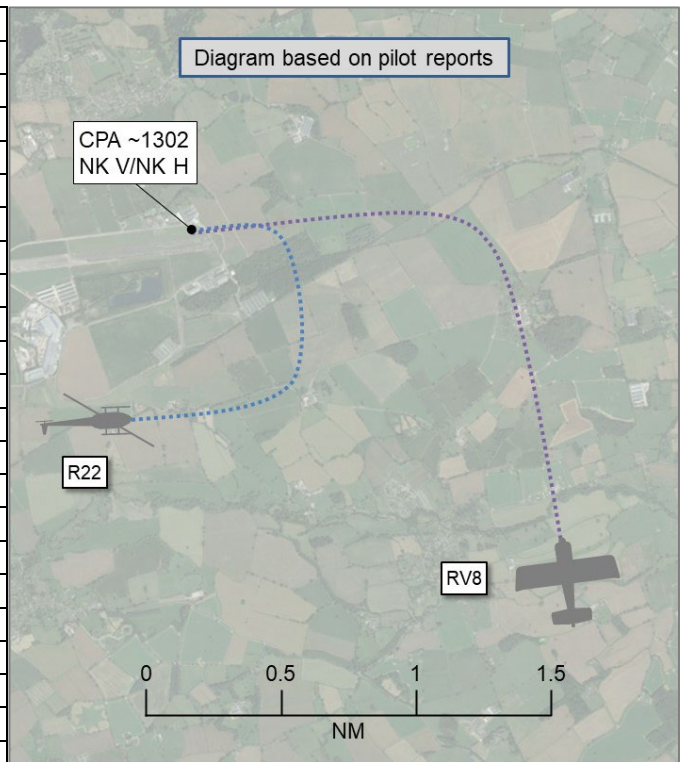


AIRPROX REPORT No 2022013

Date: 05 Jan 2022 Time: ~1302Z Position: 5215N 00253W Location: Shobdon circuit

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	R22	Van's RV8
Operator	Civ Helo	Civ FW
Airspace	Shobdon ATZ	Shobdon ATZ
Class	G	G
Rules	VFR	VFR
Service	AFIS	AFIS
Provider	Shobdon Info	Shobdon Info
Altitude/FL	NR	NR
Transponder	A, C, S	Standby
Reported		
Colours	White	White
Lighting	Red strobe	Landing/taxi lights
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	60ft	300ft
Altimeter	QFE (NK hPa)	QFE (NK hPa)
Heading	260°	260°
Speed	NK	70kt
ACAS/TAS	Not fitted	Not fitted
Separation at CPA		
Reported	40ft V/120ft H	30ft V/30m H
Recorded	NK V/NK H	



THE R22 PILOT reports that they completed a normal approach down to about 60ft over the threshold of the northside grass RW26. They were planning to continue forwards and down to 8ft and to hover; however, the AFISO instructed them to break right to parking earlier than normal, which they did immediately. On turning right, they saw the other aircraft overtake them and land on the north grass RW to the left of them.

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

THE VAN'S RV8 PILOT reports that they called Shobdon and joined on base leg, whereupon they were asked if they had the helicopter in sight, to which they replied 'visual'. As they established on final, they noticed that the helicopter appeared to be in the hover and made a call stating that they would be underflying it. A normal landing was carried out and they were directed to parking by the tower. At no point were they asked to come to the tower and they spent more than an hour at the airfield without being approached.

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

THE SHOBDON AFISO reports that RW26 was in use with a left-hand circuit.

The RV8 pilot reported 3 miles to the south for a crosswind join and that they would like to use the grass RW. The AFISO queried this because a more likely join from the south would be base or downwind for RW26. The RV8 pilot then advised that they were on base leg at that time. The circuit was moderately busy with traffic ahead of the RV8 and traffic behind (a C152 on final and a PA28 downwind). The RV8 pilot confirmed that they were visual with the traffic on final. The R22 pilot then reported downwind for RW26 grass and then the C152 landed.

The R22 pilot reported final and was given the runway. The AFISO asked the RV8 pilot to confirm that they were visual with the traffic ahead as there wasn't much spacing between them and the R22. The

RV8 pilot confirmed that they were and reported short final (the AFISO's recollection is they were further out than short final). The RV8 pilot then reported that they were underneath the helicopter, so the R22 pilot was instructed to break right towards its parking area. The RV8 pilot then landed without being told to land at their discretion.

