

AIRPROX REPORT No 2012032

Date/Time: 6 Mar 2012 1750Z

Position: 5322N 00431W (7nm
finals RW19 at Valley -
elev 36ft)

Airspace: Valley AIAA/FIR (*Class: G*)

Reporting Ac Reported Ac

Type: Hawk T Mk2 Hawk T Mk2

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

Alt/FL: ↓1600ft 2000ft
 QFE (1018hPa) QFE (1018hPa)

Weather: IMC In Cloud IMC In Cloud

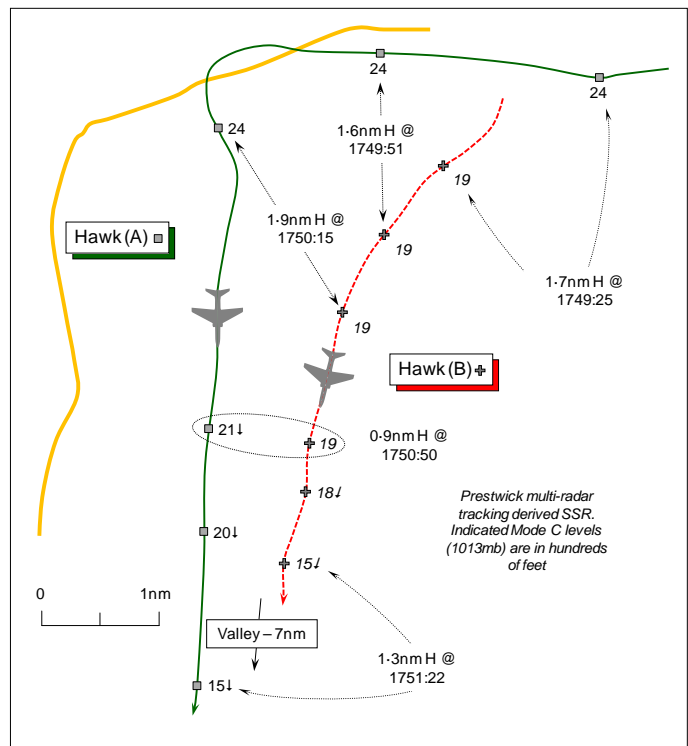
Visibility: 100m 50m

Reported Separation:

100ft V/0.9nm H NK V/0.9nm H

Recorded Separation:

200ft V @ 0.9nm Min H
Nil V @ 1.3nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE PILOT OF HAWK T Mk2 (A) reports that on completion of a local radar training sortie in the Valley Aerial Tactics Area (East) operating as a pair, individual recoveries were initiated as RW19 was in use. The flight lead ac – Hawk (B) - was vectored ahead for a radar to PAR and was placed under a DS. As the PIC, but PNF, he elected to perform a radar-to-initials recovery, which was flown under a TS from DIR, who vectored them behind the lead ac at 2500ft QFE onto the live side of the extended centre line of RW19. A further descent was then issued by DIR to 1600ft QFE. Hawk (B) on PAR ahead had been called to them and they had the ac displayed on their TCAS, but neither a TA nor RA was received. Heading 190° further descent would have resulted in them descending through Hawk (B)'s height within 1nm so the PF elected to stop the descent at 2200ft until they had passed the instrument traffic on TCAS. Once they had passed Hawk (B), the descent was recommenced and the A/D acquired visually at 1500ft QFE, from which the ac was repositioned onto the dead side and a visual run-in and break flown followed by a cct to land. Minimum separation was 0.9nm [AMPA replay facility] and the Risk assessed as 'medium'.

The assigned squawk was selected with Modes C and S on; the ac is coloured black with white HISLs on and navigation lights set to bright flash.

