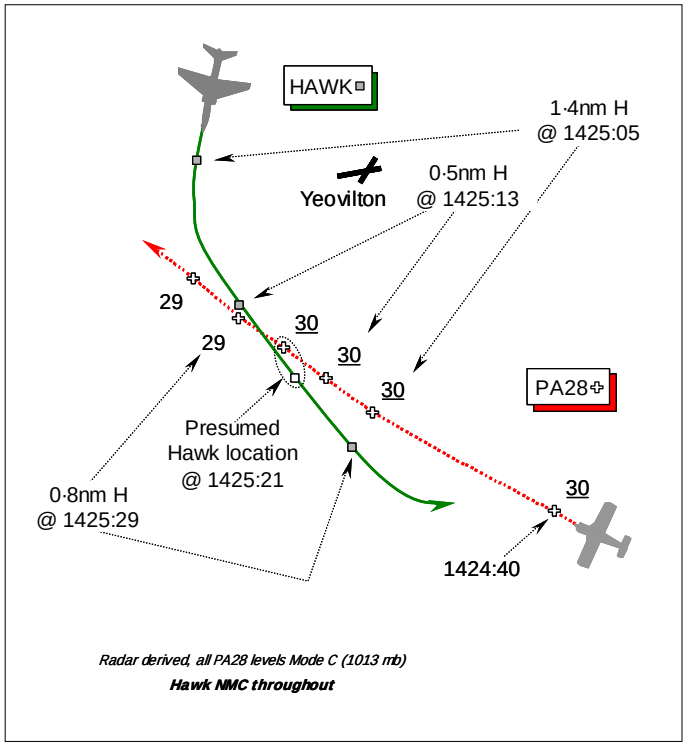
AIRPROX REPORT No 2010066

Date/Time:	2 Jun 2010 1425Z	
Position:	5059N 00238W (2nm S of Yeovilton A/D - elev 75ft)	
Airspace:	MATZ/FIR	(*Class:* G)
	Reporting Ac	*Reporting Ac*
Type:	Hawk T Mk1	PA28
Operator:	HQ Navy	Civ Pvt
Alt/FL:	3200ft QFE (1020mb)	3000ft QNH
Weather:	VMC CLBC	VMC CLOC
Visibility:	15km	>10km
Reported Separation:	100ft V/nil H	100ft V
Recorded Separation:	Not recorded	



BOTH PILOTS FILED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE HAWK T Mk1 CAPTAIN, the PNF in the rear seat, reports he was conducting a local training sortie from Yeovilton and was operating in the visual cct to RW27 whilst in communication with TOWER on 375·575MHz. SSR was selected to off.

After rolling from a normal 1000ft visual cct the PF requested a climb to HIGH KEY - 4500ft QFE (1020mb) – for a PFL. An initial climb to 3000ft QFE was approved by TOWER before subsequent approval to climb to HIGH KEY. The PF called his position at HIGH KEY – but at only 3800ft QFE, his intentions being for a touch and go and was asked by TOWER to report when at LOW KEY. Whilst approaching LOW KEY his ac was in a LH turn at about 20° AoB through 120° at 180kt descending through approx 3200ft QFE some 800ft below cloud, when the ac captain suddenly saw a white civilian light ac pass 100ft directly beneath his Hawk, flying straight and level heading NW in the opposite direction. No avoiding action was taken because of the late sighting and he assessed the Risk as 'very high'. TOWER was informed on RT about the civilian ac and the controller subsequently advised them that it was a MATZ overflight at 3000ft. He added that because of his banked L turn, coupled with the PA28's direction of approach, the other ac was obscured by his ac's fuselage. Furthermore, the focus of attention in his cockpit was towards the RW.

The Hawk has a black colour-scheme; the red HISLs and nose light were all on.

THE PA28 PILOT reports that he was in transit under VFR from Bournemouth Hurn to Perranporth and was in receipt of a BS from Yeovil Radar – located at Yeovilton – on 127·35MHz and the assigned squawk of A0245 was selected with Mode C on.

Cruising level at an altitude of 3000ft, in VMC with an in-flight visibility of >10km, he had requested MATZ penetration from Yeovilton ATC that had been approved. Heading 295° at 100kt overhead Yeovilton, a Hawk was first seen 500ft away, before passing 100ft port abeam and above his aeroplane flying straight and level; there was no warning from Yeovil Radar. He assessed the Risk of collision as 'medium', but if the Hawk had been on a reciprocal heading, a collision was possible. No avoiding action was taken as the jet passed abeam. Despite being under BS, he stressed he was

maintaining 3000ft in accordance with the MATZ penetration approval and opined that Yeovilton should have warned him of the Hawk's actions. The flight was continued but he had to divert to Plymouth due to bad weather at Perranporth. His ac has a white and purple colour-scheme; the HISL and anti-collision beacon were on.