Factual Background

The weather at Gloucestershire Airport and RAF Shawbury was recorded as follows:

METAR EGBJ 051250Z 30006KT 9999 FEW043 06/01 Q1016=
 METAR EGOS 051250Z 33009KT 9999 FEW020 04/01 Q1015 TEMPO -SHRA SCT020 RMK BLU TEMPO WHT=

Analysis and Investigation

CAA ATSI

The R22 [pilot] was conducting left-hand circuits VFR to the grass RW26 to the north of the main RW. The RV8 was inbound VFR from the south. [The pilots of] both aircraft were in receipt of an Aerodrome Flight Information Service. The Shobdon AFISO also had two aircraft ahead (a C152 and a PA28) joining to land, aircraft on the ground calling for taxi, and glider operations on the north-side of the main runway, which included calls from a vehicle associated with the gliding.

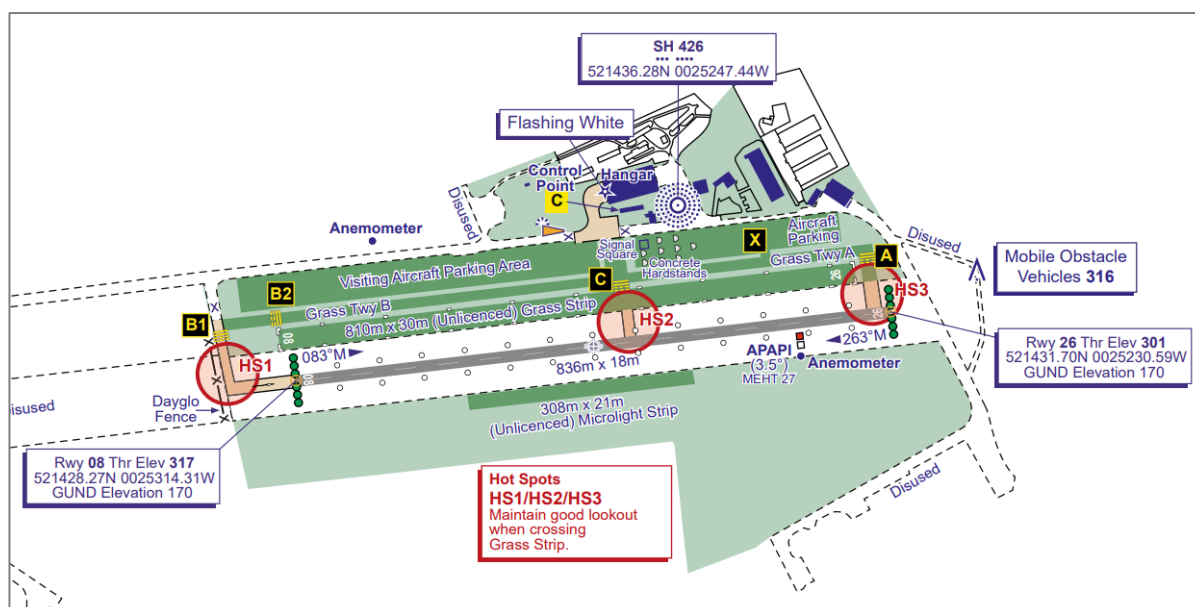


Figure 1 – Shobdon Airfield Diagram

Screenshots have been taken from the area radar replay but, apart from an intermittent primary-only contact observed earlier to the south, the RV8 was not visible at any time in the circuit, (nor was one of the other aircraft joining at the same time – a PA28). Those screenshots used have been taken at the time of significant calls but, in the past, the Shobdon RTF time code has been found not to be accurate, and so it was not possible to verify the accuracy of the timings on this occasion.

At **1257:00** the pilot of the RV8 called the Shobdon AFISO advising they were inbound from the south. The Shobdon AFISO instructed them to standby. At **1257:44** the pilot of the PA28 reported downwind (left-hand) to land on RW26 and was instructed by the AFISO to report final, which was readback correctly. At **1258:04** an aircraft was given the runway for departure. At **1258:12** the pilot of the C152 on base-leg, just about to turn onto final approach, was advised by the AFISO that they were to “*expect late runway availability glider-tug departing north grass*”.

