

AIRPROX REPORT No 2012170

Date/Time: 28 Nov 2012 1207Z

Position: 5311N 00418W
(RAF Valley 120°/9nm)

Airspace: Valley AIAA (Class: G)

Reporting Ac Reported Ac

Type: Hawk T Mk 2 F15E

Operator: HQ Air (Trg) Foreign Mil

Alt/FL: 15000ft 15000ft
RPS (1015hPa) RPS (NR)

Weather: VMC CLAC VMC NR

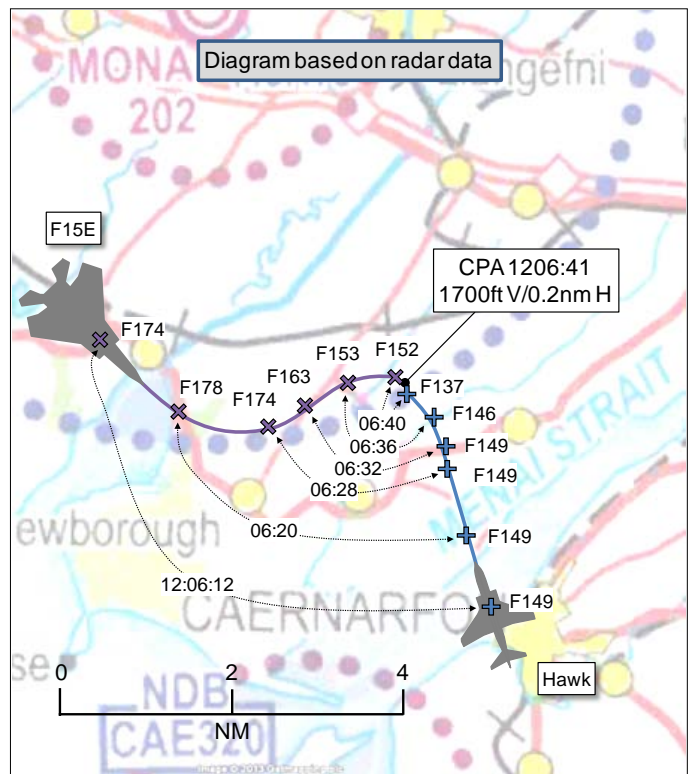
Visibility: 40km 30km

Reported Separation:

0ft V/1500ft H 0ft V/500m H

Recorded Separation:

1700ft V/0.2nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE HAWK T MK 2 PILOT reports leading a 2 ac formation, setting up for a basic radar intercept sortie, on CAP as a singleton in the NW of the over-land part of the Welsh MTA, initially at position 53 05N 004 15W. The other formation member was simulating a hostile ac with both ac using a datum split [initial separation] of 50nm along the 150° radial from RAF Valley. He was operating under VFR in VMC without an ATS. The black ac had navigation lights, nose light and HISLs selected on. The SSR transponder was selected on with Modes A and C and the ac was fitted with an ACAS. On departure from RAF Valley, 'Valley Radar' informed him that there were multiple contacts in the operating area above 20000ft. The formation was not going to go above 20000ft before speaking to an ATC agency and both ac went en-route. In accordance with the squadron SOP, he selected the deconfliction frequency for the Valley Air Training Area (VATA) on his 'main' radio and formation operating frequency on his 'back' radio; the number 2 pilot contacted London Mil on his 'main' radio, selected the formation operating frequency on his 'back' radio, and the formation members separated to generate the required 50nm split range. The number 2 pilot agreed a TS with London Mil and obtained squawks for both ac. The formation leader commenced his CAP orbit with a London Mil squawk but without an ATS, TI being passed by the number 2 pilot. Seven F15s were conducting training in the MTA and the number 2 pilot was initially passed TI that 'all the traffic was above 20000ft'. Whilst in his CAP orbit, the formation leader received a TCAS warning of Traffic 2500ft above, descending within 5nm of his position. He became visual with an F15 at 4nm range in his L 11o'clock position, in a descending RH turn and took avoiding action by descending to the L. He estimated the separation was approximately 1500ft H. During this event, the number 2 pilot was passed TI that the [F15] contacts were all changing height down to 9000ft in his position and the formation leader's position. He terminated any further training in the Welsh MTA due to high traffic density and moved to an adjacent danger area.

He assessed the risk of collision as 'Medium'.

THE F15E PILOT reports that a flight of 4 F15Es were operating in the Welsh MTA for a Surface Attack Tactics training mission, attacking simulated targets at RAF Valley. He was operating under VFR in VMC with a TS from 'London Mil'. The dark grey ac had position lights and flashing red anti-collision beacon selected on. The SSR transponder was selected on with Modes A, C and S. The ac was not fitted with an ACAS. He was operating in the altitude block 9000-40000ft, using the lowest

RPS for the NWMTA, coordinated with a flight of 3 F15Es [the non-factor formation to the S]. At approximately 1205 the F15E formation completed a simulated target attack and turned SE to prepare for another attack. The formation members were all at or above altitude 17000ft after the turn. At approximately 12:06:15, the formation simulated a surface-to-air system targeting [F15E (4)] from the SW at a range of 10nm. At 12:06:25, [F15E (4)] pilot began a descending LH turn to the N in response to the simulated threat. At 12:06:39, the crew of [F15E (4)] saw a Hawk ac passing 500m H from, and level with them in their R 3o'clock position. He terminated the defensive manoeuvre to deconflict from the Hawk. He stated that no other formation members saw or detected the Hawk before this point. He stated that it was apparent from a subsequent review of ac recorded data that London Mil had attempted to pass TI to the formation when the Hawk was approximately 5nm away. Only one formation member had heard the TI, which was concurrent with the simulated threat call RT to [F15E (4)].

