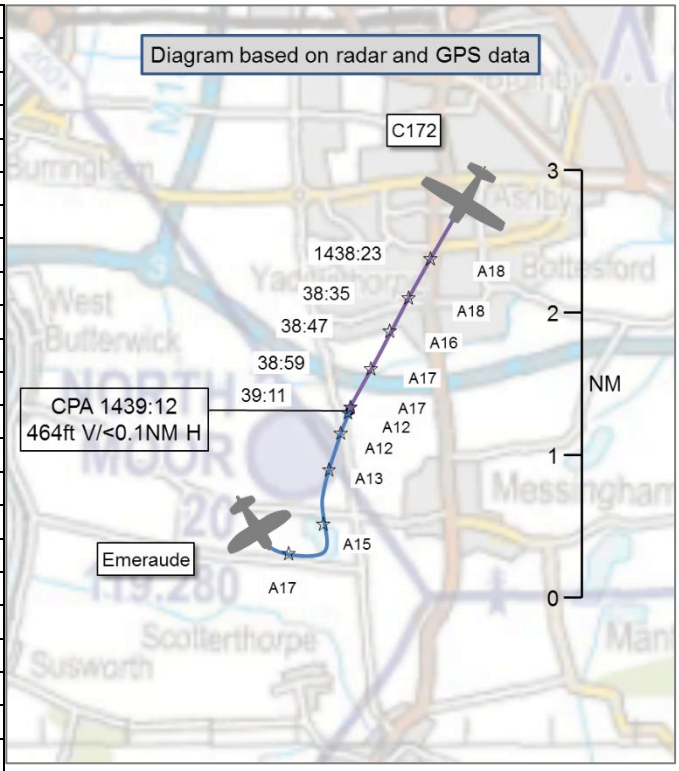
AIRPROX REPORT No 2019326

Date: 03 Dec 2019 Time: 1439Z Position: 5332N 00041W Location: North Moor airfield

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Emeraude	C172
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Basic
Provider	North Moor Radio	Doncaster Radar
Altitude/FL	1236ft	1700ft
Transponder	A, C	A, C, S
Reported		
Colours	NK	White, blue
Lighting	NK	'Strobes'
Conditions	VMC	VMC
Visibility	NK	20km
Altitude/FL	1100ft	1800ft
Altimeter	QFE (1024hPa)	QNH (1024hPa)
Heading	NK	240°
Speed	NK	84kt
ACAS/TAS	NK	Not fitted
Alert	NK	N/A
Separation		
Reported	150-350ft V/0m H	Not seen
Recorded	464ft V/<0.1NM H	



THE EMERAUDE PILOT reports approaching North Moor airfield having called North Moor Radio and asked for joining information. There was no reply, so he made a blind call, stating his intention to make a standard overhead join, and he set the aerodrome QFE. He arrived overhead North Moor at 2000ft aal and manoeuvred to try and get a better view of the windsock. The wind appeared to slightly favour RW27, so he turned to descend deadside to the south of the airfield for a right-hand circuit to RW27. While descending deadside, he again viewed the windsock and decided to reposition for a left-hand circuit onto RW09 as the wind was negligible. When flying the crosswind leg of the circuit at an indicated height of 1100ft, a Cessna passed directly above on a reciprocal heading. The other aircraft was close enough for him to clearly read the registration on the underside of the wing. He decided to report the occurrence to Humberside Radar so changed frequency and, while remaining in the circuit, informed them that he would later file an Airprox report. He then returned to the North Moor frequency and landed on RW09.

The pilot did not make an assessment of the risk of collision.

THE C172 PILOT reports that he was a solo student pilot conducting a navigation exercise. He recalled being north of Scunthorpe, traveling southwest. He was informed by Humberside Radar of traffic in the area so climbed to about 2700ft. Over Scunthorpe he requested to change to Doncaster Radar where he asked to re-join Doncaster controlled airspace at VRP Haxey. He was given a Basic Service and cleared to enter controlled airspace at Haxey not above altitude 2000ft. He believed he was slightly off track which put him over North Moor. He commenced his descent to altitude 1800ft which he did in preparation for re-joining controlled airspace. He did not see or hear on frequency any other aircraft in the area, although the sun was in his eyes on the inbound leg. The student was using a CAA 'half-mill' chart and SkyDemon GPS system. His GPS SkyDemon track indicated the aircraft was at 1725ft over North Moor at approximately 1439Z.