The AFISO then, at **1258:19** went back to the pilot of the RV8 and advised them that it was RW26 left-hand and passed the QFE. The RV8 pilot read that back and stated that they would “*take the grass*”. The AFISO requested their position (which was reported as 3 miles south) and asked how

they intended to join. The RV8 pilot replied “er crosswind if that’s possible?” The AFISO responded, “just confirm you say you are to the south?” which the RV8 pilot confirmed.

The AFISO replied “(unintelligible) joining crosswind then – you looking for a base leg join for 26?”. The RV8 pilot replied: “I’m actually base-leg right now – that would be great if you could please”. The AFISO replied “roger – traffic ahead on final and erm other traffic last reported downwind”. The RV8 pilot responded “roger – copied traffic on final – is visual – looking for other (callsign)” (see Figure 2).

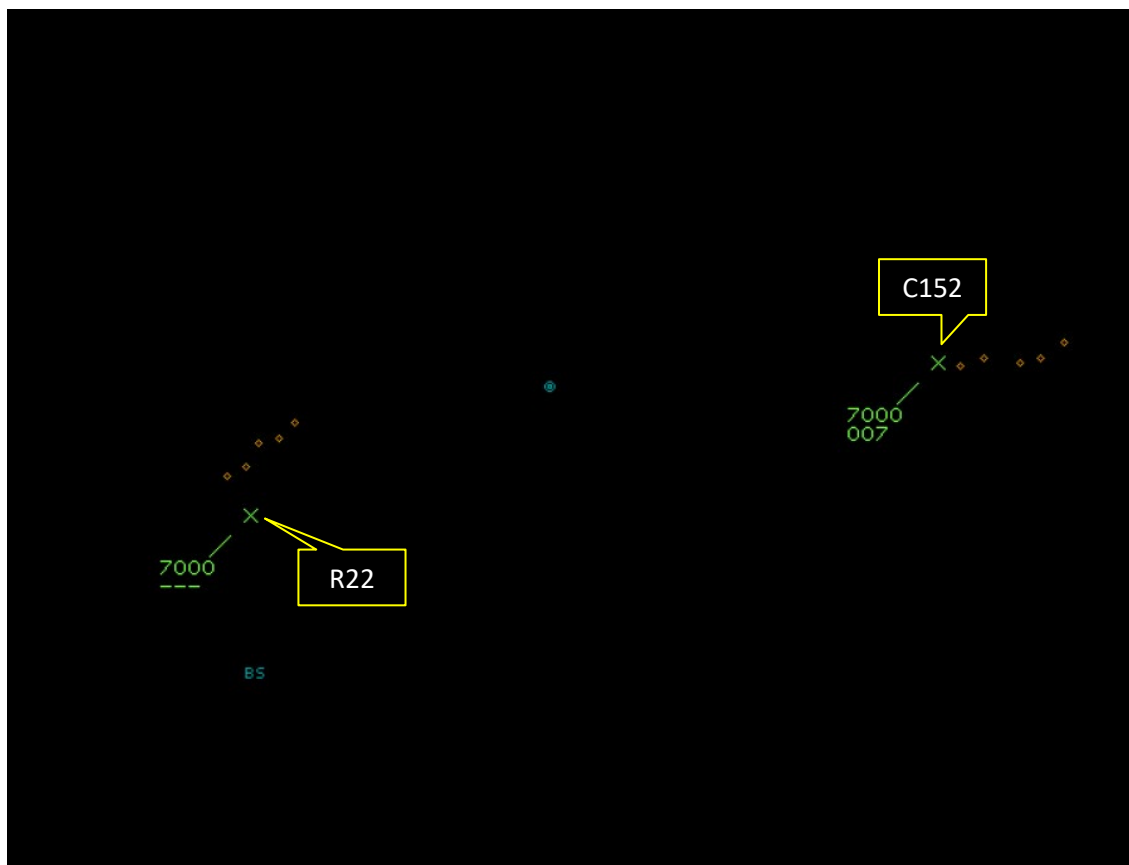


Figure 2 – 1258:54 – PA28 and RV8 not visible

Then at **1259:04** the AFISO advised the pilot of the PA28; “just had late notice of traffic joining base-leg - keep a good look out”, which was acknowledged by the PA28 pilot.

