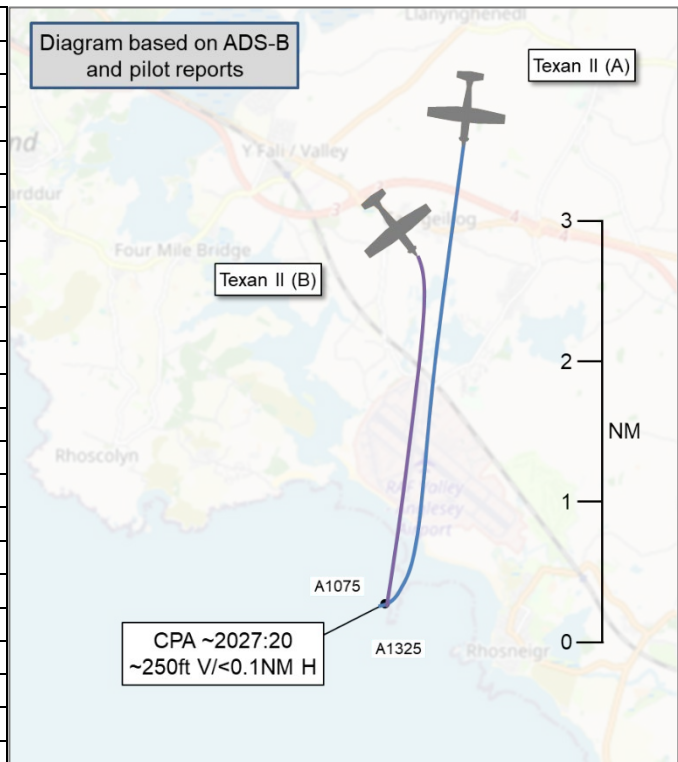


AIRPROX REPORT No 2023248

Date: 01 Nov 2023 Time: 2027Z (night) Position: 5314N 00433W Location: RAF Valley

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Texan II (A)	Texan II (B)
Operator	HQ Air (Trg)	HQ Air (Trg)
Airspace	Valley ATZ	Valley ATZ
Class	G	G
Rules	VFR	VFR
Service	ACS	ACS
Provider	Valley Tower	Valley Tower
Altitude/FL	1325ft	1075ft
Transponder	A, C, S+	A, C, S+
Reported		
Colours	Black, yellow	Black, yellow
Lighting	Beacon, nav, land	Beacon, nav
Conditions	VMC	VMC
Visibility	NR	NR
Altitude/FL	1100ft	1000ft
Altimeter	QFE (NR hPa)	QFE (977hPa)
Heading	190°	190°
Speed	180kt	140kt
ACAS/TAS	TCAS I	TCAS I
Alert	TA	TA
Separation at CPA		
Reported	NR	300ft V/50m H
Recorded	~250ft V/<0.1NM H	



THE TEXAN II (A) INSTRUCTOR reports occupying the rear seat with a trainee in the front seat flying at 1000ft and 180kt to join at Valley for RW19RH, with the intention of landing after one circuit. As they neared the landing threshold, [at altitude] on the deadside, they observed [Texan II (B)] initiating a final turn for RW19RH. They guided the trainee to extend upwind because of the shortness of the runway and to give them time on their first night circuit to RW19RH. At a point where they felt that they had extended enough they suggested a turn downwind. Their mental model of [Texan II (B)]'s position was that they were well ahead of them doing their touch-and-go. [Texan II (B)] was actually just ahead of them at 140kt, levelling at a similar 1000ft height in their 2.30 o'clock position. They were not visual with [Texan II (B)] because it was hidden under the starboard wing. The trainee was visual with [Texan II (B)], although this was not communicated to the instructor. The trainee's perception of [Texan II (B)]'s position was that they were 250ft below. They called turning, initiated a turn downwind and immediately the instructor became visual with [Texan II (B)]. They took control and climbed 100ft by the time they passed. Control was handed back to the trainee for the circuit to land and [Texan II (B)] called that they would position behind. Apart from surprise on their part, there was no perception of a collision risk. The procedures dictate a climb to 1000ft before turning on a night circuit. Therefore, it was even more important for aircrew joining at 1000ft to keep a clear picture of the positions of existing circuit traffic and for a constituted crew to talk to each other about the position of circuit traffic.

