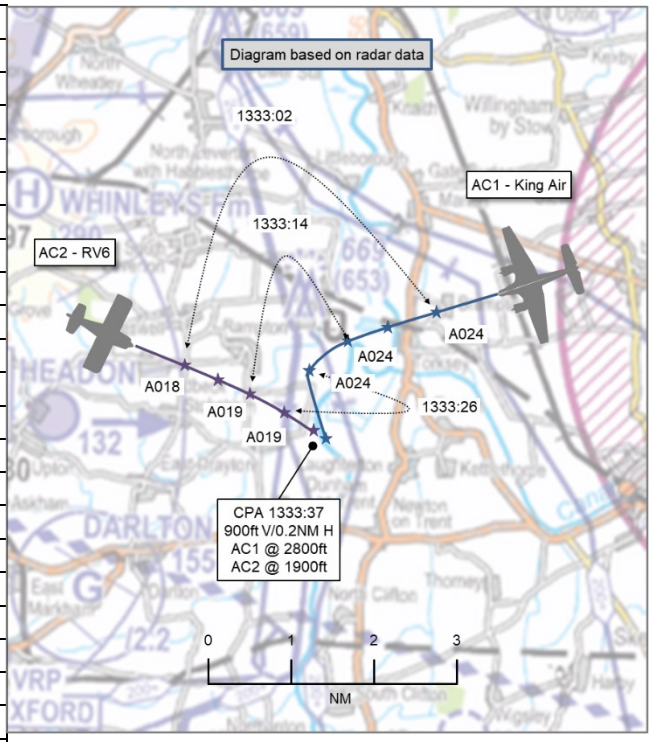
AIRPROX REPORT No 2023044

Date: 02 Apr 2023 Time: 1334Z Position: 5316N 00046W Location: 6NM E of Retford/Gamston

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	King Air	RV6
Operator	Civ Comm	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	AGCS	None
Provider	Gamston Radio	N/A
Altitude/FL	2800ft	1900ft
Transponder	A, C, S+	A, C, S
Reported		
Colours	White/Blue Stripes	Red/White
Lighting	Beacon/Nav/Position	Strobes
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2500ft	1600ft
Altimeter	QNH (1030hPa)	QNH (NR)
Heading	270°	SE
Speed	180kt	130kt
ACAS/TAS	TCAS II	Not fitted
Alert	RA	N/A
Separation at CPA		
Reported	300ft V/0.0NM H	NR V/NR H
Recorded	900ft V/0.2NM H	



THE KING AIR PILOT reports that, during a multi-pilot flight where they were the PIC and PF, the TCAS RA was activated. They were returning to Gamston VFR at 2500ft after a systems check flight over the Humber. There were quite a few light-aircraft flying around and they were receiving a Traffic Service from Humberside Approach. At 12NM east of Gamston they cancelled the Traffic Service and switched frequency to Gamston Radio. They had the TCAS set up to a 12NM range and it was indicating approximately 6 aircraft ahead of them. Most were around Gamston airport and, given their altitude indication, they assumed them to be in, or about to join, the circuit. One target approximately 10NM and 800ft below their 12 o'clock position stood out to them because it appeared that it was flying towards them. As the target got closer, the TCAS started to indicate that the aircraft was in a slow climb. They tried to acquire the target visually but were unsuccessful. As it was now less than 5NM away and just 500ft below and climbing, the King Air pilot decided to turn left to avoid it and open up the field of view to help the PM in acquiring the traffic visually. During the left turn, the TCAS RA activated and instructed them to climb. The King Air pilot started the climb straight away and at the same time the PM saw the traffic passing below them from west-to-east. At its closest point, the traffic was 300ft below them. After the PM saw the traffic pass below and the TCAS RA was no longer active, they continued their flight to Gamston where they landed without further incident.

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

THE RV6 PILOT reports that they had just passed over their own farm strip and were not aware of any conflict, They were in open FIR with no air traffic in the area now Doncaster has closed, they blind-called Waddington before changing to Wickenby, as far as the RV6 pilot was aware it is 'see and be seen' in this area.

HUMBERSIDE AIRPORT reports that the unit had no report of an Airprox on record for said date/time. DATCM arranged for a local investigation into the Airprox.

The Airprox report was received on the 13th April 2023 via email from the UK Airprox Board. The report stated that [the King Air] had an Airprox with an unknown aircraft 9NM northeast of Gamston Airfield.

Flight details: At 1259 the pilot of [the King Air] called Humberside Radar requesting a Traffic Service. The aircraft was given a squawk code of 4276 and no further details as the ATCO (under training) was busy. At 1300 the [pilot of the] aircraft requested the status of R313 and was told it was cold.