At **1259:11** the pilot of the R22 reported “downwind 26 north side”. The AFISO instructed the R22 pilot to report final but did not then pass any Traffic Information on either the RV8 joining base-leg, the PA28 already having reported downwind, nor the C152 on final approach. The R22 pilot acknowledged the instruction to report final.

Then at **1259:22** the pilot of the PA28 reported “er visual with the one that’s er just appeared inside on base”. The AFISO replied “thanks – report final”, although the end of the transmission crossed with the driver of the gliding vehicle. Another aircraft on the ground called up but the AFISO ignored that call and gave the pilot of the C152 the RW (see Figure 3).

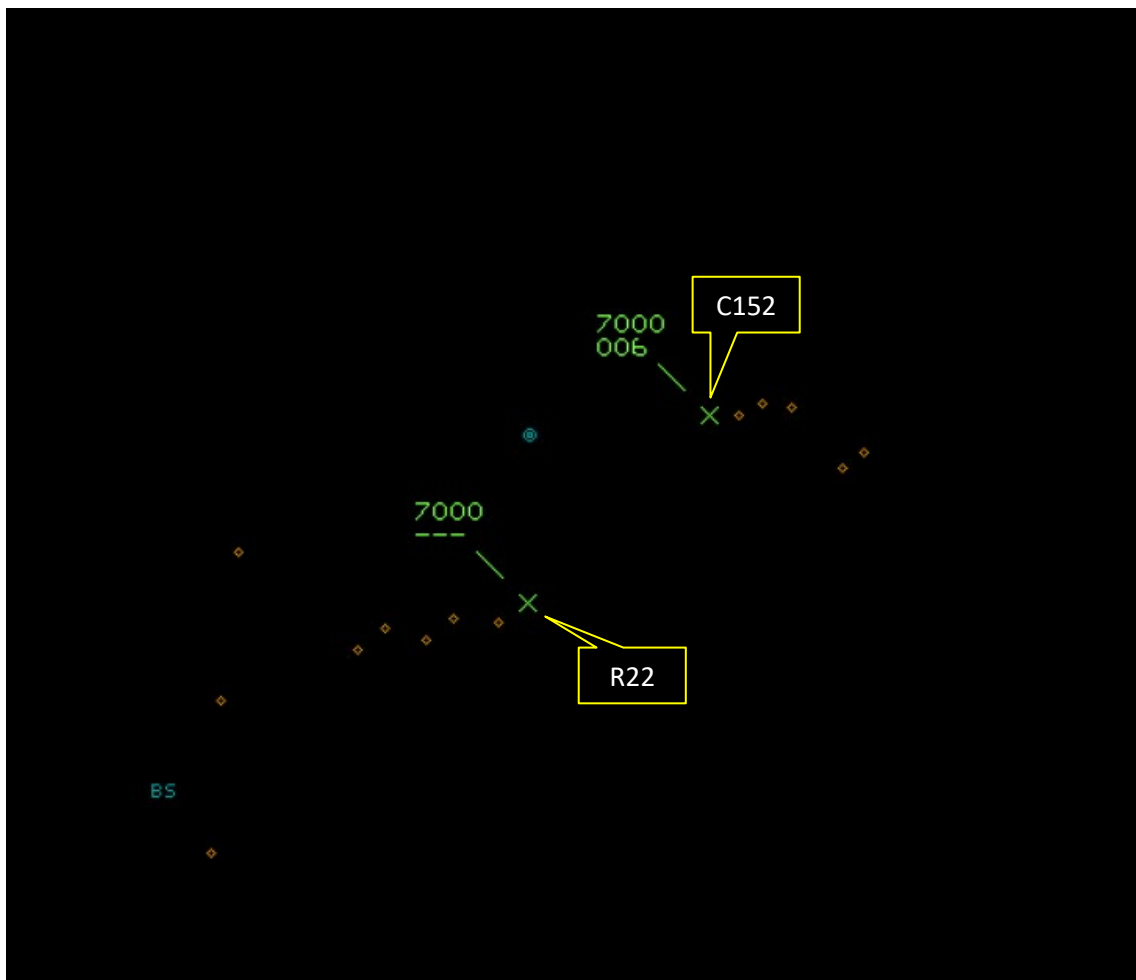


Figure 3 – 1259:36

At **1300:00** another pilot called inbound and was given the runway in use, circuit direction and QFE which was readback correctly. The AFISO then cleared the previously landing C152 to cross the grass runway to “parking”. The pilot waiting on the ground called again at **1300:10** and was given the runway in use and the QNH by the AFISO but was then told to standby which was acknowledged. At **1300:28** the pilot of the R22 reported “final 26 on the north side”. The AFISO responded “(callsign) runway 26 north grass, (instant wind), land at your discretion”, which the R22 pilot acknowledged with just their callsign.