THE HUMBERSIDE CONTROLLER reports that the Emeraude pilot, who had previously left the frequency four minutes earlier, reported back on frequency to say he would be reporting an Airprox with a Cessna that was in confliction with his aircraft when on base leg at North Moor private airstrip near Scunthorpe in North Lincolnshire. Analysis of the radar recording showed that a Cessna 172, which had earlier left the frequency on transfer to Doncaster Radar, may have been the aircraft in question. The Emeraude pilot reported that the other aircraft had been close enough for him to read its registration on the side of the aircraft.

THE DONCASTER DEPUTY AIR TRAFFIC CONTROL MANAGER reports that the ATCO concerned had no recollection of the event in terms of it being an Airprox because nothing was mentioned on the frequency. An assessor replayed the event to the ATCO to refresh their memory. The C172 pilot was under a Basic Service and generic Traffic Information was passed on the Emeraude which, from the radar replay, appeared to be in excess of 1000ft below it.

Factual Background

The weather at Doncaster and Humberside was recorded as follows:

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METAR EGCN 031450Z 26004KT CAVOK 08/04 Q1024=
METAR EGNJ 031450Z 22009KT CAVOK 08/04 Q1023=
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Analysis and Investigation

CAA ATSI

An Airprox was reported by an Emeraude pilot with a C172 when the Emeraude pilot was flying on the crosswind leg in the circuit to land at North Moor. The Emeraude pilot reported making blind calls on the North Moor Radio frequency. The C172 pilot was returning to land at Doncaster Sheffield and receiving a Basic Service from Doncaster Radar. The Emeraude could not be positively identified on the radar replay, however an aircraft's movements were observed that matched the pilot's report. [UKAB Note: The radar replay pictures indicate aircraft elevation based on flight level (1013hPa), not altitude based on QNH]

At 1429:50 the Emeraude pilot, who had been receiving a Basic Service from Humberside Radar since 1415:56, advised the Humberside controller that they were returning to North Moor, remaining to the north and west of Scunthorpe, which the controller acknowledged (Figure 1).

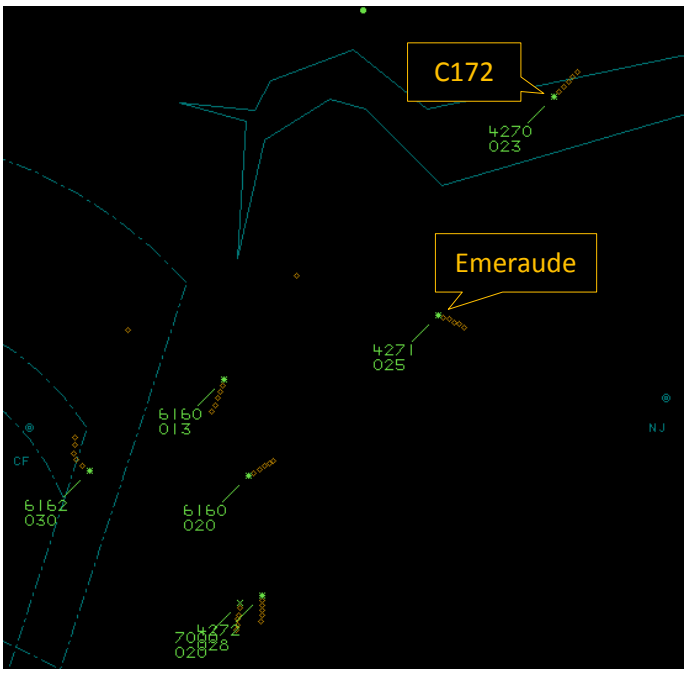

Figure 1 – 1429:50

At 1434:58 the Emeraude pilot advised the Humberside controller that they were visual with North Moor, were changing frequency and would squawk 7000 which the controller acknowledged (Figure 2).