He assessed the risk of collision as 'Medium'.

He also stated that the F15E squadron members would continue to request a TS when conducting general handling and that techniques on clearing flight paths before aggressive manoeuvres, like the defensive training that led to this incident, would be emphasized. Additionally, RT contact, both within the formation and with London Mil, would be emphasized such that if one formation member heard TI, the formation would terminate manoeuvres until the TI was resolved. They would also attempt to work with RAF Valley to determine which area frequencies were used, in order to monitor or pass advisory calls to other airspace users, in a similar fashion to the Low Flying System Advisory Frequency.

He reported that the Valley ATA, Welsh MTA, and Valley AIAA areas overlap on the British Isles En Route Low Altitude Chart, UK(L)2, in such a way that is difficult to discern where one airspace ends and another starts both laterally and vertically.

[UKAB Note(1): The RAF Valley weather was reported as follows:

METAR EGOV 281150Z 36011KT 9999 FEW025 07/00 Q1019 BLU NOSIG

METAR EGOV 281250Z 01011KT 9999 FEW028 BKN035 07/00 Q1019 BLU NOSIG]

BM SAFETY POLICY AND ASSURANCE reports that this Airprox occurred in VMC on 28 Nov 12 between a Hawk (1) and an F15E (4). Hawk (1) was operating under VFR within Valley Aerial Tactics Areas (VATA) East, without an ATS, as part of a formation of 2 Hawks, with Hawk (2) in receipt of a TS. F15E (4) was operating under VFR within the North Wales Military Trg Area (NWMTA), as part of a 4-ship formation of F15Es in receipt of a TS. Both formations were receiving an ATS from LATCC(Mil) W Tac. All heights/altitudes quoted are based upon SSR Mode C from the radar replay unless otherwise stated.

Information

The Mil AIP, ENR 5-2-18 Para 9.1, states that the NWMTA has 'been established within Class C airspace to provide military ac with the operational freedom to manoeuvre, without the requirement for the provision of a RCS. Although the airspace is intended for autonomous activity, a DS, TS or BS may be requested from the military ATCC'. The vertical boundaries of the NWMTA are FL195-FL660 (see Figure 1). The RAF Valley FOB states that deconfliction between 4FTS traffic within the NWMTA but outside of the VATAs 'is to be achieved by either requesting a TS or DS or by free-calling the [4FTS] deconfliction frequency'.

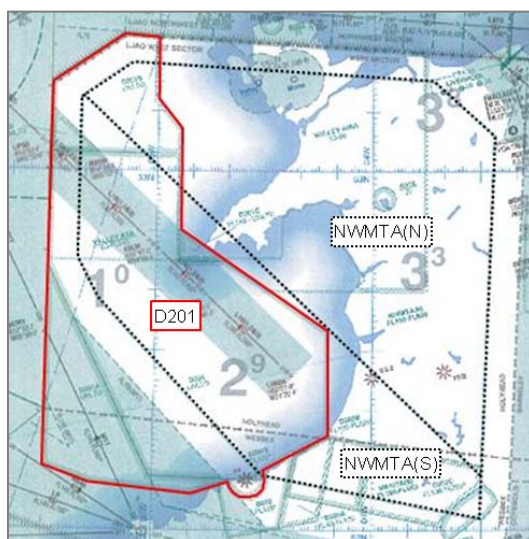


Figure 1: Depiction of NWMTA and D201

The RAF Valley FOB states:

‘the northern part of the NWMTA is divided into 2 areas by the VYL 180° radial: VATA East and VATA West (see Figure 2). The VATAs provide a degree of autonomy from other 4FTS users and may be activated by formations conducting Air Defence training or other high energy manoeuvring. However, aircrew should be aware that the VATAs are a local arrangement only and sit within Class G airspace and that other, non-4FTS traffic, may be encountered within them.’

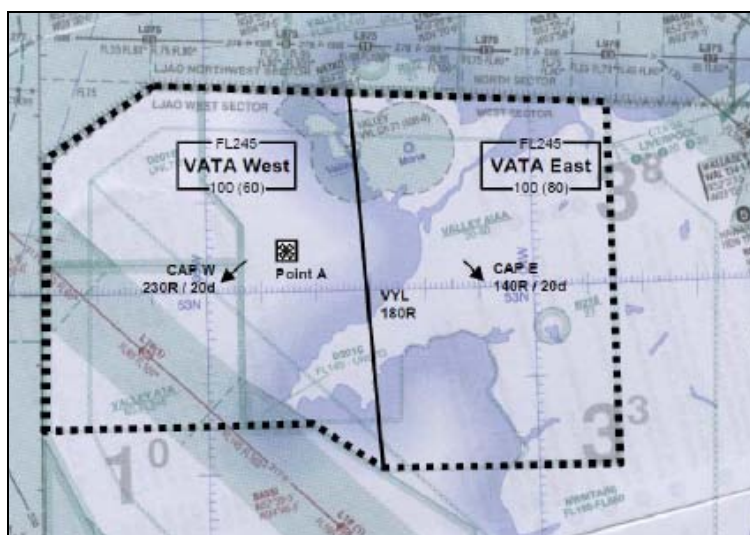


Figure 2: Depiction of VATAs

The FOB further states:

‘Since the VATAs are within Class G airspace several other users may be encountered within them. Not all of these users will be receiving a service from either Valley or London Mil. Whilst deconfliction against such traffic is not possible in the MTA unless Valley aircrew are in receipt of a TS or DS, Valley ATC will nevertheless inform Active VATA users of any traffic that is known to be within the lateral and vertical limits of that VATA. Such traffic will include those in receipt of a service from Valley, have been identified by Valley SSR but not in receipt of a service, or have contacted Valley informing of their intention to operate within an active VATA ie ‘known’ traffic. This information will be passed by ATC on the [the 4FTS] formation frequency as soon as it is safe to do so.’

The pilot of Hawk (1) reported that ‘In accordance with...Sqn SOPs...Hawk (1) [was] holding the deconfliction freq for VATA on the main radio and formation frequency on the back radio. Hawk (2) contacted London Mil on the main radio and formation freq on the back radio’. The RAF Valley FOB

states that 'During routine training flights from RAF Valley, the Hawk T2 will normally use Comm 1 for ATC and deconfliction and Comm 2 for intra-formation communication'.

Throughout the incident sequence there was a confused mixture of callsigns used by the Hawk Formation and W Tac to refer to the Hawks. In terms of this report, where reference is made to Hawk (1)'s or Hawk (2)'s C/S, it refers to the individual ac's C/S; where reference is made to the Hawk formation's C/S, it refers to both ac. For example, if RIPS AW 1 was Hawk (1)'s C/S, RIPS AW 2 would be Hawk (2)'s C/S and RIPS AW would be the formation C/S. Analysis of the RT has determined that whilst the only voice on the RT from the Hawk formation was that of the pilot of Hawk (2), he used the formation C/S, Hawk (1)'s C/S and his own C/S.

The LATCC(Mil) W and SW positions were 'band-boxed' and manned by the W Tac trainee and an instructor, with an experienced controller operating as a Planner. At the time of the incident, although a 'multi-tourist', the trainee had completed around 50% of the trg toward their first Area endorsement following graduation from the Area Radar Training Course (ARTC). Whilst the W and SW Tac positions were separate, they routinely operate 'band-boxed' due to traffic levels. The W Tac instructor reported that workload was high and that the task complexity was 'very difficult'. The Planner reported that their workload was low and that the task was undemanding, relating that 'the majority of the workload was RT related'. At the start of the incident sequence, W Tac was providing ATS to 2 formations of F15Es on a discrete UHF; the 4-ship incorporating the incident F15E was operating as 2 pairs, SE of Valley in the vicinity of Caernarfon, and a 3-ship was operating as a pair and a singleton, E of Aberporth and to the N of L9 and UL9.

Prior to the start of the incident sequence, Hawk (1) and Hawk (2) had been in communication with Valley RAD, asking, at 1158:27, whether there was, "any further traffic to affect?" RAD replied that there were, "multiple London tracks, flight level 2-3-0 and above manoeuvring" which was acknowledged by the Hawk formation, advising RAD that they would, "be going free-call for an agency once we get to that height." The Hawk formation left RAD frequency at 1158:42.

The incident sequence commenced at 1202:21 as Hawk (2) free-called W Tac on the W ICF using his individual C/S. At this point, Hawk (2) was 22.6nm SE of Valley, tracking SE'ly, indicating FL130. Hawk (1) was 8.6nm N of Hawk (2), tracking NW'ly, indicating FL140. The incident F15E formation were operating between 7.1nm and 9.2nm NE and ENE of Hawk (1), tracking SSW'ly, indicating between FL206 to FL212. The unrelated F15E formation was 69.3nm S of the incident F15E formation, tracking E'ly, indicating between FL259 and FL287 within the NWM TA. Figure 3 depicts the incident geometry at this point.

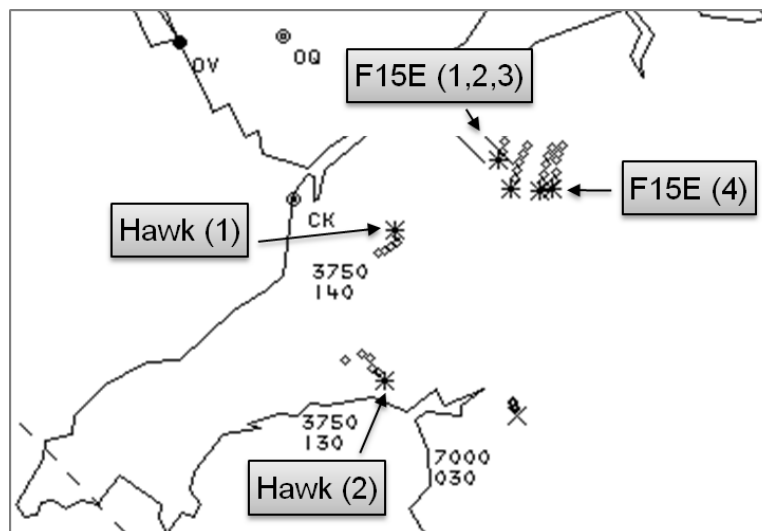


Figure 3: Incident Geometry at 1202:21.