At **1300:45** another pilot called for taxi and was told to standby. The AFISO then immediately called the pilot of the RV8 asking “(callsign) are you visual with the helicopter ahead?” The RV8 pilot replied “affirm, yes, and we’re short final”. The AFISO then advised the pilot of the PA28 that there were “two ahead on final”. The PA28 pilot replied “visual with them both. I’ll follow the circuit er but remain at height and come round again”.

The AFISO then issued taxi instructions to the pilot waiting on the ground, and the pilot of the aircraft inbound from the south advised that they intended to join at the midpoint. The AFISO requested their position but then, at **1301:40** the pilot of the RV8 reported “er just coming underneath the helicopter (callsign)”. The AFISO immediately advised the pilot of the R22 to “break right for (company)” which was readback by the R22 pilot.

The next transmissions were from the gliding vehicle driver and another pilot calling for taxi. The pilot of the RV8 then called for clearance to backtrack and was told to standby by the AFISO.

Analysis

ATSI had access to area radar and Shobdon RTF recordings. Reports from both pilots and the AFISO, together with a Shobdon ATC unit investigation report, were also available. ATSI also spoke with the AFISO on duty at the time.

Shobdon airfield has the potential to be a complex operation with 3 parallel runways for glider, fixed-wing, rotary and microlight flying. The AIP entry for Shobdon does, however, state that “*At all times, only one runway may be used for departing or arriving aircraft at any one time.*” The fixed-wing circuit is promulgated as 1000ft QFE. The helicopter circuit is promulgated to “*operate parallel to and inside fixed wing circuits up to a maximum of 700 FT QFE*”. Helicopter pilots are also advised to “*give the glider circuit a wide berth*” when that is active. The gliding circuit is to the north side of the airfield.

Having spoken with the AFISO, ATSI was led to understand that, to meet the requirement of only one runway in use at a time, the pilots are expected to integrate within the circuit to meet this requirement. Based on the traffic situation presented on the RTF, it appeared that the likely order was C152, RV8, PA28 and then the R22. However, an AFISO is not allowed to dictate the order, and can only pass Traffic Information to assist the pilots. In this instance, with the helicopter circuit being lower and inside the fixed-wing circuit, the pilot of the R22 appeared to position their aircraft ahead of both the RV8 and the PA28. It has not been established whether that is ‘standard procedure’ at Shobdon.

The pilot of the RV8 reported being asked if they had the helicopter in sight when they were on base-leg. No Traffic Information on the R22 had been passed by the AFISO to the pilot of the RV8, although they had been given generic information earlier on “*traffic*” on final and one “*last reported downwind*”. In their report, the pilot of the RV8 stated that they did see the helicopter once they were established on final approach. [Without further assistance from the AFISO], the pilot of the RV8 elected to land and, by their own admission, they under-flew the R22 still [over] the runway. The expected procedure would have been for the pilot of the RV8 to go around. The pilot of the R22 stated in their report that they completed their approach to the threshold to a height of 60ft intending to then “*continue forwards and down to 8ft to hover*”.

There was little Traffic Information passed by the AFISO to the pilots of the aircraft involved. When the pilot of the PA28 reported downwind they were not given Traffic Information on the C152 on left-base ahead of them. When the pilot of the R22 reported downwind, the PA28 pilot had already reported downwind in the fixed-wing circuit, the RV8 was on left-base and the C152 was on final approach, all of which could be considered to be traffic to the R22. However, the AFISO did not pass reciprocal Traffic Information to the pilots any of these aircraft.

Once the exact position of the RV8 was established, that information was passed to the pilot of the PA28 by the AFISO.

On Traffic Information, CAP797 the Flight Information Service Manual advises:

Whilst generic traffic information provided to a pilot may be useful to indicate how busy the aerodrome environment is, as the pilot gets closer to the aerodrome and is required to integrate with other traffic, specific traffic information is needed in order to achieve a safe, orderly and expeditious flow of air traffic and to assist pilots in preventing collisions.

