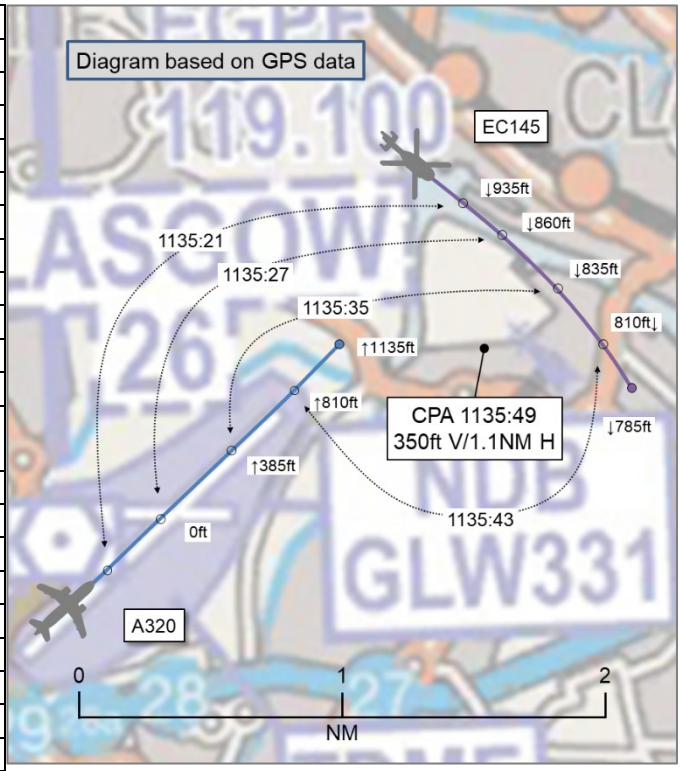
## AIRPROX REPORT No 2022257

Date: 18 Oct 2022 Time: 1136Z Position: 5553N 00424W Location: Glasgow ATZ

## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

| Recorded | Aircraft 1 | Aircraft 2 |
|---|---|---|
| Aircraft | A320 | EC145 |
| Operator | CAT | HEMS |
| Airspace | Glasgow CTR | Glasgow CTR |
| Class | D | D |
| Rules | IFR | VFR |
| Service | ACS | ACS |
| Provider | Glasgow Tower | Glasgow Tower |
| Altitude/FL | 1135ft | 785ft |
| Transponder | A, C, S+ | A, C, S |
| **Reported** | | |
| Colours | White, Orange | Yellow |
| Lighting | Nav, Strobes, Landing | Nav, Landing, Anti-Cols |
| Conditions | VMC | VMC |
| Visibility | >10km | >10km |
| Altitude/FL | 1300ft | 'Descending' |
| Altimeter | QNH (NK hPa) | QNH (NK hPa) |
| Heading | 048° | 'Southeasterly' |
| Speed | 150kt | 130kt |
| ACAS/TAS | TCAS II | TCAS I |
| Alert | None | None |
| **Separation at CPA** | | |
| Reported | 300ft V/0.5-1NM H | NK V/NK H |
| Recorded | 350ft V/1.1NM H | |




**THE A320 PILOT** reports that it's common practice for ATC to inform them of ambulance helicopter traffic on the climb-out. They were on a tight slot, holding at G2 for RW05. Line-up and take-off clearance was issued for RW05 and, as they commenced the take-off roll, ATC called at around 50kts about a helicopter in the climb-out. The call was acknowledged and take-off continued. As they rotated the helicopter was straight ahead, passing left-to-right at around 1000ft, approximately 1.5NM ahead. Take-off pitch was maintained and they passed about 300ft above the helicopter with it 0.5-1NM to their right-hand side. They were visual with the helicopter the entire time and no TCAS RA was issued, although RAs are inhibited below 1000ft.

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

**THE EC145 PILOT** reports that the flight involved an air ambulance transfer from [departure station], to the Queen Elizabeth University Hospital (QEUH) in Glasgow. Due to 'gin-clear' conditions, the flight was essentially a straight line, VFR, direct from [departure station] to the QEUH, entering Glasgow Class D airspace in the vicinity of Greenock. Even before entering the zone, there had been a number of GA aircraft that presented potential conflicts, and had kept them busy with looking out, reporting positions etc. They entered the Glasgow Class D airspace and were given a Radar Control Service on 119.100Mhz, and believe they were initially cleared to the Erskine Bridge, flying on a southeasterly track broadly following the Clyde river. Before approaching the Erskine Bridge, they were transferred to Tower on 118.805Mhz and sometime after that were cleared to cross the RW05 climb-out, which they were to report 'clear to the south of'. They recall being visual with an Airbus which was either taxying or lining up on RW05, although they can't remember being asked whether they were visual. As crossing of the climb-out and landing on the QEUH were imminent, they recall thinking they should complete/finalise the landing checklist as they knew the status quo and finishing the checks would not have presented a distraction, (namely: "The Airbus pilot is holding for us to cross, and we'll be clear

