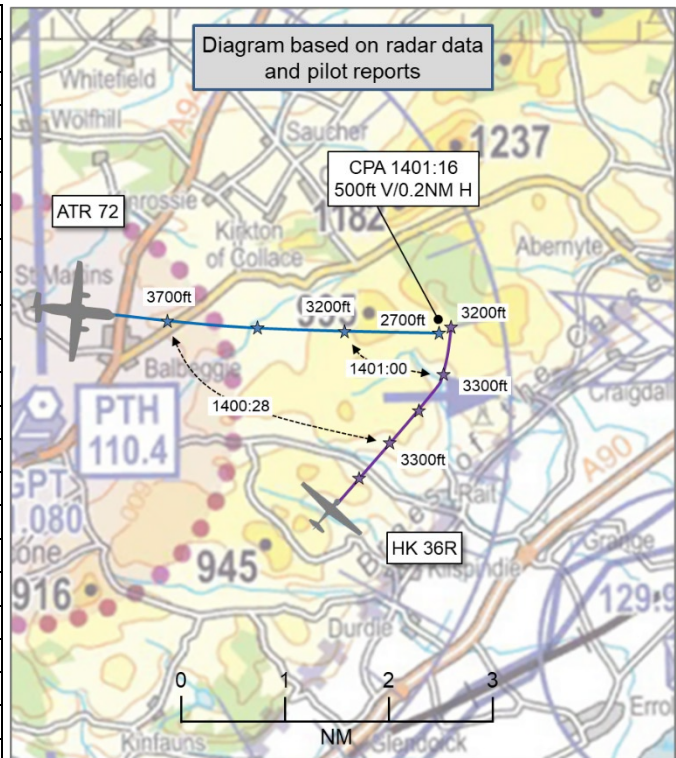


AIRPROX REPORT No 2023191

Date: 28 Jul 2023 Time:1401Z Position: 5627N 00315W Location: 7NM West of Dundee

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	ATR 72	HK 36R
Operator	CAT	Civ Gld
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	IFR	VFR
Service	Procedural	Listening Out
Provider	Dundee	Perth Radio
Altitude/FL	2700ft	3200ft
Transponder	A, C, S+	A, C, S
Reported		
Colours	White/Black/Red	White
Lighting	Strobes	Strobes
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2700ft alt	3250ft alt
Altimeter	QNH (1000hPa)	QNH (1000hPa)
Heading	090°	North
Speed	170kt	80kt
ACAS/TAS	TCAS II	PowerFLARM
Alert	RA	None
Separation at CPA		
Reported	300ft V/0.5NM H	NK V/NK H
Recorded	500ft V/0.2NM H	



THE ATR 72 PILOT reports that they had been on approach into Dundee with multiple aircraft on TCAS in the surrounding area. They had been established for RW09 at around 6NM [and had] seen an aircraft on TCAS crossing the approach at approximately 2000-2200ft. A TCAS TA had appeared on screen and the aircraft identified visually. A TCAS RA was [triggered] with a descend command. After having moved clear of the aircraft and whilst still on approach for RW09 with no deviation out of limits, they made a decision to continue to land. The aircraft in question had been a DA40 [they recall] which, after talking with ATC in Dundee, they believed to be from [...]; its registration had been unknown as it had not been on frequency during the time.

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

THE HK 36R PILOT reports that they had been conducting a gliding exercise, for issue of the BGA Cross Country Endorsement. The route had been between BGA turning points PCS (Portmoak Caravan Site) and COU (Coupar Angus) with various intervals of simulating thermalling, field selection and landing exercises. The route chosen had been deliberately testing for the candidate [pilot], requiring them to navigate between Perth ATZ and the Errol drop zone and maintain awareness of the Dundee ILS. The gliding cross country frequency is 130.105MHz but, at the time of the incident, they had been passing close to Perth and the P2 had changed to that frequency to monitor. This had seemed to have been a good decision [at the time]. The pilots had discussed the various hazards in the pre-flight briefing, including the Dundee ILS feathers and the P2's plan had been to keep as far west of Dundee as possible. The reporting pilot notes that they had not been expecting approaches to Dundee from the west, given the wind had been south-westerly at about 15kts [noting that as a learning point for themselves]. The P1 had been mostly managing their altitude (though the P2 had been free to use lift, avoid sink etc) and they had climbed above 3000ft when they knew they had been close to the Dundee ILS, just to be on the safe side. The P2 had seen the aircraft converging from their left but the P1 had not. The P1 had assumed from the direction that the P2 had looked that it had been below and behind

on the left and thought it must be Perth traffic so the P1 had looked in that direction - hence missing it as it had passed underneath and continued to their right.

