AIRPROX REPORT No 2015185

Date: 16 Oct 2015 Time: 0932Z Position: 5321N 00103W Location: 7nm SW Doncaster Airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA31(A)	Robin 2160
Operator	Civ Comm	Civ Pte
Airspace	Doncaster CTR	Doncaster CTR
Class	D	D
Rules	IFR	VFR
Service	Radar Control	Radar Control
Provider	Doncaster	Doncaster
Altitude/FL	FL012	NK
Transponder	A, C, S	A, C
Reported		
Colours	White, Blue	Green, White
Lighting	Nav, Anti-coll	Nav, Beacon, Anti-coll
Conditions	VMC	VMC
Visibility	10km	10km
Altitude/FL	1500ft	1500ft
Altimeter	QNH (1026hPa)	NK
Heading	020°	NK
Speed	120kt	120kt
ACAS/TAS	Not fitted	Unknown
Separation		
Reported	0ft V/400m H	Not seen.
Recorded	NK V/0.3nm H	

THE PA31 (A) PILOT reports that he was conducting an NDB IFR approach to Doncaster and was receiving a Radar Control Service. He was VMC at the time and, whilst manoeuvring onto final approach at 1500ft, the right-hand seat occupant (who was another company pilot, but not in an operating capacity at the time) called "look-out, aircraft ahead". The pilot looked up from his instruments and initially couldn't see the other aircraft as it was obscured by the windscreen pillar, but two seconds later it emerged dead ahead and at the same altitude, crossing from right to left. By this time avoiding action was not necessary [i.e. the other aircraft had already crossed his nose]. He did not recall hearing any Traffic Information from the controller until after the event, when the controller advised him of the traffic as it cleared to the west.

He assessed the risk of collision as 'Medium'.

THE ROBIN 2160 PILOT reports returning to his base after a flight in the Retford area. He had clearance from ATC prior to entering Doncaster airspace. After leaving Retford he entered an area of haze and had to deal with a case of airsickness on board. He could not reach the sick-bag in a pocket near to his left foot, so he loosened his straps and, during this time he diverged from his heading. At the same time as he realised this, ATC asked him to confirm his intentions. He replied and recovered his heading, but the frequency was particularly busy and there was an aircraft with a similar call-sign also on frequency and another aircraft asking for someone to relay his calls. He was unsure whether ATC were talking to him, so he waited for a gap in transmissions before stating his full callsign with his height and position. He didn't see the other aircraft involved in the Airprox, nor was he given avoiding action from ATC. He heard nothing more until just before he was leaving the frequency when he was asked to contact ATC when he landed. This he did and he was asked whether he saw the PA31, which he had not; he was not informed that an Airprox had been reported.

THE DONCASTER CONTROLLER reports that the PA31 was carrying out an NDB DME procedural approach to RW02 whilst the Robin was on a VFR route to Sherburn via Retford. The Robin pilot was initially instructed that on reaching Retford he would need to route either towards Sandtoft or Sheffield due to an ATR43, instrument traffic for RW02. The Robin pilot elected to route from Retford to Sheffield. After the ATR43 had established on the ILS the Robin, who was now abeam the 10 mile final for RW02, was instructed to route direct to Sherburn not above 2000ft VFR. The pilot read back the instruction. At this point the PA31 was still establishing on the FNY, about to go beacon-outbound for the procedure. At 0928, the Robin was seen tracking towards GAM on an easterly track, not towards Sherburn, the controller passed Traffic Information on a 7000 Squawk in the Gamston ATZ and, at 0929, the PA31 was given descent for the procedure. There followed a number of other transmissions by aircraft requesting a Traffic Service, one of which had a similar callsign to the Robin. The Robin then began to track along the A1 towards the north-west. The PA31 had descended to 1500ft and, at 0932, was established on the final approach track, the Robin was now approximately 0.5nm ahead and at the same level. The controller passed Traffic Information to the Robin pilot on the PA31 and then passed Traffic Information to the PA31 pilot, who reported visual and that the traffic had crossed his nose at the same height. He then instructed the Robin to remain west of the A1 until he had left the zone and apologised to the PA31 for the lack of Traffic Information. The controller reported that he spoke to both pilots on the telephone later in the day. The Robin pilot told him he had become disorientated by the visibility closing down and distracted by his airsick passenger. The PA31 pilot reported that he was aware that due to the base of controlled airspace there is a possibility of unknown traffic operating at the boundaries and was looking out for traffic, but that company procedures meant that he would need to file an Airprox. The controller assessed although the Robin pilot had initially followed all instructions correctly, that with hindsight he should have ascertained the Robin pilot's intentions once he realised his routing was not as he had expected it to be.

