

AIRPROX REPORT No 2014207

Date/Time: 24 Oct 2014 1533Z

Position: 5627N 00307W
(6nm W Dundee Airport)

Airspace: Scottish FIR (Class: G)

Aircraft 1 Aircraft 2

Type: Do328 G115

Operator: CAT Civ Trg

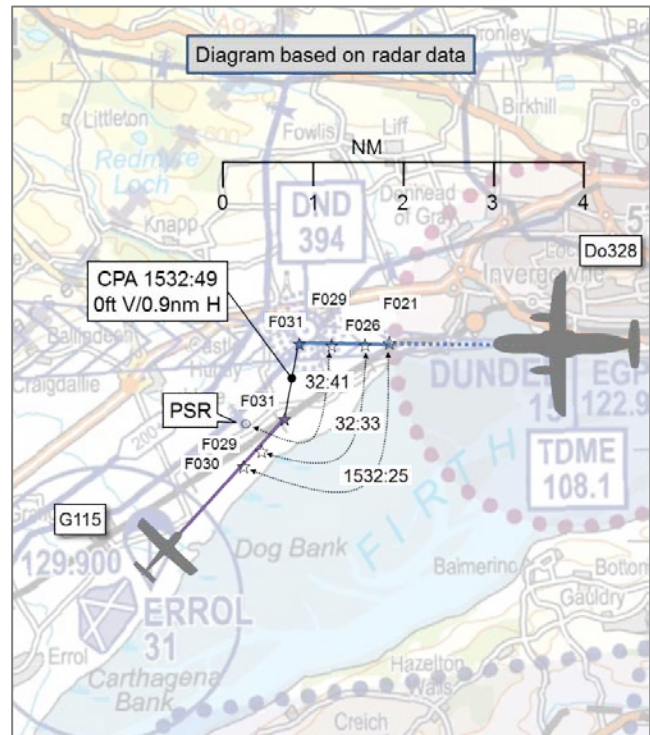
Alt/FL: 2600ft 2600ft
QNH (1005hPa) NK

Conditions: VMC CLBC VMC CLBC

Visibility: 10km 10km

Reported Separation:
200ft V/2nm H 0ft V/1nm H

Recorded Separation: 0ft V/0.9nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE DORNIER 328 (Do328) PILOT reports that white strobes, navigation and landing lights and anti-collision beacon were illuminated. SSR Modes C and S were selected; TCAS II was fitted. He was departing on an IFR flight from RW27 at Dundee: the wind was 240°/16kt so the heading 'bug' was set on 268 to compensate for the wind. The crew were informed by the Aerodrome controller that a Grob was operating south-west of the airport not above 3000ft, and they had a contact on the TCAS screen approximately 5-6nm south-west indicating +2700ft. ATC had instructed the Grob pilot to maintain current location because a Dornier was about to depart RW27 to the west before turning south, and so he briefed his crew that they would maintain runway heading until they were well clear (above and past) the Grob before turning towards GRICE. Before commencing the take-off roll the contact disappeared from the TCAS screen but, once airborne, the contact reappeared. When they were passing between 1800-2000ft he asked the Pilot Flying (PF) to turn right slightly due to the contact that was showing on TCAS. He turned approximately 10° but, shortly after this, the contact became a TA. A search outside the aircraft failed to establish visual contact with the aircraft. Shortly afterwards, whilst passing about 2600ft, the TCAS contact became an RA descent. The PF followed the command and, within a second or two, they were 'clear of conflict'. They waited for more separation before the auto-pilot was engaged and then continued the climb and turn towards GRICE.

He assessed the risk of collision as 'Medium'.

THE GROB G115 (G115) PILOT reports that the aircraft was coloured with white and blue stripes in a 'hi-viz' scheme. SSR Mode C was selected; the aircraft was not equipped with Mode S or a TAS. He was at approximately 4000ft on the Dundee QNH just north abeam Errol when he received a call from ATC asking for his position due to departing IFR traffic. He reported his location and offered to move south over the River Tay and to descend as required. ATC agreed and asked him to descend to below 3000ft. He carried out this request and began orbiting to allow the Dornier to depart. He could not proceed totally to the south bank of the Tay due to cloud cover, but remained as far south as possible. He was visual with the Dornier as it departed and remained visual with it during its climb-out. He was later informed that the Dornier pilot received an RA for only a couple of seconds at approximately 2600ft, probably due to their projected paths crossing as he was orbiting. Separation was approximately 1nm at its closest. He was visual with the Dornier the whole time and was never in any concern regarding a possible collision.