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

THE TEXAN II (B) INSTRUCTOR reports occupying the rear seat on a 'ghosted' solo night flight due to a lack of day currency for the front seat student. They were conducting circuits at RAF Valley as part of the exercise and, following a touch-and-go, were climbing upwind to 1000ft. Whilst conducting the touch-and-go they heard the calls of another aircraft joining. They became visual with this aircraft around the final turn, losing sight of it on short final. As they climbed straight ahead the instructor once again became visual with the joining traffic. The front seat student considered turning early but the

instructor encouraged them to follow the night SOPs and to continue a climb straight ahead to 1000ft. They stated that they would maintain visual with the joining traffic. As they were reaching circuit height they were approximately 250m laterally spaced from the joining traffic and approaching the same height. As the front seat pilot began the level-off the instructor noticed the other aircraft roll [right] to turn into the circuit. Shortly afterwards they called turning and the instructor took control and descended below to break any confliction. The other aircraft was seen to cross directly above and, from reviewing the tapes, the height separation was approximately 300ft. They extended upwind, regaining 1000ft and continued the sortie. The crews discussed the event once on the ground and it appeared that, due to being at night, the handling pilot of the joining aircraft was unable to accurately assess their range from the other aircraft.

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

THE VALLEY TOWER CONTROLLER reports one Texan in the circuit with one Texan joining. The circuit Texan was carrying out touch-and-goes when the second Texan called to join. They were informed 'one in'. At their initial point they were informed that the one in was downwind. The circuit Texan completed their touch-and-go, climbing to circuit height as the second Texan entered the deadside of the circuit. The controller perceived their positions and speeds to put them in confliction and so called the climbing Texan to the deadside traffic. They responded 'visual'. Had they not reported visual the controller would have instructed the deadside Texan to extend upwind. They then saw the deadside Texan turn for downwind over the climbing circuit Texan. The circuit Texan called 'descending to avoid' or words to that effect.

The controller perceived the severity of the incident as 'Medium'.

THE VALLEY SUPERVISOR did not provide a report.

Factual Background

The weather at Valley was recorded as follows:

```
METAR EGOV 012050Z 14007KT 9999 -SHRA FEW015 SCT028 BKN080 09/07 Q0977 TEMPO 6000 SHRA  
RMK BLU TEMPO WHT=  
METAR EGOV 012020Z 14011KT 9999 -SHRA FEW028 SCT035 BKN080 10/06 Q0977 TEMPO 6000 SHRA  
RMK BLU TEMPO WHT=
```

Analysis and Investigation

Military ATM

An Airprox occurred on 1 Nov 23 at approximately 2015 within the RAF Valley visual circuit. Texan (B) was conducting an instructor-ghosted night flying "solo" sortie remaining within the visual circuit. Texan (A) was conducting routine night flying training, joining the visual circuit to land after one circuit. Both pilots were in receipt of an Aerodrome Service from the Valley Tower controller.

Utilising occurrence reports and information from the local investigation, outlined below are the key events that preceded the Airprox. Where available they are supported by screenshots to indicate the positions of the relevant aircraft at each stage. The screenshots are taken from Unit Radar recordings and present the radar presentation of both Texan (B) and Texan (A) available to the Tower controller. The NATS radar recording software did not display both aircraft consistently throughout the sequence of events, including the point of CPA.

Texan (B) was established in the RAF Valley visual circuit whilst Texan (A), following visual circuits at RAF Mona, was conducting a visual Mona to Valley transit.



Figure 1 (2024:49). Texan (A) joined the Valley visual circuit.

At 2024:49, Texan (A) [pilot] contacted Valley Tower to join via initial, the Valley Tower controller issued a join with the following information “Runway 19RH, QFE 977hPa, One in”. Texan (B) was established early downwind at circuit height 1000ft QFE. At 2024:58, Texan (B) [pilot] reported downwind to conduct a flapless touch-and-go. At 2025:12, Texan (A) [pilot] reported at initial, to which the Valley Tower controller acknowledged through passing the circuit traffic position of “One Downwind”.