At 1301 the aircraft pilot asked to confirm it was under a Traffic Service, and was told to standby. Then asked to pass their details, they did so and were identified and given a Traffic Service. The aircraft continued eastbound. At 1309 the pilot requested the status of D307 and was told that it was cold. When the aircraft had reached 30 miles east of Humberside the pilot was asked how much further, and replied “10 more miles”.

At 1314 the pilot started a descent whilst simultaneously asking for a descent to 2000ft over the sea. This was acknowledged and the pilot was told the ‘Service was now reduced’. At 1315 the aircraft dropped below PSR coverage. As the aircraft approached the coast routeing westbound, 3 aircraft were crossing right-to-left, all indicating below 1000ft (Mode C). These would pass within 3-5 miles of [the King Air] but no warning was given.

[The King Air] continued westbound. At 1325 there was a controller handover. At 1330 [the King Air] was approximately 9NM northeast of Gamston in the position that the email states the Airprox occurred. No aircraft was observed in that vicinity. There was a primary contact 6 miles east of Gamston, this was fading in and out on the display, but a positive trail could not be seen.

At 1332 [the King Air] pilot requested a change of frequency to Gamston radio. This was acknowledged, approved, instructed to squawk conspicuity and the Radar Service was terminated. An aircraft registration [the RV6] was 4 miles east of Gamston tracking approximately 105°.

At 1333 [the RV6 was in the twelve o’clock of [the King Air] indicating 500ft below with the PSR contact to the South. [The King Air] was observed turning and climbing to overfly [the RV6] and merging with the PSR contact.

At 1334 [the King Air] then descended into [destination airfield].

No call regarding an Airprox was made to Humberside via either RT or the telephone. Neither [the RV6 pilot] nor the unknown PSR contact called Humberside that day.

THE GAMSTON A/G CONTROLLER reports that this event took place outside their ATZ and, as such, few details are known. The pilot did not report this directly to Gamston at any time. Nothing unusual was reported on the watch log. The RW in use was 02. They confirmed that [the King Air] landed at Gamston Airport on the 2nd of April at 1338(L) and departed on the same day, 1730(L)

Factual Background

The weather at Humberside was recorded as follows:

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METAR EGNJ 1320Z 03009KT 9999 SCT030 09/03 Q1030
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Analysis and Investigation

CAA ATSI

[The King Air pilot] had initially been on a "reduced Traffic Service" as they approached the base of primary radar cover at 1314, although the pilot was not made aware of the reason for the reduction nor the limitations of the reduced service.[1]

In the unit investigation Follow-Up/Recommendations the investigator states: *"A radar service can only be given when the aircraft is within PSR coverage (there is a caveat to this is when the PSR is unserviceable)"*. Although a review of the unit MATS part 2 could not find specific reference to the termination of a surveillance-based service when an aircraft drops below primary radar cover, the unit confirmed the following:

> *"As the primary radar is situated at the airfield and the secondary is offsite, and both have different update rates, if the aircraft is operating below primary radar cover then the service is terminated, the caveat is working SSR alone with PSR failure when the minimum lateral separations are increased.*
>
> *With regard to why the service was not terminated, as the aircraft descends towards the base of solid cover the service should be reduced CAP 774 1.11, and in accordance with MATS Part 2 4.9.3, the ATCO should have terminated the service, and has been reminded of this."*

Had the pilot been in receipt of a surveillance-based service, it might have been appropriate for Traffic Information on [the RV6] to have been passed before allowing [the King Air pilot] to change frequency. However, as far as the Humberside controller was concerned, the pilot was now in

[1] **CAP413 states**: Controllers shall inform the pilot of reductions in traffic information along with the reason and the probable duration; however, it may not always be possible to provide these warnings in a timely fashion.