Traffic information shall be described so as to be easily identified by the pilot.

In addition to the information listed in paragraph 8.99, before entering the traffic circuit an aircraft should be informed of the current traffic circuits and other traffic when necessary.

Conclusion

The pilots of the R22 and RV8 did not apparently fully integrate correctly into the traffic pattern. The RV8 landed on the grass runway, which was still occupied by the R22. The provision of specific Traffic Information by the AFISO would have assisted with that integration.

UKAB Secretariat

The entry for Shobdon airfield in the UK AIP, Part 3 Aerodromes (AD), EGBS AD 2.20 Local Aerodrome Regulations Sect 5 Helicopter operations states:

b. Helicopter circuits operate parallel to and inside fixed wing circuits up to a maximum of 700FT QFE.

Additionally, EGBS AD 2.22 Flight Procedures Sect 1 Circuits states:

b. Circuit heights:

- i. Powered fixed-wing circuits at 1000 FT QFE to the south of the villages of Pembridge and Eardisland;*
- ii. Microlight circuits at 500 FT QFE;*
- iii. Helicopter circuits at 700 FT QFE inside the normal circuit pattern.*

However, there is no description within the UK AIP of the relationship between the fixed-wing and helicopter circuits with respect to the significantly shorter track distance of the helicopter circuit when compared to the fixed-wing circuit. This information can be found on the Shobdon Airfield website (see Figure 4).

