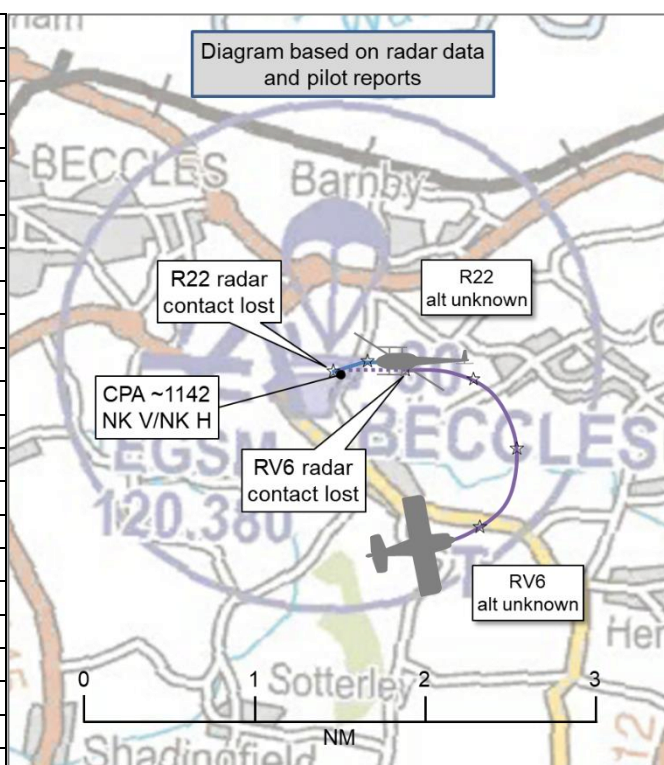


AIRPROX REPORT No 2021218

Date: 23 Oct 2021 Time: 1142Z Position: 5226N 00137E Location: Beccles airfield

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Robinson R22	Van's RV6
Operator	Civ Helo	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Beccles Radio	Beccles Radio
Altitude/FL	NR	NR
Transponder	A, C, S	A, C, S
Reported		
Colours	Red	White, red
Lighting	Strobe	Navigation lights
Conditions	VMC	VMC
Visibility	NR	>10km
Altitude/FL	50ft	100ft
Altimeter	QFE (1023hPa)	QFE (1023hPa)
Heading	270°	270°
Speed	10kt	70kt
ACAS/TAS	Not fitted	SkyEcho
Alert	N/A	None
Separation at CPA		
Reported	20ft V/0m H	50ft V/0m H
Recorded	NK V/NK H	



THE ROBINSON R22 PILOT reports that they called downwind, final and short final to land during a left-hand circuit to RW27. The Beccles Radio operator reported the traffic twice – the first time they reported that they were on final and, due to it being an instructional flight teaching exercise 14b, they were at the latter stages of a steep approach and busy focussing on the lesson, especially a controlled rate of descent at low airspeed; the second time the radio operator said that the aircraft was on final behind them. Assuming it was further away than it actually was, they reported that they were short final and busy and that the lower aircraft had the right of way. In the last 50ft of the approach they saw a fixed-wing aircraft fly directly below them to land on the RW. They expressed their shock over the radio and then requested a conversation with the other pilot. They did not take any avoiding action as they did not see the other aircraft approaching (from behind them) until it flew underneath them. The lesson was terminated early as they were a little shaken. They met the pilot and the spoke with the radio operators at the radio cabin where the R22 pilot stated that they all needed to file an Airprox.

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

THE VAN'S RV6 PILOT reports that they reported downwind and were advised of a helicopter ahead on finals. They called turning finals and heard the helicopter [pilot] call finals for a second time. They did not have visual contact with the helicopter. They continued their approach and assumed that the helicopter had landed as there was no visual contact even though visibility was excellent. At about 100ft agl, the helicopter suddenly appeared dead ahead and slightly higher. The only avoiding option was to increase descent, pass under the helicopter and land on the threshold. [A compatible EC device] was fitted but no return was received from the helicopter.

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

THE BECCLES AIR GROUND OPERATOR reports that the pilot of the R22 called final and they appeared to be high and hovering above the RW. The RV6 pilot then called left-base followed by a call

that they were on final. Because the helicopter appeared to be high and hovering, the AGO advised the helicopter pilot that the RV6 was crossing Brock Road [approximately 200m in the undershoot of RW27] to land, to which the helicopter pilot replied “the lower aircraft has priority”. The radio operator could not say or do anything more helpful and the RV6 landed below the hovering helicopter.

Factual Background

The weather at Norwich Airport was recorded as follows:

METAR COR EGSB 231150Z 20006KT 140V240 9999 BKN048 13/08 Q1025 NOSIG=

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. Both aircraft were detected in the moments leading up to the Airprox, where the R22 was seen to be on final and tracking slowly towards the RW27 threshold and the RV6 was seen to turn onto base-leg and then final behind the R22. Unfortunately, radar contact was lost on both aircraft prior to CPA.

