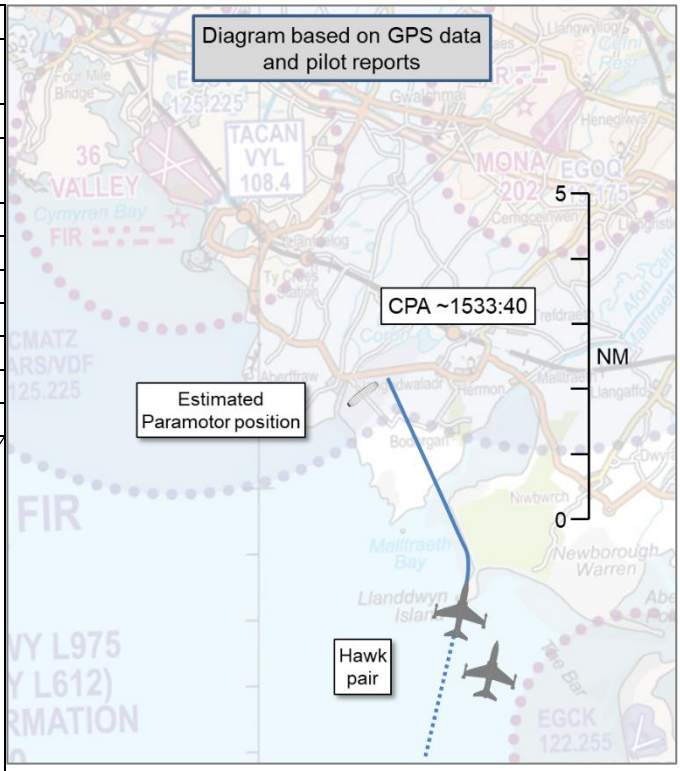
AIRPROX REPORT No 2024290

Date: 27 Nov 2024 Time: ~1534Z Position: 5311N 00426W Location: 5NM SE RAF Valley

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Hawk formation	Unknown Paramotor[1]
Operator	HQ Air (Trg)	Civ Hang
Airspace	RAF Valley/Mona CMATZ	RAF Valley/Mona CMATZ
Class	G	G
Rules	VFR	VFR
Service	ACS	Unknown
Provider	Valley Tower	NK
Altitude/FL	725ft	NK
Transponder	A, C, S	None
Reported		Not reported
Colours	Black	
Lighting	'SOP with red strobes'	
Conditions	NR (VMC)[2]	
Visibility	NR (>10km)[2]	
Altitude/FL	800ft	
Altimeter	QFE (1017hPa)	
Heading	310°	
Speed	350kt	
ACAS/TAS	TCAS I	
Alert	None	
Separation at CPA		
Reported	'300ft'	NR
Recorded	NK	



THE HAWK PILOT reports they were the rear seat pilot in the lead aircraft of a two-aircraft tactical formation. During a visual recovery to [RAF Valley] RW31RH, they saw a blue canopy with a black lining about 200ft below the port wing, pointing in the direction of RAF Valley. The formation number 2 aircraft was in arrow and [its crew] became visual at the same time. No avoiding action was taken because they saw the paramotor as the conflict passed. Having assessed the conflict was now clear, once radio chatter had subsided, they informed the handling pilot of the occurrence. It was promulgated as a warning to all stations.

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

THE PARAMOTOR PILOT: Despite extensive enquiries, the UKAB Secretariat was unable to establish contact with the paramotor pilot.

THE VALLEY TRAINEE SUPERVISOR reports that [a pilot in] a pair of [Hawks] joining through initial for RW31RH reported a para[motor] at 600ft, 2NM southeast of Valley in the 'approach lane'. The para[motor] was visually spotted from the [Tower]. On receipt of this information, a vertical restriction of joining not below 2000ft QFE was implemented and all [pilots] instructed to land. In liaison with the Duty Pilot, IFR approaches were also restricted and [pilots] instructed to join visually not below 2000ft. The

[1] The canopy was reported as a paramotor/paraglider, which was deemed most likely to be a paramotor at the reported position and time.
[2] Inferred from the RAF Valley METAR.

para[motor] was also observed by a Texan II [pilot] outside the ATZ. All [pilots] landed safely without incident.

THE VALLEY SUPERVISOR reports that an initial report was provided by the formation of Hawks. Visual identification was made by ATC of the reported para[motor]. On visual identification, it was assessed by themself and the supervisor trainee that there was only a confliction risk to standard visual joining traffic and IFR/straight-in approaches to RW31RH. Traffic joining visually was therefore vertically separated with joins instructed to be not below height 2000ft QFE with subsequent approval to descend to standard circuit height (1000ft QFE) at deadside. All traffic within the visual circuit was instructed to land due to the unknown routeing of the para[motor] and all instrument/straight-in recoveries were denied. The para[motor] was also identified in the air by [the pilot of] a Texan aircraft. Visual identification was maintained until approximately 1615.

