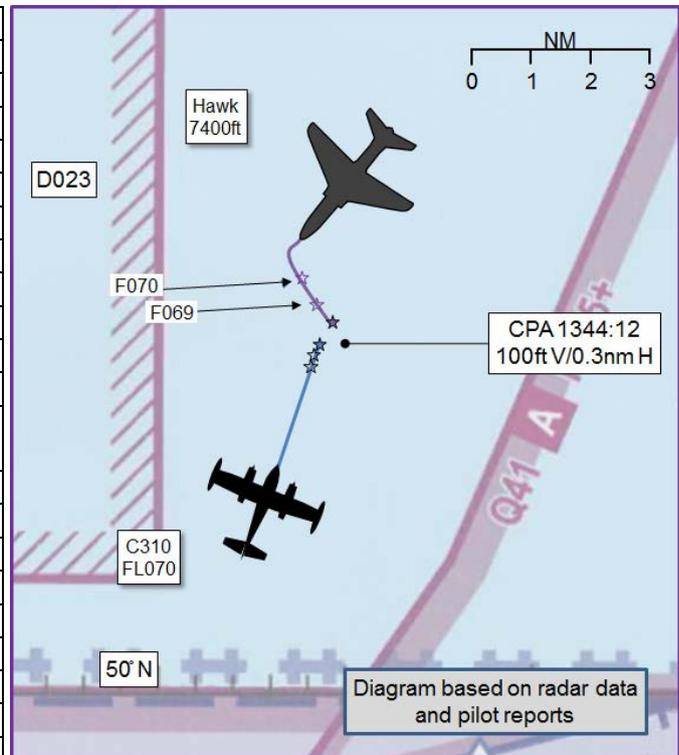


**AIRPROX REPORT No 2016056**

Date: 19 Apr 2016 Time: 1445Z Position: 5008N 00208W Location: IVO Plymouth Exercise Areas

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	Hawk	C310
Operator	RN	Civ Pte
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Traffic	Basic
Provider	HMS Daring	Plymouth(Mil)
Altitude/FL	FL069	
Transponder	A,C	A,C,S
<b>Reported</b>		
Colours	Black	White, Blue
Lighting	HISLs Nav, Landing	Beacon, Strobes
Conditions	VMC	VMC
Visibility	>20km	>25km
Altitude/FL	7400ft	FL70
Altimeter	QNH (1027hPa)	1013hPa
Heading	185°	025°
Speed	280kt	170kt
ACAS/TAS	Not fitted	Not fitted
<b>Separation</b>		
Reported	0ft V/400m H	75ft V/150m H
Recorded	100ft V/0.3nm H	



**THE HAWK PILOT** reports that he was involved in an exercise in the Plymouth south coast exercise areas, conducting intercepts on a Falcon. He was manoeuvring to shadow the Falcon and was in a descending turn at approximately 7400ft. Traffic Information was given by the Fighter Controller as a 'pop-up group' at 10nms and 10,000ft; it was not passed as unknown traffic, which led the pilot to believe it was exercise traffic. Cockpit workload was high as the Hawk pilot was keeping visual with the Falcon below him, and maintaining clear of adjacent controlled airspace, when he saw the conflicting traffic at a similar height, about 500m away. No avoiding action was taken due to the late sighting. He reported an Airprox, which was acknowledged by the Fighter Controller and the Plymouth(Mil) Radar Controller.

He assessed the risk of collision as 'Low'.