Factual Background

The weather at Doncaster Sheffield was recorded as follows:

```
METAR EGCN 160920Z 35008KT 9999 FEW023 BKN029 OVC035 11/08 Q1026=
```

Analysis and Investigation

CAA ATSI

ATSI had access to reports from the pilots of both aircraft, the Doncaster Radar Controller, the area radar recordings and a recording of the Doncaster Radar frequency. Screenshots produced in the report are provided using the area radar recordings. Levels indicated are flight levels. The PA31 (SSR code 6161) was operating under IFR on a flight to Doncaster Sheffield Airport, and at the time of the Airprox was flying the NDB(L)/DME approach procedure for RW02. The PA31 pilot was in receipt of a Radar Control Service from Doncaster Radar. The Robin (SSR code 6160) pilot was operating VFR on a local flight via Retford, also in receipt of a Radar Control Service from Doncaster Radar.

At 0918:14, the Doncaster Radar Controller gave the Robin pilot instructions to assist with the planning of his flight, and that he should, after reaching Retford (approximately 9.4nm south-southeast of Doncaster Sheffield Airport), route either, towards Sandtoft (approximately 7.3nm northeast) or Sheffield (approximately 17.6nm west-southwest). In response to this, the pilot elected to route towards Sheffield. At 0922:29, the Robin turned overhead Retford and, at 0923:33, the Doncaster Radar Controller asked the pilot to confirm that he was still below 2000ft, the pilot replied that he was at 1500ft and requested to turn to the north and return to Sherburn-in-Elmet. The Doncaster Radar Controller instructed the Robin to fly no further north than a westerly track in order to keep clear of traffic, an ATR42 which was being vectored for an ILS approach for RW02 at Doncaster Sheffield Airport.

At 0924:58, the Doncaster Radar Controller advised the Robin pilot that he could route direct to Sherburn. At 0925:24 the PA31 was in a right-turn tracking towards the FNY NDB and 3nm north-east of the beacon when the Doncaster Radar Controller cleared the PA31 pilot for the NDB(L)/DME approach for RW02 with an altitude restriction of not below 3000ft until instructed. At 0925:35 the Robin was on a bearing of 201° from the FNY at 10.9nm when it turned right and took up an eastbound track (Figure 1).

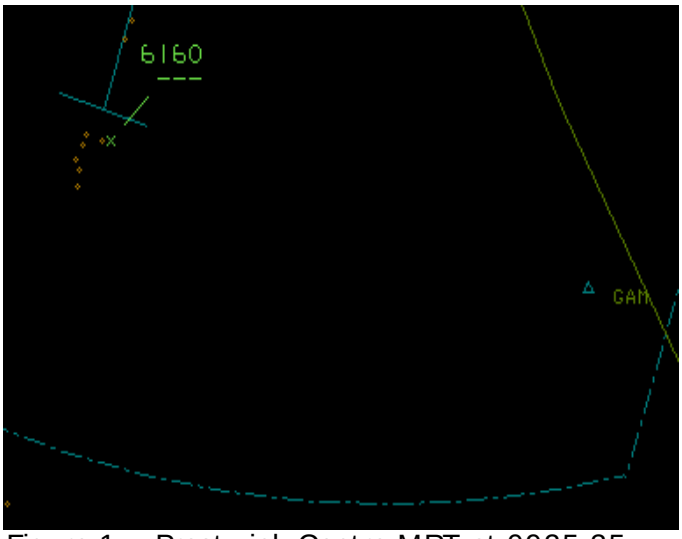


Figure 1 – Prestwick Centre MRT at 0925:35

At 0926:46, the PA31 pilot reported beacon outbound in the procedure (Figure 2).