Factual Background

The weather at Valley was recorded as follows:

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METAR EGOV 271550Z 02003KT 9999 BKN034 07/03 Q1018 NOSIG RMK BLU BLU=
METAR EGOV 271520Z 36007KT 9999 FEW027 08/03 Q1018 NOSIG RMK BLU BLU=
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Analysis and Investigation

Military ATM

An Airprox occurred on 27 Nov 24, approximately 5 miles south of Valley at 1545 UTC. The Hawk was part of a pair conducting a visual recovery to RW31 at Valley and in receipt of an Aerodrome Service from Valley Aerodrome. The unknown aircraft, believed to be a paramotor, could not be traced.

Background

Utilising occurrence reports and information from the local investigations, outlined below are the key events that preceded the Airprox. The unknown aircraft did not display on NATS or local radar recordings and therefore radar screenshots are not available.

Local BM Investigation(s)

A local investigation was conducted by Valley following the event to identify any ATS-related causal/aggravating factors. As the unknown aircraft was not detected on radar and ATC had not been notified of its presence through other methods, the outcome of the investigation was that ATC could not have prevented the outcome in any way.

2 Gp BM Analysis

Without detection by radar, radio communication or prior notification, the ability for ATC to provide aircrew with situational awareness on such aircraft like paramotors relies on visual sighting alone. Whilst possible within the local approach environment, it is not possible for approach and departure lanes. In this event the Valley Aerodrome controller could do nothing to prevent the Airprox, however, their actions in conjunction with the Valley Supervisor aided in the prevention of further such Airprox with the unknown aircraft.

UKAB Secretariat

The Hawk and paramotor pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[3] If the incident geometry

[3] (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

is considered as overtaking then the paramotor pilot had right of way and the Hawk formation was required to keep out of the way of the other aircraft by altering course to the right.[4]

Procedures for the penetration of a MATZ (and, by inference, a CMATZ) are contained in the UK AIP Part 2 (ENR) 2.2 (Other Regulated Airspace) section 2 (Military Aerodrome Traffic Zones), as follows:

> 2.1.1 At certain military aerodromes, Military Aerodrome Traffic Zones (MATZ) have been established to provide a volume of airspace within which increased protection may be given to aircraft in the critical stages of circuit, approach and climb-out. A MATZ acquires the status of the airspace classification within which it lies; however, additional mandatory ATC requirements are invariably specified for military pilots. In the airspace outside the Aerodrome Traffic Zone (ATZ), observation of MATZ procedures is not compulsory for civil pilots.
>
> 2.2.2 […]. In the interests of flight safety and good airmanship, it is strongly recommended that all pilots not previously receiving an ATS obtain a MATZ penetration 'approval' from the MATZ operating authority prior to entering a MATZ. It is recognised that most MATZ crossing/penetration 'approvals' will be obtained via RTF by pilots in receipt of a UK FIS; however, it should be possible for a pilot to request a MATZ crossing/penetration 'approval' without the use of radio (i.e. by prior agreement via telephone). In accordance with Class G Airspace classification and the rules of UK FIS, pilots are ultimately responsible for maintaining their own separation against other airspace users within the MATZ. […].

RAF Valley Investigation

The RAF Valley Investigation established the following Outcome, Cause, Causal Factor Recommendations/Mitigations and Observations:

Outcome: The pair of Hawks came within an estimated 200ft of the para[motor].

Cause: Although the para[motor] pilot was operating within the law, it would be fair to say that they were operating with poor awareness of the hazard of flying in the approach lane of a busy fast-jet base. Likewise, the Hawk formation had no awareness of the presence of the para[motor] until it was too late to do anything about it.

Recommendations (Mitigation): Hawk pilots will be reminded at the next flight safety meeting of the potential hazards of para[motor]s on approach to the airfield, and the importance of an effective lookout. Valley AST will be asked to liaise with ATC to determine the suitability of positioning a monitor showing glidernet.org (and perhaps ADS-B) live information to increase ATC's awareness of free flying in the vicinity of RAF Valley.

Causal factor: A dark-coloured para[motor] canopy against a dark-coloured ground (as was evident when reviewing the HUD footage) can be difficult to see.

Recommendations (Justification of No Action): The MOD has no influence on the colour of para[motor] canopies, although the Airprox Board may be able to submit recommendations separately via the BHPA.