The R22 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.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 a Robinson R22 and a Van's RV6 flew into proximity in the Beccles visual circuit at 1142Z on Saturday 23rd October 2021. Both pilots were operating under VFR in VMC and both pilots were in receipt of an Air Ground Communications Service from Beccles Radio.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and a report from the air ground operator involved. 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 considered the actions of the R22 pilot and heard from a helicopter pilot member that, in their experience, training for steep approaches can be carried out to any point on the airfield and does not necessarily need to be conducted to the RW in use. That said, the R22 pilot had elected to use the RW on this occasion, which they had been entitled to do [UKAB note: further information provided to the UKAB Secretariat by the R22 pilot after the Board meeting highlighted that there are no training areas at Beccles with suitable reference points for conducting steep approaches, other than the runway]. However, the Board felt that the R22 pilot could have assisted the RV6 pilot in sighting the helicopter by passing information that the R22 had been flying a steep approach path (**CF2**) and therefore would likely have been higher than the RV6 pilot had been expecting and looking for. It was clear to the Board that the R22 pilot had been aware that the RV6 had been on the approach behind them, but members agreed that the R22 pilot had not had sufficiently accurate situational awareness to be able to prevent the Airprox (**CF7**). Furthermore, with the RV6 flying the approach behind the R22, there had been no possibility of the R22 pilot sighting the RV6 before it had flown under their aircraft (**CF10, CF11**).

Turning to the actions of the RV6 pilot, the Board agreed that they had been given information on the R22 and that they had been aware of an unresolved potential confliction. Members noted that, when

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

the RV6 pilot could not see the R22, they assumed that the helicopter had landed but that this had not been the case. Therefore, the Board concluded that the RV6 pilot had not integrated with the R22 established in the visual circuit and that this had been contributory to the Airprox (**CF1, CF3, CF5**). Furthermore, members considered that, when the RV6 pilot had not seen the R22 on final, they could have asked the R22 pilot for their position and/or altitude to assist them with sighting the helicopter (**CF6**). The Board agreed that, in the event, the RV6 pilot had formed an inaccurate mental model of the situation in assuming that the R22 had landed because they could not see it on final ahead of them and had not received any information from their electronic conspicuity equipment (**CF7, CF8**), and that relying on lookout for to resolve a conflict that they knew existed had not been sufficient (**CF4**). This had led to the RV6 pilot sighting the R22 at such a late stage that their only option had been to continue their approach and land underneath the helicopter (**CF9**).

The Board then briefly considered the actions of the Beccles Air Ground Operator and quickly agreed that they had done all that they could to try and resolve the situation. Air Ground Operators are not permitted to issue instructions to pilots and so their only option was to pass updated information to the R22 pilot on the position of the RV6 behind them, which they did.

Finally, the Board considered the risk involved in this event. Although the closest point of approach had occurred below the coverage of the NATS radars and could not, therefore, be measured, members took into account both pilots' estimation of separation and assessment of the risk of collision, and noted that both pilots considered this to be a particularly alarming encounter. The Board was unanimous that there had been a serious risk of collision (**CF12**) and that providence had played a major part in events. Accordingly, the Board assigned a Risk Category A to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021218			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
	Flight Elements			
	• Regulations, Processes, Procedures and Compliance			
1	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
	• Tactical Planning and Execution			
2	Human Factors	• Accuracy of Communication	Events involving flight crew using inaccurate communication - wrong or incomplete information provided	Ineffective communication of intentions
3	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
4	Human Factors	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
5	Human Factors	• Monitoring of Environment	Events involving flight crew not to appropriately monitoring the environment	Did not avoid/conform with the pattern of traffic already formed
	• Situational Awareness of the Conflicting Aircraft and Action			
6	Human Factors	• Lack of Communication	Events involving flight crew that did not communicate enough - not enough communication	Pilot did not request additional information
7	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
	• Electronic Warning System Operation and Compliance			
8	Technical	• ACAS/TCAS System Failure	An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations	Incompatible CWS equipment
	• See and Avoid			

9	Human Factors	• Identification/Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
10	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots
11	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other
• Outcome Events				
12	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

Degree of Risk: A

Safety Barrier Assessment³

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

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **not used** because both pilots were operating with an Air Ground Communications Service and, as such, the Air Ground Operator can only pass information to pilots.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the Van's RV6 pilot did not sequence themselves correctly behind the R22 on final.

Tactical Planning and Execution was assessed as **ineffective** because the Robinson R22 pilot's approach profile was not clearly articulated to the Van's RV6 pilot and so when the RV6 pilot did not see the R22 on approach they assumed that it had landed.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the R22 pilot had only generic situational awareness of the position of the RV6, and the RV6 pilot had inaccurate situational awareness regarding the position of the R22.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the electronic conspicuity device carried by the RV6 pilot could not detect the presence of the R22.⁴

See and Avoid were assessed as **ineffective** because the R22 pilot did not see the RV6 until it passed underneath their aircraft, and the RV6 pilot did not see the R22 in time to modify their approach to increase separation.

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

⁴ Follow this link to the CAA's webpage on Electronic Conspicuity Devices, guidance material and compatibility table: https://www.caa.co.uk/General-aviation/Aircraft-ownership-and-maintenance/Electronic-Conspicuity-devices/?mc_cid=ce23f03dac&mc_eid=d250bc9f1c

Airprox Barrier Assessment: 2021218		Outside Controlled Airspace		Effectiveness				
Barrier		Provision	Application	Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Manning & Equipment	✓	✓					
	Situational Awareness of the Confliction & Action	✓	○					
	Electronic Warning System Operation and Compliance	●	●					
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✗					
	Tactical Planning and Execution	✓	✗					
	Situational Awareness of the Conflicting Aircraft & Action	!	✗					
	Electronic Warning System Operation and Compliance	!	✗					
	See & Avoid	✗	✗					
Key:		Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	✓	!	✗	●				
Application	✓	!	✗	●	○			
Effectiveness								