THE DUNDEE CONTROLLER reports that the ATR 72 had been inbound from the north and had been coordinated for an RNP approach to RW09 via IVGEX with Leuchars Radar. The Leuchars Radar controller stated that there had been a lot of traffic around the approach area and that they would follow the approach on their radar and call with Traffic Information if needed. On a coordination call with Perth aerodrome Air Ground Operator they stated that RW27RH had been active with an aircraft joining from the northwest. Leuchars Radar had called with Traffic Information on traffic at 1 o'clock, 5NM southeast of the ATR 72 on approach, on a northerly heading, indicating 500ft below. This had been passed to the ATR 72 pilot who had said that they had a TCAS TA shortly after that. Soon Leuchars Radar had called again and requested to keep the line open for the purposes of passing further Traffic Information. Leuchars passed Traffic Information on traffic at 12 o'clock 1NM similar altitude. This had been passed to the ATR 72 pilot but the transmission had most likely been crossed with their own transmission of the TCAS RA. Shortly after this, the ATR 72 pilot had made a transmission "clear of conflict" which the Leuchars Radar controller also stated on the open line. The ATR 72 pilot continued their approach and made a normal landing at 1405. Within a conversation after landing it had been clear that the ATR 72 pilot had had a TCAS RA to 'descend now' which they had followed but as they had already been descending it hadn't taken them significantly below the approach profile and they had been able to continue the approach. The ATR 72 pilot had been visual with the aircraft and had identified it as a light-aircraft with a single piston engine. They noted that they had been around 8NM on the ILS at 2200ft and the other aircraft had been at a similar altitude less than 1NM distance. The ATR 72 pilot had been cleared for an RNP approach but they followed the RNP approach only until they were able to establish on the ILS. On a conversation with the Leuchars Radar controller it had been confirmed that the other aircraft had been unknown traffic with transponder code 7000.

THE LEUCHARS CONTROLLER reports that they had been the SRE controller at Leuchars and had been handed [the ATR 72] from the north late from Scottish Civil. The aircraft had been intending to conduct the RNP via IVGEX, however, when Scottish Civil called, the aircraft had been approximately 090°/11NM from IVGEX heading south descending through FL100 for FL80. Because of this, the controller had instructed Scottish Civil to turn the aircraft onto a heading of 250°. The controller called Dundee for a clearance and had been given IVGEX 3600ft on Dundee QNH. They had then issued a descent in accordance with the SMAC (Surveillance Minimum Altitude Chart) and traffic in the vicinity until they had been able to descend to 3600ft. However, there had not been enough time for the aircraft to descend and the controller had informed Dundee that the aircraft would be high at IVGEX. The controller reports having informed the ATR 72 pilot that there had been multiple tracks in the vicinity of Perth that could become a factor on the RNP. All relevant traffic had been called and the controller had asked the ATR 72 pilot if they had been happy to continue with Dundee against that traffic. The ATR 72 pilot responded that they had been so. The controller had then told the ATR 72 pilot that they would maintain track ident on them whilst with Dundee and relay Traffic Information if required. After giving the aircraft to Dundee, it had become clear that traffic in the vicinity of Perth would continue to be a factor so the controller called Dundee to relay Traffic Information. After this, traffic in the Newburgh Area [the HK 36R] had begun to transit north. This traffic had been squawking 7000 and had transited north approximately 1NM east of PN09F and had now clearly been a factor so the controller had called Dundee to issue Traffic Information again. The controller had informed Dundee that they would remain on the line to keep passing Traffic Information as they believed there had been a risk of collision and had called traffic multiple times. At their closest, the controller had judged the ATR 72 and the HK 36R to be at the same level within 0.5NM of each other. Once the ATR 72 had been clear of traffic the controller had asked Dundee if they had had visual with conflicting traffic. The Dundee ATCO informed the Leuchars controller that they had not been told by the ATR 72 pilot and would then ask them when they were on the ground. Shortly after, the Dundee ATCO called the Leuchars controller to inform them that the ATR 72 pilot had become visual with conflicting traffic, however, they had also had a TCAS Alert to descend and would be submitting an Airprox.