Observations: The para[motor] cannot be seen in the HUD footage, although from the pilot's description it is likely that it does not pass in front of the FOV of the HUD camera. Nevertheless, it was clear from the footage that the 'look-down' was not particularly good that day, which likely contributed to the difficulties in seeing the para[motor] canopy until it had passed underneath the aircraft, by which point it was too late to do anything about it. The flight safety officer of the local paragliding club has subsequently issued a communication to the club to warn against flying in the approach lane of RAF Valley. It is likely that the para[motor] pilot is not a member of the club and/or a visitor to the area. The British Hang Gliding and Paragliding Association (BHPA) will be notified of the outcome of the Airprox Board, and it is customary for the BHPA to publish its findings in the regular magazine which is sent to all BHPA members. From a legal perspective, membership of the

[4] (UK) SERA.3210 Right-of-way (c)(3) Overtaking. MAA RA 2307 paragraph 14.

BHPA is a mandatory requirement [sic] and therefore all free-flying pilots in the UK should receive a copy of the magazine. Other than perhaps being more fortuitous with lookout, it is unlikely that the Hawk pilots would have seen the para[motor] any earlier. There are few electronic conspicuity aids (such as TCAS) carried by para[motors], although it is possible that the para[motor] pilot was carrying a FLARM beacon. This would not have been seen directly by the Hawks (or Texans), but it is usually picked up by Open Glider Network (OGN). This information is published on www.glidernet.org, which is currently not routinely reviewed at outbrief. A simple display providing this information into the approach room of ATC would be very low-cost and, in this case, would likely have picked up the presence of a para[motor] above Anglesey.

DDH/AM Comment
Good lookout by the Hawk crews ensured that the separation was maintained with the para[motor]. The subsequent action by the Hawk crew and restriction imposed by ATC was wholly appropriate to ensure the continued safe delivery of operations at RAF Valley whilst the intentions of the para[motor] [pilot] were unknown. This is the first time I have heard of a para[motor] operating on the extended centreline at a busy FJ base; I do hope they can be tracked down and educated appropriately. Wider, I would hope to see an outcome from the Airprox Board that ensures improved awareness of Mil aerodrome operations across the UK para[motor] (and the like) community. Incidents such as these serve as a timely reminder to our 4 FTS crews of the potential for these unexpected events and reinforces the requirement for lookout to be the primary mitigation against 'LoSS non-Co-op'. We have socialised this accordingly.

Comments

HQ Air Command

A good spot by the rear occupant of the lead aircraft; however, there wasn't time for the Hawk formation to conduct any type of avoiding action. The event was well managed by ATC in coordination with the Duty Pilot to mitigate any further risks presented by the paramotor. Continued engagement with local airspace users via the Regional Airspace User Working Group is vital; however, it will be difficult to capture all airspace users, especially those who don't appear to be members of the BHPA.

BHPA

The BHPA is most disappointed to hear about this Airprox which had a considerable adverse effect on RAF Valley's flying operations. We have made extensive attempts at trying to identify this paramotor pilot and, during our conversations with the local BHPA paragliding and paramotoring clubs on Anglesey, we weren't able to ascertain their identity and, therefore, we are almost certain that this pilot is not a BHPA member. Consequently, we are unable to add much in the way of a BHPA comment to the incident itself other than relief that a more serious outcome was averted.

However, the BHPA would like a couple of points to go on record. First, we regret the inconvenience that this incident caused to RAF Valley's flying operations. Having to curtail fast jet IFR procedures and adjust approach & departure heights due to the thoughtless actions of one irresponsible individual is annoying to say the very least.

Second, the BHPA is continually frustrated by the inaction of the CAA/DfT to make proper training and 3rd party insurance mandatory for paramotor and powered hang glider pilots. Paramotoring still remains the only form of aviation in the UK where an unlicensed and uninsured pilot can fly and share the sky with other airspace users having had no formal training on the Rules of the Air, Air Law, Meteorology, Airspace Classifications, etc., or had any formal flying instruction. We have a situation now where even drone pilots have more rules, regulations, training & compulsory insurance requirements whilst paramotor pilots have none. Fortunately, the vast majority of UK paramotorists do act responsibly and have received physical and theoretical training via BHPA schools and clubs but it seems that only a tragic mid-air collision between a paramotorist and another air user will bring this issue to the forefront of the CAA's attention.

We welcome RAF Valley's internal investigation and their recommendations although we'd like to correct one of their observations where it is written: "From a legal perspective, membership of the BHPA is a mandatory requirement....." This is not true; membership of the BHPA is not a mandatory requirement, nor is having any training or insurance.