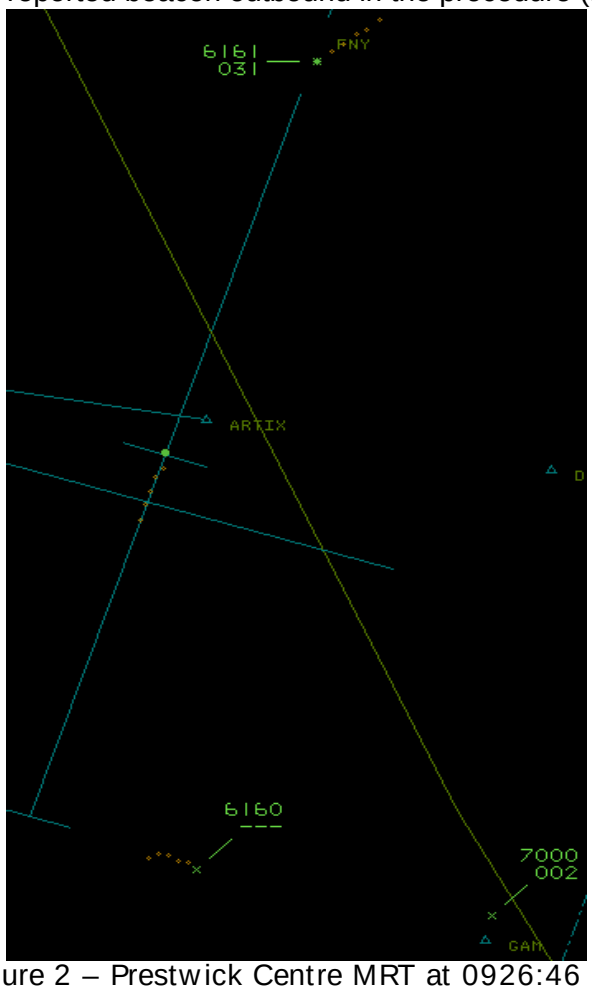


Figure 2 – Prestwick Centre MRT at 0926:46

At 0927:34, the Doncaster Radar Controller asked the Robin pilot if he was returning to Gamston, who replied that he was returning to Sherburn. The Doncaster Radar Controller questioned this as the Robin's easterly track suggested that he was tracking towards the Gamston VOR (Figure 3). The Doncaster Radar Controller then passed Traffic Information to the Robin pilot on traffic which appeared to be in the circuit at Gamston.

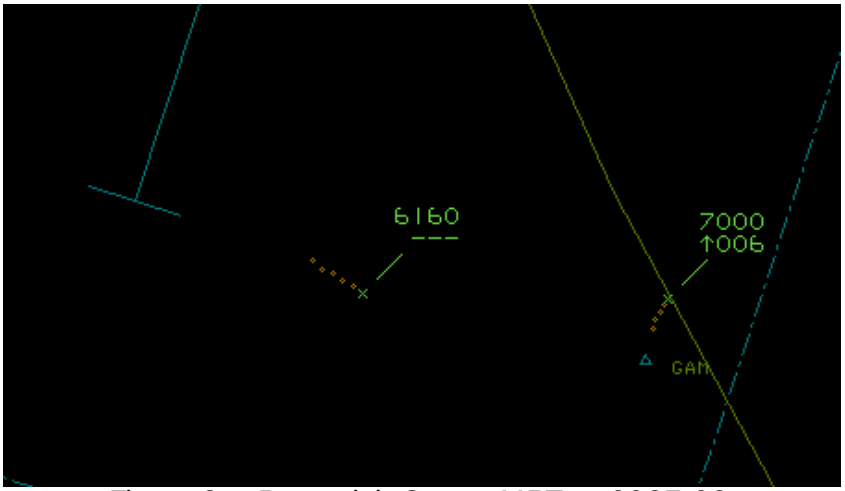


Figure 3 – Prestwick Centre MRT at 0927:00

At 0928:58, the Doncaster Radar Controller cleared the PA31 pilot to descend in accordance with the procedure (Figure 4).

