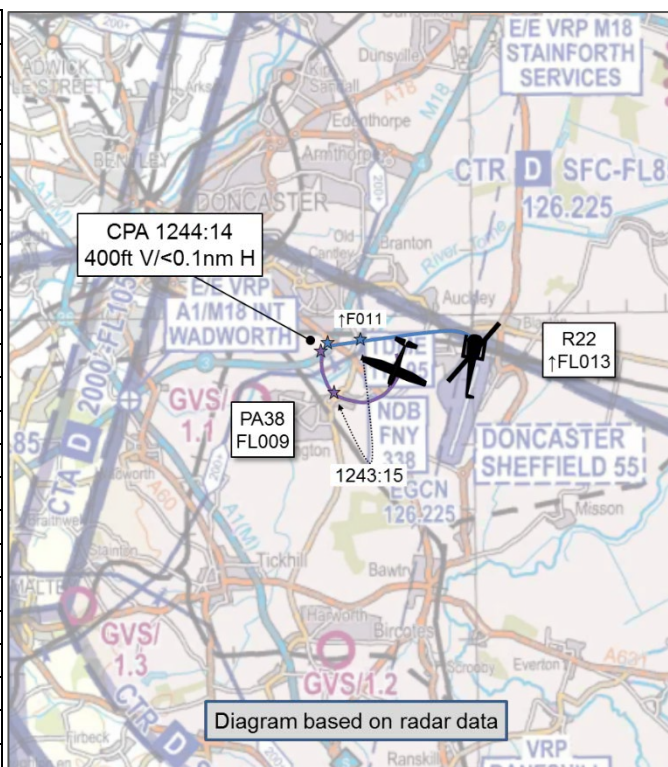


**AIRPROX REPORT No 2019218**

Date: 02 Aug 2019 Time: 1244Z Position: 5328N 00102W Location: Doncaster/Sheffield

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	R22	PA38
Operator	Civ Helo	Civ FW
Airspace	Doncaster CTR	Doncaster CTR
Class	D	D
Rules	VFR	VFR
Service	Radar Control	ACS
Provider	Doncaster	Doncaster
Altitude/FL	FL013	FL009
Transponder	A, C, S	A, C, S
<b>Reported</b>		
Colours	Blue, White	White, Red
Lighting	Nav	Nav, Strobe
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	1100ft	1000ft
Altimeter	QNH (1021hPa)	NK
Heading	255°	Orbiting
Speed	60kt	90kts
ACAS/TAS	Not fitted	Not fitted
<b>Separation</b>		
Reported	~100ft V/0m H	Not Seen
Recorded	400ft V/<0.1nm H	



**THE R22 PILOT** reports that he had just departed Doncaster Airport and had been passed from Tower to Doncaster Radar in the climb-out for RW02, climbing through 1100ft for 1500ft. The student spotted an aircraft down to the left-hand side, tracking northbound. It was inside the ATZ and he made a radio call to ATC that an aircraft had passed directly underneath approximately 100-200ft below and was simply told ‘the circuit is active, working the tower frequency’. He did not take avoiding action because there was no time, although the climb was sufficient to continue moving up and away from the other aircraft. Once back on the ground, he called the tower and was told that the aircraft that passed beneath was not meant to be there, it should have been orbiting on base leg for RW02 but had moved back up the downwind leg. He was told he did not receive Traffic Information because the controller was not expecting it to be there.

The pilot assessed the risk of collision as ‘High’.

**THE PA38 PILOT** reports that he was orbiting downwind and believed the other aircraft was joining on base leg, the first he knew about an Airprox was when it was reported on the RT. He did not see the other aircraft.