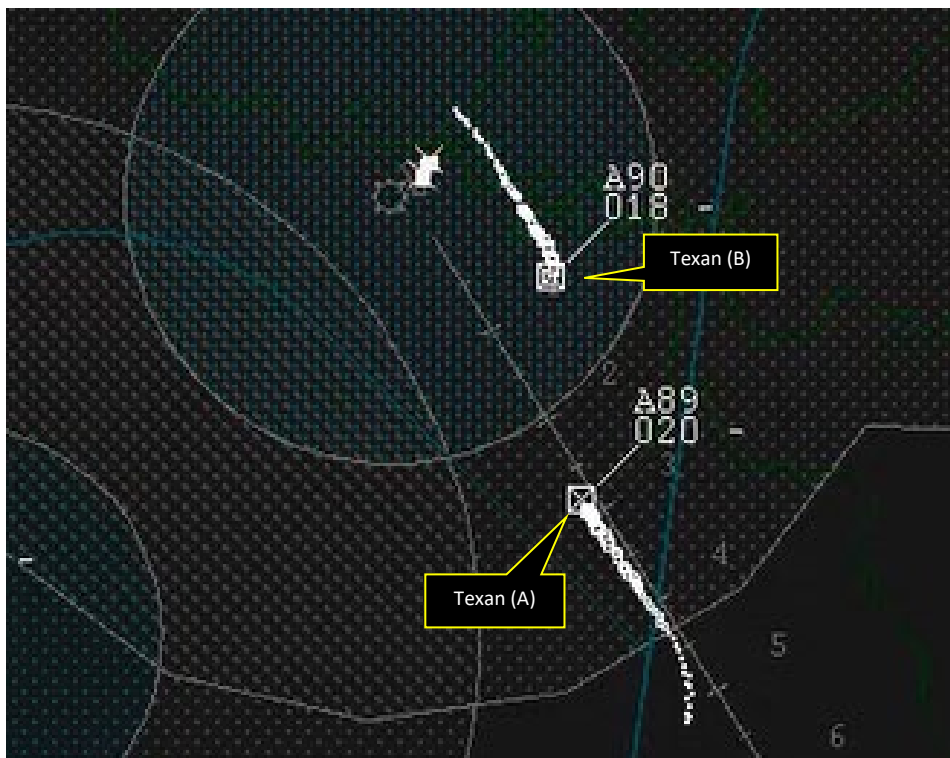


Figure 2 (2025:48). Texan (B) was cleared touch-and-go.

At 2025:48, Texan (B) was cleared touch-and-go, whilst Texan (A) was established deadside at 1000ft QFE conducting the visual join into the visual circuit.

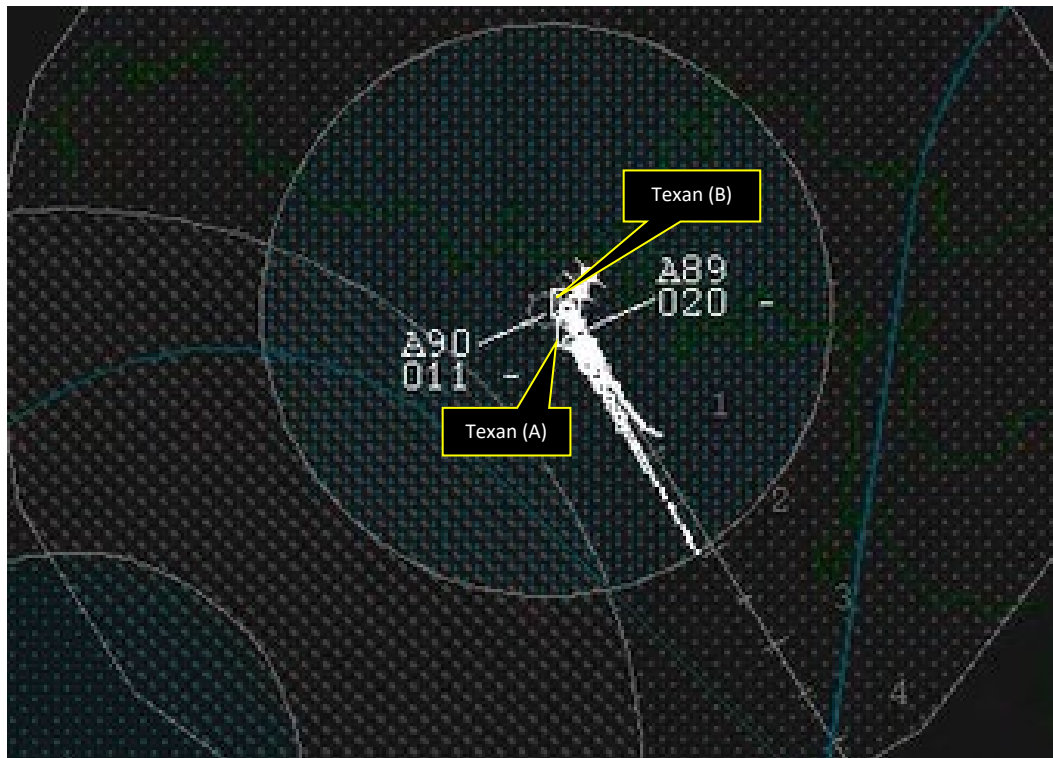


Figure 3 (2026:51). Texan (B) commenced a climb to circuit height.