W Tac replied to Hawk (2) requesting him to, "pass your message" and Hawk (2) advised, "Now [Hawk formation C/S], 2 Hawks operating North Wales MTA, er looking to maintain a Traffic Service

with yourselves, FL100 to FL300 for 3-0 mikes.” It has not been possible to determine whether W Tac perceived the changed C/S by detecting the pause between the use of the formation C/S and the number of ac in the formation. W Tac then acknowledged Hawk (2) instructing him, “[Hawk (2) C/S] Squawk 3-3-4-0, what type of service do you require?” Hawk (2) pilot acknowledged the squawk and re-iterated his request for a TS, responding using the formation C/S. Shortly afterwards, at 1203:00, Hawk (2) pilot transmitted, “Er London, [Hawk Formation C/S], request a squawk for [Hawk (1) C/S] but they won’t be on frequency.” W Tac replied, “[Hawk (2) C/S] roger, 3-3-4-1” which was acknowledged by Hawk (2) pilot, erroneously using Hawk (1) C/S. During this exchange, at 1203:04, the SSR3A code assigned to Hawk (2) was displayed on W Tac’s surveillance display changing from 3750, as depicted in Figure 3, to 3340.

Immediately after Hawk (2) pilot’s acknowledgement of the squawk for Hawk (1), W Tac advised, at 1203:18, “[Hawk (1) C/S] identified, Flight Level 1-3-0, Traffic Service.” However, whilst W Tac had utilised Hawk (1)’s C/S, he had identified Hawk (2) as it was Hawk (2) that was maintaining FL130 and Hawk (1) had not yet begun to squawk the assigned SSR3A code. Hawk (2) replied at 1203:24, “sorry, stepped on, say again for [Hawk formation C/S]” and again at 1203:31, “London [Hawk formation C/S] say again.” W Tac replied at 1203:33, “[Hawk formation C/S] identified Traffic Service, confirm Flight Level 1-3-0?” Although live-mic recording was not available, given W Tac’s transmissions at 1203:18 and 1203:33, it is likely that the delay in W Tac replying to Hawk (2) was that his instructor had prompted him to verify Hawk (2)’s level, rather than assume that the displayed SSR Mode C information was correct. Hawk (2) pilot confirmed that he was at FL130 and advised W Tac that the formation were, “looking to work in the block Flight Level 100, Flight Level 300.” W Tac then replied, using Hawk (1)’s C/S, instructing the [Hawk (2)] pilot to, “manoeuvre as required between FL100 and FL300, report 1 minute to completion. Be advised there’s 7 F-15s operating within the North Wales M-T-A.” This was acknowledged by Hawk (2) using the formation C/S. At this point Hawk (1) pilot had not commenced squawking the SSR3A code assigned to him and was 9.3nm WNW of F15E (4) and 25.7nm NNW of Hawk (2). Figure 4 depicts the incident geometry at this point.

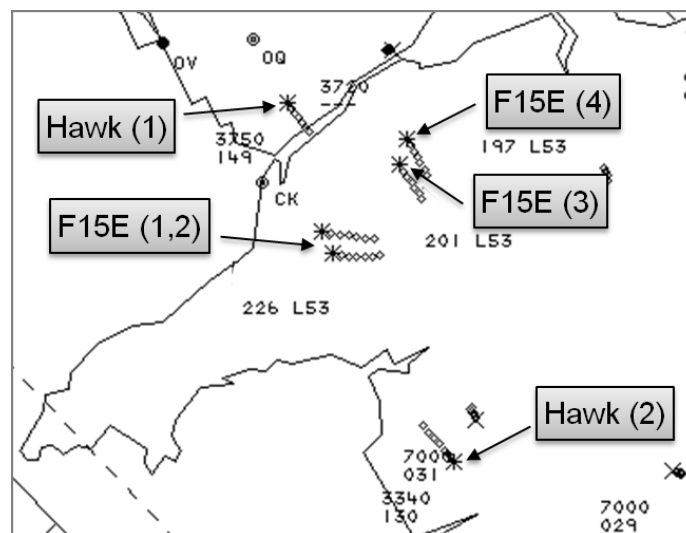


Figure 4: Incident Geometry at 1203:43.

Hawk (1) pilot began to squawk his assigned SSR3A code at 1204:36; however, an ATS was not applied by W Tac and the electronic flight strip was not amended to suggest that it had been placed under a service. At 1205:10, W Tac asked, “[Hawk Formation C/S] would you be happy to manoeuvre within Delta 2-0-1 if I can arrange it, to remain clear of the F15s?” The position of EGD201 is depicted in Figure 1. At this point, F15E (4) was 10.8nm N of Hawk (1), tracking W’ly, indicating FL193; Hawk (1) was tracking SSE’ly, indicating FL151. Hawk (2) replied, “er [Hawk formation C/S] whereabouts are they operating?” W Tac advised, “[Hawk formation C/S] they’ll be operating all over. They’re currently split between the north and south but they will be er tracking back in.” Initially, Hawk (2) pilot acknowledged this information then added at 1205:33, “er [Hawk formation C/S] I’ll only be operating a further 5 miles south of here.” W Tac replied, “roger, if you’re

happy you can manoeuvre there, then I'll keep you informed of traffic as it becomes relevant" which was acknowledged by Hawk (2) pilot. This exchange of RT finished at 1205:46 and W Tac engaged in no further recorded communication until 1206:16.