**THE C310 PILOT** reports that he was south of 50N routing northbound and receiving a service from Jersey. He wanted to route west of airway Q41 and Jersey asked him to contact Plymouth(Mil) to advise them of his presence, which he duly did. Sometime later, at about 50N, Jersey said that Plymouth (Mil) had traffic in the area and would like him to switch to their frequency, giving him a Plymouth(Mil) Squawk. On hand-over, the Plymouth(Mil) controller advised that there was two jets manoeuvring to the north. The weather was good and he could see both aircraft, 15-20 miles away, and could tell that one was an FRA Falcon, so he reported visual. His route took him through the 'gate' between Q41 and Danger Area D023 and, once through it, he took up a north-easterly heading to parallel Q41 and keep clear of the further danger areas to the north. Some 5 minutes later the two jets flew south, with the Falcon some way ahead, it passed down his right-hand-side about 1000ft below. The Hawk, which had been at a higher altitude than the C310 when further north, now descended below his level, before climbing slightly and flying a graceful arc with moderate bank across his front right quarter and down his right-hand-side whilst heading southbound. The flight path of the Hawk led the C310 pilot to believe that it was a deliberate fly-past at safe distance. He did not

consider that there was a collision risk and, although he did disconnect his auto-pilot in readiness, he did not see the need to take action. Thinking that it was a 'hello' flypast, he didn't think to mention it to the Plymouth(Mil) controller and was therefore surprised some minutes later when the controller advised that the Hawk had reported an Airprox. The controller advised that there was some confusion by either the Hawk pilot, or the C310 pilot about which airspace the C310 was in. The C310 pilot noted that he was guided by 3 on-board map GPSs.

He assessed the risk of collision as 'None'.

**THE PLYMOUTH(MIL) LARS WEST CONTROLLER** reports that the Hawk had been handed over to HMS Daring to conduct Combat Air Patrol as part of the standard Tuesday Air Defence Exercise. Whilst under a Traffic Service from them, the Hawk pilot called 'Airprox, Airprox' and passed a description of a light twin-prop fixed-wing aircraft approximately 500ft above. The Plymouth(Mil) controller had heard the fighter Controller give Traffic Information prior to this, but it had been notified as a 'late call' and at 12,000ft. The traffic was not visible on the controller's display because he was operating on the Culdrose/Wembury radar in his role as LARS West, and the Airprox took place outside the range of his radar display. Upon speaking to the LARS(East) controller it became apparent that there was a C310 transiting northbound, outside EG-D023 and within Class G airspace at FL70. It was thought that the LARS(East) had given Traffic Information, and the C310 pilot had called visual.

He perceived the severity of the incident as 'Medium'.

**THE HMS DARING FIGHTER CONTROLLER (FC2)** reports that she was controlling a single Hawk under a Traffic Service. The Hawk was tracking east at 8000ft to intercept aircraft in the eastern sector of the exercise area. As the Hawk approached the other exercise traffic, the controller became aware of unknown traffic approaching from the south. The unknown traffic was at a range of 7nm when she believed she called 'late call, stranger BRAA<sup>1</sup> south 7, 12,000 tracks north'. The Hawk pilot acknowledged and continued. The controller tried to use the radar to determine the height of the unknown track; it had no Mode 3 IFF but the Mode C was indicating FL70. For the next two minutes the unknown traffic continued to track north and passed in front of the Hawk. When it was about 2nm north-east, the Hawk pilot reported an Airprox, saying the traffic had over-flown him by 500ft. Further radar interrogation indicated that the unknown track did have Mode 3 and was wearing a Plymouth(Mil) squawk.

He perceived the severity of the incident as 'Medium'.

**THE FC SUPERVISOR** reports that, during the training exercise, he was employed in the Ops room with no aircraft under his control, reading air warnings and assisting with the picture compilation. FC2 was controlling a single Hawk in order to intercept a pair of Falcons closing in from the east. During the closing stages of the intercept, an unknown aircraft was approaching from the south, at first in the French FIR and outside the areas allocated for the serial. The FC2 gave Traffic Information to the Hawk at a range of 7nm, which was acknowledged. There was a poor IFF response from the unknown aircraft, it wasn't showing Mode 3A, so he initiated manual integration of the track. The unknown aircraft flew in front of the Hawk, and subsequently the IFF squawk indicated a 4521 squawk.

