

## AIRPROX REPORT No 2011123

Date/Time: 14 Sep 2011 1927Z (Night)

Position: 5314N 00425W (4nm E Valley - elev 37ft)

Airspace: Valley MATZ/ (Class: G)

Mona ATZ

Reporting Ac      Reporting Ac

Type: Hawk(A)      Hawk(B)

Operator: HQ Air (Trg)      HQ Air (Trg)

Alt/FL: 1650ft      1200ft  
Valley QFE      Mona QFE  
(1017mb)      (1011mb)

Weather: VMC NR      VMC CLBC

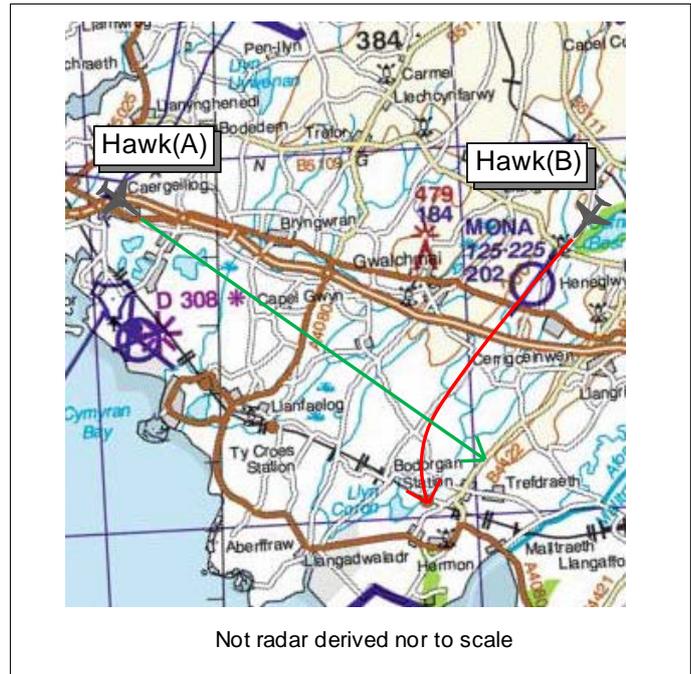
Visibility: NR      25km

Reported Separation:

200-300ft V/Nil H 250ft V

Recorded Separation:

NR



## **BOTH PILOTS FILED**

### **PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

**THE HAWK(A) PILOT** reports flying a night currency flight from Valley and in communication with Valley on Stud 2, squawking 7005 [High Energy Manoeuvres conspicuity code] with Mode C; nav and red strobe lights were switched on. He was the rear seat Capt and NHP at the time and owing to another flight requesting a Practice Engine Failure After Take Off (PEFATO) at Valley the decision was made to extend downwind to initial for RW31. At approximately 1650ft Valley QFE heading 135° and roughly 3nm E of Valley he became tally with an ac in his 10 o'clock low and very close, <0.5nm, approximately 1sec before it passed beneath and reappeared in their 3 o'clock. Subsequently he learned the other ac was a Valley-based Hawk that had extended upwind from Mona RW22 to 1200ft Mona QFE; this put vertical separation at 200-300ft. He assessed the risk as high.