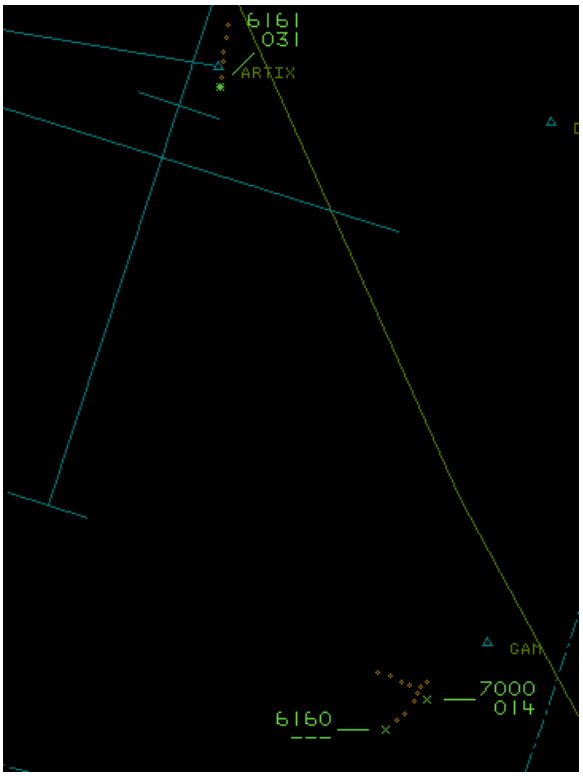


Figure 4 – Prestwick Centre MRT at 0928:58

At 0929:24, the Robin pilot had turned and established on a west-north-westerly track (Figure 5).

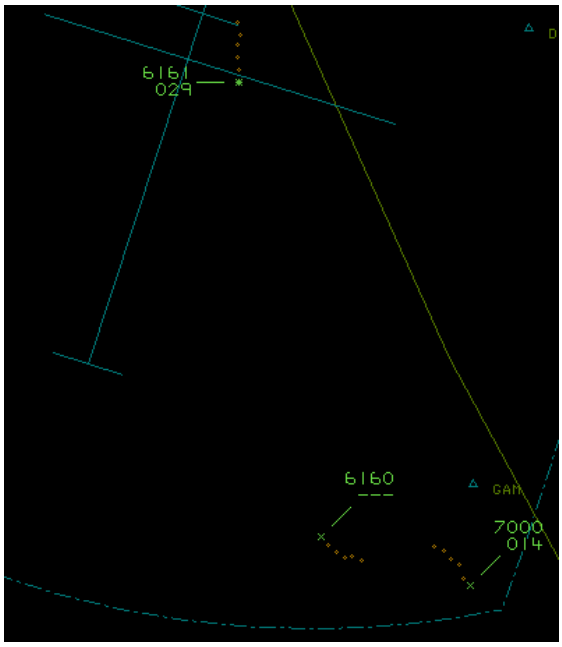


Figure 5 – Prestwick Centre MRT at 0929:24

At 0929:50, another pilot, with a similar callsign to the Robin's, called Doncaster Radar requesting a transit clearance. At 0930:41, the Doncaster Radar Controller attempted to confirm the altitude of the Robin but the call was taken by the transiting aircraft pilot with the similar callsign.

At 0930:52, the PA31 was in the procedure turn on the NDB (L)/DME approach. The Robin was 1.7nm southeast of the PA31 tracking north (Figure 6). At 0930:56, the Doncaster Radar Controller asked the Robin pilot to confirm his level, he replied stating that he was at 1500ft. CPA of 0.3nm occurred at 0932:55 as shown in Figure 7.

