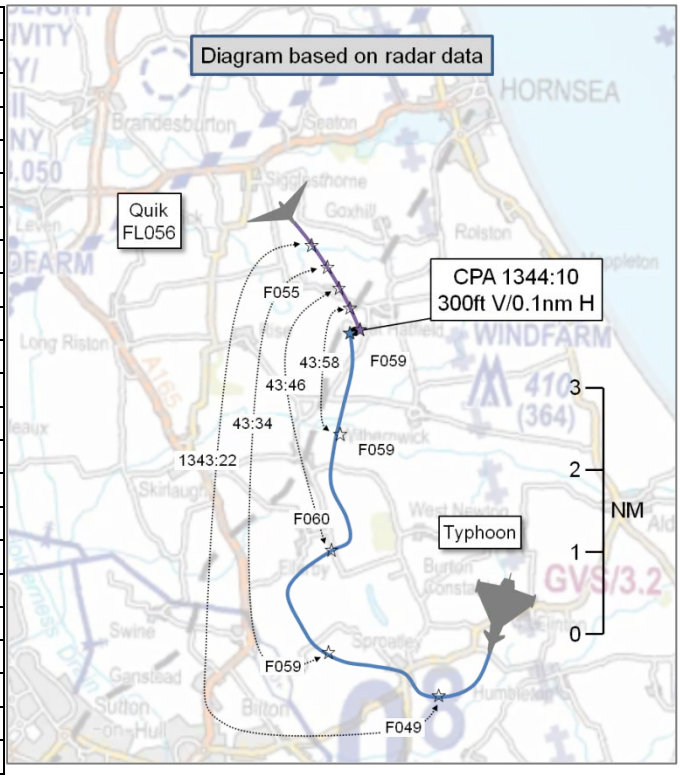
AIRPROX REPORT No 2017159

Date: 12 Jul 2017 Time: 1344Z Position: 5352N 00012W Location: Vale of York

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Typhoon	Quik Microlight
Operator	HQ Air (Ops)	Civ Pte
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Traffic	Listening Out
Provider	Swanwick	(Beverley Radio)
Altitude/FL	FL059	FL056
Transponder	A, C, S	A, C, S
Reported		
Colours	Grey	Red, white, blue
Lighting	HISLs, nav	Strobes
Conditions	VMC	VMC
Visibility	40km	>10km
Altitude/FL	NK	5000ft
Altimeter	RPS (1013hPa)	NK
Heading	007°	~180°
Speed	NK	60kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	1000ft V/1000ft H	200ft V/500m H
Recorded	300ft V/0.1nm H	



THE TYPHOON PILOT reports conducting a medium-level General Handling (GH) sortie in the southern portion of the Vale of York. He was informed at 1338:35 of a contact 4nm north of his position, manoeuvring at 5000ft. In response to the information call from Swanwick, he deconflicted to the south. After a further 5mins of GH, he proceeded back to the north at 6000ft. At 1344:06, he visually acquired a high-wing light-aircraft, assessed as a microlight, believed to be the traffic initially called approximately 700ft low but within the HUD field of view. A climbing left-hand turn was initiated to increase the miss distance which was assessed to be approximately 2500ft.

He assessed the risk of collision as 'Low'.

THE QUIK PILOT reports that he was in level flight and noticed the Typhoon approaching on a path that looked like it would take it over the top on the right-hand side. The speed of approach was such that from first seeing it to it passing down the right-hand side above was only 7secs. He considered turning right to avoid the approaching aircraft; however, the Typhoon was slightly to the right, he didn't wish to turn into it, and the separation was such that no avoiding action was required. The Typhoon rolled to its left as it approached (turning further to the Quik pilot's right) and passed above and down the right-hand side. The Quik pilot stated that he had assumed that given he had a Mode S transponder and strobes, the Typhoon pilot had seen him and was using him as a 'dummy target' [UKAB Note: this was not the case, the encounter was purely circumstantial].