**THE DONCASTER ADC CONTROLLER** reports it was a busy afternoon with the LH circuit active with a PA38 and the RH circuit active with a B737. There was a B747 at 'B' hold awaiting departure. A B737 pushed back on the main apron for departure with a CTOT, and an R22 at A7 hold awaiting departure to the West. He had instructed both circuit-traffic aircraft to orbit to allow for the departures and an inbound E175 to land. He cleared the E175 to land at approx 6nm, and advised the landing traffic that it would be to vacate via A7 due to a FOD inspection taking place on taxiway 'C' and 'A' (south of 'C') following the B747 taxiing out. As the E175 had landed and was at taxi speed on the RW, the R22 at A7 asked if he was required to move. The controller considered moving him back to 'D' taxiway but chose to allow him to lift from his current position to depart VFR West instead. He then transferred the R22 to Radar once airborne. He did not give two way Traffic Information to the departing R22 and the

orbiting PA38. This is something that he would usually have done, but had not, perhaps due to the busy traffic situation, including the taxiway/runway inspections. Having subsequently watched/listened to the tapes he noted that the PA38 was in an orbit at mid-point downwind. He had believed him to be much further south at the time.

## Factual Background

The weather at Doncaster/Sheffield was recorded as follows:

METAR EGCN 021220Z 07004KT 040V110 9999 VCSH FEW019 SCT026TCU 19/17 Q1021=

The Aerodrome Chart featured in the AIP is reproduced at Figure 1:



Figure 1 – Doncaster/Sheffield Aerodrome Chart

## Analysis and Investigation

### Occurrence Investigation

A Doncaster investigation reviewed the RT in conjunction with the controller. It was noted that the C/A intersection is a bottleneck and should be used with caution for departing helicopters. A standards bulletin will be issued to all controllers reminding them about the need for Traffic Information in the circuit, to be cautious when using A7 for departing helicopters, and that controllers should consider limiting the circuit to 1 during busy periods, or when commercial traffic is departing. Additionally, controllers should not be afraid to control defensively, for example by holding training aircraft at 'parking' during busy times.

## UKAB Secretariat

At 1243:08 (Figure 2), the NATS radars, which are not used by the Doncaster controller, show the R22 squawking 6160, routing towards the PA38 (squawking 7010) which is orbiting downwind. It is not known at what point the R22 pilot switched to the radar frequency. The R22 crosses over the top of the PA38 at 1243:54 (Figure 3), with 400ft vertical separation.

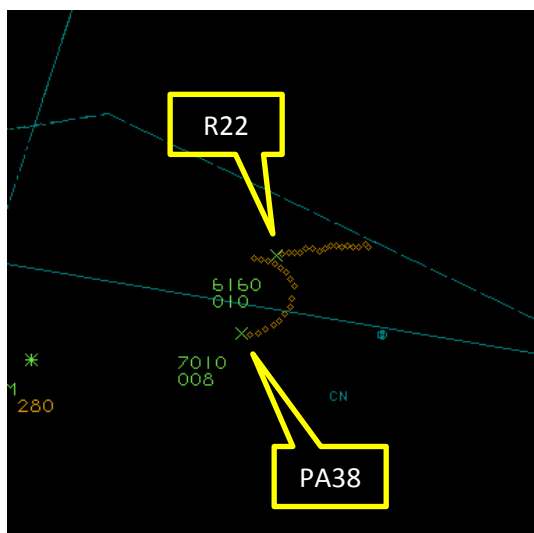


Figure 2:1243:08

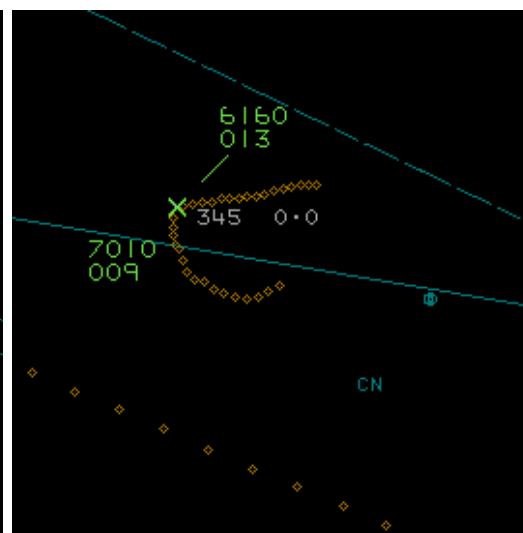


Figure 3:1243:54

The R22 and PA38 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>1</sup>.

