traffic avoidance advice when requested.*

These actions were correctly carried out by ATC. Although the pilot of the EC175 asked the controller to instruct the R22 to stop descending and this specific request was not passed on by INT-M, this may not be considered to have been a request for traffic avoidance.

In a discussion with INT-M, the following points were noted:

- This was a good VFR traffic training day for his student. The student controller is on his final phase of his Approach Radar training at Aberdeen (his first unit endorsement) and as such INT-M was aware there was a "fine line" to strike between allowing his student to do as much of the controlling as possible whilst ensuring the safety of all traffic.
- Although INT-S has not seen a significant amount of complex VFR traffic scenarios, the mentor believed the prevailing traffic situation at the time of the event was within his student's capabilities.
- INT-M reported he believed they did everything they reasonably could for the two aircraft in that Traffic Information was first passed at a relatively early stage in order to give the pilots of both aircraft good situational awareness and then they provided an update on the traffic to both aircraft to assist them in visually acquiring each other.
- INT-M noted the aircraft did see each other, but this occurred just before they passed [UKAB note: About 1nm prior to CPA].
- In his opinion, INT-M did not consider this event to fall within the definition of an Airprox.

Both the EC175 and R22 pilots were operating on VFR clearances that were appropriate for the conditions and their requested routings. INT-S had provided the pilots of both aircraft with early warning of the traffic and this was later updated by both him and INT-M.

All ATC actions were appropriate for the flight rules and class of airspace. The pilots of both aircraft reported visually acquiring each other prior to the closest point of approach; however, the pilot of the EC175 considered their relative positions were such that it met the definition of an Airprox.

UKAB Secretariat

The EC175 and R22 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[2]. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right[3]. If the incident geometry is considered as converging then the EC175 pilot was required to give way to the R22[4].

Summary

An Airprox was reported when an EC175 and a R22 flew into proximity near Inverurie at 0958hrs on Saturday the 29th of June 2019. Both pilots were operating under VFR in VMC and in receipt of a Radar Control service from Aberdeen.

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.

[2] SERA.3205 Proximity.
[3] SERA.3210 Right-of-way (c)(1) Approaching head-on.
[4] SERA.3210 Right-of-way (c)(2) Converging.

The Board began by looking at the actions of the EC175 pilot. Noting that he was about to enter Class D airspace prior to the Airprox occurring, some members wondered whether he might have been expecting the controller to deconflict him from the R22 when in fact the controller was not required to achieve any form of separation between VFR-VFR traffic. Clearly aware of the R22 from his TCAS and the Traffic Information from the controller, it was for the EC175 pilot to modify his track or route if he was concerned by the R22's presence (especially if he thought the R22 pilot was not aware of him), although members agreed that it was not unreasonable for him first to ask the controller if the R22 pilot would be content not to descend as they converged. However, if the EC175 pilot continued to be concerned by the proximity of the R22 **(CF1)**, then he should have made the decision himself to turn to increase the separation between the aircraft. Members noted that the EC175 pilot had received a TCAS TA **(CF2)**, and some wondered whether this had influenced his perception of the incident as being closer than it was in reality.

For his part, members noted that the R22 pilot was in fact visual with the EC175 and was not concerned by the proximity at any point, although he did agree to stop his descent. That being said, they cautioned that pilots should take care when pointing at other aircraft that might be TCAS equipped at close range because this can result in warnings being generated that might require the other aircraft's pilot to react accordingly.

Turning to the risk, the Board noted that the aircraft had been separated by 0.5nm horizontally and 400ft vertically at CPA, that the EC175 crew had seen the R22 at about 3nm, and that the R22 pilot had seen the EC175 at about 5nm. As a result, members believed that there had been no reduction in safety margins **(CF3)** and that both pilots had seen the other aircraft in sufficient time to ensure that normal safety standards had been maintained. The Board therefore assessed the risk as Category E.