At 1206:16, transmitting on both the Hawk and F15E formation's frequencies, W Tac trainee attempted to provide TI to the N'ly F15E formation on Hawk (1); however, quoting the W Planner, the trainee 'stumbled' over his phraseology, prompting the instructor to step in. The instructor stated, "[F15E formation C/S] Hawk west...east 2 miles, manoeuvring, Flight Level 1-5-0, operating in the block Flight Level 300 Flight Level 100", which was acknowledged using the F15E formation C/S. However, based on the F15E formation's report, it was not the formation leader who acknowledged the TI, a point that will be examined later. At the time the W Tac trainee attempted to pass TI, F15E (3) and F15E (4) were 4.5nm and 4.8nm respectively NW of Hawk (1), tracking SE'ly, indicating FL180 and FL175 respectively. As the instructor passed TI to the F15E formation, at 1206:28, F15E (4) turned left approximately 30° introducing the conflict with Hawk (1), 2.3nm ESE of him. At 1206:36, F15E (4) turned left approximately a further 45° and commenced a rapid descent, further reducing the separation on Hawk (1). This detail can be seen in Figure 5. Extrapolation of the radar data demonstrated that approximately 2.1nm lateral separation would have existed between Hawk (1) and F15E (4), prior to this manoeuvre. Immediately after the F15E formation's acknowledgement of the TI, the W Tac instructor replied to an unrelated free-calling ac on the SW ICF, instructing them to, "standby". The CPA between Hawk (1) and F15E (4) occurred between radar sweeps at approximately 1206:42 as F15E (4) crossed 0.2nm L to R through Hawk (1)'s 12 o'clock. Figure 5 depicts the incident geometry at 1206:39 at the radar sweep immediately prior to the CPA. In the radar sweep immediately after the CPA, at 1206:43, the F15E is shown having made a tight R turn through 45° towards Hawk (1), indicating FL153. Hawk (1) was indicating FL135, after his 'avoiding action...descending to the left'; Figure 6 shows this detail with the flight path of F15E (4) highlighted in red and that of Hawk (1) highlighted in blue.

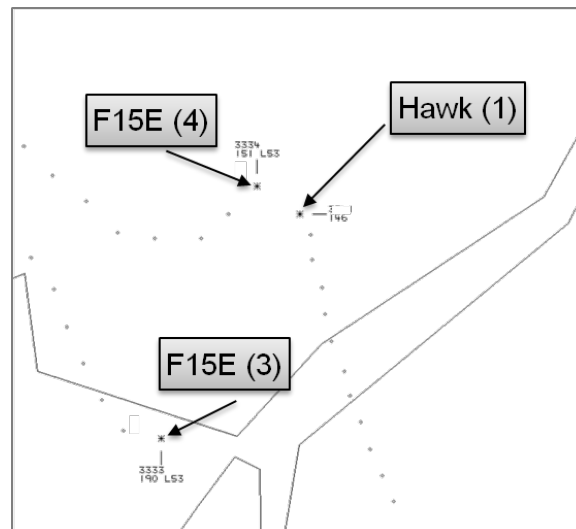


Figure 5: Incident Geometry at 1206:39 immediately prior to the CPA.

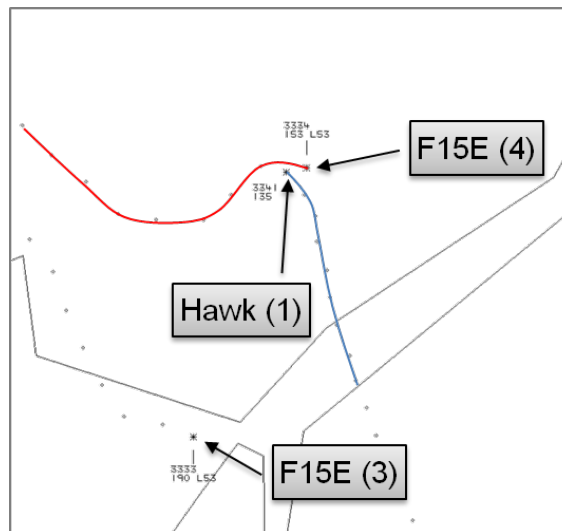
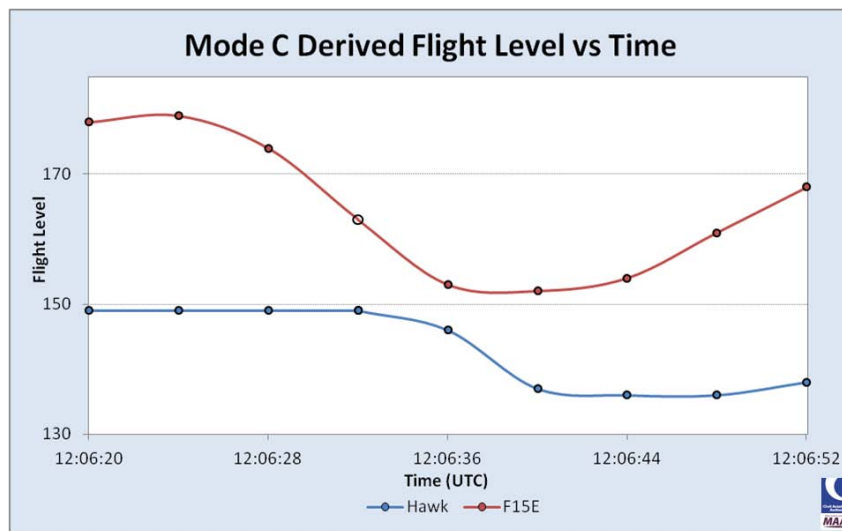


Figure 6: Incident Geometry at 1206:43 immediately after the CPA.