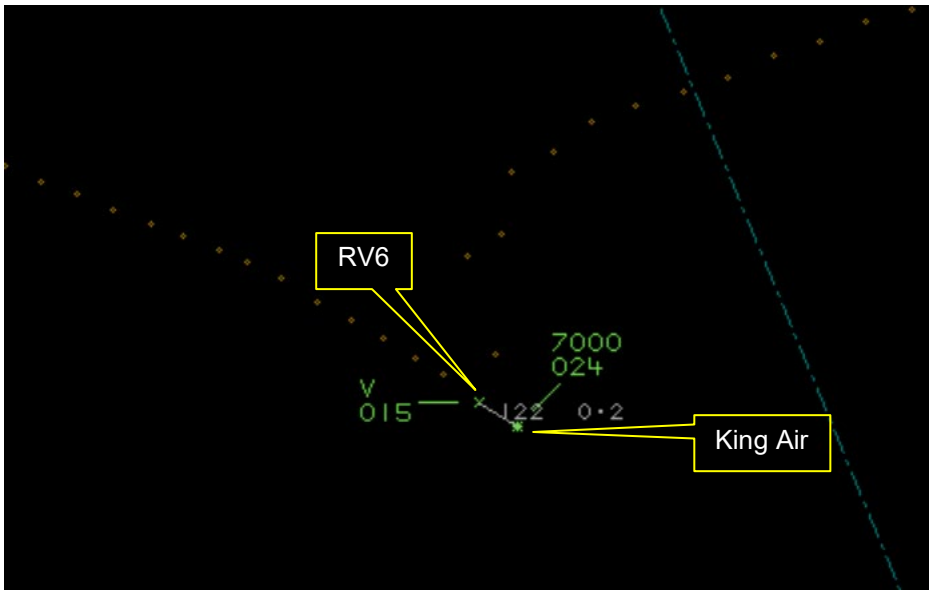
receipt of a Basic Service prior to this point, although the pilot was not made aware of this. The Airprox occurred after the pilot of [the King Air] left the Humberside frequency and no longer in receipt of an ATS. [The RV6 pilot] was not receiving any ATS.

The unit MATS Part 2 does not stipulate that a radar service cannot be provided when the aircraft's contact becomes a secondary-only but that:

> ***PRIMARY RADAR UNAVAILABLE OR PROVISION OF - RADAR SERVICE USING SSR ALONE***
> *a. Operating Procedures.*
> *In the event that primary radar is unavailable and SSR remain serviceable, controllers can continue to provide a radar service to SSR equipped aircraft under the following conditions:*
> *(1) Inform all aircraft on frequency that primary radar has failed but that radar service continues for SSR equipped aircraft using SSR alone and advise pilots of the limitations ("Reduced Service Secondary Radar only. Traffic information and (where applicable) avoiding action on squawking traffic only")……*

ATSI stated to the unit that, in their opinion, there was an opportunity for the controller to have passed Traffic Information to the pilot of [the King Air] on [the RV6] before they changed frequency as the aircraft would have been visible to the controller. The unit response was: "The aircraft was on a reduced TS and elected to change to Gamston. At the point of radar service termination, [the King Air] was approximately 6-7 miles away from [the RV6] with nearly 1000ft separation and [the RV6] appeared to be turning to the north." In mitigation they also stated: "it was a busy day with lots of LARS traffic including many 7000 squawks, particularly out to the northwest, following the closure of Doncaster/Sheffield."

UKAB Secretariat



CPA 1333:37 900ft V/0.2NM H

The King Air and RV6 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[2] If the incident geometry is considered as converging then the King Air pilot was required to give way to the RV6 pilot.[3]

[2] (UK) SERA.3205 Proximity..
[3] (UK) SERA.3210 Right-of-way (c)(2) Converging.

Summary

An Airprox was reported when a King Air and an RV6 flew into proximity at 6NM E of Retford/Gamston at 1334Z on Sunday 2nd April 2023. Both pilots were operating under VFR in VMC, the King Air pilot in receipt of an AGCS from Gamston Radio and the RV6 pilot not in receipt of an ATS.

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 units involved and analysis from the CAAs Air Traffic Services Investigations unit. 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 discussed the actions of both pilots (though limited information was available for the RV6 and that of Humberside in its role of service provision to the King Air pilot). They agreed that the earlier reduction in service (from Traffic to Basic) brought about by a lack of coverage at the King Air's operating area over the North Sea (approximately 30NM to the east of Humberside) had been poorly communicated and its implications had not been fully absorbed either by the pilot of the King Air or by the replacement controller at Humberside (the change having taken place 9min before the CPA). This had meant that, as the King Air pilot had switched from the Humberside frequency to Gamston Radio, they had been on a Basic Service and no Traffic Information concerning the RV6 had been passed. Members were satisfied that the subsequent TCAS RA for the King Air pilot had helped to increase the vertical separation between the 2 aircraft but agreed that the decision to make a left-hand turn had brought the 2 aircraft closer together laterally and perhaps a turn away (to the right) would have better served to add lateral separation. The Board also wished to note the ongoing financial support for the purchase of EC-related equipment,[4] the carriage and use of which would have helped to improve situational awareness; that support is in place in its current form until March 2024 only. However, members were satisfied that there had been sufficient separation between the aircraft, and that there had been no risk of collision. It was therefore agreed that normal safety parameters had pertained and, as such, the Board assigned Risk Category E to this event. Members agreed that the following factors (detailed in Part C) had contributed to this Airprox:

CF1: The TCAS RA had enabled decision making by the pilot of the King Air, but perhaps interpretation of the flight path of the RV6 had been sub-optimal.