The controller perceived the severity of the incident as 'High'.

THE PERTH CONTROLLER reports that [they] can confirm there had been no RT between either aircraft and Perth Radio between 1350 and 1410. Perth Radio had notified all Perth Traffic on frequency at 1358 that Dundee had RNP traffic descending through the overhead eastbound.

Factual Background

The weather at Dundee was recorded as follows:

METAR EGNP 281350Z 00000KT 9999 SCT035 20/14 Q1000=

Analysis and Investigation

DUNDEE ATS

The ATR 72 had been a scheduled passenger flight inbound to Dundee from [departure aerodrome]. The aircraft had been co-ordinated with Dundee ATC from Leuchars LARS to carry out the RNP procedure to RW09. The crew had contacted Dundee ATC at 1358 as the aircraft had been passing the Initial Approach Point IVGEX, descending to 3600ft, however the pilot had initially used an incorrect reporting point of ABDED. This had been amended to IVGEX in a subsequent transmission to Dundee ATC. The crew had been cleared for the RNP procedure to RW09 and asked to report at MARIV to which they replied they had been passing MARIV at that point. After this point the crew had been provided with a number of Traffic Information calls giving them details of unknown traffic approaching them from the south at a similar level [the HK 36R]. After the second instance of Traffic Information the crew reported that they had been visual with the HK 36R. Further Traffic Information was provided to them and subsequently the crew stated they were clear of the conflict. After passing the Final Approach Fix the flight had been cleared to land on RW09. After landing the crew had passed a number of messages to Dundee ATC over the RT giving details of the other aircraft and also stated that during the flight they had received a TCAS RA instructing them to descend.

After the incident, a flight crew member stated to the Dundee controller that after the second call made by Dundee ATC giving Traffic Information, the crew had been focusing a lot of their attention on the TCAS display and anticipating [...] a TCAS RA. [To note - the aircraft had been cleared for an RNP approach to RW09] but subsequent calls after landing had made reference to the ILS approach procedure. The HK 36R had been identified originally by using FlightRadar24 and subsequently the pilot confirmed that this had been the other aircraft [from the south]. The HK 36R pilot had stated that this route had been chosen as it covered "...a complicated area, needing to avoid Perth, Errol and the Dundee ILS...". The HK 36R pilot stated that as they had transited past Dundee they had not been receiving a service from any ATC unit, but had been monitoring the Perth Air/Ground frequency (121.080MHz). A transponder code of 7000 had been utilised. Within this area they had observed aircraft operating within the Perth visual circuit and at one point the trainee had commented that they had seen traffic converging from their left but the examiner had not spotted this aircraft which would have passed them at some considerable speed. The examiner also stated that as they had passed between Dundee and Perth they had not made any major track changes and allowed the motorglider to gently descend once they were "... clear of the ILS feathers".

The Dundee ATC controller had started their shift at 1255 and had been on their first period of duty that day. The controller had been operational for 65min when the incident had occurred. The controller had been providing a Procedural Service to the ATR 72 pilot and had been working a small number of aircraft at the time including one operating within the visual circuit on RW09. The Dundee controller had co-ordinated the arriving ATR 72 when requested by Leuchars LARS and followed the Letter of Agreement requirements in contacting Perth Air/Ground to ascertain if they had any traffic that may affect the ATR 72. The traffic specified by the Perth Air/Ground had not constituted pertinent traffic for the ATR 72. The Dundee controller had not known of any other traffic that would affect the ATR 72 until the Leuchars LARS controller had contacted them and gave information on unknown traffic routing northbound. All Traffic Information provided by the Leuchars LARS controller had been passed to the ATR 72 pilot, however this process had been slow. At the time of the incident the controller had also been dealing with a late report of a potential bird strike involving a Cessna Citation that had landed at 1336.