[UKAB Note(2): The vertical profile of the encounter, derived from Mode C data, is shown below:



Note that the F15E Flight Level is interpolated between 12:06:28 and 12:06:36 as its RoD exceeded the surveillance system parameters for processing height readout.]

The guidance material contained within CAP774 Chapter 3 Para 5 states:

‘Controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5nm, in order to give the pilot sufficient time to meet his collision avoidance responsibilities and to allow for an update in traffic information if considered necessary.’

Although the regulation states that ‘high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information’, no reduction in the ATS was applied by W Tac.

The F15E formation reported that ‘only one ac actually heard the radio call [the TI from W Tac]. This was around the same time that F15E (1) was transmitting a simulated threat call to F15E (4). It is reasonable to argue that the timing of the ‘simulated threat call’ explains the manoeuvring conducted by F15E (4) between 1206:28 and 1206:36. Following this Airprox, the F15E Sqn stated that ‘they will emphasise techniques on clearing flight paths before aggressive manoeuvres like the defensive manoeuvre that led to this incident’.

Immediately after instructing the unrelated ac free-calling the SW ICF to, “standby”, at 1206:54, the W Tac instructor transmitted to the Hawk formation, “4 F15s south west of you in your current location, in the block Flight Level 9-0 Flight Level 4-0-0, indication Flight Level 1-8-5.” At this point, F15E (4) was 2.2nm E of Hawk (1) tracking SE’ly indicating FL166; F15E (3) was 3.3nm S of Hawk (1) tracking E’ly, indicating FL193; F15E (1) and (2) were 9.3nm SSW of Hawk (1) indicating FL206 and 200. Although the TI was inaccurate, given the surveillance display range scale that W Tac would have required in order to monitor the W and SW AoRs, combined with the proximity of the F15E formation to Hawk (1), it is unlikely that W Tac would have been able to provide more accurate TI.

It has not been possible to determine the point at which W Tac detected Hawk (1)’s squawk; however, based upon the DASOR’s submitted by the W Tac instructor and the Planner, it is clear that W Tac had not detected the conflict between Hawk (1) and F15E (4) prior to it being pointed out by the Planner. This might also suggest that W Tac had not detected Hawk (1)’s SSR3A code prior to this point. An argument which is lent weight by the W Tac instructor’s report that he had assumed prior to the incident that Hawk (1) and Hawk (2) ‘were in close formation’, adding that he had become distracted by the proximity of the F15E 3-ship operating in the S of the area to L9, UL9 and EGD203 at Sennybridge. During the closing stages of the incident sequence, the F15E 3-ship operating in the S of the area was around 14nm W of EGD203 maintaining an orbit in which the S edge was around 8nm N of the lateral boundary of L9. The W Tac instructor stated that he passed TI to the F15E formation first as this ‘was coherent to frequency set up at the time’. It is likely that W Tac had selected the F15E formation’s discrete freq to transmit in case he was required to broadcast a warning to the S’ly formation of their proximity to L9/UL9 or EGD203.

Analysis

In terms of this incident as an Airprox, both Hawk (1) and F15E (4) pilots were operating in Class G airspace and were required to discharge their responsibilities for collision avoidance. Based on the available data, although the pilot of Hawk (1) had SA on the F15E through TCAS, he seemed to have visually acquired F15E (4) relatively late and shortly before 1206:39, given that his avoiding action is seen to take effect at this time. At this point, 0.7nm lateral separation existed, with 500ft vertical separation indicated. Based on the formation report, the pilot of F15E (4) appears to have visually acquired Hawk (1) at approximately the CPA. Moreover, the Airprox appears to have occurred following defensive manoeuvring from the F15E (4) pilot, in response to a simulated threat, which brought him into conflict with Hawk (1).

In terms of the ATM aspects of the incident, both the W Tac trainee and the instructor had become distracted such that they were unable to divide effectively their attention between all their ac; consequently, TI was provided late to the incident F15E formation and, given the intra-formation RT traffic, the TI was rendered nugatory. Although the Planner had stepped in to prompt the W Tac trainee and instructor, the intervention came too late to affect the situation given the likely lateral separation at that point, compounded by the trainee’s ‘stumbled’ phraseology.