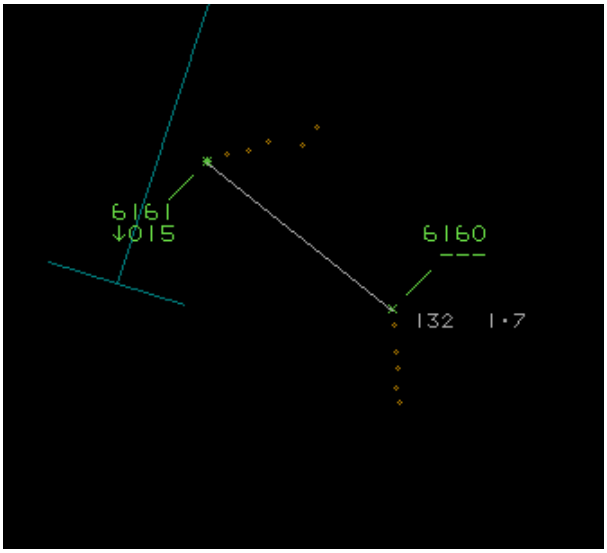


Figure 6
Prestwick Centre MRT at 0930:52

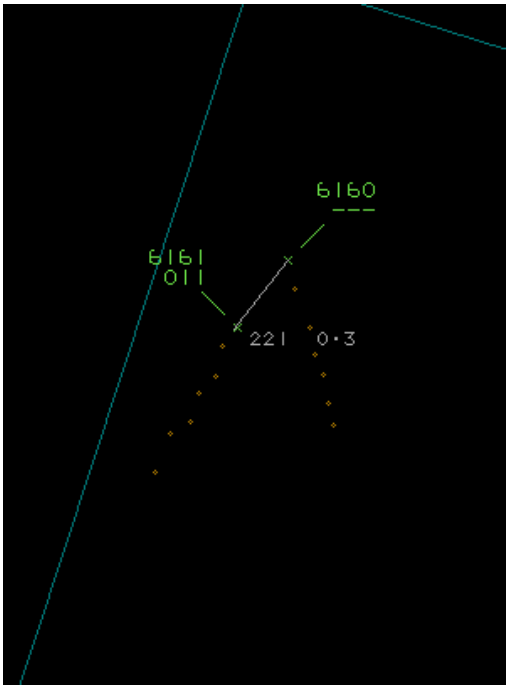


Figure 7
Prestwick Centre MRT at 0932:55 (CPA)

According to the recommended vertical profile for the NDB (L)/DME approach procedure, an aircraft should be at 1500ft at the range the Airprox occurred. The base of controlled airspace at this point in the procedure is also 1500ft. At the time of CPA the PA31 was on a bearing of

199° and at range 7.6nm from the FNY NDB, and indicating FL011 which is equivalent to altitude 1451ft. The PA31 pilot stated that he was at 1500ft at the time of the Airprox. The difference in altitude is within the permitted 200ft tolerance used for validated Mode C data. At 0933:01 the Doncaster Radar Controller passed Traffic Information to the Robin pilot on the PA31. This information was not acknowledged. At 0933:14 the controller passed Traffic Information to the PA31 pilot on the Robin.

The Robin pilot had obtained a clearance to transit the Doncaster Control Zone south-eastbound routeing to Retford, where the pilot intended to turn and route north-westbound and return to Sherburn-in-Elmet Aerodrome. After leaving Retford the track of the Robin became somewhat erratic. The pilot stated in his report that he had entered an area of haze and was also dealing with a case of airsickness on board the aircraft. These two factors were not communicated to the Doncaster Radar Controller. The recorded surveillance data suggests that at the time of the Airprox the Robin pilot was following the A1 trunk road, this becomes the A1 (M) motorway approximately 5.6nm to the south-southwest of Doncaster Sheffield Airport and is a notified route for SVFR and VFR traffic to transiting the Doncaster Control Zone (Figure 8).