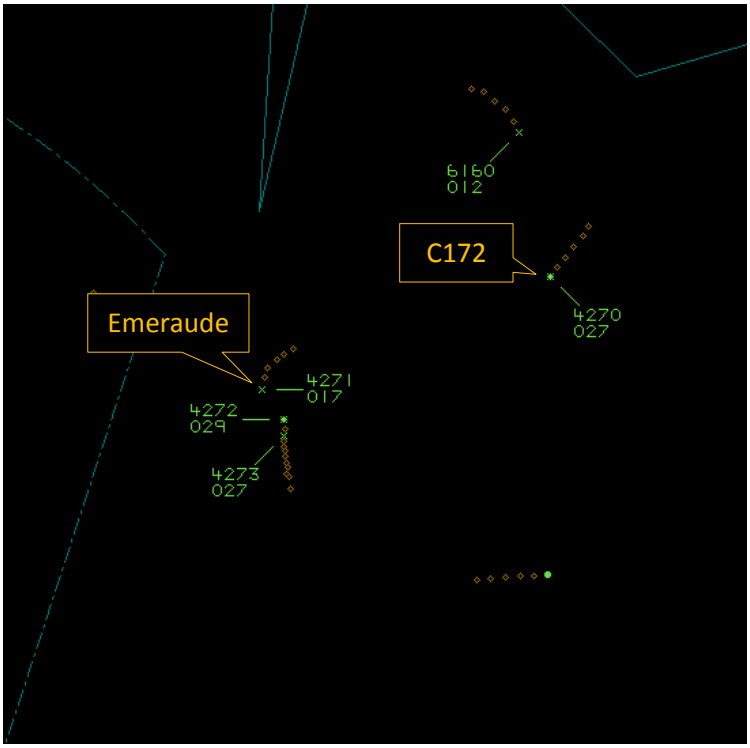

Figure 2 – 1434:58

At 1435:45 (Figure 3), the C172, flown by a student pilot who was completing a solo navigational training exercise, and who had also been with Humberside Radar for some time, reported being overhead Scunthorpe and requested a frequency change to Doncaster which was approved by the Humberside controller.

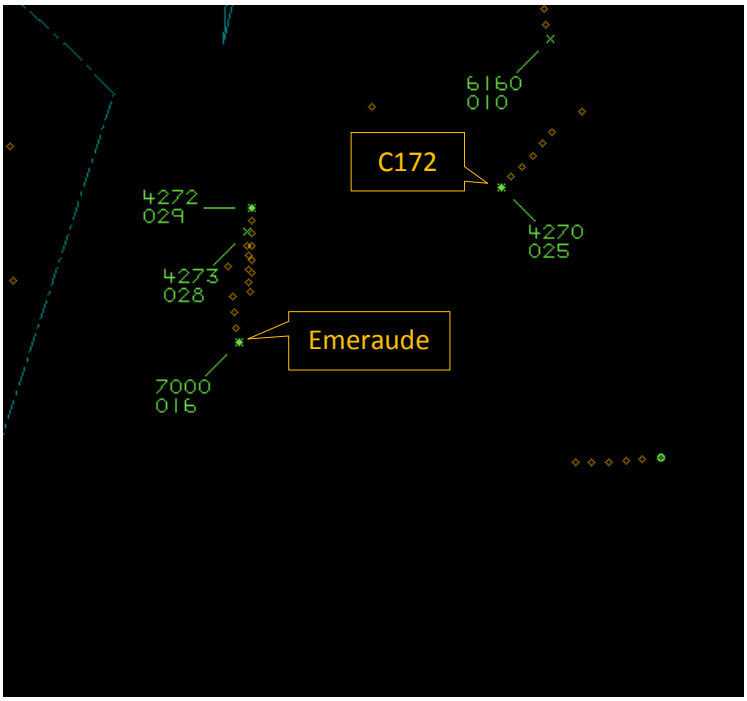

Figure 3 – 1435:45

At 1438:00 the C172 made their initial call to Doncaster Radar (Figure 4).

