

## **AIRPROX REPORT No 2014144**

Date/Time: 19 Aug 2014 0941Z

Position: 5626N 00258W  
(Dundee)

Airspace: Dundee ATZ/ (Class: G)  
Scottish FIR

Aircraft 1                      Aircraft 2

Type: Grob Heron<sup>1</sup>                      EC120

Operator: Civ Trg                      Civ Pte

Alt/FL: 1000ft                      700ft  
QNH (1010hPa)                      QNH (1013hPa)

Conditions: VMC                      VMC

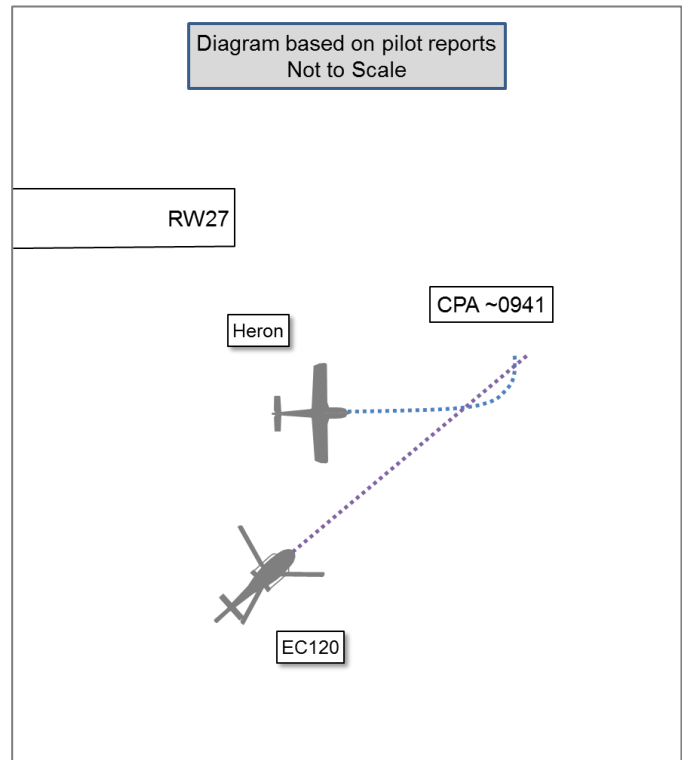
Visibility: NK                      >40km

Reported Separation:

200ft V/0m H                      300ft V/500m H

Recorded Separation:

NK

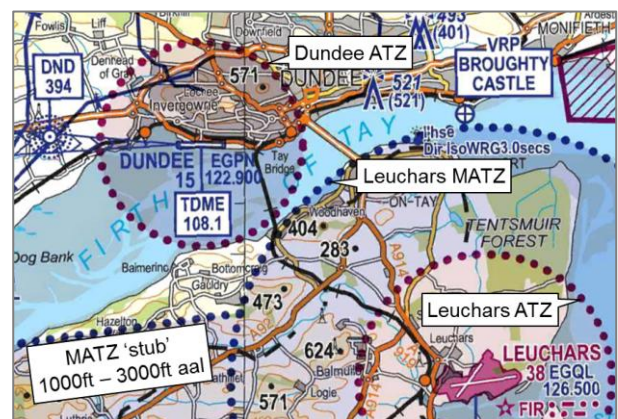


## **PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

**THE HERON PILOT** reports instructing normal circuits to RW27 with the student flying. The predominantly white aircraft had strobe, navigation and landing lights selected on, as was the SSR transponder with Modes A and C. The aircraft was not fitted with an ACAS or TAS. The pilot was operating under VFR in VMC, in receipt of an Aerodrome Control Service from Dundee Tower. Whilst in the late downwind position, the instructor heard ATC telling a helicopter pilot to remain 'outside the circuit traffic'. The instruction was repeated and the helicopter pilot acknowledged and reported being at 800ft. During their turn onto the base leg, level at 1000ft at 90kt, the instructor saw a helicopter 'coming from underneath', heading west to east on what looked to be an extended downwind. The instructor stated that the helicopter pilot did not have permission to enter the ATZ and that a colleague, also in the circuit, had stated after the flight that the other aircraft appeared to be inside the Dundee ATZ and was very close to the instructor's aircraft. The instructor noted that it was a busy circuit. The Airprox was reported to Dundee ATC by phone after landing.

She assessed the risk of collision as 'High'.