He assessed the risk of collision as 'Low'.

THE SWANWICK CONTROLLER reports that he recalled working 2 tracks at the time of the Airprox, the subject Typhoon under a Traffic Service and civilian traffic inbound to Marham under a Deconfliction Service. The Typhoon was conducting GH in the vicinity of OTR between FL50 and FL150. The controller believed he called the conflicting traffic in question to the Typhoon pilot; however, he could not be completely sure because the civilian traffic required a lot of attention.

THE SWANWICK SUPERVISOR reports that he was not aware the incident had occurred until he was informed the following day.

Factual Background

The weather at Humberside was recorded as follows:

```
METAR EGNJ 121350Z 02011KT 9999 FEW028 SCT033 18/09 Q1020=
```

Analysis and Investigation

Military ATM

An Airprox occurred on 12 Jul 17 at approximately 1345hrs UTC, 15nm NE of Hull, between a Typhoon and a Microlight. The Typhoon was receiving Traffic Service (TS) while general handing as part of a pair; the Microlight was not in receipt of an Air Traffic Service (ATS). Figures 1-5 show the positions of the Typhoon and Microlight at relevant times during the Airprox. The screen shots are taken from a replay using the Claxby radar, which is utilised by Swanwick controllers.

The Swanwick NE Tac Controller passed Traffic Information to the Typhoon on the Microlight at 13:38:37, which led the Typhoon pilot to operate further to the south to deconflict.

At 13:40:42 (Figure 1), the Swanwick NE Tac Controller answered a landline call from Linton-on-Ouse ATC requesting information on an aircraft operating to the south west of the sector.