Leuchars LARS had been working the ATR72 from handover from TAY Sector, Prestwick Centre, until handing the aircraft to Dundee ATC. The co-ordination from TAY Sector appeared to have been fairly late as the controller had commented to the Dundee controller that "Scottish have thrown me a fast ball here" and that they "Might orbit him to get height off". The Leuchars controller correctly co-ordinated the traffic to Dundee ATC stating that the ATR 72 had been at IVGEX and passing through FL60, then transferred communication. The Leuchars controller had also stated to Dundee ATC that they would "...keep an eye on it as there's quite a lot of traffic..." No specific mention had been made concerning the traffic routing south-to-north carrying a 7000 squawk, but this had been more in relation to the amount of traffic operating around Perth. Following transfer of the ATR 72 to Dundee, the Leuchars controller had monitored the flight and very shortly afterwards rang the Dundee controller to pass Traffic Information to the ATR 72 pilot about the contact routing south-to-north. Subsequent to this, approximately one minute later the Leuchars controller had called Dundee again and had decided to keep the line open to pass Traffic Information more quickly. The Leuchars controller had given two further pieces of Traffic Information on the unknown traffic before stating that the ATR 72 had been clear of this contact.

Dundee has a number of instrument approaches published for RW09. Due to their close proximity to Perth Airport a Letter of Agreement (LOA) had been set up between Dundee ATC and Perth Air/Ground in order to ensure pertinent Traffic Information on known Perth traffic is passed to any aircraft operating on any instrument approach into Dundee on RW09. In this instance the ATR 72 pilot had been cleared for the RNP RW09 routing via IVGEX. IVGEX is the Initial Approach Fix used for traffic inbound from the north and is approximately 12.6NM west-northwest of Dundee airport. The minimum altitude for IVGEX is 3600ft on the Dundee QNH. The next approach fix on the procedure is MARIV which is 12NM West of Dundee Airport. From MARIV aircraft will descend to maintain 2500ft QNH until passing PN09F (FAF-Final Approach Fix) when they will commence descent to cross a point at 4NM final not below 1300ft QNH and then to land RW09. The ATR 72 pilot referenced the ILS approach to RW09 when describing the incident so were likely to have been using the initial part of the RNP procedure to intercept the ILS localiser. The policy of starting the Instrument approach using an RNP IAF to then intercept the ILS Localiser is becoming more frequent particularly with biz-jet traffic, and as such is the subject of a Safety Survey being produced by Dundee ATC. In any case, the published approach procedures for Dundee extend a considerable way from Dundee Airport, with the RNP procedures extending to 12NM from Dundee and the ILS procedure extending to approximately 9-10NM from Dundee.

Within Class G airspace VFR and IFR flight is permitted without any requirement for an ATC clearance and there is no requirement to be in RT contact with any ATC Unit. It is stated in CAA CAP1535 [The Skyway Code] that "Some aerodromes outside controlled airspace have instrument approach procedures (IAPs). These are defined sequences of waypoints that guide aircraft to the final approach track. Details of IAPs can be found in entries for individual aerodromes in AD of the AIP. They are often used in VMC, especially by commercial air transport aircraft and those conducting instrument training. Larger commercial air transport traffic will have reduced capability to 'see and avoid' due to the limitations of visibility from the cockpit. Aircraft also tend to descend further away from the aerodrome and make larger radius turns when conducting IAPs than they would when making a visual approach. VFR traffic operating near aerodromes outside controlled airspace should be aware that there may be instrument traffic using IAPs and should avoid crossing them at similar altitudes to that of the procedure, unless talking to the relevant ATSU. IAPs outside controlled airspace are indicated by 'feathered arrows'. Note they only align with the main instrument runway. There may also be approaches to other runways as well. Pilots are recommended to contact the aerodrome ATSU if flying within 10NM of an aerodrome marked with such feathers."

In conclusion, the TCAS RA generated on the ATR 72 had been caused by the close proximity of the HK 36R which had been transiting to the west of Dundee Airport to operate within the local area to the northwest of Dundee and at the time had not been in RT communication with either Leuchars LARS or Dundee ATC. This had been exacerbated by the ATR 72 having been higher on the approach than anticipated due to the late handover by TAY Sector, Prestwick Control to Leuchars LARS. In an open and honest report, the pilot of the HK 36R had deliberately planned the route to the area to the northwest of Dundee in order to fully test their student, as the route took the aircraft

close to Errol parachute site, Perth aerodrome and Dundee Airport and its associated instrument let-down procedure. Both crew members had been fully aware of the instrument approach procedure into Dundee and had planned to keep as far away from Dundee as possible.