## Summary

An Airprox was reported when a R22 and a PA38 flew into proximity in the Doncaster/Sheffield visual circuit at 1244hrs on Friday 2<sup>nd</sup> August 2019. Both pilots were operating under VFR in VMC, the R22 pilot in receipt of a Radar Control Service from Doncaster App and the PA38 pilot in receipt of an ACS from the Doncaster ADC.

## 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. 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 looked at the actions of the R22 pilot. He had been holding, awaiting take-off, just prior to asking the controller if he was required to move for the taxiing E175. Whilst acknowledging that the frequency was very busy, he had been holding for some time and some members wondered whether he should have assimilated that the controller had told an aircraft to orbit downwind. Although probably trying to be helpful in clearing the area quickly once given a clearance, helicopter members opined that he should have conducted a thorough look-out as he climbed through the circuit anyway, knowing that it was active. That being said, they acknowledged that did not receive any Traffic Information from the controller and so only had generic situational awareness that there might be aircraft in the circuit (**CF6**). Once he had commenced his climb, the R22 pilot did not see the PA38 until it was in close proximity, probably because of the geometry as the PA38 orbited (**CF8**). Fortunately there was already vertical separation between them, which increased as he continued the climb.

<sup>1</sup> SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

The PA38 was also on the aerodrome frequency, and, although the circuit was busy, members also thought the instructor should have heard the controller give the R22 clearance to lift and climb to the west (**CF6**). Similar to the R22 pilot, without specific Traffic Information from the controller, the PA38 pilot could not anticipate that the R22 would be there, and did not see it climb above him (**CF7**). Noting that there was an instructor and a student on-board, members briefly speculated whether they had become immersed in the teaching points that the orbit provided, perhaps to the detriment of look-out in the circuit.

Turning to the role of the aerodrome controller, members noted that he was extremely busy with circuit traffic that needed orbiting due to inbounds, aircraft with timed slots to achieve, and taxiway inspections, any one of which would require careful attention on its own (**CF5**). Controller members wondered whether this workload meant that he had probably briefly forgotten that the R22 was holding and would present a problem to the taxiing E175. Once he realised, he gave the R22 pilot immediate clearance to take-off in order to remove it as a factor but did not give corresponding Traffic Information on the orbiting traffic in the circuit (**CF1, CF3, CF4**). Controller members went on to opine that, although pressured into making a quick decision, with hindsight, if he had just held the E175 on the runway he could have cleared the R22 to make a normal departure, which would not have conflicted with the downwind traffic. The controller was clearly uncertain as to where the PA38 was because he had reported that he thought the PA38 was further downwind that it actually was and had not realised it would be a problem to the R22 departing to the west (**CF2**). In trying to resolve what instructions the PA38 pilot had actually been given, members were disappointed that the Doncaster investigation had not included any R/T transcripts, nor did it include any information from the radar controller about whether the R22 had called the radar controller before or after the Airprox, and whether the radar controller had had time to pass Traffic Information.

In assessing the risk, the Board agreed that the final separation of 400ft had largely been achieved by chance because of the R22's climb. However, this was considered sufficient to mean that, although safety had been degraded, there had been no risk of collision; risk Category C.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

	2019218		
CF	Factor	Description	Amplification
	<b>Ground Elements</b>		
	<b>• Regulations, Processes, Procedures and Compliance</b>		
1	Human Factors	• ATM Regulatory Deviation	Regulations and/or procedures not complied with
	<b>• Situational Awareness and Action</b>		
2	Human Factors	• Conflict Detection - Not Detected	
3	Human Factors	• Inappropriate Clearance	Controller instructions contributed to the conflict
4	Human Factors	• Traffic Management Information Provision	Not provided, inaccurate, inadequate, or late
5	Human Factors	• Distraction - Job Related	
	<b>Flight Elements</b>		
	<b>• Situational Awareness of the Conflicting Aircraft and Action</b>		
6	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
	<b>• See and Avoid</b>		
7	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots
8	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots

Degree of Risk: C.