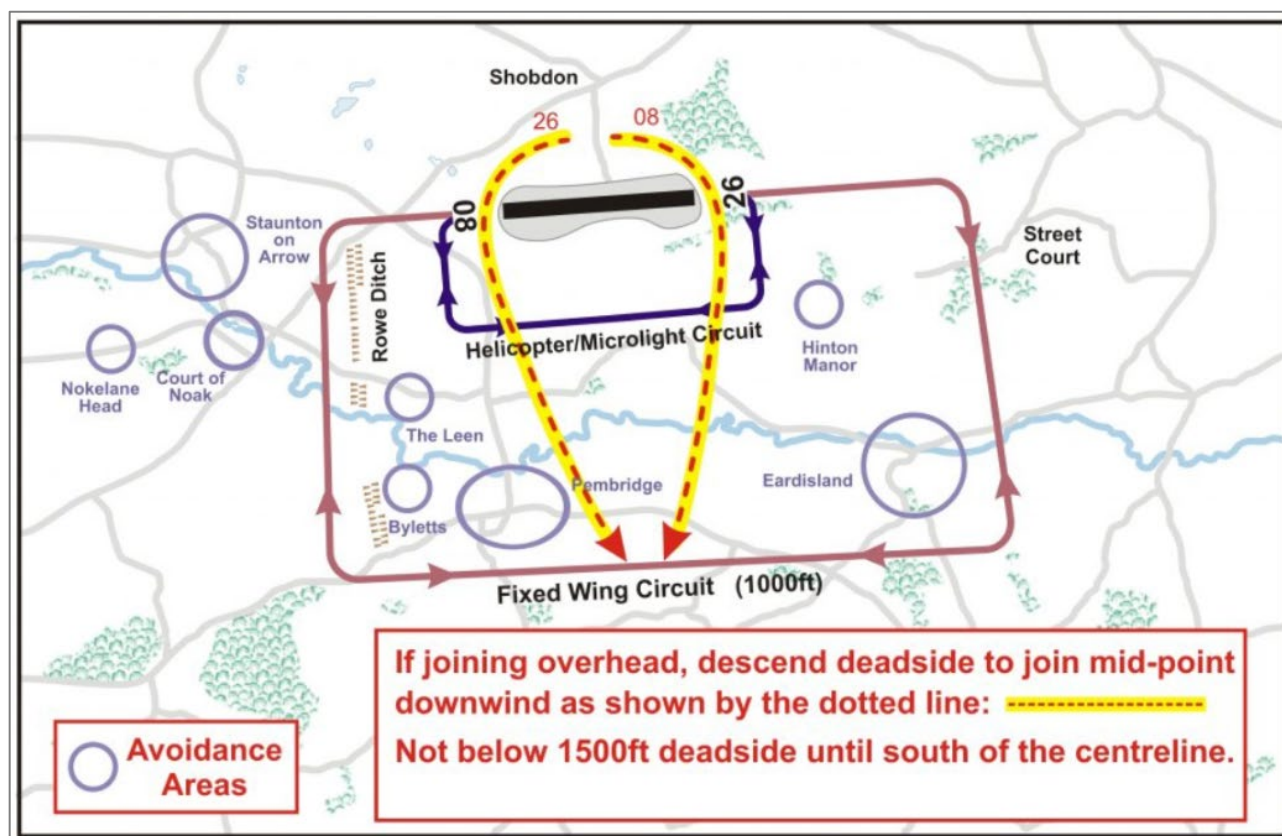


Figure 4 – Shobdon published circuit patterns¹

The Robinson R22 and Van's RV8 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 An aircraft operated

¹ Source - <https://alligator-gold-bfts.squarespace.com/airfield-and-circuit/#circuit-chart>

² (UK) SERA.3205 Proximity.

on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation.³

Summary

An Airprox was reported when a Robinson R22 and a Van's RV8 flew into proximity in the Shobdon visual circuit at approximately 1302Z on Wednesday 5th January 2022. Both pilots were operating under VFR in VMC and both pilots were in receipt of an Aerodrome Flight Information Service from Shobdon Information.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from the AFISO involved and a report from the appropriate operating authority. 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. Members noted that they had made their downwind call after the RV8 pilot had announced that they had been on base-leg, but that the helicopter circuit at Shobdon has a significantly shorter ground track than that of the fixed-wing circuit. The Board discussed that the landing order at uncontrolled airfields is usually set by the order that pilots call "downwind" (notwithstanding pilots may join directly onto base-leg should this be feasible), but at Shobdon the shorter and tighter helicopter circuit means that this is not necessarily the case. That said, the Board felt that there had been an equal responsibility on both the R22 pilot and RV8 pilot to sequence their aircraft with each other, and that the R22 pilot could have helped the RV8 pilot in this regard by announcing their intention to sequence ahead of the RV8 on final (**CF3, CF6**). The Board agreed that the R22 pilot had probably been aware of the RV8's presence in the fixed-wing circuit, but that they had not had specific situational awareness of its position relative to their aircraft (**CF7**). Additionally, once they had established their aircraft on final, they had been unsighted on the RV8 behind them and could then not effectively employ the See and Avoid barrier with respect to the RV8 (**CF9, CF10**).

Turning to the actions of the RV8 pilot, the Board heard from a GA pilot member that the RV8 is a relatively quick GA aircraft, with a cruise speed in the order of 150kt. This characteristic, coupled with joining the circuit directly on base-leg, would have reduced the time available to the RV8 pilot to gain full situational awareness on traffic in the circuit. The Board noted that the entry for Shobdon in the UK AIP Part 3 Aerodromes (AD) states '*Helicopter circuits at 700 FT QFE inside the normal circuit pattern*' and members felt that this information does not sufficiently describe the distinctly shorter ground track of the helicopter circuit such that pilots can anticipate, and be alert to, helicopters turning onto final from downwind/base-leg in a much shorter timeframe than a fixed-wing aircraft (**CF1**). In this case, when asked by the AFISO if they had been visual with the R22, the RV8 pilot confirmed that they had been and so the Board wondered why the RV8 pilot had not initiated a go-around at this point. The Board heard from a helicopter pilot member that flying beneath a hovering helicopter is extremely unwise and a GA pilot member added that the RV8 pilot could not have known if the helicopter was about to descend and that there are risks associated with helicopter downwash in that it could induce un-demanded roll. Members noted that (UK) SERA.3210 Right-of-Way paragraph (c)(4)(i) states '*When two or more heavier-than-air aircraft are approaching an aerodrome or an operating site for the purpose of landing, aircraft at the higher level shall give way to aircraft at the lower level, but the latter shall not take advantage of this rule to cut in front of another which is in the final stages of an approach to land, or to overtake that aircraft.*' The Board therefore considered that, in continuing their approach to land underneath the R22, the RV8 pilot had not complied with this rule and this had been contributory to the Airprox (**CF2, CF6**). The Board then discussed the options open to the RV8 pilot on final behind the R22 and quickly agreed that an early decision to go around would have been the safest course of action. Consequently, members considered that the RV8 pilot had made a late decision to adapt their approach

³ (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

(CF5) and, at the point at which they had made their decision, they had had very few options open to them and so had decided to under-fly the helicopter to land (CF4, CF8).