UKAB Note (2): The Yeovilton 1350UTC METAR was: 360/04kt; Vis 9999; Cloud BKN 3000ft; QNH 1022mb BLU NOSIG. The Portland RPS 1400-1500UTC was 1018mb.

YEOVILTON ATC reports that the combined APPROACH/DIRECTOR (APP) had been closed up on console for about 1hr with low to moderate traffic intensity and had switched a Hawk pair to TOWER for a visual join on RW27. Some 5-10mins later the ADC rang to ask for HIGH KEY for a Hawk. After a cursory check of the radar display this was approved and the phrase 'local [TOWER] has High Key' shouted around the ACR. LARS had not passed TI to APP because the PA28 transit ac was correctly displaying a Mode A squawk with Mode C. Furthermore, because it was at 3000ft RPS it was above the MATZ and was not, therefore, technically a 'MATZ crosser'. Neither the LARS controller nor the Radar Supervisor heard the 'local has HIGH KEY' message. A subsequent replay of the Yeovilton ASR and voice recordings at the time of the request for HIGH KEY from the ADC, show the PA28 displayed about 1½nm S of Yeovilton, with Mode C information.

UKAB Note (3): Analysis of the radar recording is inconclusive as the Hawk is only shown as a primary contact (SSR off) for 3 sweeps over the period of the Airprox as it circles the aerodrome. The PA28 is clearly shown on a NW'ly course at 1424:40, maintaining a level cruise at 3000ft (1013mb), which equates to a height of about 3210ft QFE (1020mb) and therefore above the upper limit of the MATZ. First shown at 1425:05, the Hawk is 0·7nm W of Yeovilton in the PA28's 12:30 position at a range of 1·4nm. Horizontal separation between the two ac reduces to 0·5nm as the Hawk draws slightly L, but still ahead of the PA28. At the next sweep the Hawk is not shown at all; by interpolation the CPA, which cannot be determined, is presumed to have occurred with the jet passing just marginally to port as the ac crossed, as reported by the PA28 pilot. After the ac pass each other the Hawk is shown once again in the PA28's 7 o'clock, the latter having descended 100ft to an indicated 2900ft (1013mb).

SATCO YEOVILTON comments that this is a disappointing Airprox from the ATC perspective. Whilst it could be argued that this was a VFR encounter and that the onus was on the Hawk crew to clear their flight path in the Class G airspace above the MATZ before commencing the PFL, there was a procedure which should have given information to them on any traffic likely to conflict with their stated intentions. The ATC investigation has shown that the procedure was followed, but that APP did not notice the PA28 MATZ overflight nor did he get a positive acknowledgement from the LARS controller, who would have then alerted him to the presence of the MATZ overflyer. The question from the ATC perspective is why this information about the PA28 MATZ overflight did not reach the Hawk crew. The APP controller has confirmed he was fully aware of the procedure and he understood the reason why the ADC requests HIGH KEY, this understanding has also been tested amongst the other qualified controllers and all claim to be cognisant of the procedure and any required actions. APP claims he looked at the radar display but did not see the PA28; however, subsequent radar replays clearly show the ac displayed.

It appears there are Human Factors at work here. I suspect that there was an element of under arousal and of over familiarity, in that HIGH KEY is normally given to Local without any comment or restriction. This Airprox and the subsequent Safety Survey were the subject of lengthy discussions during a recent Safety Management Executive meeting. The main recommendation from the survey, that controllers be reminded of the relevance and importance of High Key requests, has been adopted; the other recommendations remain under review. In addition, the ATC Fixed Wing Liaison Officer will be discussing the procedure in detail with Naval Flying Standards Flight (NFSF) to ensure all parties are fully aware of what each other is intending to do and what they should be expecting from each other at all stages of the procedure; it is possible, though less likely, that this incident could have occurred whilst the Hawk was climbing to High Key.

Addendum:

The Safety Survey has now been submitted and whilst it was felt that overall the procedures in place are fit for purpose, it does make several recommendations that will enhance them. Firstly Yeovilton ATCOs will be reminded of the relevance and importance of High Key requests. Secondly when a Hawk is in the visual cct, traffic information will be passed to ADC for any traffic crossing through or over the MATZ at or below 5000ft. Finally all requests for High Key will be passed through the Radar Supervisor who will maintain an overview of both the APP and LARS positions. At RN Air Stations the Radar Supervisor's place of duty is in the ACR where they remain closed up for the whole period of their watch, therefore, this change of procedure will not necessarily read across to other military aerodromes where this isn't the case. Two other minor recommendations were made in the survey but these have not been adopted at this time. NFSF (FW) was consulted as part of the Survey process, as were CFS, RAF Valley and Boscombe Down.