shortly so we have a proverbial second"), but more so, because they had been kept busy looking out and identifying traffic up until that point. The next call they heard was from the Tower controller to the Airbus pilot about them [the EC145] crossing, and the Airbus pilot reporting visual. They remember briefly thinking that was odd, before looking out again and realising the Airbus had actually started the take-off roll. That surprised them, as the last they knew was that they were holding momentarily for them [the EC145] to cross. They estimate that when the Airbus rotated, they had just gone through the climb-out flightpath, although they may have been slightly further south already. They reported clear to the south shortly afterwards. Shortly after that, traffic, which they believe to be an [unrelated] B737, was cleared to land on RW05 when the Airbus had lifted. They recall thinking that ATC might have underestimated how long it would take for them to cross the climb-out, for the Airbus to depart RW05 and for the (believed to be) B737 to land after that. There was no indication afterwards from anyone on frequency to suggest they had been in close proximity and they landed on the QEUH uneventfully. Although they did think the spacing was unusually tight, even for busy airspace like Glasgow which they are used to, it did not occur to them to report this as an occurrence. Apart from a brief moment, they were always visual with the relevant traffic and so far as they recall they were visual with them [the EC145] as well. They were alerted by the company to the fact an Airprox had been filed on 3rd November and approached for details, at which point they recalled the circumstances of the flight straight away. [They consider this] is an indication that they should have reported it at the time and had them wondering why they actually did not.

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

**THE GLASGOW TOWER CONTROLLER UNDER SUPERVISION** reports that they were operating as the AIR[1] controller under supervision by an OJTI in moderate to heavy traffic. [The EC145 pilot], (VFR) was on frequency and instructed to cross the RW05 climb-out behind a departing ATR. An inbound G115 pilot (VFR) was instructed to extend their final to get an [A320] away from G1. [The A320 pilot] was instructed to line-up on RW05. The controller had the [EC145] continually in sight and deemed it would be through the climb-out before the [A320] would be airborne. They cleared [A320 pilot for] take-off. At this point they were in discussion with the OJTI about traffic and realised that they had not passed Traffic Information. As the [A320] turned onto the runway, they passed Traffic Information on the [EC145] stating 'left-to-right though climb-out, well ahead'. This was acknowledged by the pilot of [the A320]. No further comments were made.

**THE GLASGOW TOWER OJTI** reports that they were working in AIR, monitoring a controller who was returning from a period off work. The traffic loading was medium-heavy with ILS calibration in progress. [The EC145 pilot] had been cleared through the RW05 climb-out, [the A320 had] lined-up and a G115 was on base. The controller-being-monitored then cleared [the A320 pilot] for take-off before [the EC145] had crossed through the centreline. They pointed out to the controller that [the A320 pilot] had not yet had Traffic Information on [the EC145], this the controller did straight away as [the A320 pilot] was commencing their take-off roll. At no point did they consider there a need to stop [the A320] or orbit [the EC145], they had them both in sight and [the EC145] was through the centreline a matter of seconds later and [the A320] then passed behind and above it.

## Factual Background

The weather at Glasgow was recorded as follows:

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METAR EGPF 181120Z 07008KT 9999 NCD 12/07 Q1030
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## Analysis and Investigation

### Glasgow ATSU Investigation Summary

[The A320 pilot] was given take-off clearance, followed by Traffic Information on [an EC145] when rolling. [The EC145] was cleared to cross the RW05 climb-out north-to-south and was still to the

[1] The Tower position responsible for 'airborne' elements, not including the ground movement control (GMC).

north [of the extended centreline] when the take-off clearance to [the A320] was issued. The pilot of [the A320] reported they passed about 0.5NM behind the helicopter which was 300ft below them.

ATCO A was operating as AIR and being monitored by ATCO B. RW05 was in use, a calibrator aircraft was holding in the vicinity at 1600ft, with a G115 holding on left base and another G115 holding on right base.