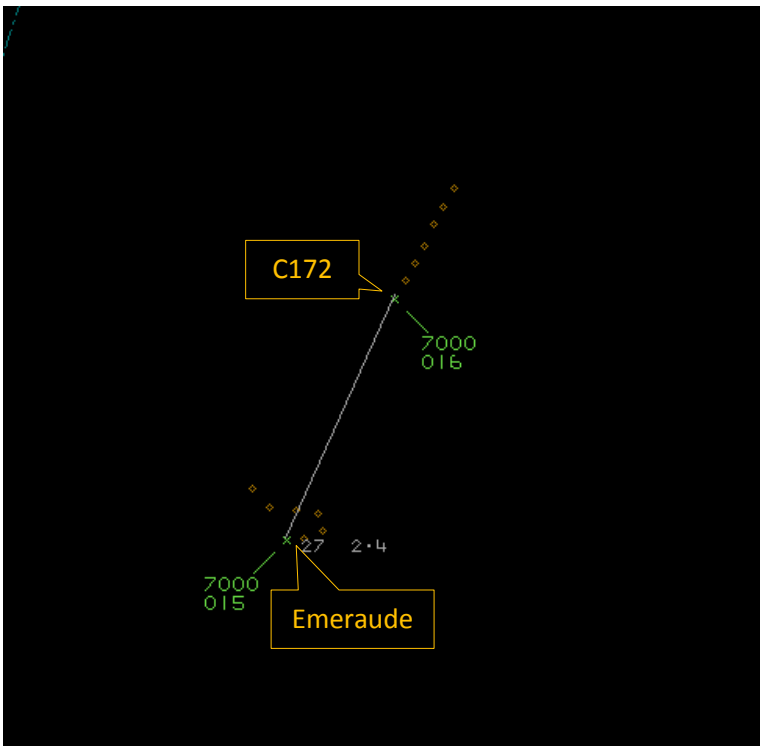

Figure 4 – 1438:00

The Doncaster radar controller allocated a squawk, confirmed that they would provide a Basic Service and asked the C172 to pass their message. The C172 read back the squawk and service and reported being at Scunthorpe. They requested a re-join via Haxey, a VRP to the east of Doncaster-Sheffield. The controller acknowledged this and immediately, at 1438:20, advised the C172 that "*there is traffic at North Moor indicating 1400ft".* They then issued the C172 pilot a joining clearance via Haxey, not above 2000ft VFR. The C172 pilot read back the clearance but did not acknowledge the Traffic Information passed by the controller (Figure 5).

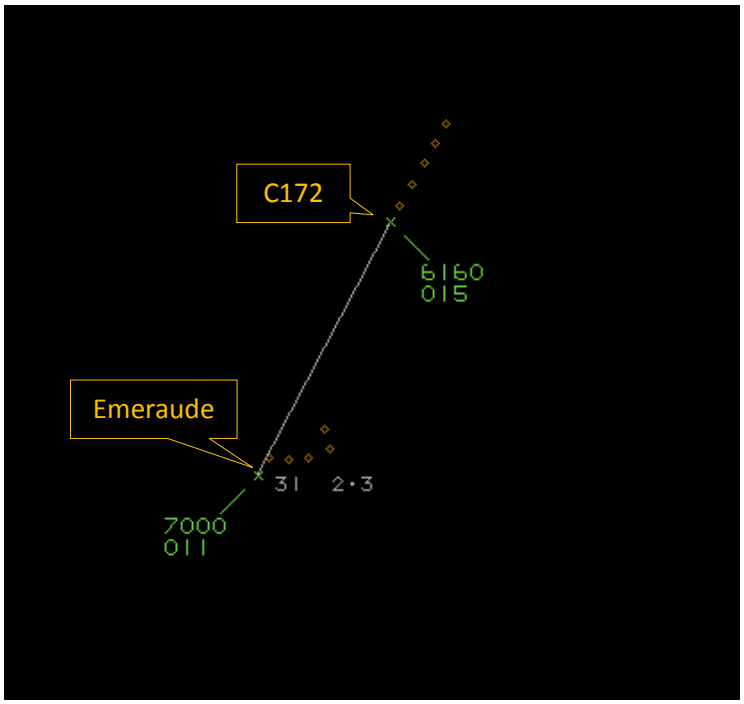

Figure 5 – 1438:20

The C172 then continued a south-westerly track, (Figures 6), with CPA estimated, (due to the slow sweep-rate of area radar), to occur at 1439:15 (Figure 7).