HQ NAVY CMD endorses SATCO's comments. Whilst the circumstances leading to this AIRPROX are disappointing, the Unit should be commended for their thorough actions to mitigate the risk of further occurrences.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, radar video recordings, reports from the air traffic control unit involved and comment from the appropriate operating authority.

The Board commended the ATSU for their laudably frank report. It was plain they had identified a weakness in their local procedures and taken appropriate measures to reduce the potential for a recurrence by modifying their liaison arrangements between the ADC in the VCR and radar controllers in the ACR.

It was apparent that, despite both flights being in receipt of an ATS from controllers at the same unit, the APP controller had not been aware of the presence of the PA28 transiting overhead the aerodrome when he approved TOWER's request for the Hawk to climb for the PFL. The PA28 was evident on the Unit's radar recording and thus APP should have seen it before he approved the request for HIGH KEY and broadcast this in the ACR. Controller Members recognised that APP's message that 'local has HIGH KEY' had not reached the ears of LARS. Although this controller was only providing a BS to the PA28 pilot, LARS would undoubtedly have questioned the climb of a jet to HIGH KEY if he had known about it. Thus, unaware that local aerodrome traffic was going to climb out of the cct area in close proximity to his transit traffic, the non-squawking Hawk not being evident in the radar overhead, an opportunity was lost to forestall this close quarters situation and LARS was unable to warn the PA28 pilot about the Hawk, which the Board agreed was part of the Cause.

Following APP's approval, and without any knowledge of the PA28 transiting through the airspace between HIGH and LOW KEY above the normal cct area in the MATZ either, TOWER approved the Hawk pilot's PFL request. If the ADC had been aware of the PA28's transit from prior co-ordination, or had spotted the ac on the local Aerodrome Traffic Monitor (ATM) beforehand, then he might have been able to provide a warning. As it was the ADC had no knowledge of the PA28 until it was spotted by the Hawk pilot passing beneath his ac. The Board agreed that the Hawk pilot could reasonably have expected TI about ac known by ATC to be passing through the MATZ, or in the vicinity, and this lack of TI to the Hawk pilots was also part of the Cause.

Accepting that ATC should have played their part more fully in averting this Airprox, pilot Members emphasised the importance of lookout, both in the visual aerodrome cct and also whilst transiting Class G airspace. Ultimately, it was a pilots responsibility to 'see and avoid' other ac in this situation, with or without the assistance of ATC. A pilot Member noted that pilots in receipt of a BS should not expect TI as a matter of routine. Their lookout scan should be robust enough to see traffic in time to avoid it and even though the PA28 pilot had requested a MATZ penetration - but here was actually flying just above the MATZ - both ac were operating in Class G airspace where not all ac will be known to ATC. Notwithstanding the reasonable presumption that ATC was providing a service to

both pilots and should have told them about each other, each had a duty to lookout and sight the other in time to effect appropriate separation. In this instance the Hawk PNF had not seen the PA28 until it passed 100ft directly beneath his Hawk; no avoiding action was taken because of the late sighting thus, in the Board's view, he was unable to affect the outcome and this was, effectively, a non-sighting. Similarly, the PA28 pilot took no avoiding action as the jet passed 100ft port abeam after first sighting it 500ft away he reports. The radar recording reflects that the PA28 descended marginally after the CPA and that the jet was turning head-on; since the Hawk was also descending on its PFL, it was not flying straight and level as the PA28 pilot thought. Taking all these factors into account, the Board concluded that this Airprox had been caused because TI was not passed to either ac leading to effective non-sightings by the pilots in both ac.

Turning to the inherent Risk, the Board is charged with assessing Airprox on the basis of what actually happened and not what might have occurred if the situation had been slightly different. The Hawk pilot looking from above had assessed the Risk as 'very high' and some Members agreed that with no positive action to ensure separation an actual risk of a collision had existed. Other Members took the view that even though neither pilot had sighted the other's ac in time to take positive action, the PA28 pilot reports that about 100ft of horizontal separation had existed as the Hawk passed abeam. Despite the absence of a radar contact on the Hawk at the moment they passed each other, this seemed to be supported by the radar recording which suggested to Members that although safety margins had been eroded significantly the two ac would not have collided. Following considerable debate, the Board voted to conclude that the safety of the ac involved had been compromised.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: TI was not passed to either ac leading to effective non-sightings by the pilots in both ac.

Degree of Risk: B.