The route that the HK 36R took would have placed it approximately 7NM to the west of Dundee threshold for RW09 and the aircraft's altitude had been 3250ft (accuracy cannot be confirmed). The pilot of the HK 36R stated that they were at approximately 3200ft (on pressure setting 1000hPa) as they had passed west of Dundee and started a slow descent once they had passed to the north of the `Dundee ILS feathers` as marked on the aeronautical chart. An aircraft carrying out the RNP Approach to RW09 should be between 2300ft QNH and 2500 ft QNH when between 8NM and 7NM from touchdown. As the ATR 72 had been handed over from TAY sector fairly late the aircraft had been considerably higher than the prescribed altitude when passing IVGEX. The procedure states that the minimum altitude at IVGEX is 3600ft QNH when, according to the Leuchars LARS controller, the ATR 72 had been at IVGEX passing through Flight Level 60, which would have meant that they had been at 6390ft on the Dundee QNH 1000hPa. When the ATR 72 had been at approximately 7.5NM, the aircraft had been indicating 3025ft (accuracy cannot be confirmed), potentially in excess of 500ft higher than the aircraft should have been at that point. Taking into the consideration that an aircraft utilising the ILS procedure on RW09 would have been at 2200ft QNH between 8NM and 7NM from touchdown, then the actions taken by the pilot of the HK 36R of transiting at 3200ft appear sound and should have meant that there would have been approximately 1000ft between the two aircraft. However, as an aside, the standard procedure at Dundee for aircraft to intercept the ILS is to route from the DND NDB (2.6NM west of the threshold for RW09) descending from 3000ft QNH to 2200ft QNH to the southwest of Dundee means that due to the route that the HK 36R had taken it could well have come into close proximity to an aircraft carrying out the standard procedure as well. One issue that came to light from the pilot of the HK 36R had been that they had not expected instrument traffic to approach Dundee from the west, bearing in mind that they had ascertained that the wind had been a south-westerly and therefore RW27 would have been in use at Dundee. In fact, as the surface wind at Dundee had been indicating between 070° and 160°, albeit quite light up to a maximum of 5kts, from 1000 until 1450, RW09 had been the runway in use. This assumption by the pilot of the HK 36R that Dundee would be using RW27 meant that they sub-consciously believed that any Dundee traffic would not have been an issue to them. The decision to only monitor the Perth Air/Ground frequency had been made by the student but had been considered a sound one by the PIC. As the HK 36R pilots had been monitoring the Perth Air/Ground frequency, the traffic they had been listening to would have dominated their thought process, possibly to the detriment of a more general lookout. If prior to transiting the area the crew of the HK 36R had established communication with either Leuchars LARS or Dundee ATC, then more timely Traffic Information or even a possible revised routeing could have been offered.

RECOMMENDATION - It is recommended that the SATCO Dundee ATC contact the Portmoak Gliding Club in order to arrange a safety presentation highlighting procedures and operations into and out of Dundee Airport and to encourage any aircraft transiting close to Dundee Airport to contact Dundee ATC or Leuchars LARS via RTF. N.B. This brief was carried out on 13th January 2024.

NB. Dundee is due to receive an ATS Flight Information Display (AFID) after February 2024 which would provide an ADS-B based plot of aircraft operating within the vicinity of Dundee. This system is to be used as a tool by ATC to increase the controller's situational awareness of traffic. In this incident the controller would have been aware of the 7000-squawk approaching from the south but would only have been able to provide limited Traffic Information based on it. It is not certain that the use of AFID in this case would have prevented a TCAS RA.

CAA ATSI

Having read the comprehensive investigation report from Dundee, ATSI has nothing to add.