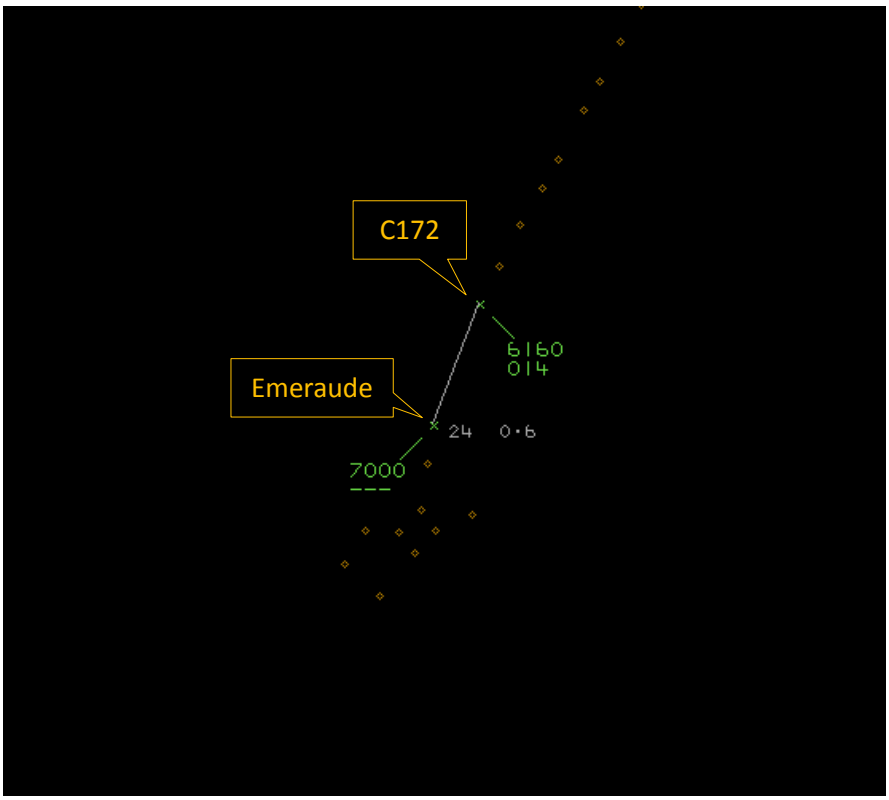

Figure 6 – 1438:58

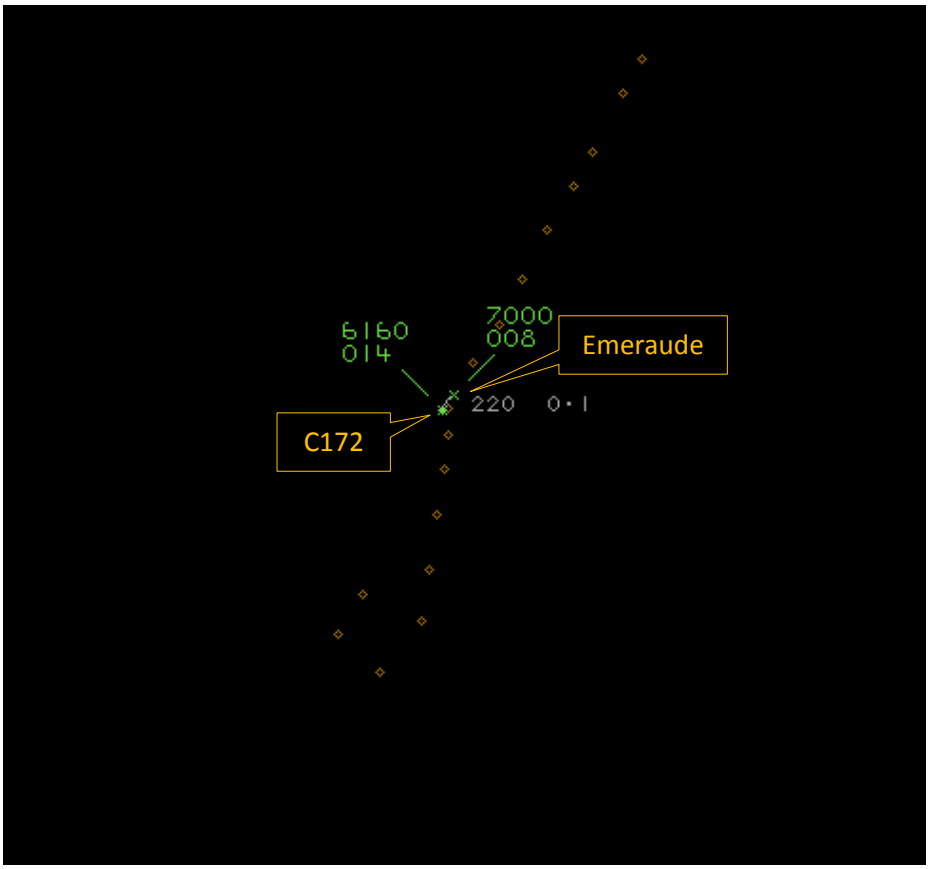

Figure 7 – 1439:15

The Emeraude pilot re-contacted the Humberside Radar controller, and at 1444:02 advised them that they wished to report an Airprox, having come *"nose to nose with a Cessna"* which was on a reciprocal track whilst they were on base leg.

The Airprox took place in Class G airspace, where both pilots shared equal responsibility for collision avoidance. The Doncaster radar controller passed Traffic Information to the C172 pilot on the traffic seen at North Moor, which was not acknowledged by the C172 pilot.