**THE EC120 PILOT** reports transiting from south to north, to the west of RAF Leuchars. The green and silver helicopter had navigation lights selected on, as was the SSR transponder with Modes A and C. The aircraft was not fitted with an ACAS or TAS. He was given a squawk for Leuchars but briefly spoke with Fife airfield first, as his route took him close by. He was informed that Fife had no traffic so switched to Leuchars, where he agreed a Basic Service and requested MATZ penetration at his level of 1000ft, passing a couple of miles to the west of Leuchars. This was declined and he was offered a transit at 3000ft. He declined this option and stated he would transit outside the MATZ, below the MATZ stub to the west. He requested frequency change to Dundee but was asked to stay with



<sup>1</sup> A Grob Heron (G115D2) is visually identical to a Grob Tutor (G115E), with the exception of a 2-bladed, fixed-pitch propeller rather than the Tutor's 3-bladed variable-pitch propeller.

Leuchars, which he did until he received a clearance to speak to Dundee. On doing so, he asked for a Basic Service and stated he would be passing 'outside controlled airspace, through the gap between Dundee and Leuchars'. He was heading 050° at 120kt, flying at 700ft and below the Dundee circuit height. He was not given any information on circuit traffic nor on any possible conflicting traffic. Dundee ATC seemed to be most concerned about him staying outside 'controlled airspace'. At a position east-southeast of Dundee, he saw a fixed wing aircraft pass down his right hand side, well clear horizontally and above. Dundee had not notified him of this circuit traffic. The pilot stated that he did not consider this to be an Airprox, that he had no intention to report the traffic either to Dundee Tower nor to report it once he had landed and that the flight continued uneventfully.

He assessed the risk of collision as 'None'.

**THE DUNDEE CONTROLLER** reports the visual circuit was busy with 4 aircraft carrying out touch-and-go's. The EC120 pilot called to route from south abeam Dundee through the gap between the Leuchars MATZ and the Dundee ATZ at 800ft agl. He was instructed to remain outside the Dundee ATZ and report passing Broughty Castle VRP. At the time of his first call, the controller could not see the helicopter but, once he had the helicopter visual, it appeared that it was to the southeast of [the Airprox Heron], which was turning left base for RW27, away from the helicopter. From the VCR, the two aircraft appeared close, with the EC120 'outside' [the Airprox Heron]. As the Heron pilot commenced the turn onto left base the two aircraft were moving apart so the controller elected not to pass Traffic Information to either aircraft. After landing, the Heron pilot rang the VCR to state that they wished to file an Airprox report.

### Factual Background

The weather at Dundee was recorded as follows:

METAR EGN 190920Z 29006KT 230V340 9999 SCT045 13/06 Q1010

METAR EGN 190950Z 27006KT 230V320 9999 SCT040 12/05 Q1010

A transcript of the Dundee Tower RTF was provided, as follows:

From	To	Transcript
EC120	Tower	Dundee good morning it's helicopter [EC120 C/S] (0939:00)
Tower	EC120	????? [EC120 C/S] Dundee pass your message
EC120	Tower	Good morning to you, we're an E C one twenty out of a private site Edinburgh (0939:10) routeing????? to land at a private site Aberdeen, er been working er Leuchars, er maintaining outside their MATZ, routeing on a direct track up towards Aberdeen and er (0939:20) just going to go through the gap so I'll be staying outside controlled airspace but er request for er Basic Service
Tower	Other Heron	[Other Grob Heron C/S] line up runway (0939:30) two seven
Tower	Other Heron	[Other Grob Heron C/S] line up two seven
Airprox Heron	Tower	Downwind touch and go
Tower	Other Heron	I say again [Other Grob Heron C/S] (0939:40) line up two seven
Other Heron	Tower	Line up two seven [Other Grob Heron C/S]
Tower	Airprox Heron	[Airprox Heron C/S] see you????? number one, report final
Airprox Heron	Tower	Number one report final [Airprox Heron C/S]
Tower	EC120	[EC120 C/S] Dundee (0939:50) er sorry, what's your routeing in relation to the Dundee aerodrome traffic zone?