THE PILOT OF HAWK T Mk2 (B), a QFI, reports that on completion of a 1v1 radar sortie the Hawk pair recovered individually to Valley. Hawk (B) recovered first and elected to perform a PAR recovery, whereas Hawk (A) who was further from Valley elected to recover via a radar-to-initial approach. Flying level at 2000ft QFE (1018hPa), in cloud heading 190° at 160kt, after being handed over to TALKDOWN under a DS, he observed a contact that he assumed was Hawk (A) closing on TCAS from his 7o'clock position 500ft above his ac; TCAS was set to TA. The contact – Hawk (A) - then proceeded to pass behind his ac before turning onto a parallel track at a range estimated on TCAS to be less than half a mile. The track was then seen on TCAS to descend to an indicated 100ft above his ac overtaking to starboard. Approaching the point of descent, alarmed by the apparent extremely close proximity of Hawk (A) whilst passing and that ac's position on the live side, he called Hawk (A) on the Squadron common frequency to their flight conditions, as he in Hawk (B) was still IMC. The pilot of Hawk (A) replied that they were also still IMC and level at 2000ft - the same height as Hawk (B). Consequently, he in Hawk (B) executed a 'flinch' descent to 1800ft QFE

in an attempt to provide a last chance vertical separation as TCAS still showed Hawk (A) at +01 – 100ft above his ac. At no point did the crew of Hawk (A) or (B) become visual with each other. He assessed the Risk as 'medium'.

The assigned squawk was selected with Modes C and S on; the ac is coloured black with white HISLs, navigation and formation lights on.

Post flight analysis using the Hawk T2 AMPA replay and debrief facilities shows the vertical separation was around 100ft and 0.9nm laterally as Hawk (A) overtook Hawk (B) on its RH side. Both ac were IMC at the time and Hawk (A) had been instructed by DIR to descend from 2500ft to 1600ft, which took it through Hawk (B)'s level. The combination of TCAS in both ac warning of traffic and Hawk (B)'s call to Hawk (A) on Squadron Common meant that Hawk (A)'s crew also became aware of the apparent lack of separation and they decided to stop their decent and call their level to Hawk (B). This was the point that he in Hawk (B) elected to take a flinch descent to 1800ft. Had Hawk (A) continued the descent, no vertical separation would have existed as Hawk (A) would have descended to 1600ft - through Hawk (B)'s height - within 1nm whilst both crews were IMC.

THE VALLEY APPROACH CONTROLLER (APP) reports he was the initial point of contact for ac recovering to Valley. The Hawk pair free-called APP from VATA East separately; the first ac - Hawk (B) - requested a PAR, the second crew - Hawk (A) - called for a radar-to-initials approach 10-15nm SE of Hawk (B). Both ac were vectored to the N and descended to the Terrain Safe Level (TSL). He advised the crew of Hawk (A) they would be sequenced No4 in the pattern (this was due to their position and DIRECTOR already having 2 ac in the Radar Training Circuit (RTC). The pilot of Hawk (A) questioned this statement and confirmed that he was being fed for a radar-to-initials, but was told he was still No4 for sequencing. Both tracks were handed-over to DIR under TS.

VALLEY DIRECTOR (DIR) reports he was working the 2 Hawk ac under a TS, he thought, in an SSR only environment for individual approaches. The crew of Hawk (B) elected to approach via a PAR to RW19RH and was established on a base-leg from the E at 2000ft QFE. The crew of Hawk (A), also approaching from the E, elected for a radar-to-initial approach as the recovery state had recently changed from Instrument Recoveries Mandatory (IRM) to 'Carry Fuel for Radar' (CFFR). He provided a vector and a decent to 2500ft for Hawk (A) and called the PAR traffic - Hawk (B) - in the standard format; no 'visual' response was indicated by the pilot. Hawk (B) was vectored to 8nm from touchdown and handed to TALKDOWN L of centreline. In order to vector Hawk (A) to gain visual contact with the A/D, he elected to take the ac down the RH side (live side) of Hawk (B) on PAR as the cct was clear and Hawk (B) was L of the RW19 centreline on the PAR. Hawk (A) requested a further descent, which he denied due to the PAR traffic. He vectored Hawk (A) to the rear of Hawk (B) calling the traffic as standard for a second time; Hawk (A) was vectored inbound descending to 1600ft once he was satisfied no risk of collision existed. The faster 'radar to initial' Hawk (A) passed the PAR traffic on the latter's right hand side and he descended Hawk (A) to 1000ft; at 5nm the crew of Hawk (A) reported visual with the A/D and switched to TOWER.