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

Contributory Factor(s):

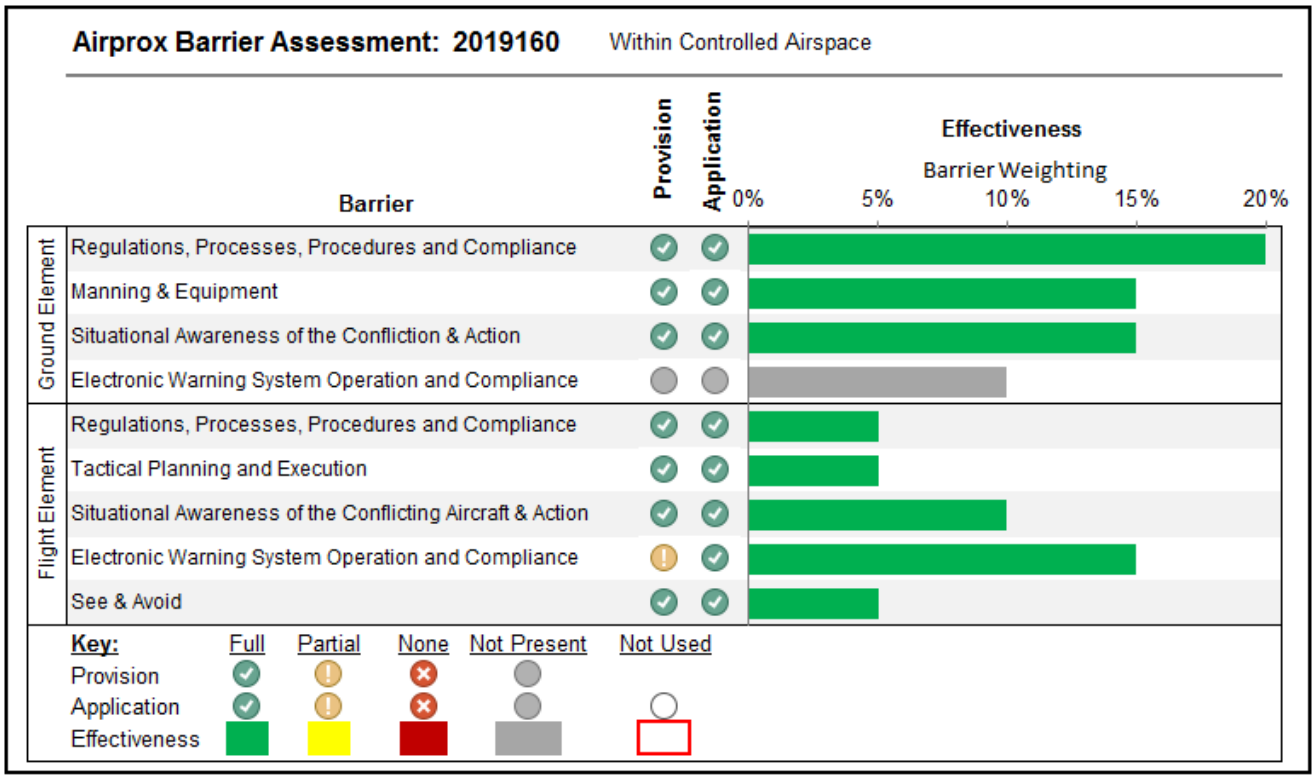
	2019160		
CF	**Factor**	**Description**	**Amplification**
	Flight Elements		
	• Situational Awareness of the Conflicting Aircraft and Action		
1	Human Factors	• Interpretation of Automation or Flight Deck Information	Pilot was concerned by the proximity of the other aircraft
	• Electronic Warning System Operation and Compliance		
2	Contextual	• ACAS/TCAS TA	TCAS TA / CWS indication
	• See and Avoid		
3	Human Factors	• Monitoring of Other Aircraft	Sighting report

Degree of Risk: E.

Safety Barrier Assessment[5]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that all the safety barriers had functioned correctly:

[5] 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: 2019160
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 Used
Provision
Application
Effectiveness