Furthermore, although having an inexpensive monitor inside the ATC tower showing FLARM/OGN/FR24/ADS-B Exchange, etc. can only be welcomed as another barrier in helping to mitigate incidents like this, most paramotorists will not usually be carrying an expensive high-end moving map device that has up-to-date airspace, NOTAM and FLARM or Fanet+ (EC) capability. These are usually the preserve of cross-country/competition paraglider pilots flying a task in gaggles and having to negotiate complex airspace. Had this paramotorist been using such a device, they would have received a visual and audible warning that they were inside a CMATZ. And for information, only a tiny percentage of BHPA members (including paramotorists) will use a licensed airband radio and have a FRTOL to operate one. 99% of paraglider pilots will be using a VHF radio in the 2-metre band, around 142-144MHz, whilst many paramotorists will simply be wearing a set of ear defenders.

Finally, in order to educate the local population and hopefully reach the paramotorist responsible for this incident, perhaps RAF Valley media ops could invoke the services of the local press/TV highlighting the dangers of flying a paramotor midweek unannounced inside a busy CMATZ and the adverse effect this had on RAF Valley's operations. We would also suggest including a telephone number for ATC/Ops that could be used by a non-radio pilot to inform of their intentions.

Summary

An Airprox was reported when a Hawk formation and a paramotor flew into proximity 5NM southeast of RAF Valley at about 1534Z on Wednesday 27th November 2024. All the pilots were operating under VFR in VMC, the Hawk formation in receipt of a military Aerodrome Control Service from Valley Tower and the paramotor pilot not in receipt of an ACS or FIS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from a Hawk pilot, radar photographs/video recordings, 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.

Members first discussed the pilots' actions and noted that none of the Hawk pilots had been able to see the paramotor in time to increase separation at CPA, effectively a non-sighting in terms of collision avoidance (**CF6**). This was not a criticism of the Hawk pilots but rather an important reminder of the need for pilots operating close to busy military airfields, especially those with fast-jet traffic, to notify the airfield before their flight so that any risk of collision could be mitigated pre-emptively to an acceptable level, which the paramotor pilot had elected not to do (**CF2**). With the absence of a significant radar cross-section and lack of electronic conspicuity (**CF5**), the paramotor had not been detectable by surveillance means and hence Valley ATC and the Hawk crews had had no situational awareness of it (**CF1** and **CF4** respectively). This had left see-and-avoid as the remaining barrier to mid-air collision which had been further compromised by the paramotor pilot being on a course that faced away from the approaching Hawks and hence most likely had not seen them before CPA (**CF6**). The BHPA member briefed the Board and noted that the paramotor pilot had not been a member of the BHPA. This in itself was not a bar to flying a paramotor but the BHPA's concerns had been presented in their comment to the Airprox report. In sum, the freedom to aviate afforded by current paraglider and paramotor regulation also carries the responsibility to do so in a manner that affords an acceptable level of safety for other airspace users. In this instance, the paramotor pilot had clearly not prepared or briefed to a sufficient standard (**CF3**) to enable them to conduct their flight safely. The BHPA member noted that a future edition of the organisation's magazine, Skywings[5], will contain an article on how to fly responsibly. In this instance the consequences of the paramotor pilot's actions had been well handled

[5] https://skywings.bhpa.co.uk/

by RAF Valley ATC but had resulted in significant disruption to operations at RAF Valley and their task to train future military pilots.

Turning to risk, members agreed that separation at CPA and the lack of any mitigating barriers had resulted in a situation where safety had been much reduced, Risk B. The Board noted that this risk carrying Airprox, with its significant consequences, could have been entirely avoidable with a little thought and communication from the paramotor pilot.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024290			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	Flight Elements			
	• 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	• Pre-flight briefing and flight preparation	An event involving incorrect, poor or insufficient pre-flight briefing	
	• Situational Awareness of the Conflicting Aircraft and Action			
4	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			
5	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			
6	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
	• Outcome Events			
7	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 Assessment[6]

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 **ineffective** because the Valley Tower controller had had no situational awareness on the paramotor.

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

Electronic Warning System Operation and Compliance were assessed as **not used** because the paramotor most likely did not have EC equipment fitted.

Flight Elements:

Tactical Planning and Execution was assessed as **ineffective** because the paramotor pilot had apparently not briefed themselves on the recommended actions when transiting a MATZ and had not notified RAF Valley of their planned route within the RAF Valley/Mona CMATZ.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because none of the pilots had had situational awareness on the other aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the paramotor had most likely not been EC equipped and could not alert the Hawks' TCAS.

See and Avoid were assessed as **ineffective** because the paramotor pilot likely had not seen the Hawks approaching from behind and the Hawk pilot saw the paramotor at about CPA, effectively a non-sighting.