THE VALLEY TALKDOWN CONTROLLER (TD) reports he was carrying out a PAR to RW19RH for Hawk (B). He had called PAR contact on the ac to DIR on the intercom at around the 8nm point and the crew instructed to contact him on Stud 7. Hawk (B) came on frequency at approximately 7nm; after a correct QFE read back he carried out the PAR in a normal manner. During the approach he observed a radar contact crossing from L to R behind Hawk (B). He was informed this ac was to join the visual cct and pass down the RH side of Hawk (B), so he informed the crew about the visual joiner to pass down their RH side. The joining ac – Hawk (A) - passed down the right hand side of Hawk (B) at about 5nm from touchdown and was showing at 2000ft with Hawk (B) started in descent on a 3° glidepath. He judged the traffic to be sufficiently separated against Hawk (B) at all times so continued the approach normally. The rest of the approach continued as normal, although the pilot of Hawk (B) asked if he had priority over cct and joining traffic at about 2 miles, after he had already been given a clearance to land.

THE VALLEY ATC SUPERVISOR (SUP) reports that the majority of station flying was complete, with just 4 Hawk T2 ac left to recover. Weather conditions were poor and the recovery restriction in place was CFFR. Having monitored the most recent recoveries, he suggested to the Duty Authorising Officer (DAO) that they implement IRM. The DAO agreed and IRM was implemented. Shortly afterwards the weather improved slightly and the DAO reverted to CFFR, so he returned to the ACR to monitor the situation. The crew of Hawk (A) called approach for a PAR recovery, was passed the CFFR and elected to recover radar-to-initial. He advised the controller to tell Hawk (A) that he was No4 in the pattern and would be sequenced accordingly. At this point he left the ACR to monitor the situation from the VCR and was only made aware of the close proximity of the 2 Hawk ac the following day when the Airprox was reported to ATC.

UKAB Note (2):

The Valley 1750UTC METAR: 19028KT 9999 -RA FEW017 OVC022 07/06 Q1019 WHT TEMPO 7000 RA SCT014 GRN=

The Valley 1850UTC METAR: 18027KT 9999 -RA OVC018 07/05 Q1018 WHT BECMG BKN014 GRN=

BM SAFETY MANAGEMENT reports that this Airprox occurred between 2 Hawks; Hawk (A) on a radar-to-initial recovery in receipt of a TS from Valley DIR and Hawk (B) on a PAR recovery whose crew had requested a DS from Valley DIR and TD. Both ac were operating IFR in IMC and in receipt of an ATS that was reduced as Valley were operating 'SSR only' without primary ASR.

All heights/altitudes quoted are based upon SSR Mode C from the radar replay unless otherwise stated.

The weather was reported by the Hawk pair as OVC at 1200ft with drizzle and both crews were flying in IMC throughout the incident sequence. The recovery state at Valley that afternoon had been changeable, alternating between VFR and IFR, with the DAO changing to a VFR recovery state immediately prior to the start of the incident sequence. The Valley FOB states that 'the minimum weather for the execution of visual circuits is 5km visibility and a 1000ft main cloud base. The normal visual circuit height is 1000ft QFE.' Valley was operating to RW19RH throughout the incident sequence.

DIR reports their workload at the time of the Airprox as medium to low, with low task difficulty, having been on console for 60mins. Their taskload history during that time was medium to high, controlling an IFR recovery wave in mainly IMC, with low to moderate task difficulty. Although the crew of Hawk (B) requested and was provided with a DS by DIR on initial contact, DIR stated in their report that they believed that Hawk (B) was under a TS and treated the ac as such during the remainder of the incident sequence. Subsequent to completing their DASOR, DIR has stated that they could not recall why they might have forgotten that Hawk (B) had requested a DS.