He assessed the risk of collision as 'None'.

THE DUNDEE APPROACH/AERODROMECONTROLLER reports that the Do328 departed RW27 at 1531 with a clearance to join Controlled Airspace (CAS) on track to GRICE (south-west of Dundee) climbing to FL150. At the time there was a G115 pilot operating on a Basic Service to the west/south-west, General Handling (GH). With the Do328 about to depart from Dundee's westerly runway on a Procedural Service, he obtained a position update from the G115 pilot as he believed the two aircraft to be a potential conflict. The G115 pilot reported that he was at 4000ft to the north of Errol. Traffic Information about the imminent Do328 departure was passed to the G115 pilot and he offered to transit south to avoid the departing traffic. He also requested an agreement from the G115 pilot that he would operate not above 3000ft and to report reaching that level. This was agreed by the pilot, and a level check at 3000ft was received from him before the Do328 departed. Traffic Information was passed to the crew of the Do328 about the G115 before departure, which was acknowledged by them. After the Do328 departed he obtained a level check from them and they reported passing FL35. Assuming that the agreement was being maintained with the G115 pilot, he instructed the Do328 crew to change frequency to Scottish Control 124.5MHz. He then de-restricted the G115 pilot by advising 'no height restriction'. The pilot reported climbing to the north passing 3500ft. At 1537 the Do328 pilot called on the frequency on 'box 2' to report that they had responded to a TCAS RA on departure from Dundee, and that they suspected it to have been against the GH traffic operating to the west. The Captain reported that he would file a report on the incident. No further details were given.

Factual Background

The Dundee weather was:

METAR EGNP 241520Z 24018KT 9999 FEW025 SCT040 11/08 Q1005=

Analysis and Investigation

CAA ATSI

ATSI had access to reports from both pilots, the Dundee Tower/Approach controller, area radar recordings and transcription of the Dundee Tower/Approach frequency. Dundee were providing the service without the aid of surveillance equipment; screenshots produced in the report are provided using area radar recordings.

An Airprox was reported by the pilot of a Do328 after a TCAS RA was received against a G115 in Class G airspace shortly after departure from RW27 at Dundee Airport. The Do328 was operating IFR on a flight from Dundee in receipt of a Procedural Service from Dundee Tower/Approach combined on frequency 122.9MHz. The G115 was operating VFR on a local flight from Dundee and was in receipt of a Basic Service from Dundee Tower/Approach combined on frequency 122.9MHz. The G115 pilot had previously departed Dundee and reported at Errol (approximately 7nm west-south-west of Dundee) when a Basic Service was agreed.

As the Do328 pilot was taxiing out for departure the Dundee controller asked the G115 pilot to report his position and level. The pilot replied that he was just abeam Errol at 4000ft. The Dundee controller informed the G115 pilot that the Do328 was about to depart to the south-west and would be climbing to FL150. The G115 pilot replied that he would move to the south bank of the River Tay and the controller requested that the G115 pilot remain not above 3000ft which he acknowledged.

At 1528:50 the Do328 pilot was instructed to line up RW27 and report ready for departure. The G115 pilot reported at 3000ft.

At 1530:27 the Do328 pilot reported ready for departure and the Dundee controller passed Traffic Information on the G115 operating not above 3000ft to the south-west VFR. At 1530:38 the Do328 pilot was cleared for take-off.

As the Do328 became visible on the radar recordings the G115 was 2.1nm south-west of the Do328, tracking north-east (Figure 1).