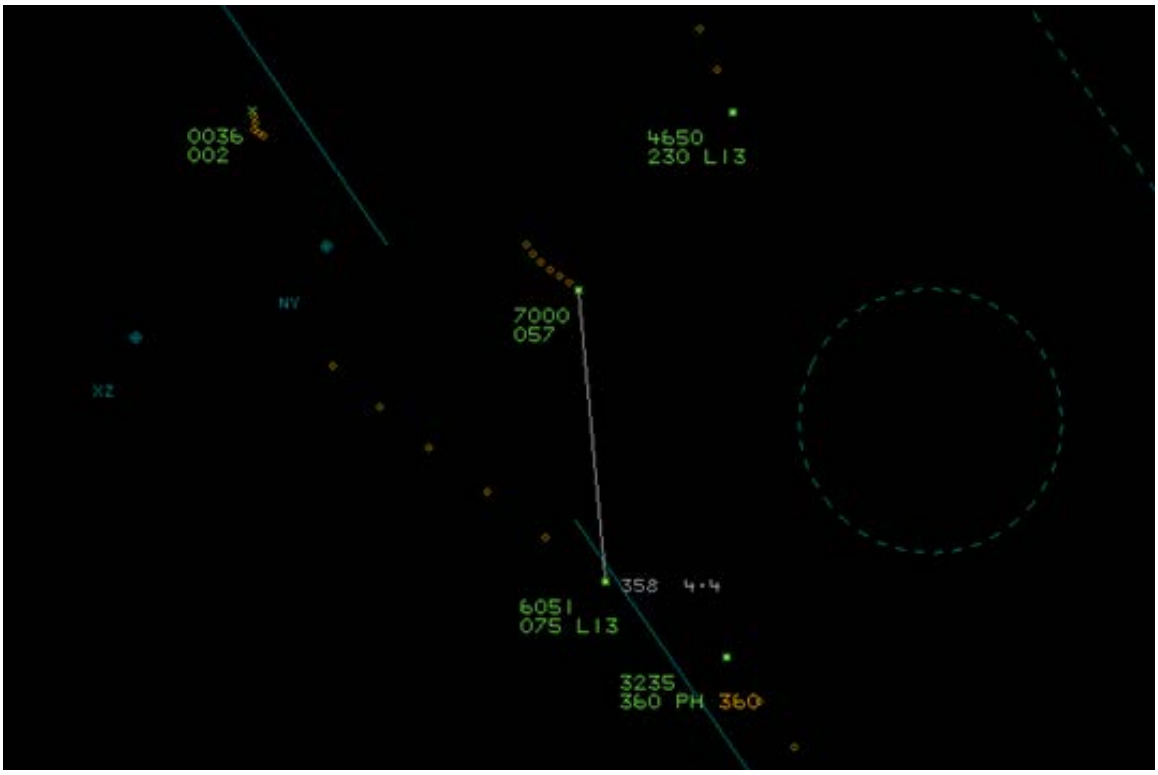


Figure 1: Geometry at 13:40:42 (Typhoon 6051; Microlight 7000)

At 13:41:27 (Figure 2), the Swanwick NE Tac Controller instructed the other aircraft on frequency (SSR 4650) to descend from FL230 to FL170.

At 13:43:04 (Figure 3), the Typhoon and Microlight were both general handling approximately 5-6nm apart.

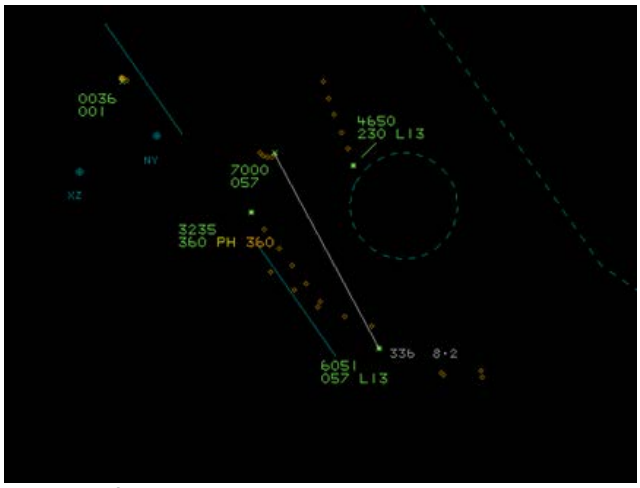


Figure 2: Geometry at 13:41:27

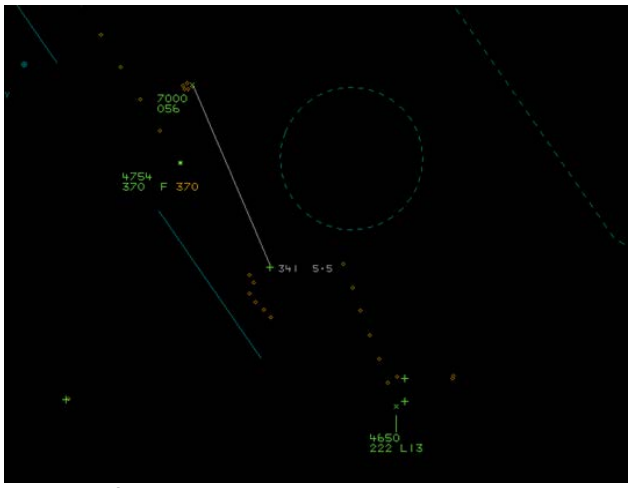


Figure 3: Geometry at 13:43:04
(Typhoon 6051; Microlight 7000)