The Board then considered the actions of the Shobdon AFISO and quickly agreed that their rapid interjection in instructing the R22 pilot to break right had probably generated more separation than would otherwise have been the case. However, the Board also noted that there had been little Traffic Information passed to either pilot regarding the positioning of the other aircraft, which the Board felt may have assisted both pilots with their integration into the circuit.

The Board noted that neither aircraft had been fitted with additional electronic conspicuity equipment and members wished to highlight to all pilots that additional funding has been made available for electronic conspicuity devices through the CAA's Electronic Conspicuity Rebate Scheme, which has been extended until 31st March 2023.⁴

Finally, the Board considered the risk involved in this Airprox. Although there was no recorded data to which they could refer, members noted that both pilots had estimated there to be less than 50ft of vertical separation and in the region of 100ft of horizontal separation. Members agreed that, by any measure, this had been an extremely close encounter and a risk of collision had existed (CF11). In deciding whether this Airprox warranted a Risk Category of A or B, members considered whether providence had played a major part in events and, because the RV8 pilot had been visual with the R22 on final and had made a conscious decision to land underneath it, agreed to assign a Risk Category B to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022013			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Regulations, Processes, Procedures and Compliance				
1	Organisational	• Aeronautical Information Services	An event involving the provision of Aeronautical Information	The Ground entity's regulations or procedures were inadequate
Flight Elements				
• Regulations, Processes, Procedures and Compliance				
2	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				
3	Human Factors	• Accuracy of Communication	Events involving flight crew using inaccurate communication - wrong or incomplete information provided	Ineffective communication of intentions
4	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
5	Human Factors	• Late Decision/Plan	Events involving flight crew making a decision too late to meet the needs of the situation	
6	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				
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
• See and Avoid				
8	Contextual	• Loss of Separation	An event involving a loss of separation between aircraft	Pilot flew into conflict

⁴ <https://www.caa.co.uk/general-aviation/aircraft-ownership-and-maintenance/electronic-conspicuity-devices/>

9	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
10	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other
• Outcome Events				
11	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: B

Safety Barrier Assessment⁵

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 **partially effective** because the published Shobdon circuit procedures for the integration of rotary and fixed-wing traffic flying different circuit patterns to the same RW are not sufficiently descriptive, which could lead to uncertainty amongst pilots as to the sequencing of aircraft in the 2 circuits.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the RV8 pilot did not comply with SERA.3210 Right-of-Way paragraph (c)(4)(i), in that they did not give way to the R22 which was initially the lower aircraft on final.

Tactical Planning and Execution was assessed as **ineffective** because the R22 pilot did not make their intentions clear on the RT with respect to their execution of the final stages of the approach, and the RV8 pilot, who was visual with the R22 throughout, made a late decision to land underneath the hovering helicopter without sufficient information regarding the helicopter pilots' intentions.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the R22 pilot had only generic situational awareness that the RV8 was behind them on final.

See and Avoid were assessed as **ineffective** because the RV8 was obscured to the R22 pilot as it was behind their aircraft. And the RV8 pilot did not take early enough action to resolve the potential confliction on short final.

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

Airprox Barrier Assessment: 2022013		Outside Controlled Airspace						
Barrier		Provision	Application	Effectiveness				
				Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	⚠	⚠	[Yellow bar: 0% to 5%]				
	Manning & Equipment	✔	✔	[Green bar: 0% to 2.5%]				
	Situational Awareness of the Confliction & Action	✔	✔	[Green bar: 0% to 15%]				
	Electronic Warning System Operation and Compliance	⊘	⊘	[Grey bar: 0% to 2.5%]				
Flight Element	Regulations, Processes, Procedures and Compliance	✔	✘	[Red bar: 0% to 10%]				
	Tactical Planning and Execution	✔	✘	[Red bar: 0% to 10%]				
	Situational Awareness of the Conflicting Aircraft & Action	⚠	✔	[Yellow bar: 0% to 20%]				
	Electronic Warning System Operation and Compliance	⊘	⊘	[Grey bar: 0% to 15%]				
	See & Avoid	✔	✘	[Red bar: 0% to 20%]				
Key:		<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>		
Provision	✔	⚠	✘	⊘				
Application	✔	⚠	✘	⊘		⊘		
Effectiveness	■	■	■	■		□		