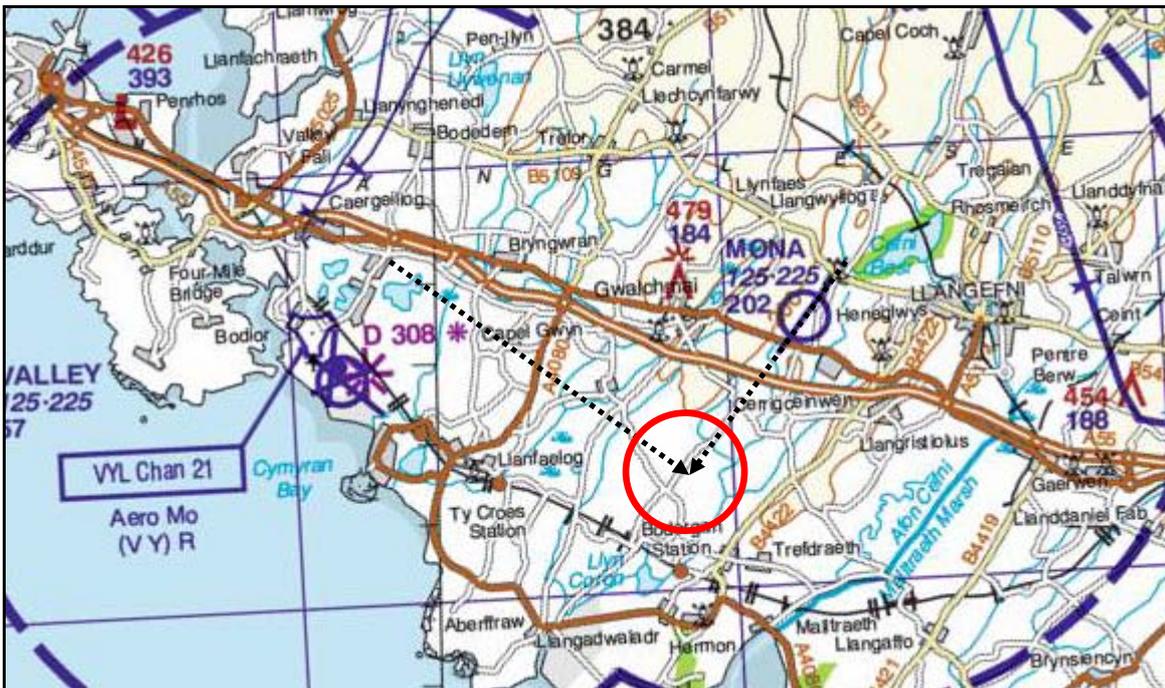
**THE HAWK(B) PILOT** reports flying a cct sortie at Mona and in communication with Mona Tower, squawking 7000 with Mode C. The visibility was 25km flying 2000ft below cloud in VMC and the ac's nav and red strobe lights were switched on. On climbout from a touch and go RW22, about 2nm from the RW04 threshold, heading 220° at 210kt the HP levelled the ac at 1200ft Mona QFE 1010mb and then commenced a L turn to position the ac downwind to route to initials for a 1200ft PFL. As the ac began to roll he, the NHP, caught a glimpse of an ac immediately in his R 1 o'clock and perceived its flightpath to go straight over the top of them with not much vertical separation. He immediately took control and commenced a bunt but he had already observed the ac go directly above. The outline shape of the other ac was very defined and although difficult to assess its range he estimated the distance to be no more than 400-500ft. He informed Mona Tower about the incident and asked for any available info on the ac. He was informed the other ac was in contact with Valley Tower and had been routing to position for initials for RW31 RH cct which was in use at the time. He informed ATC that he may be filing an Airprox. Subsequently he was told by the other ac's Capt that the other ac was at height 1600ft Valley QFE resulting in vertical separation of 250ft. He assessed the risk as high.

**BM SAFETY MANAGEMENT** reports that this Airprox occurred shortly after 1927 between 2 Hawks operating VFR at night in VMC. Hawk(A) was operating in the visual cct at Valley, with Hawk(B) operating in the visual cct at Mona.

Given the height at which the Airprox occurred and the distance from NATS radar heads, the Airprox was not visible to those radars used to provide the radar replay. Consequently, this investigation has been completed utilising the reports of the aircrew and ATM personnel involved and is based upon the investigation conducted by Valley.

At the time of the occurrence, Valley was operating to RW31 RH cct, whilst Mona was operating to RW22 (see Fig 1). Mona receives a feed for its High-Brite display from the Valley PSR/SSR; however, at the time of the occurrence, Valley's SSR was unserviceable and the performance of the PSR close to Valley and Mona is known to be poor and highlighted as such in the Valley FOB. The ATC Tower at Valley is sited N of RW31/13 and E of RW19/01, with the layout of the VCR favouring the main instrument RW, RW31/13, with the cct behind the Tower. The ATC Tower at Mona is sited W of RW22/04.

[UKAB Note (1): Valley elevation is 37ft amsl, Mona 202ft amsl.]



**Figure 1: Valley and Mona Local Area**

At 1923:57, Hawk(A) flight rejoined the Valley visual cct from radar and, at 1924:11 following a request from TWR, agreed to orbit at 1500ft QFE to permit an unrelated Hawk to conduct a PEFATO to RW19.

At 1925:43, Hawk(B) flight was cleared by Mona TWR to, "touch and go." At 1926:47, during the PEFATO being conducted by the unrelated Hawk, Hawk(A) flight stated their intention to remain at, "one thousand five hundred feet, extending to initials." The pilot of Hawk(A) states in his report that, albeit that the ac was at 1650ft QFE, they routed towards the IP for RW31 by extending downwind RH (as shown on Fig 1).