UKAB Secretariat

The Emeraude and C172 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]. An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation[2].

Summary

An Airprox was reported when an Emeraude and a C172 flew into proximity at 1439Z in the overhead of North Moor airfield on Tuesday 3rd December 2019. Both pilots were operating under VFR in VMC, the Emeraude pilot listening out on the North Moor A/G frequency and the C172 pilot in receipt of a Basic Service from Doncaster Radar.

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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments. Although not all Board members were present for the entirety of the meeting and, as a result, the usual wide-ranging discussions involving all Board members were more limited, sufficient engagement was achieved to enable a formal assessment to be agreed along with the following associated comments.

Members first discussed the pilots' actions. The C172 student pilot had received Traffic Information from the Doncaster controller on the Emeraude at North Moor, including its altitude, but had not acknowledged the call or deviated from his track. He had also subsequently descended from an altitude that would have afforded ample vertical separation to an altitude that was some 400ft above that given in the Traffic Information call, no doubt in response to the Doncaster clearance to be not above 2000ft at VRP Haxey. The C172 pilot did not mention provision of Traffic Information in his report so the Board surmised that he had been working at or near capacity and had not assimilated the Traffic Information passed (**CF3**), resulting in his flying over North Moor airfield at 1700ft (**CF1**). The Board discussed the requirement for pilots to integrate with or remain clear of an airfield's visual circuit and acknowledged that there was considerable room for interpretation. Some members felt that the C172 pilot had not remained sufficiently clear given that joining aircraft could be overhead at 2000ft and descending to circuit altitude with the joining pilot, of necessity, focused on the airfield and traffic pattern rather than other approaching aircraft. After further discussion, members agreed that the requirement to integrate or remain clear was predicated on traffic actually operating in the vicinity of an airfield, not an abstract interpretation of where a joining or circuit pattern might exist. However, if relying purely on see-and-avoid, it was considered prudent to remain clear of an airfield's immediate proximity on the basis that a pilot might not see traffic operating in the vicinity. Members also wondered to what degree the student pilot had been exposed to a Traffic Service during his training and thus whether he had practised the division of attention required to assimilate 3rd party information. Turning to the controllers, the Board commended the Doncaster controller for passing Traffic Information whilst the C172 student pilot was only under a Basic Service. It was unfortunate that this was apparently not assimilated but the Board nevertheless reiterated the crucial part controllers can play in mitigating mid-air collision risk in Class G airspace. Considering the risk, although some members felt that the C172 student pilot could have

[1] SERA.3205 Proximity.
[2] SERA.3225 Operation on and in the Vicinity of an Aerodrome.

flown into proximity with an aircraft conducting an overhead join, others thought that, in the event, the Emeraude pilot was already at circuit altitude and that with a recorded vertical separation of 464ft there had not been a confliction. Although the C172 student pilot seemingly did not have SA of the Emeraude (**CF2**) and did not see it (**CF4**), the Emeraude pilot had perceived the C172 to be in closer proximity than that measured by radar/GPS (**CF5**). Notwithstanding the possibility of Mode C error in the C172, members felt that the Emeraude pilot had probably been startled by the sudden appearance of the C172 and that his startle response may have resulted in an underestimation of separation. Nevertheless, members felt that the probable lack of assimilation of Traffic Information and descent to an altitude only 400ft above that of the previously reported traffic was not a situation that could be described as one where 'normal procedures, safety standards and parameters pertained', and therefore classified the occurrence as risk C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2019326		
CF	**Factor**	**Description**	**Amplification**
	Flight Elements		
	• Tactical Planning and Execution		
1	Human Factors	• Action Performed Incorrectly	Incorrect or ineffective execution
	• Situational Awareness of the Conflicting Aircraft and Action		
2	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
3	Human Factors	• Understanding/Comprehension	Pilot did not assimilate conflict information
	• See and Avoid		
4	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots
5	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: C.

Recommendation: Nil.

Safety Barrier Assessment[3]

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 C172 pilot commenced a descent to altitude 1800ft when pointing at North Moor airfield after having been passed Traffic Information on 'traffic at North Moor indicating 1400ft'.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the C172 pilot did not act on the Traffic Information given.

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

See and Avoid were assessed as **ineffective** because the C172 pilot did not see the Emeraude and the Emeraude pilot saw the C172 at such a late stage that he could not increase separation at CPA, effectively a non-sighting.