Military ATM

The ATR 72 pilot had been conducting a procedural approach inbound to Dundee having previously been in receipt of an Air Traffic Service from Leuchars ATC. The HK 36R pilot had been conducting a gliding exercise routing VFR northbound whilst listening out on Portmoak. Leuchars ATC had not been providing an Air Traffic Service to either aircraft at the point of the Airprox. However, it had been providing the ATR 72 pilot with a Deconfliction Service following its departure from controlled airspace and prior to its transfer to Dundee.

Leuchars ATC had received the ATR 72 from Scottish Civil and had provided vectors to facilitate a procedural RNP approach via IVGEX inbound to Dundee RW09. Whilst in the descent to 3600ft Dundee QNH, it had been observed that multiple aircraft had been operating in the vicinity of the procedural approach path. The Leuchars controller had provided the ATR 72 pilot with Traffic Information before then confirming with the ATR 72 pilot that they had been content to continue and transfer to a Procedural Service with Dundee. Prior to transfer, the Leuchars controller had informed the ATR 72 pilot that they would retain track ident and relay relevant Traffic Information to Dundee.

Following transfer to Dundee, the Leuchars controller had deemed the ATR 72's proximity with the HK 36R close enough to have warranted the passing of Traffic Information to Dundee via landline. The Leuchars controller's intentions being to provide additional situational awareness to the ATR 72 pilot, recognising Dundee's lack of surveillance capability. Traffic Information had been passed on multiple occasions to Dundee by the Leuchars controller, continuing until separation began to increase.

2 Gp BM Analysis

The actions of the Leuchars controller, whilst non-standard, had been entirely suitable in aiding Dundee to provide an increased level of situational awareness to the ATR 72 pilot. The initial Traffic Information had provided the ATR 72 pilot with an appropriate level of awareness to effectively determine if continuation of the approach had been a suitable course of action. The passage of further Traffic Information via Dundee then aided development of this situational awareness. Had the ATR 72 pilot not been content to continue the approach, Leuchars ATC would have provided vectors to establish a holding pattern until the approach could have been facilitated. Overall, the actions of the Leuchars controller, in a non-standard scenario, had been deemed suitable and are supported by 2 Gp BM.