From	To	Transcript
EC120	Tower	Er we're visual with the airfield just to the south of ?????, passing er to the southeast of the field through the gap between (0940:00) controlled airspace, we're at er eight hundred feet on er one zero one one and er visual with traffic just above [EC120 C/S]
Tower	EC120	Okay, remain outside the aerodrome traffic zone please (0940:10), you're not authorised to enter the Dundee aerodrome traffic zone, report passing Broughty Castle V R P
EC120	Tower	Wilco but not looking to er to transit, er we're looking to transit through the gap between controlled airspace [EC120 C/S] (0940:20)
Tower	EC120	Yep understood, just????? that you remain outside the aerodrome traffic zone
EC120	Tower	Copy that and er wilco [EC120 C/S]
Tower	EC120	It's a Basic Service Dundee Q N H one zero one zero (0940:30)
EC120	Tower	One zero one zero and it's a Basic Service [EC120 C/S]
Other Heron	Tower	[Other Grob Heron C/S] passed the castle en-route Tay er the road-bridge
Tower	Other Heron	[Other Grob Heron C/S] Dundee roger continue straight in approach (0940:40) runway two seven, report crossing the road-bridge, traffic information helicopter traffic low level just passing south abeam Dundee, outside the A T Z, routeing opposite direction
Other Heron	Tower	Er visual traffic, (0940:50) continue straight in approach runway two seven, report the road-bridge [Other Grob Heron C/S]
Tower	EC120	????? helicopter [EC120 C/S] traffic information P A twenty eight just passing Broughty Castle V R P, opposite direction to you, has you in sight
EC120	Tower	Also (0941:10) visual [EC120 C/S] and below
Tower	Airprox Heron	(0941:40) [Airprox Heron C/S] see you on final runway two seven, you are clear touch and go, surface wind two niner zero five
Airprox Heron	Tower	Clear for touch and go [Airprox Heron C/S] (0941:50)

The EC120 pilot called abeam Montrose and was cleared to switch to Aberdeen at 0950:00.

## Analysis and Investigation

### CAA ATSI

ATSI had access to Dundee RTF and area radar recording, together with the written report from the controller and both pilots. The area radar coverage recording was not able to show aircraft operating below 1300ft. The Heron pilot was operating under VFR in the left-hand visual circuit for RW27 at Dundee, was in receipt of an Aerodrome Control Service from Dundee Tower, and was established in a busy RW27 visual left hand circuit with four other aircraft together with VFR departures and arrivals. The EC120 pilot was operating under VFR on a transit flight. Dundee ATC were providing a combined Aerodrome and Approach Control service without the aid of surveillance equipment; the controller's workload was assessed as medium.

At 0936:00, the Heron pilot reported on final and was cleared for a touch and go. Another inbound pilot was instructed to report at Broughty Castle for a straight in approach. At 0938:54, the EC120 pilot established two way communication with Dundee and reported his routeing, *"...maintaining outside their MATZ routeing on a direct track up towards Aberdeen and er just going to go through the gap so I'll be staying outside controlled airspace but er request for er Basic Service"*. The controller initially responded to two other aircraft; the Heron pilot reported downwind and was cleared to final as number one. It was considered likely that the Heron pilot was at the end of the downwind leg at 1000ft as the EC120 pilot was passing to the southeast, near the boundary of the ATZ and probably at 800ft.

The incident occurred below radar coverage and it was not possible to show the geometry of the encounter or the exact position in relation to the boundary of the ATZ. Because of the circular

nature of the ATZ and rectangular nature of the circuit pattern, it was considered likely that both the EC120 and Heron pilots were close to the ATZ boundary when they came into proximity.

The controller was unable to pass timely Traffic Information regarding the Heron as the controller was unsure of the position and routing of EC120 pilot. It was considered likely that the Heron pilot overflew the EC120 at the end of the downwind leg and both pilots sighted each other but did not consider the need to take avoiding action. The controller sighted the EC120 and Heron after they had passed abeam each other and judged that there was no longer a need to pass Traffic Information. A Basic Service was then agreed with the EC120 pilot, who was reminded to remain outside the ATZ.

The Heron pilot was in receipt of an Aerodrome Control Service and CAP493, the Manual of Air Traffic Services (MATS), Part 1, Section 2, Chapter 1, Paragraph 1.4 states:

'Aerodrome Control shall issue information and instructions to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic with the objective of: Preventing collisions between: aircraft flying in, and in the vicinity of, the ATZ...

...Note: Aerodrome Control is not solely responsible for the prevention of collisions. Pilots ... must also fulfil their own responsibilities in accordance with Rules of the Air.'

The Airprox occurred when the Heron and EC120 came into proximity, most likely near the boundary of the Dundee ATZ whilst operating within Class G airspace where the pilots are ultimately responsible for their own collision avoidance. There was insufficient time for the controller to assimilate the position and routing of the EC120 prior to the Airprox and he was unable to pass timely Traffic Information to either pilot.