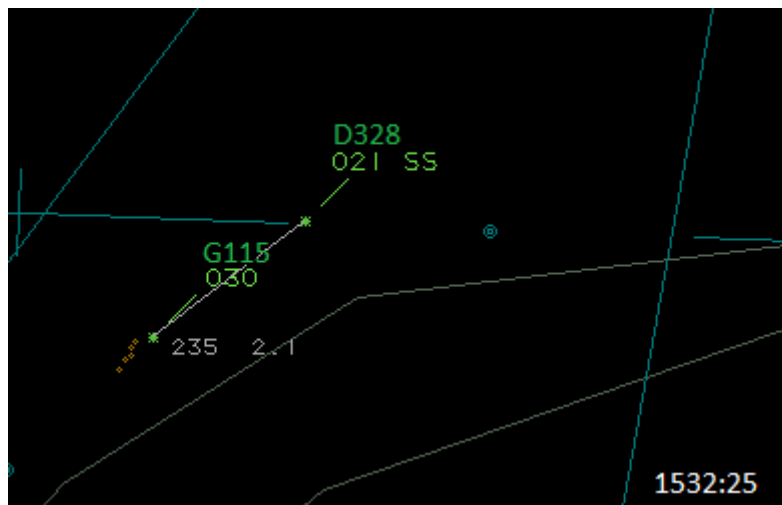


Figure 1.

According to the written report from the pilot of the Do328, they turned right 10° after passing 1800-2000ft due to the TCAS contact and shortly afterwards the contact became a TA. The crew did not manage to establish visual contact with the G115 and, passing around 2600ft, the TA became and RA and they were instructed to descend before becoming 'clear of conflict' within a second or two. Figure 2 showed the Do328 with a slight right turn off the centreline and a positive rate of climb. On the next update of the radar the rate of climb of the Do328 had dropped substantially so it is likely that the TCAS RA was received around the time of Figure 2.

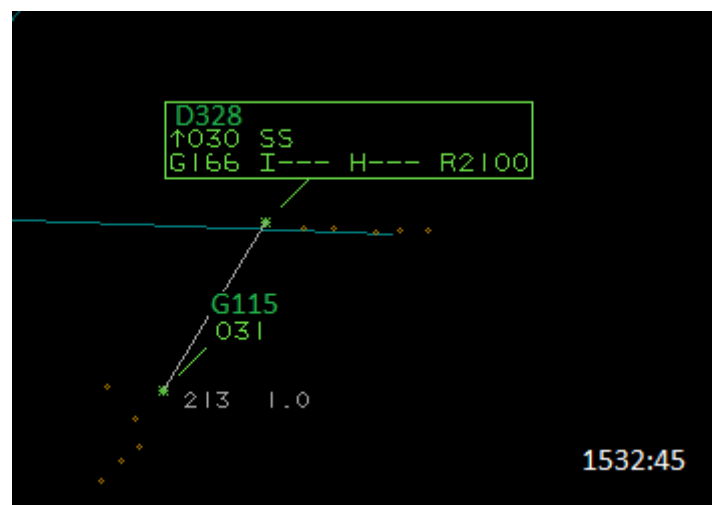


Figure 2.

CPA occurred at the next update of the radar when the two aircraft were at the same level, 0.9nm apart (Figure 3). The Do328 pilot was transferred to Scottish Control but later called the Dundee controller on box 2 to advise that he had received a TCAS RA on climb-out.

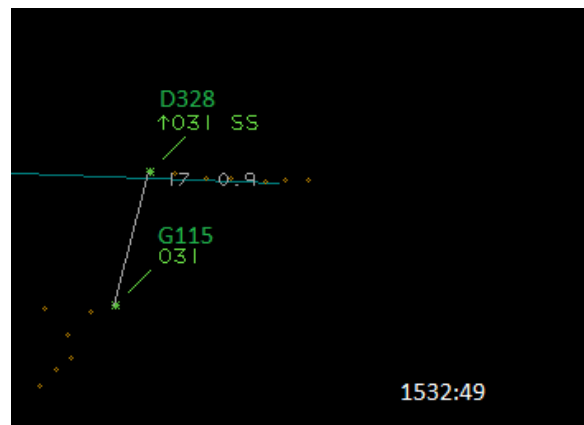


Figure 3.

The Dundee controller believed that there was a potential conflict between the two aircraft prior to the Do328 departing. Traffic Information was passed on the Do328 to the G115 pilot who was in receipt of a Basic Service and agreement was reached for the G115 pilot to remain south and operate at 3000ft or below. Traffic Information was then passed to the Do328 pilot (who was anticipating a Procedural Service) prior to departure on the G115 which was acknowledged by the crew and briefed for prior to departure.