UKAB Secretariat

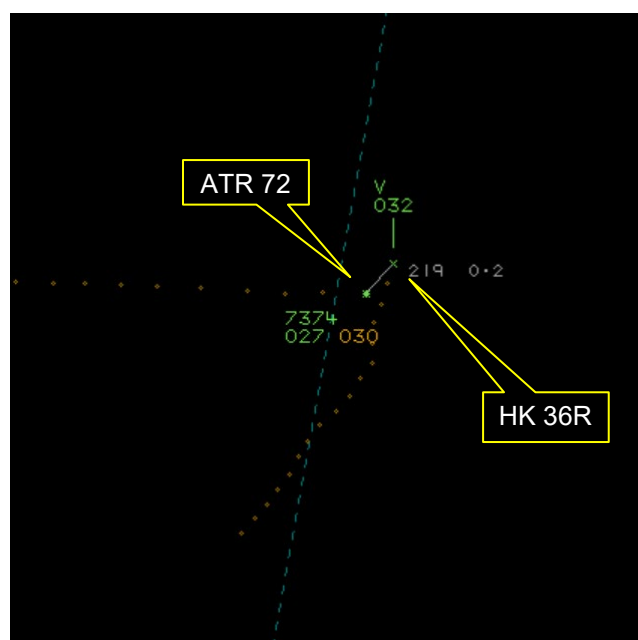


Figure 1 – CPA 1401:16 500ft V/0.2NM H

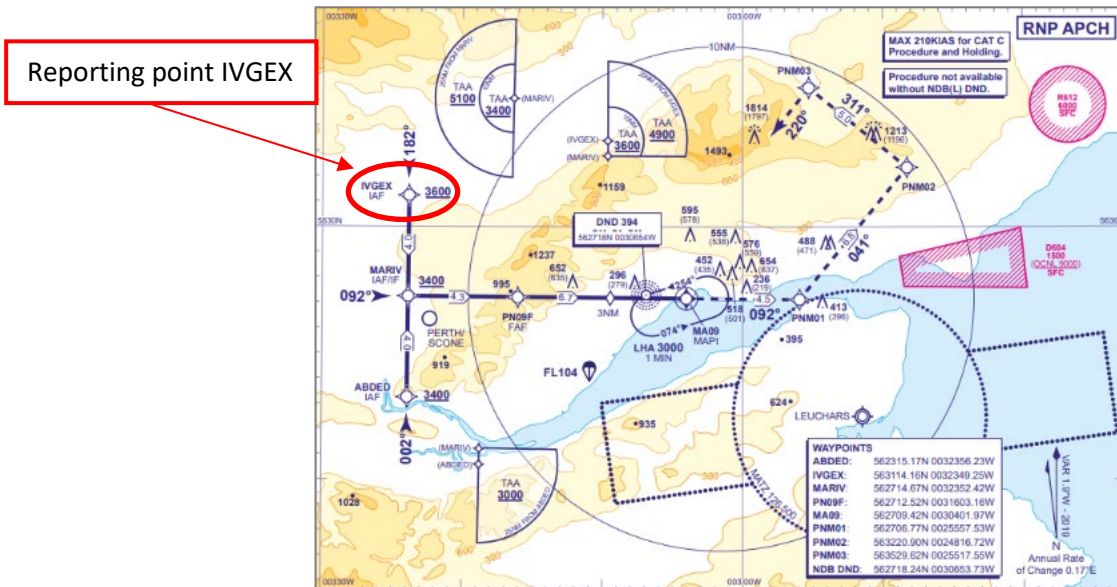


Figure 2 – extract from the Dundee RNP approach

The ATR 72 and HK 36R 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 ATR 72 pilot was required to give way to the HK 36R.²

Comments

BGA

The HK 36R pilot is to be commended for climbing above the expected altitude of Dundee Instrument Approach Procedure (IAP) traffic while in the area. In addition, where the necessary Flight Radio Telephony Operator's Licence (FRTOL) is held and cockpit workload allows, glider pilots are encouraged take a service from the relevant ATSU when flying near an IAP in Class G airspace to make controllers aware of their presence.

Summary

An Airprox was reported when an ATR 72 and an HK 36R flew into proximity 7NM west of Dundee at 1401Z on Friday 28th July 2023. The ATR 72 pilot was operating under IFR in VMC and the HK 36R pilot was operating under VFR in VMC, the ATR 72 pilot in receipt of a Procedural Service from Dundee and the HK 36R pilot had been Listening Out on Perth Radio.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, 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.

Board members first considered the actions of the ATR 72 pilot. They noted that they had been positioning for an RNP approach to RW09 at Dundee in good weather with a light and variable wind. Having approached from the north, members felt that the pilot could potentially have sought an approach to RW27 to avoid the busy overland sector to the west of their destination, accepting that there may have been sound reasons for preferring RW09. Members recognised that the ATR 72 approach had been higher than usual due to a late handover from Scottish to Leuchars, but that the cooperative relationship between Leuchars and Dundee had allowed for the passing of additional Traffic

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

Information which had added comfort to the ATR 72 pilot in this busy area. They accepted that the aircraft had been well-equipped with radio, transponder and TCAS giving the greatest opportunity for situational awareness for themselves and others in the area. The Board discussed the effect of the TCAS alerts received by the crew, acknowledging that lateral indications (particularly those close to the nose) within a TA can be less accurate and that a decision to give way in accordance with rules of the air in VMC had not been appropriate at an earlier stage but that reaction to an RA is explicit (**CF3**).

Members went on to discuss the actions of the HK 36R pilot, noting the deliberate choices made in route selection and altitude and recognised their logic in electing to listen out on the Perth radio frequency, but did feel that either a LARS from Leuchars, or an information call to Dundee, would in this case have given a better awareness of other traffic in the area (**CF1**). Despite carrying electronic conspicuity (EC) equipment common amongst glider pilots, it had not been able to interact with the transponder carried by the ATR 72 and that, together with operating on a different radio frequency, left the HK 36R pilot with no situational awareness of the presence of the ATR 72 (**CF2**).

In considering the actions of the controllers involved, members opined that the relationship between Dundee and Leuchars had been beneficial and the additional Traffic Information passed by Leuchars together with the Procedural Service delivered by Dundee had been a positive aspect in this event and that there had been little more they could have done. Members understood there to be a Letter of Agreement (LOA) in place between the 2 units which enabled such cooperation and members suggested that a review and refresh of that LOA would be timely.