[UKAB Note (3): The crew of Hawk (B) contacted DIR at 1744:23, who responded, "*..identified descending 3 thousand feet Traffic Service*". The crew of Hawk (B) then countered, "*3 thousand feet and request Deconfliction Service [Hawk (B) C/S]*", which DIR agreed at 1744.35, [Hawk (B) C/S] *Deconfliction Service*"; this was then read back by the crew.]

At 1745:00, as the crew of Hawk (A) contacted DIR following a handover from APP. At this point, Hawk (A) was 9.6nm ESE of Hawk (B), tracking N'ly at 6000ft QFE; Hawk (B) was heading 360° at 3000ft QFE. The SUP has stated that he went to the VCR immediately prior to Hawk (A) contacting DIR and remained there throughout the incident sequence.

At 1745:11 the crew of Hawk (B) was instructed to descend to 2000ft QFE, reporting level at 1745:47. At 1745:19, Hawk (A) was instructed to descend to 3000ft QFE. At 1745:49, Hawk (B) was instructed to turn onto 270°. At 1746:04 Hawk (A) was instructed to turn onto 310°, at which point,

Hawk (A) was 9.4nm SE of Hawk (B), descending through 4200ft. At 1746:30, Hawk (A) was turned onto 270° and, at 1747:15, Hawk (B) was turned onto 220°.

At 1747:27, DIR passed TI to Hawk (A) on Hawk (B) stating, “*traffic right 1 o’clock, 5 miles [radar replay shows 7.9nm], similar heading, 2 thousand feet in the radar pattern*”, which was acknowledged by the crew of Hawk (A). Although this was after the point at which Hawk (B) had been turned onto 220°, it was an accurate representation as Hawk (B) did not commence the turn until 1747:28. At 1747:43, DIR instructed Hawk (A) to descend to 2500ft, with the ac reporting level at 1748:01. Shortly after, at 1748:09, DIR updated the TI to Hawk (A) on Hawk (B) stating, “*previously called traffic now 12 o’clock, 4 miles, crossing right-left, 2 thousand feet*”, which was acknowledged. Given the visual cct direction, that the visual circuit was known to be clear and that Hawk (B) was positioned to the E of the RW19 centre-line, DIR’s intention was to position Hawk (A) to the W of the centre-line, on the live side of the visual circuit.

At 1749:25, the crew of Hawk (A) requested, “*further descent when able*” which was acknowledged by DIR who stated, “*roger, standby in 3 miles.*” DIR reported that they delayed the descent to Hawk (A) due to the proximity of Hawk (B); at this point, Hawk (A) was 1.7nm NE of Hawk (B) with 500ft vertical separation indicated between the ac. This tallies with the report of Hawk (B) who stated that they ‘observed a contact, assumed to be [Hawk (A)], closing on TCAS from the 7 o’clock position 500ft above.’ It is reasonable to argue that Hawk (B) would have been displayed on Hawk (A)’s TCAS display.

At 1749:51, DIR instructed Hawk (A) to turn L onto 190°; Hawk (A) was 1.6nm N of Hawk (B). The turn onto 190° would have seen Hawk (A) parallel the centre-line 0.9nm to the W, with approximately 1.4nm lateral separation between the 2 ac; however, Hawk (A) initially turned to track approximately 170°, closing the displacement to 0.4nm W of the centre-line, before turning onto 190°. Subsequent to completing their report, DIR has stated that due to the update rate of the SSR at Valley, this ‘overturn’ by Hawk (A) was not visible on their surveillance display.