At 2026:51, Texan (B), having conducted a touch-and-go, commenced a climb to circuit height. Texan (A) was abeam runway mid-point on the deadside at 1000ft QFE. At 2027:13, Texan (A) [pilot] reported “*turning*”¹ and initiated a turn across Texan (B), now also at 1000ft QFE. The Tower controller recognised the relative positions and asked Texan (A) “*Are you visual with the Texan?*”. Whilst Texan (A) [pilot] did not respond directly, at 2027:20 Texan (A) [pilot] declared “*descending below.*”

CPA could not be accurately determined due to the NATS radar recording software not displaying both aircraft consistently. It was assessed however by Texan (B) as 0NM and 300ft separation.

An Occurrence Safety Investigation was conducted by RAF Valley. The investigation identified the event outcome as a loss of safe separation between co-operating aircraft. No BM related causal/aggravating factor were identified.

The investigation found that the Valley Tower controller acted iaw with RA 3261, Local ATC Procedures, and CAP413, by passing generic Traffic Information initially and then specific Traffic Information when the joining traffic called at initial. The Tower controller made extra calls to assist in the prevention of collisions and ensure the safe separation of aircraft. Specifically, after the joining traffic called ‘*turning*’, the Valley Tower controller immediately asked whether Texan (A) [pilot] was visual with Texan (B), as they assessed the conflicting profiles.

2 Gp BM Analysis

As identified in the Occurrence Safety Investigation, the Valley Tower controller provided an Aerodrome Control Service iaw regulation and local orders. The Traffic Information provided was adequate to enable safe integration of Texan (A) into the visual circuit had they followed standing circuit procedure.

¹ ‘Turning’ calls are required iaw local orders for night flying to aid with aircrew and ATC situational awareness.

UKAB Secretariat

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

RAF Valley Occurrence Investigation

Summary of Investigation

The investigation [...] process involved face-to-face interviews and analysis of ATC (Air Traffic Control) and HUD (Head-up Display) footage from both aircraft. The TORs were investigated with each individual element of the TORs assessed as to whether it had constituted a causal factor for the incident and all observations from the Investigating Team were recorded.

In RA2307 it is stated that under VFR (Visual Flight Rules), pilots should maintain safe separation from other traffic, however there is no clear definition of safe separation minima within the VFR environment, particularly in the visual circuit. Therefore it is concluded that safe separation in a VFR environment is purely a judgement call from the aircrew using their perception of what they personally deem as safe and can vary from crew to crew.

Lighting and Avionics Management

The lighting on both Texans was fully serviceable with both strobes and forward facing lights in use in accordance with A23-4FTS 2307 - Rules of the Air - Aircraft External Lighting (see supporting documentation).

After questioning all individuals involved, it was established that the lighting on the Texan is fully sufficient to allow for good visibility of the aircraft both during night and day operations. It was pointed out during interviews that the navigation lighting, high intensity strobe lighting and forward-facing lighting is very good in comparison to other air systems and that the joining aircraft was visible to the circuit traffic when 5NM north of the airfield. It was also highlighted that the Texan is easier to see during the night than in the day.

It can be concluded that the lighting of the Texan was not a contributory factor in this incident.

ATC Involvement

RA 3261(1) para 7 states:

Traffic Information (TI) and Instructions. TI and instructions should be passed to aircraft on any occasion that a controller considers it necessary in the interests of safety, or when requested by the pilot. In particular, an Aerodrome Service should provide:

- a. Generic TI to enable VFR pilots to safely integrate their flight with other Aircraft; (eg number of Aircraft in the visual circuit).
- b. Specific TI appropriate to the stage of flight and risk of collision; (eg circuit positions of Aircraft passed to Aircraft calling at Initial).