The pilot of the G115 reported that he would hold over the south bank of the River Tay but was unable to do so due to cloud and was therefore further north than the Dundee controller expected. There was no requirement for the G115 pilot to remain over the south bank of the River Tay; however, having stated that he would, it would be expected for him to advise the controller if it was no longer achievable. It is possible that if the G115 had been over the south bank it may not have triggered a TCAS RA for the Do328. The Dundee controller was only required to pass Traffic Information on the G115 to the Do328 pilot; however, the Traffic Information passed only stated that the G115 was operating to the south-west, and did not specify the south bank of the River Tay. Notwithstanding, given that the Do328 pilot was aware of the G115 prior to departure, and could see the traffic on TCAS, this is unlikely to have affected his situational awareness.

UKAB Secretariat

CAP 774 (UK Flight Information Services)¹ states that under a Procedural Service:

'The controller shall provide traffic information, if it is considered that a conflict may exist, on aircraft being provided with a Basic Service and those where traffic information has been passed by another ATS unit; however, there is no requirement for deconfliction advice to be passed, and the pilot is wholly responsible for collision avoidance'.

And that under a Basic Service:

'Pilots should not expect any form of traffic information from a controller/FISO, as there is no such obligation placed on the controller/FISO under a *Basic Service*, and the pilot remains responsible for collision avoidance at all times.'

Both pilots shared an equal responsibility to avoid a collision and for not flying into such proximity as to create a danger of collision². The G115 pilot was required to give way to traffic on his right³

¹ Chapter 5.

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

³ *ibid.*, Rule 9 (Converging).

Summary

The Airprox occurred within Class G airspace of the Scottish FIR between a Do328 operating on an IFR flight from Dundee and a G115 operating VFR on a local flight south-west of Dundee. Both pilots were issued with Traffic Information about the other flight prior to the departure of the Do328; however, due to weather conditions the G115 pilot was operating further north than notified to ATC. The Do328 pilot subsequently received a TCAS RA against the G115. The G115 pilot had visual contact with the Do328 throughout the incident. Both pilots were responsible for collision avoidance. The minimum separation was recorded as 0ft vertically and 0.9nm horizontally.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from both pilots, the controller concerned, area radar and RTF recordings and reports from the appropriate ATC and operating authorities.

The Board noted that the Do328 pilot had received Traffic Information about the G115 before departure, and that this had allowed him to discuss with the crew what action that would be taken to avoid it after getting airborne. The Board noted that the G115 pilot had also been issued with Traffic Information about the Do328 prior to its take off, and had been able to monitor visually the Do328's progress continuously after it had departed.

The Board observed that, after departure, the Do328 pilot had initially received a TCAS TA which had soon changed to an RA descent and then a few seconds later the pilot had received a 'clear of conflict' message. Given the brevity of the RA, the Board considered that, had the G115 pilot had been holding over the south bank as he had agreed, the aircraft would have been further apart and the TCAS alert would probably not have been activated. The Board were concerned that the G115 pilot had not informed ATC that it had not been possible for him to route to the south bank of the River Tay as previously agreed because this was a fundamental part of the controller's deconfliction plan. They also opined that the G115 pilot had not realised that his positioning relative to the Do328 would cause its pilot to receive a TCAS RA, or that by not complying with his previously stated intentions he was compromising the controller's plan. Notwithstanding, it was noted that the G115 pilot had been in a position to take avoiding action at all times if it had been necessary, and the Board believed that the Airprox may have been filed by the Do328 pilot because he had received a TCAS RA, even if it had only been for a few seconds. Consequently, the Board agreed that the cause of the incident was a TCAS sighting, and that normal safety standards had pertained so the Airprox should be categorised as Risk E.

The Board noted that there have been a number of Airprox where pilots had manoeuvred sufficiently close to other TCAS-equipped aircraft to generate TCAS RAs. It was therefore thought likely that there were a considerable number of GA pilots who might not be fully aware of TCAS envelopes and how their own flight vectors might generate TCAS alerts in the other aircraft which carried a mandatory requirement for CAT pilots to respond. Consequently the Board resolved to recommend that: 'The General Aviation Safety Council (GASCo) educate GA pilots on TCAS envelopes and the implication of flight vectors'.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause:	A TCAS sighting report.
Degree of Risk:	E.
Recommendation:	That GASCo consider means to educate GA pilots on TCAS envelopes and the implication of flight vectors.
ERC Score ⁴ :	50.

⁴ 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.