At 1750:15, content that ‘no risk of collision existed’, DIR instructed the crew of Hawk (A) to descend to 1600ft QFE; Hawk (A) was 1.9nm NW of Hawk (B), who was maintaining 2000ft QFE. At 1750:30, approximately 0.5nm from Hawk (B)’s descent point on PAR and following liaison with DIR, TALKDOWN advised Hawk (B) that there was a, “*visual joiner [Hawk (A)] passing your right-hand side.*” Hawk (A) was 1.3nm NW of Hawk (B), indicating 600ft above, and approximately 0.6nm W of the centre-line.

The lateral CPA occurred at 1750:50, as Hawk (A) indicating 200ft above Hawk (B) passed 0.9nm W of the latter. After the CPA, Hawk (A) continued to slowly converge with the centreline but was accelerating ahead of Hawk (B). At 1750:59, Hawk (B) appears to have commenced a descent; however, it is unclear whether this was as a result of their “flinch descent” or having commenced descent on the PAR.

The purpose of a radar-to-initial approach is to rapidly recover fast-jet ac in marginal weather through radar vectoring to an initial point, thereby facilitating the pilot’s visual acquisition of the airfield such that they can continue VFR. Regulatory guidance for the conduct of radar-to-initial approaches may be found within RA3025 and MMATM Chapter 25 Para 6 which states that:

‘When positioning aircraft for this type of approach the...controller **should** consider:

- a. Reported cloud base, visibility and weather.
- b. Approach lighting aids available.
- c. Director’s patterns and conflicting traffic.
- d. Other aerodromes’ traffic patterns.
- e. Airspace restrictions.
- f. Terrain clearance.

Understandably, this does not provide detailed information on the separation standards to be applied between Radar-to-Initial traffic and other IFR traffic conducting instrument approaches. The RAF Valley FOB does not contain detailed guidance on the conduct of Radar-to-Initial approaches.

CAP 774 Chapter 3 Para 1 states that under a TS:

‘Controllers may provide headings and/or levels for the purposes of positioning and/or sequencing; however, the controller is not required to achieve deconfliction minima, and the avoidance of other traffic is ultimately the pilot’s responsibility.’

CAP 774 Chapter 4 Para 7 guidance material states that under a DS:

‘When aircraft are in the initial stages of departure or on final approach, due to limited aircraft manoeuvrability...deconfliction minima do not apply...and avoiding action is instead aimed at preventing collision...The procedures regarding deconfliction advice to aircraft on...final approach are designed to cater for ‘pop up’ conflicts over which the controller has no advance warning due to the uncontrolled nature of Class G airspace. Controllers should attempt to co-ordinate and deconflict observed traffic prior to allowing the...final approach of an aircraft that is...receiving a Deconfliction Service.’

RA 3024 and MMATM Chapter 24, Para 43 states that:

‘The PAR controller...will provide the pilot with the necessary information to avoid a collision rather than to maintain any specified separation distance.’

Teaching at the CATCS states that within 10nm of the aerodrome, irrespective of the ATS provided to ac on an instrument approach, radar-to-initial traffic may be descended through the level of instrument traffic, if the pilot of the radar-to-initial traffic is visual with the instrument traffic. This descent is given without reference to the pilot of the ac conducting the instrument approach. However, it should be stressed that this is teaching at CATCS and does not represent Policy or Valley local orders.

Insofar as this Airprox is concerned, DIR incorrectly believed that Hawk (B) was in receipt of a TS, rather than a DS and issued an instruction to Hawk (A) to descend through Hawk (B)’s level. This suggests that either the FPS was not amended to reflect the fact that Hawk (B) requested a DS on handover from APP, or that the controller did not check the FPS prior to issuing the instruction and was relying on their memory. Unfortunately, it has not been possible to determine which of these hypotheses is correct. In the respect that DIR believed both ac to be in receipt of a TS, they correctly applied vertical deconfliction minima between Hawk (A) and Hawk (B) until the point where they determined that no collision risk existed and then permitted Hawk (A) to descend through Hawk (B)’s level. However, in accordance with CATCS teaching, DIR did not check that Hawk (A) was visual with Hawk (B) prior to issuing the instruction to descend. However, had both ac been under a TS, as DIR erroneously believed, then, in accordance with CAP 774, there was technically no requirement to deconflict the two ac, other than to avoid a collision. From TD’s perspective, in accordance with CAP 774 and the MMATM, the controller correctly assessed that the respective tracks of Hawk (A) and Hawk (B) would not result in a risk of collision and continued the PAR.