The runway was safeguarded for the calibrator and Cat 2/3 holding points were in use. [The A320 pilot] was holding at G2 and [another aircraft] was taxying to G2. An (AT76) had departed RW05 at 1132, and [an unrelated Airbus] was cleared to land. [The EC145 pilot] had just called on frequency, east of Dumbarton (north of the extended centreline) to route to the Queen Elizabeth University Hospital (south of the extended centreline).

| | | |
|---|---|---|
| 1133:53 | Tower | [A320 c/s] via Golf two line-up and wait runway zero five |
| | [A320] | Line-up and wait zero five [A320 c/s] |
| 1134:04 | | *unrelated transmissions* |
| 1134:34 | Tower | [A320 c/s] surface wind zero nine zero degrees at niner knots runway zero five clear take-off. |
| 1134:34 | [A320 c/s] | Clear take-off [A320 c/s]. |

([The A320] was crossing the G1 holding point when take-off clearance was issued. [The EC145] was still north of the RW05 climb-out) Figure 1.

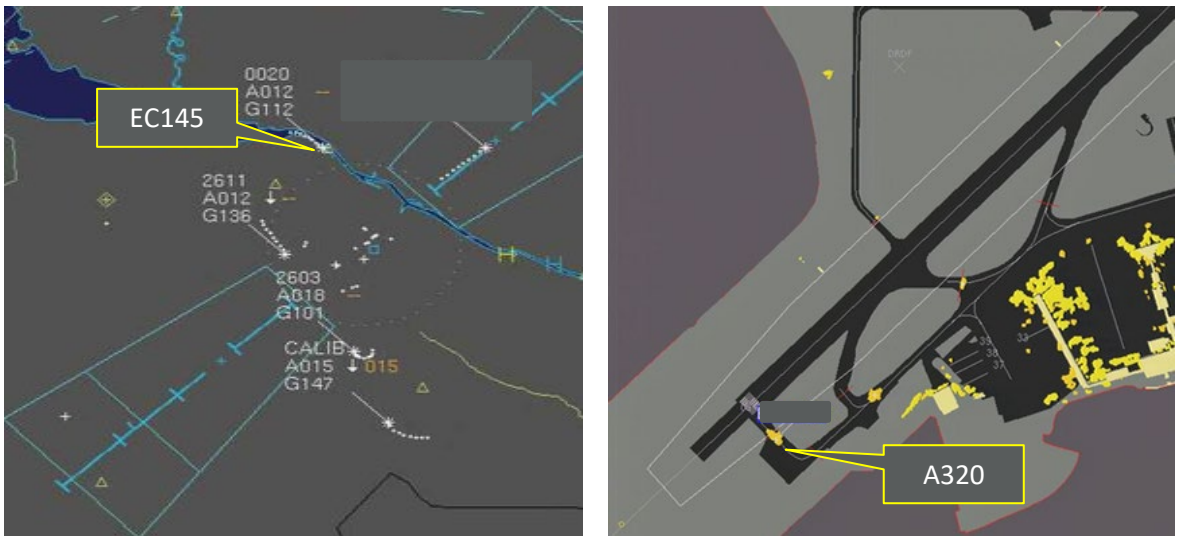



Figure 1.

| | | |
|---|---|---|
| 1134:53 | Tower | [A320 c/s] traffic just crossing through the uh climb-out, it's a helimed EC four five well ahead. |
| 1134:53 | [A320 c/s] | Roger. |

(At this point the [A320] aircraft was on the piano keys commencing the take-off roll. [The EC145] was still north of the extended centreline by approximately 0.5NM indicating altitude 1100ft) Figure 2.


Figure 2.

| | | |
|---|---|---|
| 1135:22 | [EC145 c/s] | And Tower [EC145 c/s] just clear the uh climb-out now |
| 1135:22 | Tower | [EC145 c/s] roger report letting down to the roof, the surface wind at the field is zero nine zero degrees one zero knots |
| 1135:22 | [EC145 c/s] | (unintelligible) [EC145 c/s] |

([The EC145] appeared to be directly on the climb-out as they report clear) Figure 3.