The question of provision of service to Hawk (1) pilot is more difficult. Given the generic nature of the warning passed by W Tac at 1205:10, BM SPA contends that, although Hawk (1)’s SSR3A code was visible from 1204:36, W Tac had not detected it by 1205:10 and was only monitoring Hawk (2) who was operating in clear airspace. Moreover, despite the trainee’s erroneous transmission to Hawk (1) at 1203:18 and the whole formation at 1203:33, Hawk (1) was never formally identified and placed under an ATS. The basis of ATSOCAS is that pilots and controllers agree a ‘contract’ between them, based upon the Service Principles and the details of the specific ATS as laid down in CAP774. Whilst acting as a formation, the formation leader may agree a ‘contract’ with an ATCO on behalf of the formation; however, in this instance, the formation were split by up to 44nm and Hawk (1) pilot was not on frequency. Consequently, each element of the formation was required to have been identified separately and an ATS agreed between the pilot and W Tac. Implicit within that statement is that each ac in receipt of an ATS should be on the ATC frequency in use. That said, given W Tac’s transmissions to the formation and that W Tac did not challenge Hawk (2) when he learned that Hawk (1) would not be on freq, the Hawk formation probably believed that both ac were

in receipt of an ATS. Unfortunately, as previously stated, it has not proved possible to conclusively determine the point at which W Tac obtained 'track ident' on Hawk (1); subsequent to completing their DASOR, the W Tac instructor could only recall that it was spotted prior to TI being passed. As argued previously, it appears reasonable to suggest that the SSR3A code was sighted as the Planner identified the conflict to the Tac. However, what is clear is that the distraction that affected the ATS provision to the incident F15E formation would have similarly affected the monitoring of Hawk (1); thus W Tac was unable to provide an earlier, more specific warning to Hawk (1). Disappointingly, this distraction affected both the trainee and the instructor in equal measure. It is also reasonable to argue that the generic traffic warnings passed by W Tac to the Hawk formation could have included more specific detail to enhance the Hawk formation's SA; for example, expanding on the N/S split between the F15E formations to include range and bearing information.

Whilst neither causal nor contributory to the Airprox, BM SPA believes that the following observations identified in the conduct of this investigation are noteworthy.

1. Notwithstanding the issues over the 'ATS contract', the 'comms plan' presented to W Tac by the pilot of Hawk (2) appears convoluted. At best this arrangement could lead to a significant delay in the passage of time critical TI to the second ac; at worst, it could lead to inaccurate and potentially misleading information being passed. The RAF Valley FOB states that deconfliction between 4FTS traffic within the NWMTA but outside of the VATAs 'is to be achieved by either requesting a TS or DS or by free-calling the [4FTS] deconfliction frequency'; however, it states that within the VATAs, crews may either elect to receive a TS or DS or they will receive generic traffic warnings from Valley ATC. This latter arrangement is despite there being no agreed ATS between ATC and the 4FTS aircrews and has the potential to blur the boundary between autonomous ops and being in receipt of an ATS; an issue that was highlighted by both the SATCO and BM SPA as being unsatisfactory when it was introduced following Airprox 2011/134. These flying orders present aircrews with an 'either/or' arrangement; however, in this instance, the Hawk formation were attempting to conduct both activities in order, perhaps understandably, to achieve greater SA.
2. Operating in the 'band-boxed' position, given W Tac's task-load and the distribution of ac around the West AoR, BM SPA contends that W Tac was working at or very near capacity. Thus, it is unlikely that he would have had sufficient capacity to provide ATS to additional free-calling ac, in either the W or SW AoR. However, the Planner does not appear to have attempted to 'split' the control positions or to seek an additional Tac controller to increase sector capacity. Moreover, whilst the Supervisor reported being cognisant of the traffic loading on the 'band-boxed' position, he did not mention whether this was discussed with the Planner. This observation provides additional evidence to support 2 recommendations made to the RAF ATM Force Cmd. Firstly following the investigation of Airprox 2012/117, where a request was made to consider the requirement for LATCC(Mil) Planner endorsed personnel to be re-briefed on assessing task complexity, in addition to task load, when determining sector manning. Secondly, following the investigation of Airprox 2012/163, a request was made to review the practice of 'band-boxing'.

Conclusion

This incident resulted from a conflict of flight paths within Class G airspace that was resolved by the pilot of Hawk (1). Lack of TI to both the pilot of Hawk (1) and lack of timely TI to the incident F15E formation was a contributory factor in this Airprox, caused by controller distraction.

HQ AIR (TRG) comments that the conflict was due in large part to weakness in communication between the controllers and crews involved. It appears that neither party perceived the potential for a conflict, despite their efforts to maintain a TS. It should be emphasised that a TS provides no form of deconfliction as is suggested by the RAF Valley FOB extract, unless:

1. A controller 'goes the extra mile' to engineer it, as was attempted in this case with an offer to move to D201.

2. The crews perceive the potential for a conflict and arrange their own deconfliction with the other traffic directly.
3. Deconfliction is arranged through ATC.
4. By moving clear themselves.

By remaining in the airspace the crews accepted the collision avoidance responsibility but it appears in this case that they may not have perceived the full conflict potential, despite the controller's suggestion of an airspace move; they were not informed of the F15's operating block, other than Valley RAD's call that they were '230 and above', nor were they offered any direct TI for the reasons given in the report. More precise RT phraseology may well have painted the picture of the Hawk formation's disposition to the controller, enabling better TI to be passed. Equally, the controller's description of the disposition of the F15s did not convey the potential for conflict and this, coupled with the lack of a timely call of the F15s' operating block, created a false sense of security.