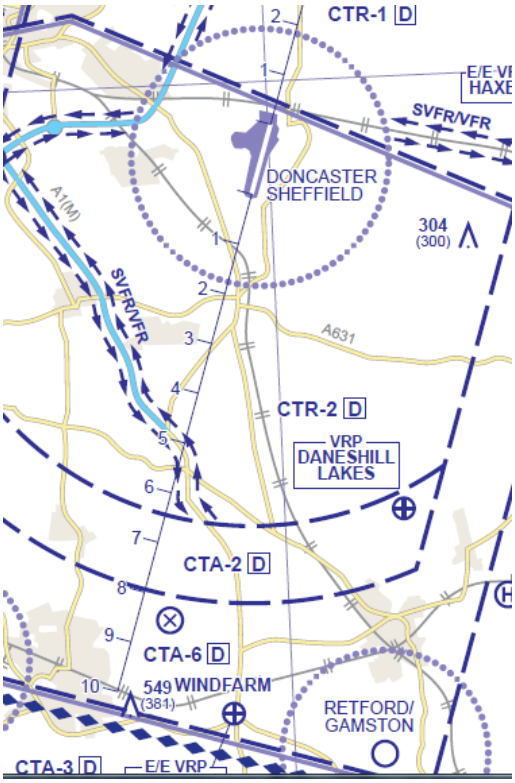


Figure 8 – Control Zone and Control Area Chart (UK AIP AD 2-EGCN-4-1)

Although having previously given the Robin pilot specific routeing instructions to de-conflict this aircraft from other IFR traffic, the Doncaster Radar Controller allowed it to proceed on a track that would put it in proximity to the final approach track for RW02 whilst the PA31 was making an instrument approach.

The Doncaster Radar Controller attempted to confirm the altitude of the Robin approximately two minutes prior to CPA, this transmission was taken by another transiting aircraft with the same last two letters of the callsign as the Robin. The Doncaster Radar Controller then repeated the transmission to the Robin, and the pilot confirmed that he was at 1500ft. The Doncaster Radar Controller did not instruct the pilots with the similar callsigns to use their full callsigns and used abbreviated callsigns when communicating with both aircraft.

The Doncaster Radar Controller passed Traffic Information to the Robin pilot just after CPA but this transmission was not acknowledged. The controller passed Traffic Information to the PA31 pilot on the Robin after CPA had occurred, with the Robin passing through the PA31's 12 o'clock position, right to left at 0.3nm. The PA31 pilot advised that he was visual with the traffic and that it had flown across his nose at the same level. In response to this the Doncaster Radar Controller apologised for the lack of Traffic Information.

In Class D airspace a controller is not required to separate IFR from VFR aircraft, however, Traffic Information was not passed to either pilot in sufficient time to enable a possible visual sighting before the two aircraft came into proximity. The PA31 pilot visually acquired the Robin aircraft as it crossed ahead his track from right to left just after he had made the procedure turn on the NDB approach.

The Airprox occurred within the Doncaster CTA which is designated Class D. Although the controller is not required to separate IFR from VFR flights, a more proactive strategy of traffic information and tactical control (as demonstrated by the controller earlier with the ATR42) could have prevented the Robin flying into proximity with the PA31. The erratic nature of the Robin's track after leaving Retford suggests that the pilot was having difficulty with navigation; the pilot's subsequent report stated that he was pre-occupied with a case of airsickness on board. This fact was not communicated to the Doncaster Radar controller.