CF2: The pilot of the RV6 had no awareness of the King Air as they were not in receipt of an ATS and had no declared EC equipment in use. The pilot of the King Air had greater situational awareness but was limited by a lack of Traffic Information from the Humberside controller on switching frequency.

CF3: The pilot of the King Air was concerned by the proximity of the RV6 and initiated action to increase separation.

CF4: The King Air had an operational TCAS which alerted them to the presence of the RV6.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023044			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
1	Human Factors	• Interpretation of Automation or Flight Deck Information	Interpretation of Automation or Flight Deck Information by the flight crew.	

[4] https://www.caa.co.uk/general-aviation/aircraft-ownership-and-maintenance/electronic-conspicuity-devices/#

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
3	Human Factors	• Unnecessary Action	Events involving flight crew performing an action that was not required	Pilot was concerned by the proximity of the other aircraft
	• Electronic Warning System Operation and Compliance			
4	Contextual	• ACAS/TCAS RA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system resolution advisory warning triggered	

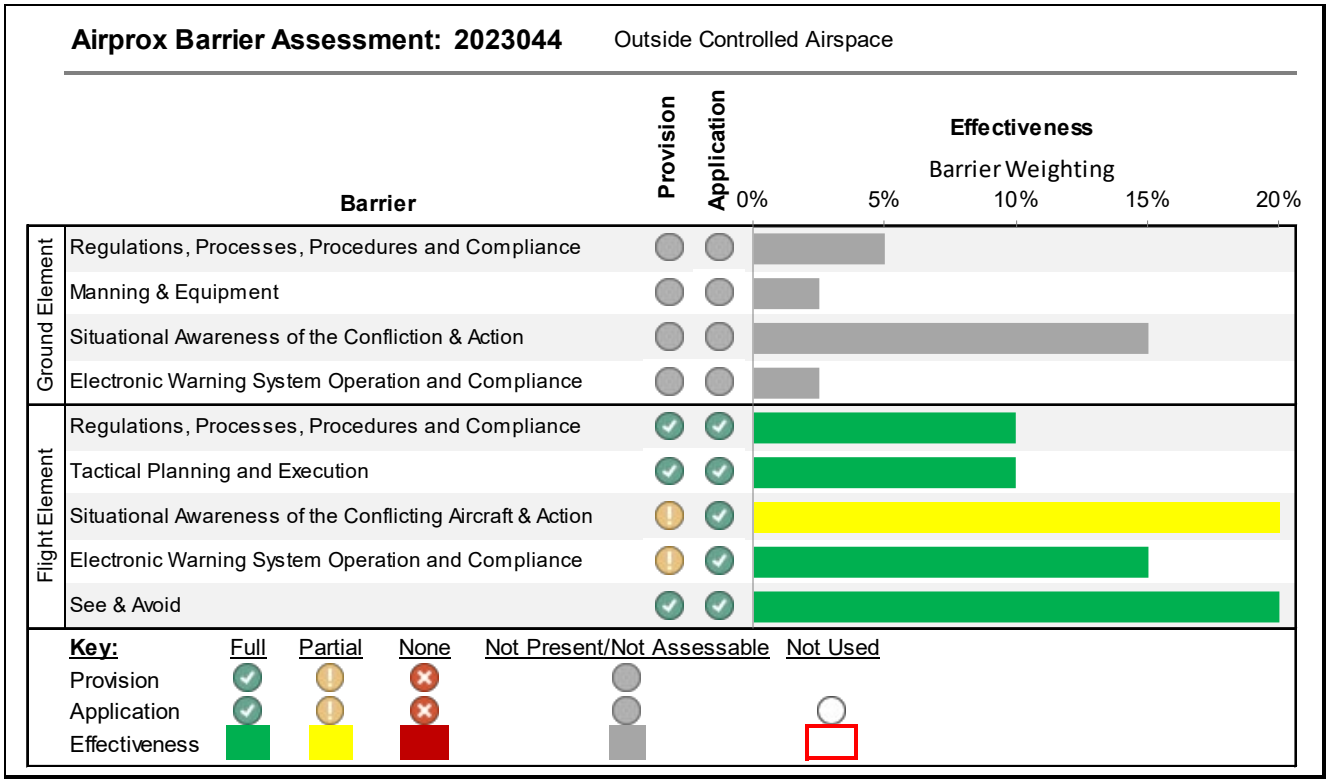
Degree of Risk: E.

Safety Barrier Assessment[5]

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

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because, although the King Air pilot had generic situational awareness, they had received a TCAS alert which they interpreted to initiate a left turn, bringing them closer to the RV6 and resulting in increased concern of the proximity between the 2 aircraft.



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