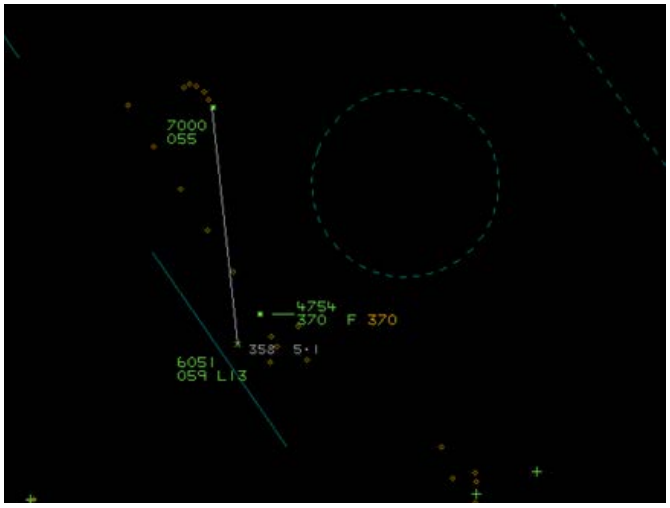


Figure 4: Geometry at 13:43:29

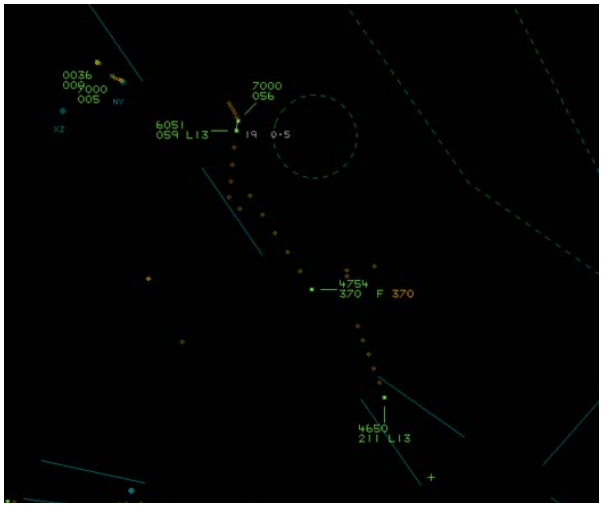


Figure 5: Geometry at 13:44:07
(Typhoon 6051; Microlight 7000)

At 13:43:29 (Figure 4), the Typhoon and Microlight both turned towards each other and began closing distance. At 13:44:07 (Figure 5), the Typhoon and Microlight were at their closest point, with separation of approximately 0.5nm and 300ft.

When the Typhoon turned back north approximately 5mins after the initial Traffic Information it was then moving towards the Microlight (which had also begun to travel south). The controller did not update the Traffic Information. CAP 774 states that, when providing Traffic Service:

> *The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information.*

Although only controlling one other aircraft, the second aircraft was under a Deconfliction Service and ready to commence a slow descent into RAF Marham. With normal conditions giving high density of GA and military general handling traffic in the vicinity, providing a Deconfliction Service can create a high workload and it is believed to have drawn the Swanwick NE Tac Controller's attention away from the Typhoon such that the Traffic Information was not updated when the Typhoon turned back towards the microlight. That said, the Typhoon pilot remained responsible for his own collision avoidance.

UKAB Secretariat

The Typhoon and Quik pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[1]. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right[2], notwithstanding their responsibility to avoid collision.

Comments

HQ Air Command

The Typhoon pilot had planned, briefed and authorised his sortie in accordance with all current regulations and orders. The area for conducting GH had been chosen on the basis of suitability and availability, the only other viable alternative being the East Anglia MTA which was already known to be busy.

Since neither the Typhoon nor the Quik involved in this Airprox was equipped with ACAS, there was no barrier of electronic conspicuity available. However, both aircraft were carrying transponders and thus the controller was initially able to issue TI on the Quik to the Typhoon pilot. Upon receipt of the initial information, the Typhoon pilot elected to manoeuvre to the south and could reasonably have expected updated TI once he turned north again approximately 5 minutes later. However, updated TI was not forthcoming as the controller was involved in delivering a Deconfliction Service to a civilian aircraft in an area of high GA traffic density. It is possible that this barrier could have been enhanced if the Quik pilot had elected to receive a surveillance-based ATS as he would then have been in a position to receive TI on the Typhoon from his controller. Ultimately both pilots saw each other's aircraft, the Typhoon pilot taking action to increase separation.