When determining the risk of the Airprox, the Board considered the reports from both pilots together with the reports of the controllers involved. They noted that the ATR 72 pilot had seen the HK 36R after having been triggered by a TCAS TA, but the HK 36R pilot had gained only a late sighting (**CF4**) of the ATR 72. This had led to the ATR72 pilot becoming concerned by their proximity to the HK 36R (**CF5**) and, whilst the ATR 72 pilot may have wished for more separation, their action had ensured that although safety had been degraded, there had been no risk of collision. Members therefore awarded a Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2023191				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Tactical Planning and Execution				
1	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider
• 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
• Electronic Warning System Operation and Compliance				
3	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				
4	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
5	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.

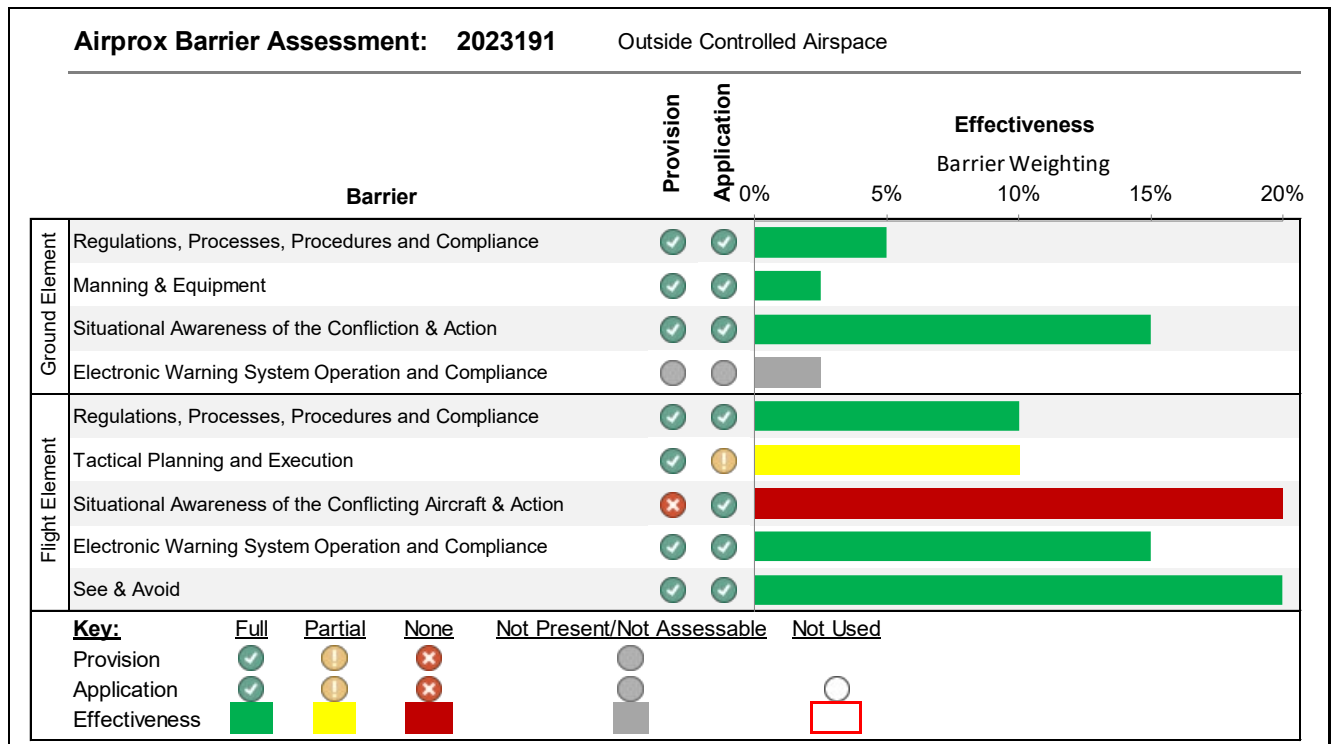
Safety Barrier Assessment³

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

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the HK 36R pilot could have considered contacting Dundee as they had passed their approach lanes.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the HK 36R had no situational awareness of the ATR 72.



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