At 1926:59, Hawk(B) flight stated that they would position, "downwind for a twelve hundred foot PFL." This was followed at 1927:17 by them informing Mona TWR that, "there's another aircraft in the overhead." Based upon their Defence Air Safety Occurrence Report narrative, this is a clear reference to Hawk(A), indicating that the Airprox had just occurred.

In their report, Hawk(A) Capt reports that Hawk(B) had extended upwind from RW22 at Mona; however, in the absence of a radar replay it has not been possible to substantiate this assertion. That notwithstanding, based upon the reports of the pilots of both Hawk(A) and Hawk(B), it is clear that they had not sighted each other until effectively the CPA.

Following this incident, the unit investigation revealed an omission in the FOB whereby the ability to extend downwind on RW31 RH to reach the IP was not ruled out, which carried with it an inherent risk of conflict with the Mona visual cct.

BM Safety Management agrees with the analysis conducted by RAF Valley into this incident. The latent condition that existed within the FOB by not specifically excluding an extension downwind on RW31 RH during Mona operations was the root cause of this Airprox.

Notwithstanding the responsibility of both pilots to “see and avoid,” understandably, the pilot of Hawk(A) extended downwind to position for the IP for RW31 RH but seems to have been unaware of the potential risk of conflict with the Mona visual cct. Similarly, the pilot of Hawk(B) had no reason to believe that there may have been conflicting traffic in the vicinity. From an ATM perspective, whilst the ADCs at Valley and Mona may have been able to use the High-Brite display to ascertain that a conflict was evident, the contextual conditions must be borne in mind. It was night and, therefore, a continuous lookout is required such that visual contact may be maintained with all ac in the visual cct. The SSR was unserviceable and the PSR performance is poor; consequently, the chances of obtaining positive tracks on the High-Brite display were reduced. The Valley ADC’s focus would have been the safe handling of the unrelated Hawk conducting the PEFATO to RW19, which would have targeted their attention to the NW of Valley, whilst the CPA was to the E. From the Mona ADC’s perspective, Hawk(A) was approaching from behind them with only nav lights and red strobes showing and they had no information to suggest that Hawk(A) was extending downwind towards their visual cct.

Disconcertingly, this is a further failure of “see and avoid” which lends further evidence to the continued debate over the risk of mid-air collision.

As a result of the investigation conducted by Valley an immediate change was made to the FOB mandating a turn onto the deadside when re-positioning for the IP. Moreover, a wider review of the FOB was initiated which will specifically assess the relationship between the Valley and Mona traffic flows.

**HQ AIR (TRG)** comments that the immediate investigation and changes made following this incident by RAF Valley are welcomed. However, changes to orders are not a panacea and there is no substitute for good awareness and lookout.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

Members welcomed the procedure changes that had taken place post incident. With Hawk(A) leaving the Valley cct to carry out a rejoin, deconfliction procedures were needed to ensure safe separation against the Mona cct pattern. The HQ Air Trg Member believed that Hawk(A) crew should have been cognisant that Mona was also active during night flying and climbed to 2000ft to remain well clear of the Mona cct pattern or asked ATC for Mona activity information. Hawk(B) pilot had climbed straight ahead to 1200ft QFE from RW22 at Mona and was rolling in to a level turn to position for a PFL. Hawk(A) pilot had extended downwind from RW31 at Valley and climbed to 1650ft Valley QFE (~1450ft Mona QFE) to position towards the IP. Without ATC intervention, since both ADCs were unaware of the potential conflict, the only means of collision avoidance was

through see and avoid. However, it was clear to Members that both of the Hawk crews only saw each other moments before the CPA, with no time to take avoiding action, effectively non-sightings and the cause of the Airprox.

In trying to assess the risk Members were torn between there being an actual collision possibility or the lower category of safety not being assured. Luck had certainly played some part, with Hawk(A) pilot extending downwind, towards the RW31 IP at an arbitrary level 250ft above Hawk(B) which was maintaining 1200ft on the Mona QFE. The ac passed in level flight with no pilot inputs consciously to select or increase the separation, but the vertical separation was 250ft, which may have had an impact on the crews' visual acquisition. In the end Members agreed that, while there may have been an actual collision risk, it was certain that the ac passed with margins reduced to the point that safety had been compromised.

### **PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: Effectively non-sightings by the pilots of both ac.

Degree of Risk: B.