Finally, it should be noted that Typhoon pilots will not conduct training against civilian traffic unless all parties have been specifically briefed and authorised. Thus there is no likelihood that the Typhoon pilot in this encounter used the Quik as a 'dummy target'.

Summary

An Airprox was reported when a Typhoon and a Quik microlight flew into proximity at 1344 on Wednesday 12th July 2017. Both pilots were operating under VFR in VMC, the Typhoon pilot in receipt of a Traffic Service from Swanwick and the Quik pilot not in receipt of a service.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from the air traffic controller involved and reports from the appropriate ATC and operating authorities.

Board members commented that it was an unusual and welcome development that the microlight pilot had chosen to equip his aircraft with an SSR transponder; whilst there was no single solution to electronic conspicuity, fitment of a transponder could help. A military member commented that on this occasion the Quik pilot could also have created a barrier to mid-air conflict by obtaining a FIS, preferably a Traffic Service, and thereby probably have obtained Traffic Information on the Typhoon. Some members agreed, and thought that the Quik pilot should have obtained a service given his position and altitude close to an AIAA, others commented that the practicalities were that ATC would soon get swamped by pilots calling for a service that would be unlikely to be able to be provided due to the numbers of aircraft present. The Board enquired as to whether the Typhoon's radar could have provided a warning based on general surveillance of transponder replies, including the microlight's transponder signal. However, it was established that this was not the case other than if the Quik was

[1] SERA.3205 Proximity.
[2] SERA.3210 Right-of-way (c)(1) Approaching head-on.

specifically being interrogated by the radar, which was not the case at the time; a military member was clear in pointing out that civilian aircraft are not targeted by UK military aircraft unless in an Air Policing role or by prior agreement and after extensive briefing. In the event, the Quik pilot saw the Typhoon first and, although he assessed that no avoiding action was required, it was felt that a turn to present a changing aspect could have aided visual identification by the Typhoon's pilot. For his part, the Typhoon pilot had commendably increased his planned base height based on previous Traffic Information and saw the microlight in time to commence avoiding action, although the separation at CPA was significantly less than that assessed by him.

Turning to the Swanwick controller, members agreed that although the workload had not been excessive, his capacity had probably been taken up by the higher service being provided to the civilian aircraft, and he had therefore not been able to provide Traffic Information to the Typhoon pilot when he turned north towards the microlight. Members emphasised that although this had been a contributory factor, this situation was entirely within the mandate of a Traffic Service and served as a timely reminder to all as to the limitations of such a service.

Given that both pilots probably saw each other as early as prevailing circumstances permitted, members agreed that the cause was best described as a conflict in Class G resolved by the Typhoon pilot. There was some debate as to the risk, with some members feeling that the rate of closure was such that safety had been much reduced. However, the issue was taken to a vote and the majority of the Board decided on risk Category C (no risk of collision) on the basis that the Quik pilot had seen the Typhoon at range and that the Typhoon pilot had had the opportunity to take more decisive avoiding action than he did if he had considered the aircraft to be on a collision course.

PART C: ASSESSMENT OF CAUSE, RISK AND SAFETY BARRIERS

Cause: A conflict in Class G resolved by the Typhoon pilot.

Contributory Factors: The Swanwick controller could not provide updated Traffic Information.

Degree of Risk: C.

Safety Barrier Assessment[3]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

ANSP:

Situational Awareness and Action were assessed as **partially effective** because the controller's workload precluded updated Traffic Information when the Typhoon turned north.