## Safety Barrier Assessment<sup>2</sup>

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

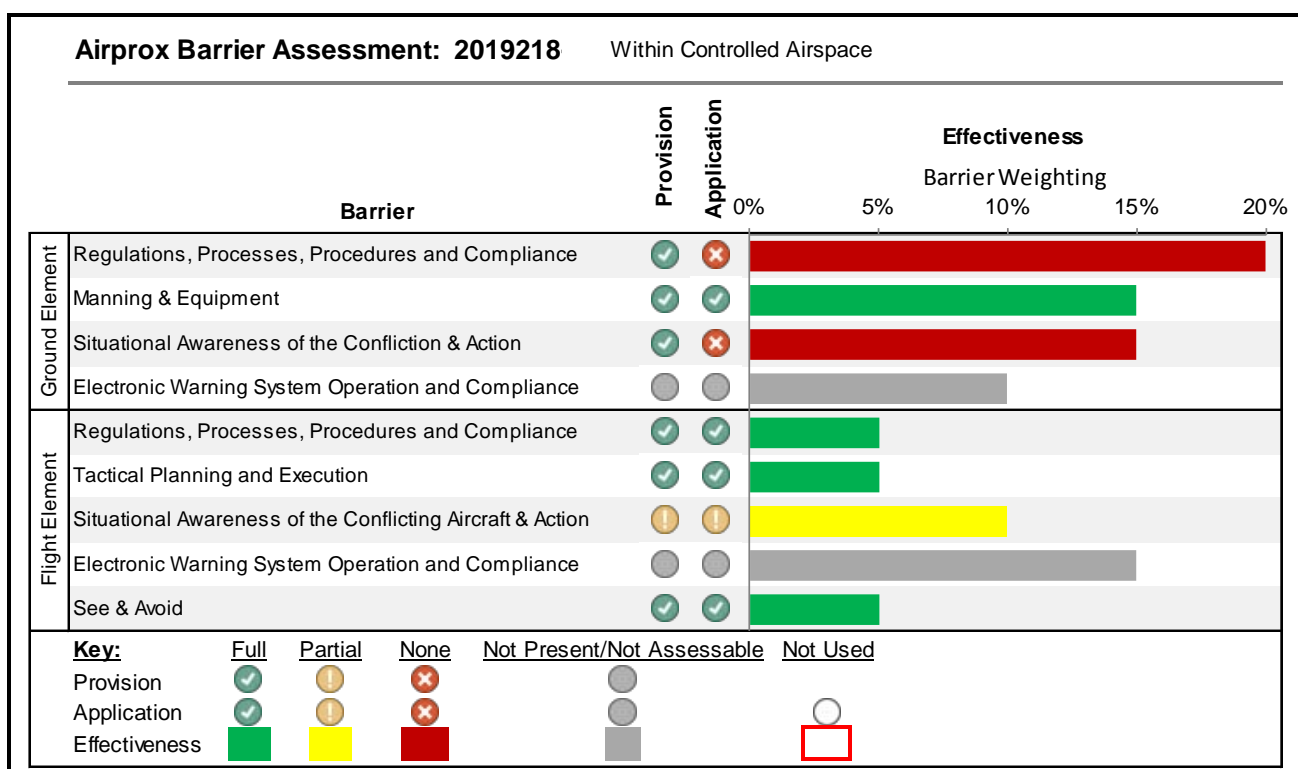
### Ground Elements:

**Regulations, Processes, Procedures and Compliance** were assessed as **ineffective** because the Aerodrome controller did not pass Traffic information to either pilot.

**Situational Awareness of the Confliction and Action** were assessed as **ineffective** because the controller thought that the PA38 was orbiting further downwind and would not be a factor to the departing R22.

### Flight Elements:

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **partially effective** because although both on the same frequency, neither pilot had assimilated that the other would be in their vicinity.



<sup>2</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).