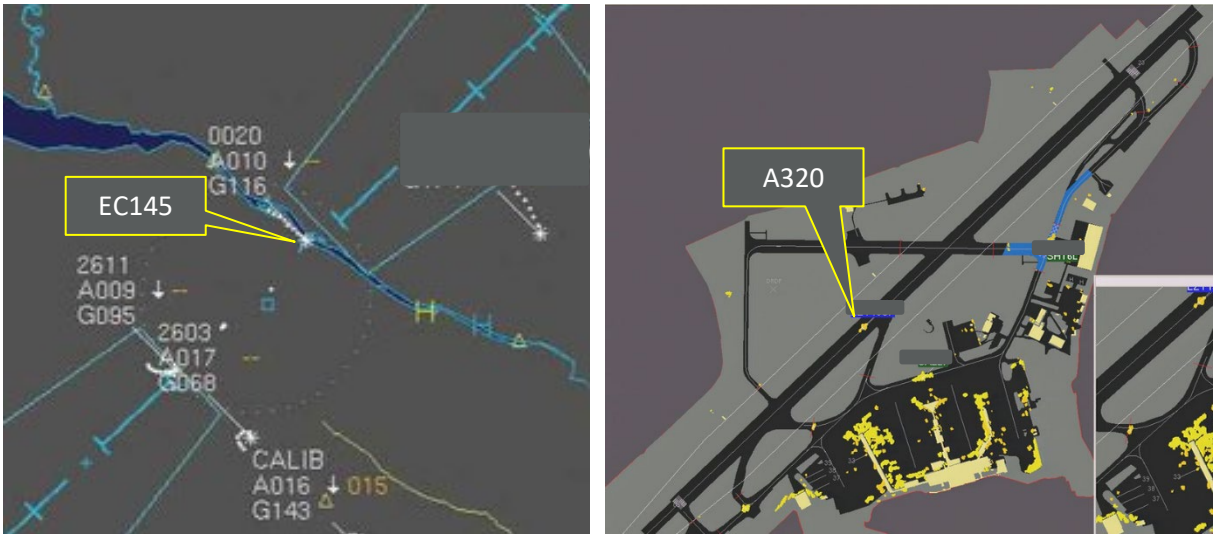



Figure 3.

When the [A320] disappeared from the SMR, and before appearing on the ATM, the [EC145] was south of the RW05 climb-out by just under 0.5NM. The pilot of [the A320] never mentioned the [EC145] and was transferred to Scottish Control shortly after departure.

RT, ATM and SMR recordings were reviewed. Both ATCOs were interviewed but this was some time after the event as nothing was filed until the unit was notified of the Airprox report. Both ATCOs were unaware of the incident at the time. The ASR received from the pilot [was also reviewed].

ATCO A had had a period of time not using the privileges of their licence. In accordance with [requirements],[2] before ATCO A returned to duty for both ADI and APS rating, they had to complete a period of time in both ratings being monitored by an OJTI.

It was the first day of ATCO A being monitored in the Tower and they had previously spent 1 hour in GMC and 2 hours in AIR with an OJTI (ATCO B). Tower [AIR] and GMC were split.

The traffic was medium with two VFR aircraft holding on opposite base legs for RW05, a number of departures, a VFR helicopter to cross the climb-out and a calibrator aircraft, VFR, holding to the south waiting to commence the next run. An [additional aircraft] (DHC6) was due in from the northwest and was visible on radar but still had around 35NM to go.

The Tower ATCO (ATCO A) reported that they were planning to get the two holding VFR aircraft in to land and enable the calibrator to carry out some more calibration runs before the inbound DHC6. ATCO A stated they had observed the helicopter out of the window and were confident that it would be south of the centreline by the time the [A320] was airborne. They recalled ATCO B prompting them to give Traffic Information to the departing aircraft and that that was the point they realised they hadn't issued it. They immediately informed [the A320 pilot] of the helicopter on the climb-out. ATCO A stated that the aircraft was only just commencing the take-off roll. This is confirmed by the SMR showing the aircraft at the very beginning of the runway. They were confident that the position of the two aircraft and their relative speeds meant the [EC145] would be well ahead of the departing A320.

ATCO B (mentor) reported they were working in AIR, monitoring an experienced controller who was returning from a period of time off. They recalled that [the EC145 pilot] had been cleared through the RW05 climb-out to the Queen Elizabeth University Hospital with [the A320] lined-up and a G115 on base. The controller-being-monitored then cleared [the A320 pilot] for take-off before [the EC145] had crossed through the centreline. ATCO B stated they had pointed out to the controller that [the A320 pilot] had not yet had Traffic Information on [the EC145], which ATCO A then issued immediately as [the A320] was commencing its take-off roll. ATCO B reported that at no point had they considered a need to stop [the A320] or orbit [the EC145] as they had them both in sight and [the EC145] was through the centreline a matter of seconds later. [The A320] then passed behind and above the helicopter.