It has been suggested that a booking system for the NWMTA could be instigated but this presupposes that it is unacceptable to operate more than one formation in the area at any one time. In light of the relatively small number of issues in the MTA, and its potential to impact availability of the airspace to Valley traffic, this is not being pursued at present. There remain several options to get detail of other traffic in the MTA (or Overland Training Area) and the crews in this case were well aware of the other traffic, albeit once they had got airborne. A greater willingness to accept the suggested airspace change might have prevented this incident. The F15 unit have taken some useful lessons from this incident and hopefully have an increased awareness of the Hawk activity in the area.

The crews attempted to cover all bases with their communications plan but its complexity, and the imprecise use of phraseology and callsigns, rendered it ineffective. The option to use a GCI service should also be considered as a viable option to achieve a service on a single and discrete frequency. Such a service is normally preceded by a brief to the specific controller and should provide the greatest situational awareness for the formation.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, radar photographs/video recordings and reports from the appropriate ATC and operating authorities.

Board Members considered the Hawk formation's communications plan was flawed. In trying simultaneously to comply with the Squadron SOPs and the RAF Valley FOB they achieved a radio configuration that denied them the service they were seeking. The Hawk (2) pilot's use of differing C/Ss further confused the issue, such that the LATCC(Mil) W Tac trainee Controller likely thought he was communicating with both Hawk formation members when in fact he was in RT contact with Hawk (2) pilot only. The Hawk formation leader's plan was to obtain ATSOCAS for both ac; however, they were separated by up to 44nm and he was not on frequency. Consequently there was little prospect of him obtaining timely TI, if any. ATC Members further opined that it is only feasible to provide a service to a formation member who is not on frequency if the formation ac are close together and not if formation elements have split. An attempt to do so in the latter case, by having a formation member relay TI, would only serve to increase risk. The Board concluded that the Hawk formation communication plan had been a contributory factor in the Airprox. Military pilot Members questioned why the Hawk formation were not using GCI control but also acknowledged that Air Surveillance And Control System (ASACS) provision was limited and subject to prioritisation, such that it may not be possible to provide GCI control regularly for RAF Valley sorties of this type. The USAFE Liaison Officer advised that UK-based F15 crews were also affected by the availability and prioritisation of ASACS resources. The Air Cmd Safety Policy and Assurance Advisor advised the Board that

LATCC(Mil) were considering a request by RAF Valley for a dedicated service in the NWMTA; this development was welcomed by the Board.

The F15E formation was operating in the N of the NWMTA, with a separate but coordinated 3-ac F15E formation operating in the S. The N'ly formation was in receipt of a TS from the same controller with whom Hawk (2) was in RT communication. TI was passed to both formations before CPA but it did not include operating blocks and the Hawk formation had previously received information from Valley RAD that the F15Es were operating above FL230. The TI to Hawk (2) pilot crucially did not inform him of the true F15E operating block of FL90-FL400 until shortly after the CPA. The LATCC(Mil) W Tac trainee controller had earlier suggested, sensibly and proactively, to Hawk (2) pilot that the Hawk formation move W to D210 but without accurate block information the Board opined that Hawk (2) pilot did not perceive there to be a potential confliction issue and that the Hawk formation pilots were operating in the mistaken belief that the F15E formation would remain above FL230. The Hawk operating block of FL300-FL100 was passed to the F15E formation some 20sec before CPA but it transpired that this was as the formation was reacting to a simulated threat, transmitting on the discrete formation frequency, and did not increase formation SA in time to avoid the incident. The LATCC(Mil) W Tac trainee and instructor controllers did not pass specific TI to Hawk (2) pilot prior to CPA and could not pass TI to Hawk (1) pilot directly. The Board opined they probably became aware of Hawk (1) pilot's location shortly before CPA, but by then had insufficient time to pass TI to him, via Hawk (2) pilot. The Board concluded that the lack of adequate TI to both formations had been a contributory factor in the Airprox.

The LATCC(Mil) W Tac trainee controller and instructor were operating bandboxed W and SW positions with 'high' workload and 'very difficult' task complexity reported by the instructor. The experienced Planner reported the task complexity to be undemanding with the majority of the 'low' workload due to RT. ATC Board Members opined that this disparity in perceived work load was indicative of the Planner not being aware of the Tac controllers' level of concern over the proximity of the S'ly F15E formation to the airways and Danger Area and responsible for his consequent late intervention to indicate the impending Hawk and F15E confliction. The Board agreed with the military ATC analysis that the W Tac trainee and instructor controllers were distracted by the proximity of the S'ly F15E formation to the L9/UL9 airways and D203 and that this had degraded their capacity to control the situation in the N of the area.

The F15E and Hawk formation members were all operating in class G airspace with equal responsibility to 'see and avoid'. The geometry of the conflicting ac flight paths prior to CPA indicated that Hawk (1) pilot had right of way. Hawk (1) pilot was warned of the proximity of F15E (4) by his TCAS and saw it at an estimated range of 4nm, in his L 11 o'clock. He was thus well-placed to take avoiding action. F15E (4) pilot did not see Hawk (1) until it was in his R 3 o'clock position, which was too late to take avoiding action. The Board concluded that the Airprox was caused by the F15E crew's effective non-sighting but that the Hawk pilot had taken effective and timely action to prevent the ac colliding.

[Post meeting note: Director UKAB has undertaken to write to AIDU about the depiction and clarity of the airspace boundaries of the NWMTA]

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Effectively a non-sighting by the F15E crew.

Degree of Risk: C.

Contributory Factors:

1. Inadequate TI to both formations.
2. Hawk formation communication plan.