An aggravating factor in this incident was the turn by Hawk (A) at 1749:51 that initially tracked 170°, thereby reducing the lateral separation between Hawk (A) and Hawk (B). Whilst neither causal nor contributory in this Airprox, it is worthy of note that Hawk (A) was in receipt of a TS in sustained IMC when a DS was available.

Whilst the Airprox itself is relatively un-complicated, it has raised questions over the interaction between ac executing a radar-to-initial approach - by implication a visual approach - and ac conducting instrument approaches. Specifically, the teaching at the CATCS and in wide use within military ATM that once the radar-to-initial ac becomes visual with the instrument traffic, radar-to-initial traffic may be given descent through the level of the instrument traffic, without reference to the pilot

of the instrument traffic and irrespective to that ac's type of ATS. This is suggestive of the operating assumption within Class D airspace that VFR traffic will avoid IFR traffic. Given the speed differential between instrument and radar-to-initial traffic, the application of deconfliction minima would be difficult to implement and would negate the purpose of a radar-to-initial approach to be more expeditious. Moreover, one interpretation of CAP 774 Chapter 4 Para 7 could suggest that once the ac on instrument approach had commenced their descent under a DS, then DIR and/or TD only need to ensure collision avoidance, rather than apply the more stringent deconfliction minima. Consequently, whilst the extant procedure is understandable and pragmatic, BM SM contends that it is reasonable to expect that this modus operandi should be explicitly stated, such that it is obvious to aircrew and ATM personnel alike.

The Airprox was caused by DIR's instruction to Hawk (A) to descend through the level of Hawk (B), caused by their incorrect recollection of the type of ATS to be provided to the crew of Hawk (B). A contributory factor was that DIR had not confirmed that Hawk (A) was visual with Hawk (B) prior to issuing the descent.

RECOMMENDATION

BM SM recommends that RAF ATM Force Cmd examine the findings of this investigation vis-a-vis the interaction between ac under a radar-to-initial approach and ac conducting instrument approaches.

OUTCOMES

The Unit conducted a thorough investigation of this Airprox. Lessons learnt were disseminated to both controllers and aircrew, specifically relating to the conduct of radar-to-initial approaches and the advisability of sustained flight in IMC when a DS is available. Further work is being conducted to review the FOB in relation to radar-to-initial approaches and the weather minima pertaining to them.

HQ AIR (TRG) comments that whilst the controllers did their best to assist the pilots in their collision avoidance responsibilities, the lack of any explicit requirement to confirm that the overtaking pilot is visual and happy to descend through the other traffic's height allowed this situation to develop. As it was, both crews were very aware of each other's proximity through TCAS and were not sufficiently comfortable to follow the instruction. The lack of any clear responsibility of a controller with respect to collision avoidance under a TS, save the guidance in CAP 774 that they should not vector (or climb/descend?) ac into conflict, may have influenced the pilots' decision not to accept the descent when it was first offered. BM SM's point about operating IMC under a TS is valid. Whilst it can be entirely safe, for it to be so relies on high quality information from ATC about what traffic has and has not been coordinated. Given the need to achieve deconfliction minima, such combinations of approaches might not be compatible under a strictly applied DS. The review of the FOB is welcome and will need to address the particular recovery procedures in place at RAF Valley. Consideration of the compatibility of the various recovery states, weather conditions and ATS applied will be essential. The RAF ATM Force Cmd examination of the issues raised by this Airprox is also welcomed so that any problems identified can be addressed across the RAF, through the Regulator if required.

In summary, believing that no deconfliction minima applied the controller ensured that there was no actual risk of collision, but the crews were concerned by their proximity given that they were in IMC.