Conclusions

A mentor (ATCO B) was observing an experienced controller (ATCO A) who had just [returned] after a number of weeks non-operational. The traffic was medium with two VFR inbound aircraft holding on opposite bases, a VFR helicopter to cross the climb-out and a number of departures. A VFR calibrator aircraft was holding to the south waiting to complete ILS calibration on RW05. The controller expressed a desire to expedite the traffic in order to allow the calibrator to complete a number of runs before the next inbound aircraft, a DHC6 with approximately 25 miles to go for the ILS.

The controller [ATCO A] cleared [the EC145 pilot] to cross the RW05 climb-out when they reported approaching the Erskine Bridge which is about 2.5NM from the climb out to the north. At the same time they had one of the G115 VFR aircraft routing to final and [the A320] lining up RW05. While [the EC145] was still north of the runway extended centreline by approximately 1NM, ATCO A cleared [the A320 pilot] for take-off. After a prompt from ATCO B, ATCO A issued Traffic Information to [the A320 pilot] on the [EC145] helicopter, advising them it was 'well ahead' although at this point the helicopter was still at least 0.5NM north of the centreline. No Traffic Information was passed to the [EC145 pilot]. ATCO A believed the helicopter's lateral profile would keep them well ahead of the departure but in reality the departure aircraft was airborne with the [EC145] about 200m south of the centre line.

[2] NMOCS, Airports Vol 1 12.6 Long Term Absence

The pilot of [the A320] reported in their ASR that no safety event occurred and the rest of the flight continued normally. They did not report at the time that they were filing an Airprox, however, sometime later ATC was notified that a report had been submitted.

**UKAB Secretariat**

The Manual of Air Traffic Services Part 1, CAP 493, Section 1: General. Chapter 5: Integration of VFR Flights with IFR Traffic in Class D CTR/CTA/TMA, 3. Control of VFR flight para 3.1 states:

> *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.*

The A320 and EC145 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[3] If the incident geometry is considered as converging then the EC145 pilot was required to give way to the A320.[4] 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.[5]

## Summary

An Airprox was reported when an A320 and an EC145 flew into proximity in the Glasgow ATZ at 1136Z on Tuesday 18th October 2022. The A320 pilot was operating under IFR in VMC, the EC145 pilot operating under VFR in VMC. Both pilots were in receipt of an Aerodrome Control Service from Glasgow Tower.

## PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS data, reports from the air traffic controllers 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 considered the actions of the A320 pilot and noted that, although the Traffic Information they had received had been passed to them at a later than optimum point (**CF1**), they had reported that they had been visual with the EC145 from an early stage. Members discussed the geometry of the event, agreeing that the A320 crew's TCAS would have been unlikely to issue an alert, however, members were encouraged that the A320 pilot had been using their TCAS display to enhance their Situational Awareness. The Board then agreed that, although the A320 pilot had been visual with the EC145, its proximity had been such that it had caused the A320 pilot some concern (**CF3**).

Next, members discussed the actions of the EC145 pilot and noted that they had been visual with the A320 and had assumed that the A320 crew would not be commencing their take-off roll until after they had crossed the RW05 centreline. The Board wondered whether there may have been a more appropriate routing that the EC145 pilot could have followed which would have meant they had not needed to cross the centreline, however agreed that, in following the routing they had, the pilot had been complying with instructions from the Tower controller.

The Board then turned its attention to the ground element involvement and a civil air traffic controller member stated that, as the EC145 pilot had been visual with the A320 pilot throughout, the passage of Traffic Information to them would not have influenced the EC145 pilot's actions or affected the outcome, however, best practice would have been to have provided Traffic Information to the EC145 pilot. A civil pilot member stated that take-off is a critical phase of flight and that, at the time the Traffic Information

[3] (UK) SERA.3205 Proximity.
[4] (UK) SERA.3210 Right-of-way (c)(2) Converging.
[5] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

had been passed to the A320 crew, the flightdeck workload would have been very high. Members wondered whether, given the geometry of the event, it would have been prudent for the Tower controller to have delayed the passing of Traffic Information to the A320 pilot until they had been airborne, or whether the controller had had an automatic reaction to pass the Traffic Information when the OJTI pointed out that it had not been passed. Notwithstanding, the Board was in agreement that the Traffic Information had been passed at a later than optimum time (**CF1**).

Finally, the Board considered the risk of collision involved in this Airprox. Members discussed that the pilots of both of the aircraft had been visual with the other aircraft in good time but acknowledged that the proximity of the EC145 had caused some concern to the A320 pilot. The Board concluded that, although safety had been degraded, there had been no risk of collision. Consequently, the Board assigned a Risk Category C to this event.

## PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

| | 2022257 | | | |
|---|---|---|---|---|
| CF | **Factor** | **Description** | **ECCAIRS Amplification** | **UKAB Amplification** |
| | **Ground Elements** | | | |
| | **• Situational Awareness and Action** | | | |
| 1 | Human Factors | • ANS Traffic Information Provision | Provision of ANS traffic information | TI not provided, inaccurate, inadequate, or late |
| | **Flight Elements** | | | |
| | **• Situational Awareness of the Conflicting Aircraft and Action** | | | |
| 2 | 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 |
| | **• See and Avoid** | | | |
| 3 | Human Factors | • Perception of Visual Information | Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement | Pilot was concerned by the proximity of the other aircraft |

Degree of Risk: C

Safety Barrier Assessment[6]

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

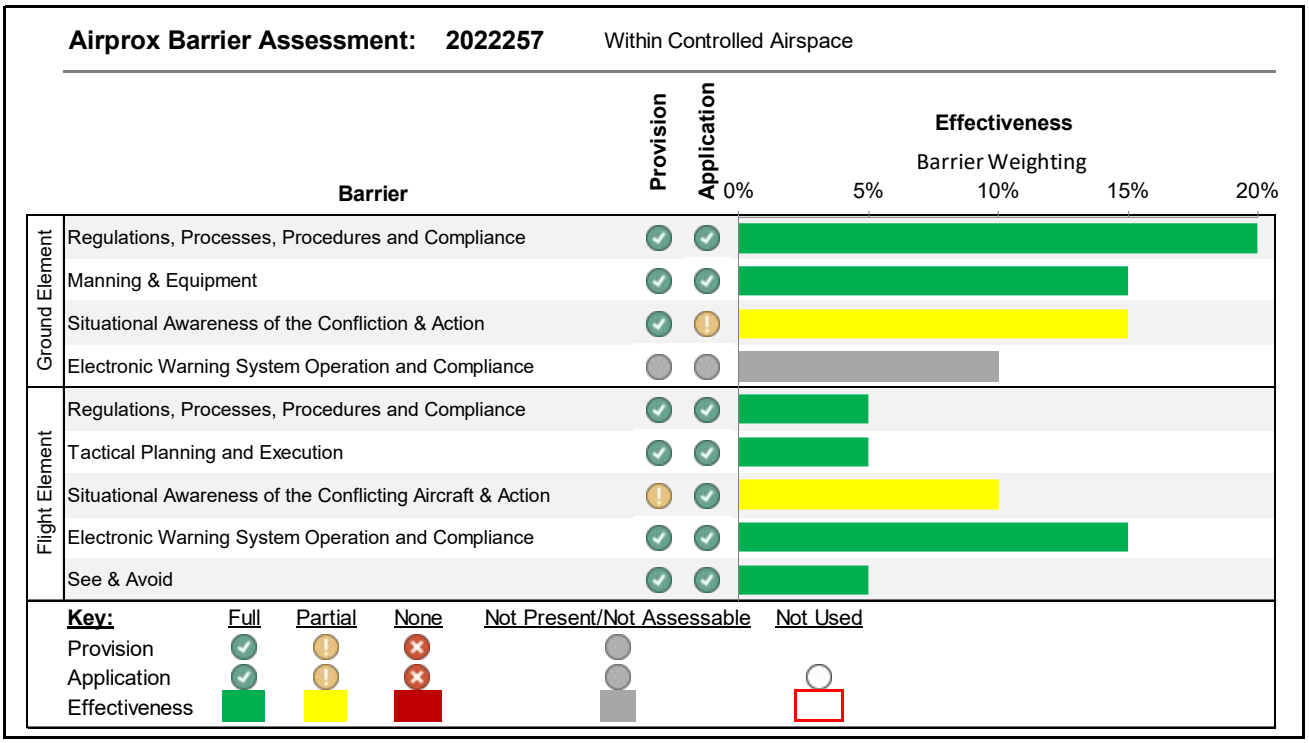
**Ground Elements:**

**Situational Awareness of the Confliction and Action** were assessed as **partially effective** because, although Traffic Information had been provided to the A320 pilot, this had been passed at a later than optimum time and no Traffic Information had been passed to the EC145 pilot.

**Flight Elements:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **partially effective** because, although the A320 pilot had become aware of the presence of the EC145, this had been at a later than optimum time.

[6] 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: 2022257
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