## Factual Background

The weather at Bournemouth was recorded as follows:

METAR EGGH 191420Z 17004KT 050V190 9999 SCT042 14/05 Q1027=

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<sup>1</sup> BRAA – Bearing, Range, Altitude and Aspect relative to the aircraft being controlled.

A portion of the RT transcript is reproduced below:

From	To	Speech Transcription	Time
Freddie <sup>2</sup> (ASACs)	Hawk	[Hawk c/s], Late call, group BRAA south 5, (pause) 12 thousand, tracks north	1343:02
Hawk	Freddie	[Hawk c/s]	1343:09
Hawk	Freddie	[Hawk c/s] (inaudible possibly 'height please/tally 2')	1343:19
Hawk	Freddie	Freddie, [Hawk c/s] Airprox, Airprox	1344:16
Hawk	Freddie	A twin engine light civilian aircraft, just passed by me about 500 feet above.	1344:23
Freddie	Hawk	[Hawk c/s]	1344:57
Plymouth(Mil)	Hawk	[Hawk c/s] Plymouth request the details	1345:00
Hawk	Plymouth(Mil)	OK it's a twin engine light civilian aircraft, propeller. (Pause) It was white, about 500 feet above me, I was 7500 feet. (Pause) Looked to be heading approximately north easterly.	1345:03

### UKAB Secretariat

The Hawk and C310 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>3</sup>. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right<sup>4</sup>. If the incident geometry is considered as converging then the Hawk pilot was required to give way to the C310<sup>5</sup>.

### Comments

#### Navy HQ

In compiling comment, reports from both pilots and controllers have been utilised and discussion with RNSFC and FOST has increased understanding of wider issues. The reports illustrate a discrepancy between reported heights and ranges at which traffic was called, so the tape transcript from Plymouth(Mil) has also been examined. Both the Hawk and C310 were in class G airspace under TS.

The C310 received accurate and timely Traffic Information from Plymouth(Mil) regarding both the Hawk and a Falcon with which it was operating. C310 pilot reported visual with both, felt no need to make any alteration of course or heading, and assessed there was no risk of collision.

The RN Hawk received Traffic Information from the HMS Daring Fighter Controller (1343:02 from the transcript) but this was inaccurate, gave little notice, and phraseology was tactical (as he would expect due to being involved in an Air Defence Exercise) rather than following the format of CAP 413. Incorrect classification of the C310 as a "Group" rather than "Stranger" led the Hawk pilot to believe that this contact was exercise traffic and therefore coordinated by height sanctuaries. The height of the C310 was passed as 12000ft (rather than the actual FL70) vs the Hawk at 7400ft. Consequently, the Hawk pilot considered he could disregard this traffic as a possible confliction. The Hawk pilot's manoeuvre to take up station with the Falcon meant he first became visual with the C310 very late, and was unable to take any action to avoid. Even though he assessed the risk of collision as low, his late sighting of the C310 and poor SA were cause for concern.

<sup>2</sup> Freddie is military terminology for a ship-borne fighter controller.

<sup>3</sup> SERA.3205 Proximity.

<sup>4</sup> SERA.3210 Right-of-way (c)(1) Approaching head-on.

<sup>5</sup> SERA.3210 Right-of-way (c)(2) Converging.

## Summary

An Airprox was reported when a Hawk and a C310 flew into proximity at 1445 on Tuesday 19 April 2016. Both pilots were operating under VFR in VMC, the Hawk pilot in receipt of a Traffic Service from HMS Daring and the C310 pilot in receipt of a Basic Service from Plymouth(Mil).

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

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controller and fighter controller involved and reports from the appropriate ATC and operating authorities.