² MAA RA 2307 paragraphs 1 and 2.

³ MAA RA 2307 paragraph 17.

c. Timely instructions as necessary to assist in the prevention of collisions and to enable safe, orderly and expeditious flight within and in the vicinity of the Military Aerodrome Traffic Zone (MATZ).

Additionally, RAF Valley ATC procedures state:

TC(ADC) (Terminal Control (Aerodrome Control)) Procedures - Initial Join. The standard join is via the Initial Point (3-4 DME on the extended centreline, 1NM on the dead side) between 1000ft and 2000ft QFE. Low level joins for 4 FTS aircraft is 500ft QFE, except RW31RH, where it is 800ft QFE due to noise abatement. Visitors are not allowed low level joins. 4 FTS aircraft will not request a low-level join and may break at any height between 500ft and 1000ft QFE. When the pilot calls initial, TC(ADC) will pass the position of circuit traffic and the 2-minute surface wind. To ensure adequate separation, pilots are to identify all cct traffic before arriving on the deadside. When Mona is using RW04RH and Valley RW31RH, aircraft recovering to Mona should not be below 2000ft QFE until inside initial.

[...]

The ADC (Aerodrome Control) ATCO acted iaw with all procedures, passing both generic TI during the first call and then specific TI when the joining traffic called at Initial. They also made extra calls to assist in the prevention of collisions and ensure the safe separation of aircraft. Specifically, after the joining traffic called 'turning', the ATCO immediately asked whether the deadside aircraft was visual with the circuit traffic when they thought both aircraft were aiming for the same point.

In this instance, standard phraseology was used by all aircrew and ATC throughout.

Visual Circuit Procedures

For comparison, the US and Civilian joining procedures were considered.

[...]

Having considered alternative methods used for joining the visual circuit, the investigation concluded that the existing procedures to join via initial both during the day and night is wholly suitable for circuit integration. The joining procedure detailed in the FOB order 8 was analysed and it was concluded that, if followed correctly, it allows for the safe integration of traffic into the visual circuit.

Cause - The crew of the joining aircraft turned into the flightpath of the established circuit traffic.

Causal Factor 1: Neither crew of the joining traffic was visual with the climbing traffic before turning / poor SA of joining traffic crew. (Contributory)

The QFI (Qualified Flying Instructor), stated during the sortie that [they] will "coach the trainee through" this circuit due to the trainee's inexperience as it was their "first look at night flying". This led to the trainee believing the QFI had full situational awareness. They stated "I made the assumption that [they were] visual and made the call to turn to deconflict with the circuit traffic." In their interview, Texan (A) trainee also said they felt they had a "false sense of security as the instructor said they would coach [them] through".

The QFI was under the assumption that the trainee was visual with circuit traffic before turning; although, the trainee didn't verbalise whether they were visual in the cockpit until immediately after the 'turning' call was made. The trainee stated in the cockpit after the incident that they were "visual throughout" but in interview they clarified that they only became visual with the circuit traffic when they turned from the deadside position:

"There was a split second before [they] called this where I became visual, in my peripherals, with the other aircraft. My mental model assumed that the instructor was aware of the other Texan and [their] 'turn now' call was made in order to deconflict with the other aircraft. After I initiated the turn, my instructor and I became very clearly visual with the other aircraft."

FOB Order 8 states:

"Normal joins should be made from the deadside of the circuit at 1000 ft QFE [...] Visual joining aircraft shall be responsible for sequencing into the visual circuit and shall be responsible for ensuring sufficient and safe separation from all other traffic."

The positioning of the Texan wing and its dihedral design creates a blind spot for both the front and rear seat. It may make it difficult for the Texan aircrew, especially when in the back seat, to be visual with traffic positioned 'under the wing' to their relative position and so this can reduce visibility of aircraft within the visual circuit. Texan (A) instructor is a very experienced Texan QFI and so would have been fully aware of this restriction in view out to the right of their cockpit and aware of common practices used to mitigate this. In this instance, neither occupant of the joining aircraft was visual with the established circuit traffic.

Texan (A) instructor stated in their interview: "clearly us joining and deconflicting with circuit traffic could have been better". When asked: "who's responsibility was it to avoid the circuit traffic?"; they replied: "at the end of the day, I was the captain and should have avoided, and I'll take the hit. The joining traffic joins without disturbing the circuit traffic."