### **UKAB Secretariat**

Both pilots shared an equal responsibility for collision avoidance and not to fly into such proximity as to create a danger of collision<sup>2</sup>. The EC120 pilot was required to conform to the pattern of traffic formed by other aircraft intending to land at Dundee or keep clear of the airspace in which the pattern was formed<sup>3</sup> and to remain outside the Dundee ATZ unless given permission to enter<sup>4</sup>. The EC120 pilot was not required to remain outside the Leuchars MATZ and did not require permission to enter it<sup>5</sup>.

### **Summary**

An Airprox was reported when a Grob Heron and an EC120 flew into proximity at about 0941 on Tuesday 19<sup>th</sup> August 2014. Both pilots were operating under VFR in VMC, the Heron pilot in receipt of an Aerodrome Control Service from Dundee Tower and the EC120 pilot, recently in contact with Dundee Tower, in receipt of a Basic Service.

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

Information available consisted of reports from the pilots of both aircraft, a transcript of the relevant RT frequency, radar photographs/video recordings, a report from the air traffic controllers involved and a report from the appropriate ATC authority.

The Board first considered the pilots' actions. The EC120 pilot, on a transit flight in good weather, had been in contact with the relevant on-route agencies and had requested a MATZ crossing from Leuchars. The Board noted that the EC120 pilot reported that this request had been refused at the requested level of 1000ft; the military ATM advisor opined that it would have been unlikely for Leuchars to completely refuse a transit (not least because the controller was not empowered to do

<sup>2</sup> Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions).

<sup>3</sup> *ibid.*, Rule 12 (Flight in the vicinity of an aerodrome).

<sup>4</sup> *ibid.*, Rule 45 (Flights within aerodrome traffic zones)

<sup>5</sup> UK AIP ENR 2.2 (Other Regulated Airspace), Section 2 (Military Air Traffic Zones), dated 6 Mar 2014.

so) but that other Leuchars traffic may have precluded the 1000ft level and that a transit could have been negotiated at a different height. In the event, weather was such that a transit at the offered height of 3000ft would have been achievable. The Board noted that the EC120 pilot subsequently chose to transit below the MATZ stub and through the gap between the Leuchars MATZ and the Dundee ATZ, allowing him to remain clear of both. The Board thought that it appeared from the RT transcript that the EC120 pilot may have considered that the Leuchars MATZ was controlled or regulated such that he was required to remain clear of it; whilst it was laudable that he gave the MATZ consideration for avoidance, it was not the case that he had to avoid it. Members noted that the distance between the MATZ and ATZ is just less than 500m and were of the opinion that choosing to transit 'the gap' at a level close to the Dundee circuit height not only reduced the EC120 pilot's routing options, but required exacting attention to navigation if he was to avoid entering the Dundee ATZ. The choice of routeing also increased the potential for conflict with Dundee traffic that may have been flying at or just beyond the boundaries of the ATZ.

The Heron pilot was operating in the RW27 visual circuit, with 3 other aircraft in the circuit. Members noted that a GA circuit would normally be expected to be flown within the ATZ but that *ab initio* circuit instruction can result in patterns which extended beyond the boundary of the ATZ depending on the skill and experience of students. If instructors allowed their students to do so, then they bore an increased responsibility to continually assess their position and be aware of the decreased conflict protection that flight beyond or on the boundaries of an ATZ entailed. The Board agreed that with no tracks on radar recordings available it was not possible to positively establish the Heron and EC120 positions relative to the ATZ at CPA; nevertheless members noted that it was likely that the Airprox occurred near the ATZ boundary.

Turning to the Tower controller, the Board noted that he was under a medium workload with a number of aircraft in the visual circuit, together with VFR departures and arrivals. As such, they agreed that it was unlikely that he would be able to assimilate the EC120 pilot's position and routeing in time to pass effective Traffic Information.

The Board concluded that the cause of the occurrence was the late sighting of the Heron by the EC120 pilot and the effective non-sighting of the EC120 by the Heron pilot (members were of the opinion that the Heron pilot probably saw the EC120 either at or just after CPA). Members were also of the opinion that the EC120 pilot had probably seen the Heron in time to take avoiding action if required, and that his assessment that the aircraft would remain clear amounted to effective and timely action to prevent aircraft colliding.

### **PART C: ASSESSMENT OF CAUSE AND RISK**

<u>Cause:</u>	A non-sighting by the Heron pilot and a late sighting by the EC120 pilot.
<u>Degree of Risk:</u>	C.
<u>ERC Score<sup>6</sup>:</u>	4.

<sup>6</sup> Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.