The Board first looked at the actions of the Hawk pilot. It was noted that the Airprox took place outside of the danger area, and some members of the Board wondered whether this had a bearing on the incident. Although noting that the Hawk and Falcons were perfectly entitled to operate in that location, members opined that it was a small and confined piece of airspace, with CAS to the East which acted as a funnel for anything transiting northbound, as indeed the C310 was. Recognising the dynamic nature of such exercises, members thought that it would have been wise to remain within the danger areas as much as possible, and that the Fighter Controller could have been more proactive in reminding the pilots of their positioning. Having asked for a Traffic Service, and with a high cockpit workload, the Board thought that the Hawk pilot was probably relying on the Fighter Controller to advise of both his positioning, and any conflicting traffic. When the controller then gave the inaccurate Traffic Information (5000ft altitude error and with phraseology implying that it was exercise traffic), the Board thought that the Hawk pilot was probably lulled into believing it wasn't a threat. Notwithstanding, members noted that the pilot remains ultimately responsible for his own separation and the safety of his aircraft irrespective of what ATS he was receiving. In this respect, some members opined that the visibility was good and the C310 was there to be seen; however, others thought that the Hawk pilot was probably understandably task focused and looking towards the Falcons, so was startled when he suddenly saw the C310 which he did not expect to be there.

Turning to the C310 pilot, the Board noted that, as requested by ATC, he had called Plymouth(Mil) for an ATS and had received accurate Traffic Information on the Falcons and Hawk. They noted that he could see the other aircraft from 15-20 miles away and had indicated in his narrative that he thought they were visual with him. The other aircraft were manoeuvring in front of him, at first at a higher level, and some members wondered whether he could have taken early action to keep clear. However, they noted that although his options had been constrained by the surrounding airspace, he had nonetheless disengaged his auto-pilot in case action was required. Ultimately, believing that the Hawk was also visual with him, he was obviously comfortable with the separation.

The Board then looked at the actions of the controllers involved. For his part, the Plymouth(Mil) Controller working the C310 had given timely and accurate Traffic Information which had enabled the pilot to see the confliction from some distance. However, members noted that the Fighter Controller on board the ship was less accurate. The Board noted that initially the radar was used to tactically assess the height of the conflicting traffic, rather than Mode C, which would have been more accurate. The RN Board member was unable to say why the height readout from the ship's radar was so inaccurate, but he commented that the controller would probably not have had access to SSR information for training purposes. Notwithstanding, there was a Supervisor alongside the Fighter Controller who could have acted as a cross-check for safety purposes yet still the vital height information was not discovered until it was too late. Even if the ship's system could not display the SSR or Mode C height, the C310 would have been wearing a Plymouth(Mil) squawk, and Traffic Information could easily have been sought from them. Furthermore, having identified the confliction, the Board noted that the Fighter Controller had used the phrase 'group' which probably led to the Hawk pilot believing that the aircraft was part of the exercise. The Board's Fighter Controller advisor also noted that BRAA is usually only used in association with unknown traffic ('stranger'), and that her coupling it with the phrase 'group' was another potential cause for confusion. Ultimately, the Board thought that the Supervisor should have been able to act to ensure that the training value of tactically controlling without SSR/Mode C was not traded-off against flight safety.

In determining the cause of the Airprox, a lively discussion ensued as to where responsibility lay and who had played what role in the unfolding incident. After a prolonged debate, the Board returned to the fact that, operating as he was in Class G airspace, even under a Traffic Service the Hawk pilot remained fundamentally responsible for ensuring his own separation despite the advice he did, or did not, receive from ATC; therefore, members finally agreed that the cause had been a late sighting by the Hawk pilot. However, in considerable mitigation, the Board were in agreement that the Fighter controller had had a major part to play in that, by passing inaccurate Traffic Information, she had probably led the Hawk pilot to believe that the other aircraft was not a factor, and that this had contributed to the Airprox. That said, in determining the risk, they were quickly in agreement that the C310 pilot had been visual with the Hawk throughout and that, as a result, this had been a Category C incident; there had been no risk of collision.

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

Cause: A late sighting by the Hawk pilot.

Contributory Factor: Inaccurate Traffic Information from the Fighter Controller.

Degree of Risk: C.