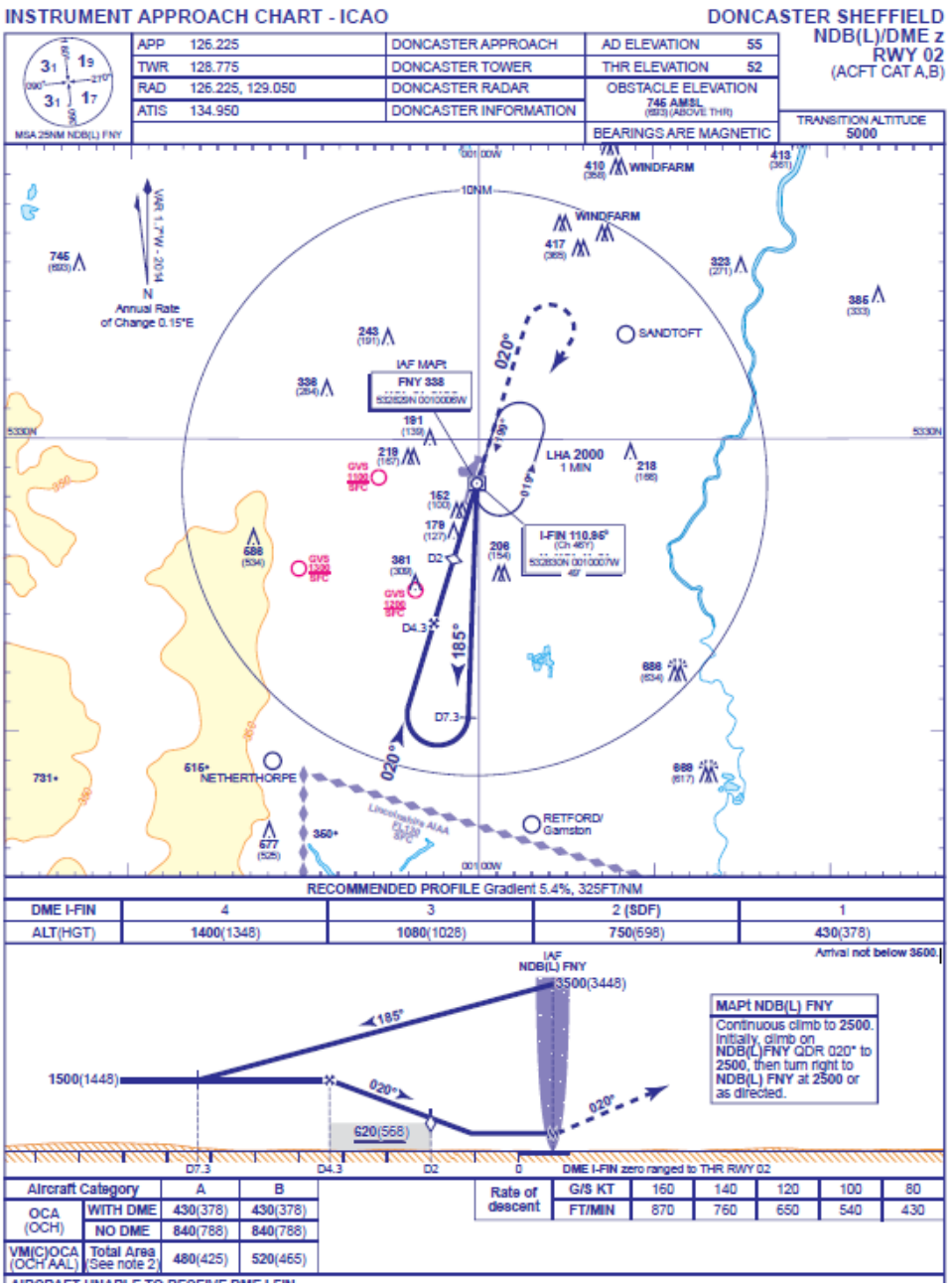
UKAB Secretariat

The PA31 and Robin 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]. SERA states that in Class D airspace:

> IFR and VFR flights are permitted and all flights are provided with air traffic control service. IFR flights are separated from other IFR flights, receive traffic information in respect of VFR flights and traffic avoidance advice on request. VFR flights receive traffic information in respect of all other flights and traffic avoidance advice on request. … . All flights shall be subject to ATC clearance.[2]

The UK AIP entry for Doncaster/Sheffield show the NDB approach to RW02 for Cat A and B aircraft to be as follows:

[1] SERA.3205 Proximity.
[2] SERA.6001 Classification of airspaces para (d).