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 video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

Albeit that this was a 'reduced' radar service with Valley operating with SSR only, it was clear that this Airprox report had been submitted principally from the conflict that could have arisen if he had

descended in accord with DIR's instructions, coupled with DIR's misperception of the ATS required by the crew of Hawk (B). In this occurrence DIR had agreed a DS with the crew of Hawk (B) before handing the ac to TALKDOWN but then vectored Hawk (A) closer to Hawk (B) than DS minima require. The BM SM investigation also calls into question the responsibilities of controllers when vectoring traffic for recovery under a TS amongst instrument traffic under a DS and *inter-alia*, the applicable policy, procedures and training of controllers.

Irrespective of whether a TS or DS was provided, a Member opined that both crews had a reasonable expectation that they would not be vectored by ATC into close quarters with one another during the recovery. Whilst DIR might not know whether the crews were IMC, he should have asked the pilot of Hawk (A) if he was visual with Hawk (B) before issuing a descent instruction to 1600ft QFE through Hawk (B)'s height of 2000ft QFE, whilst still overhauling within close proximity of the latter. Although the crew of Hawk (A) had earlier requested further descent from 2500ft QFE "*..when able*", the controller recognised that at that point the ac were still potentially in conflict and delayed the descent accordingly. Here, DIR reports, he was applying a TS to both ac and not applying DS minima around Hawk (B). Whilst this might be perceived to be in accord with the guidance contained within CAP 774 Chapter 4 Para 7 where '*...deconfliction minima do not apply...and avoiding action is instead aimed at preventing collision...*', the CAA Policy and Standards Advisor opined that this was not applicable in the context of this Airprox and explained that this point is aimed at balancing traffic avoidance procedures on final approach against the terrain risk at low-level. Nevertheless, the BM SM Advisor emphasised that 500ft vertical separation should have been applied between Hawk (A) and Hawk (B) until the pilot of Hawk (A) had reported visual with Hawk (B) and the latter afforded a DS. The Naval Member perceived that the two ac should have been sequenced and separation maintained; he questioned the ATC Supervisory aspects as it seemed the SUP was 'out of the loop' at a critical point and the difficulties of one person supervising the controllers in both the VCR and ACR in difficult weather conditions was illustrated here. RN Air Stations employ a DATCO in the VCR who also co-ordinates between the O-i-C of Flying and the Radar Supervisor to ensure the recovery state is appropriate, whereas at RAF A/Ds, as here, the recovery state is decided by the DCF in consultation with the DAO.

Some Members were concerned that the crew of Hawk (A) continued to operate under a TS whilst flying IMC, in cloud. This had been addressed within the HQ Air (Trg) comments, who considered it to be entirely safe when high quality TI was available from ATC. Members accepted that a TS could be requested by crews operating IMC in cloud within the provisions of CAP774; whilst it might not be prohibited the guidance within CAP774 suggests it might not be appropriate when other radar services are available and some pilot Members considered it unwise. The HQ Air (Ops) Member opined that the pilot of Hawk (A) had stuck with a TS, perhaps perceiving that he would obtain visual contact with the A/D in relatively short order. Here the lesson for aircrew was to ask for a DS, and for controllers, wherever feasible, to ensure that you provide what is agreed.