Recommendation(s)

1. All Texan crews should be reminded of the restrictions in view due to the Texan's wing design.
2. All Texan Captains should be reminded that it is their responsibility to be visual with and have sound SA on established circuit traffic.

Causal Factor 2: The mental model of the joining traffic's crew in relation to the position of established circuit traffic was incorrect. (Contributory)

Immediately prior to the incident, the joining traffic extended upwind on the deadside. During the day, this would have been a sufficient extension upwind but during the night they would have had to extend even further due to climbing circuit traffic being mandated to climb straight ahead to 1000ft during night flying.

The circuit traffic was flapless on this circuit so potentially began their climb faster than the joining traffic anticipated, moving approximately 10kt faster than in a circuit with flaps. Texan (B) instructor stated in their interview: "we may have been on a flapless circuit at that time which may have led to a bit of confusion as this may have meant that we went around the final turn quicker than the other aircraft anticipated."

The established traffic transmitted that they were "downwind flapless touch and go" at 2024:58 whilst the joining traffic was on frequency. Subsequently when the joining traffic called "initial", ATC correctly passed the circuit information as "one downwind".

Recommendation

3. ATC include configuration of circuit traffic when passing specific TI at initial.

Causal Factor 3: The circuit traffic climbed to 1000ft upwind before turning downwind. (Aggravated)

FOB Order 17 - Night Flying para 3(2) states:

"All aircraft should climb straight ahead to 1000ft QFE before turning downwind; for low-level circuits, aircrew should extend ahead at 500ft for 10 seconds. When turning onto the downwind leg from the initial circuit and following any go-around, aircrew should make a call of "turning".

In this instance, Texan (B) trainee, in the climbing circuit traffic, was visual with the joining traffic and questioned whether they should turn early to allow for the joining traffic - this was correctly

rejected by Texan (B) instructor as circuit profile should continue iaw orders and the onus was on the joining traffic to deconflict. The situational awareness of [the Texan (B) crew] ensured that they were able to react quickly when the joining aircraft correctly made a 'turning' call and incorrectly turned into conflict with them. The quick reactions of Texan (B) instructor ensured that they took control from the relatively inexperienced trainee and manoeuvred the aircraft out of conflict with the turning traffic in a timely fashion.

Texan (A) instructor stated in interview that this safety barrier of climbing to 1000ft during night flying is creating a different problem: "this is potentially an issue at night, individual ops extend upwind climb-out to 1000ft before turning which naturally puts both the joining traffic and the climb-out traffic at the same height." However, [they were] fully aware of this additional requirement at night and with good lookout, this shouldn't pose any issues.

Recommendation

Covered in recommendations for Causal Factor 2.

Causal factor 4: The crew didn't acknowledge TCAS TA warning. (Contributory)

[...]

Vertical separation with the TCAS in the Texan is accurate but azimuth is poor due to [angle of arrival error], especially in the circuit when in close proximity to other aircraft. Crews are advised during training not to trust the azimuth and build their SA using lookout or listening.

The Texan courseware has a generic TCAS section emphasising para 3 below, the Hawk courseware covers actions in the event of an RA only. Of note, para 4 below reads as applicable to formation only despite the title of TA procedures.

4FTS Orders A21 - 2307- Para 3 and 4 states:

General procedures. Traffic collision Avoidance System (TCAS) shall be operated in accordance with RA 2307. TCAS is one of a number of complementary barriers for deconflicting with other transponding aircraft but has its limitations and should not be wholly relied upon to the detriment of a robust lookout technique.

TA Procedures. During tactical formation manoeuvring, the TCAS will often give a 'Traffic Traffic' alert on the other formation element. All 'Traffic, Traffic' alerts should be acknowledged by the handling pilot and visual confirmation made that the alert is from the other formation element and not an unidentified stranger. All aircrew should be aware of the potential desensitising effect of continual 'Traffic' alerts. All unknown TCAS 'Traffic' alerts should be called to the other formation members as follows:

The circuit traffic presented itself to the joining traffic TCAS as proximate traffic (solid white diamond) at 2025:17. It then disappeared at 2026:05 when the circuit traffic made their approach to the runway. The proximate traffic solid diamond re-appeared at 2026:59 and an audible 'TRAFFIC TRAFFIC' alert and the symbol immediately turned to solid amber circle warning of a possible threat of collision. This was not acknowledged by either crew. On interview with Texan (A) instructor, they stated "TCAS isn't particularly accurate. I can't remember if it went off in this instance. However, I do listen to it in the circuit and it needs to be turned on throughout." When asked about TCAS in interview, Texan (B) solo student stated "I can't remember. Probably will have done. If it had, then it would have triggered both me and the instructor."