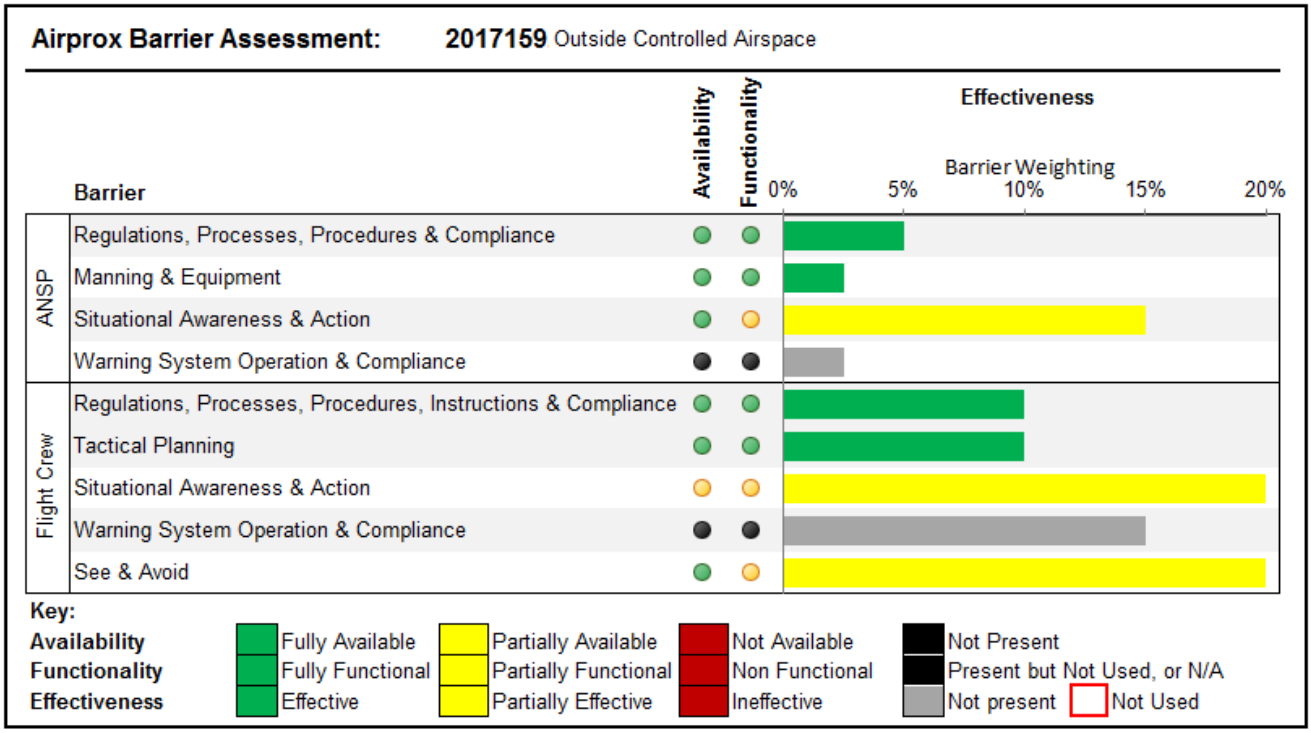
Flight Crew:

Situational Awareness and Action were assessed as **partially effective** because neither pilot had SA on the other aircraft until visual contact.

See and Avoid were assessed as **partially effective** because the Typhoon pilot saw the microlight at a late stage.

Safety barrier assessment overleaf.

[3] The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the UKAB Website.


Airprox Barrier Assessment: 2017159 Outside Controlled Airspace
Barrier
Availability
Functionality
Effectiveness
Barrier Weighting
0%
5%
10%
15%
20%
ANSP
Regulations, Processes, Procedures & Compliance
Manning & Equipment
Situational Awareness & Action
Warning System Operation & Compliance
Flight Crew
Regulations, Processes, Procedures, Instructions & Compliance
Tactical Planning
Situational Awareness & Action
Warning System Operation & Compliance
See & Avoid
Key:
Availability
Functionality
Effectiveness
Fully Available
Fully Functional
Effective
Partially Available
Partially Functional
Partially Effective
Not Available
Non Functional
Ineffective
Not Present
Present but Not Used, or N/A
Not present
Not Used