The Board recognised that the Hawk ac involved were Mk2 types, which had the benefit of a TCAS fitment. Although provided with TI by ATC about each other, this Airprox illustrates the enhanced SA provided to both fast-jet crews by their TCAS equipment, which enabled them to rapidly appreciate that both ac were in close proximity. A quick call on the RT established that they were both flying in IMC, in cloud, with minimal in-flight visibility. It was clear that this additional knowledge convinced the pilot of Hawk (A) to sensibly delay his descent through Hawk (B)'s height of 2000ft QFE when instructed by DIR so to do. Whilst some Members opined that the pilot of Hawk (B) should have advised DIR that he was not complying with this instruction immediately, the Board agreed that this was a wise decision on the part of the pilot of Hawk (A) and had prevented a more serious situation from developing. Taking all these factors into account the Board concluded that this Airprox had resulted because the crew of Hawk (A) was instructed to descend through the level of Hawk (B) without confirmation that Hawk (A) pilot was visual with Hawk (B). As to the inherent Risk, it was clear that Hawk (A) pilot's decision not to follow DIR's instruction to descend had forestalled any potential for a conflict with Hawk (B) as he overhauled it 0.9nm away to port. Although he could not see it, TCAS plainly told the pilot of Hawk (A) exactly where Hawk (B) was in the vertical plane and, accelerating ahead of it, he descended through Hawk (B)'s level after the range had increased. This,

coupled with the pilot of Hawk (B)'s instinctive 'flinch' descent led the Board to conclude that no Risk of a collision had existed in the circumstances conscientiously reported here.

Having determined the Cause and Risk, it was evident from the BM SM investigation that there was an anomaly between the teaching at CATCS, current custom and practice 'in the field' and the regulatory aspects of the provision of a DS to instrument traffic when radar-to-visual recoveries were also being sequenced in the radar pattern for recovery in marginal weather conditions. It was apparent that student controllers at CATCS are being taught to descend radar-to-visual traffic through the level of instrument traffic under a DS if the pilot of the radar-to-visual traffic is in visual contact with the instrument traffic, irrespective of DS minima being provided to the ac on the instrument approach. This widely used but undefined procedure allowed DIR to overtake Hawk (B) if visual separation was effected by the crew of Hawk (A). A civilian controller Member opined that as this Airprox stemmed from a singular error by a controller, it might not warrant a recommendation from the Board to review the regulations and Valley were already conducting a review locally. Although the MAA Advisor suggested that the extant ATM Regulations and Acceptable Means of Compliance for individual radar-to-visual procedures were appropriate, the MAA shared HQ ATM Force's concern, expressed through the BM SM report, on the appropriate selection of ATS by aircrew and the local ATC policy on services provided to ac undertaking various recovery procedures in relation to the extant meteorological conditions. Whilst the MAA does not determine Policy, the Authority undertook to engage where a review of policy or change might be recommended by the UKAB. The CAA Policy and Standards Advisor agreed that the investigation of this Airprox had revealed an anomaly between the provisions of CAP774 UK Flight Information Services – the joint civil/military document defining ATSOCS co-sponsored by the CAA and MAA - wherein the requirements for a DS are specified for military and civilian controllers alike. The BM SM Advisor contended that there is no specific guidance to ATCOs or aircrew when vectoring traffic for a radar-to-initials recovery under a TS amongst instrument traffic under a DS. Moreover, any descent of radar-to-visual approaches through the level of ac conducting instrument approaches under a DS breaches the planned deconfliction minima, which CAP774 does not permit. Whilst this is a technicality, he opined that as long as this common but undefined procedure is followed correctly it is safe. The CAA Advisor agreed that CAP774 does not offer the scope to effect the foregoing. Although the Board might wish to make a Safety Recommendation if the Members considered it appropriate, with the agreement of the BM SM and MAA Advisors present, the CAA Policy and Standards Advisor undertook to liaise with the MAA to establish a suitable 'regulatory enabler' within CAP774 that would allow a defined military specific radar-to-visual procedure to be promulgated, without contravening the requirements of a DS. The Board agreed that this was a pragmatic way forward, thanked the CAA Policy and Standards Advisor for his pre-emptive action, and requested that he keep the Board closely apprised of progress on this topic.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Hawk (A) was instructed to descend through the level of Hawk (B) without confirmation that Hawk (A) pilot was visual with Hawk (B).

Degree of Risk: C.

Action: CAA AATSD will liaise with MAA to establish a suitable 'regulatory enabler' within CAP774 that will allow a defined military specific radar-to-visual procedure to be promulgated without contravening the requirements of a DS.