The circuit traffic received visual TCAS alerts above 400ft but no audio warning. The limitation of no audio warning with the other aircraft in the take-off or landing regime is in the documentation and a substitution test with available aircrew deemed that they are aware of this. The removal of a contact entirely when assumed below a height of 400ft is not widely known by Texan aircrew.

Recommendation

4. STANEVAL to review the orders wrt calling all Traffic conflicts in cockpit (not just formation wingmen).
5. STANEVAL to liaise with the Texan Release to Service to advertise the limitation of TCAS (removal of low contacts entirely) and in turn, an education of the Texan aircrew on the topic.

Comments

HQ Air Command

It's encouraging to see the Occurrence Safety Investigation identified and examined a comprehensive array of contributory factors. The CRM aspects of the joining aircraft's cockpit identify a valuable instructional lesson which has been shared. There were no overt flaws in procedure or local orders identified, but SA was degraded and TCAS could have improved this further. The recommendation that local orders better reflect how to interpret TCAS warnings should improve this, and revised wording in the Release to Service to educate pilots on TCAS limitations is a positive step. ATC should also be commended for monitoring the situation when visually recognising a potential conflict. Whilst SA in the cockpit of the joining aircraft was degraded, SA in the other aircraft's cockpit allowed intervention to prevent a collision or loss of safe separation.

Summary

An Airprox was reported when 2 Texan IIs flew into proximity in the RAF Valley night visual circuit at 2027Z on Wednesday 1st November 2023. Both pilots were operating under VFR in VMC, both in receipt of a military Aerodrome Control Service from Valley Tower.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS data, a report from the air traffic controller 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.

The Board members quickly agreed that a significant contributory factor had been that the Texan (A) instructor's situational awareness had broken down to a degree (**CF2**) and that their incorrect situational awareness of the position of Texan (B) had resulted in them not integrating with it (**CF1**) as they had joined the night visual circuit. The Texan (A) trainee had become visual with Texan (B) just before being told to turn but had not communicated this to the Texan (A) instructor (**CF7**) and Texan (B) had been obscured to the Texan (A) instructor by their seat position above the wing (**CF6**). The Texan (B) crew had been aware of the Texan (A) position but the Texan (A) instructor had only seen the Texan (B) at a late stage (**CF5**). The Board noted that although both Texan TCAS had alerted (**CF4**), neither crew had recalled being aware of the alert (**CF3**). Members thanked the RAF Valley Occurrence Investigation team for their thorough and illuminating investigation report and agreed with the recommendations stemming from it. Turning to risk, some members thought that the proximity at night indicated safety had been much reduced but the Board agreed by majority vote that in this case collision had been averted without safety being substantially reduced, Risk C. Lastly, the Board commended the Valley Tower controller for their diligence in observing the developing confliction and providing timely and appropriate warning.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**Contributory Factors:**

2023248				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Tactical Planning and Execution				
1	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				
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	• Understanding/Comprehension	Events involving flight crew that did not understand or comprehend a situation or instruction	Pilot did not assimilate conflict information
• Electronic Warning System Operation and Compliance				
4	Contextual	• ACAS/TCAS TA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system traffic advisory warning triggered	
• See and Avoid				
5	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
6	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other
• Any other events				
7	Human Factors	• Any other event	Any other event not listed elsewhere within the event types list.	Mismatch in situational awareness between trainee and instructor in Texan (A)

Degree of Risk: C.

Safety Barrier Assessment⁴

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 Texan (A) pilot did not integrate with the Texan (B).

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the Texan (A) pilot had incorrect situational awareness on the position of the Texan (B) and neither crew assimilated TCAS warnings.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because neither crew assimilated the TCAS TA warnings.

See and Avoid were assessed as **partially effective** because Texan (B) was obscured from the instructor in Texan (A) resulting in a late sighting by the Texan (A) crew and the Texan (B) crew could only avoid at a late stage.

⁴ 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: 2023248		Outside Controlled Airspace						
Barrier		Provision	Application	Effectiveness				
				Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Manning & Equipment	✓	✓					
	Situational Awareness of the Conflicition & 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								