Occurrence Investigation

PA31 Operating Authority

This is the second occurrence at Doncaster involving a company aircraft, crews have been made aware of the uncontrolled airspace in the vicinity of Doncaster and particularly below the instrument approach paths. The company pilot in this case reports the occurrence as at 8nm range to EGCN, the base of Class D airspace is at 1500' at this point.

Summary

An Airprox was reported when a PA31 and a Robin 2160 flew into proximity at 0932 on Friday 16th October 2015. The PA31 pilot was operating under IFR in VMC, and in receipt of a Radar Control Service from Doncaster. The Robin pilot was under VFR in VMC, also in receipt of a Radar Control Service from Doncaster.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board began by discussing the NDB approach procedure at Doncaster/Sheffield. They were surprised to note that, although larger aircraft flew a different profile, the procedure for Cat A and B aircraft took them down to the very base of the CTA (1500ft) at 7.3nm final, more or less the point of the Airprox. In this instance, the conflicting aircraft was being controlled by Doncaster/Sheffield but, although the PA31's operating authority were clearly aware of the potential for conflict, the Board thought that many other users might believe that the airspace provided them more protection than it actually did; in theory, a VFR pilot could be operating autonomously just beneath the controlled airspace and could come into conflict with traffic on the NDB procedure which would reasonably have expected that the airspace would afford him sufficient protection.

For his part, the Board noted that the Robin pilot had been distracted by his air-sick passenger and was routing through haze which would have impacted his lookout. As a result, his routing had become erratic sometime before the Airprox and members wondered why he didn't ask for assistance from the controller with either positioning or heading information. Notwithstanding, once the controller had established with the Robin pilot that his routing was direct to Sherburn, the pilot took up a route that appeared to follow the A1; with no instructions to the contrary, or Traffic Information on the inbound PA31, the Robin pilot had no reason to believe that this was not a satisfactory routing. Some members wondered whether the Robin pilot could have heard the controller's instructions to the PA31 on the frequency and might have realised that there was inbound traffic. Others thought that this was too much to expect with a busy frequency, callsign confusion, and an airsick passenger and reduced visibility likely introducing navigational problems.

Although the Robin pilot was flying VFR within Class D airspace and was therefore required to remain clear of IFR traffic, ATC members opined that the controller was also required to monitor his flight in order to make sure that the pilot received sufficient Traffic Information to assist him in this task by identifying to him any traffic to avoid. Turning to the actions of the controller, on previous occasions when there was traffic to affect the Board noted that the controller had issued the Robin pilot with direct instructions to keep clear of the inbound traffic by taking a specific routing. The Board thought that he could similarly have done more to ensure the Robin pilot kept clear of the approach lane when the PA31 commenced its procedure, either by height separation or by giving more positive instructions for routing via a known point to keep clear. Even if the controller had expected the Robin to fly a different route to Sherburn, ATC members thought that, having already established that the Robin pilot's navigation was somewhat erratic, the controller should have been vigilant to the possibility of him straying off his course. In some mitigation, they thought it likely that the controller was distracted by the callsign mix-up, and also wondered whether, had the Robin been displaying Mode C information, the controller would have had more visual cues to alert him to the proximity of the two aircraft. As it was, without Mode C information he had to confirm with the Robin pilot what his height was and, with the mix-up of callsigns, this vital information was not received in time for the controller to act upon.

Taking all of this evidence into account, the Board then discussed the cause of the Airprox. Although the Robin pilot was required to keep clear of the IFR traffic in Class D airspace, without specific Traffic Information he could not avoid what he was not aware of. Notwithstanding the fact that the Robin pilot should still have maintained a robust lookout, the cause was determined therefore to be that the controller did not effectively integrate the Robin with the PA31. Turning to the risk, the Board noted that the Robin pilot did not see the PA31 at all, and that the PA31 pilot only saw the Robin more or less at CPA, (and had assessed that by then avoiding action was not necessary); therefore, with an achieved separation of 0.3nm horizontally, the Board judged the risk to be Category B, safety margins had been much reduced below the norm.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The controller did not effectively integrate the Robin with the PA31.

Degree of Risk: B.