

## ASSESSMENT SUMMARY SHEET FOR UKAB MEETING ON 20 October 2010

**Total: 17      Risk A: 3      Risk B: 3      Risk C: 10      Risk D: 1**

<u>No</u>	<u>Reporting</u>	<u>Reported</u>	<u>Airspace</u>	<u>Cause</u>	<u>Risk</u>
2010028	DHC-8 Q400 (CAT)	C-17A (MIL)	A	<p>i) The descent instruction issued by the outgoing TC MID controller did not require the DHC-8 to be level at FL150 by KIDLI.</p> <p>ii) The incoming TC MID controller did not comply with the COWLY – WILLO Standing Agreement when the DHC-8 was transferred.</p>	C
2010037	Puma HC1 (MIL)	Untraced Aircraft	G	Effectively a non-sighting by the Puma crew and possibly a non-sighting by the untraced aircraft pilot.	D
2010042	Sea King HC4 (MIL)	Mi-17 (MIL)	G	Effectively non-sightings by the crews of both aircraft.	A
2010044	Grob Tutor (A) (MIL)	Grob Tutor (B) (MIL)	G	Effectively a non-sighting by the crew of Tutor (A) and a late sighting by the pilot of Tutor (B).	C
2010046	C510 Mustang (CIV)	Pioneer 200 (CIV)	G	Late sightings by the pilots of both aircraft.	B
2010047	Bell 206B (CIV)	Robinson R44 (CIV)	G	A conflict in Class G airspace resolved by the Bell 206 B pilot assisted by timely TI from APR.	C
2010051	B737-800 (CAT)	A319 (CAT)	C	LAC S5T climbed the B737 into conflict with the A319.	C

2010052	Lynx Mk 9A (MIL)	Tornado GR4 (MIL)	G	The Tornado crew flew close enough to the Lynx to cause its crew concern.	C
2010056	Sea King (MIL)	Robin (CIV)	G	Effectively a non-sighting by the Sea King crew and a late sighting by the Robin pilot.	B
2010060	AH64 Apache (MIL)	Glider (N/K)	G	Conflict in Class G airspace resolved by the Apache crew.	C
2010061	Alpha Jet (MIL)	Lynx AH7 (MIL)	G	APP vectored the Alpha Jet towards the Lynx and, despite receiving accurate and timely TI, the pilots of both aircraft saw each other late.	A
2010070	Tornado GR4 (MIL)	Tornado GR4 (MIL)	G	Effectively non-sightings by the crews of both aircraft.	A
2010071	Typhoon x3 (MIL)	C152 (CIV)	G	In the absence of TI to the Typhoon formation and a warning to the C150 pilot, a non-sighting by the Typhoon formation leader and effectively a non-sighting by the C150 pilot.	B
2010073	A321(A) (CAT)	A321(B) (CAT)	A	The A321(A) crew misunderstood their instructions and LTC Heathrow INT did not assimilate the incorrect read back.	C
2010075	Jetstream 41 (CAT)	Hawk x 2 (MIL)	G	A conflict in Class G airspace between IFR and VFR traffic.	C
2010079	Paraglider (CIV)	Merlin (MIL)	G	The Merlin crew flew close enough to cause the paraglider pilot concern.	C
2010088	Tutor (A) (MIL)	Tutor (B) (MIL)	G	A non-sighting by the crew of Tutor (B) and a late sighting by the crew of Tutor (A).	C

- end -

## AIRPROX REPORT No 2010028

Date/Time: 2 Apr 2010 0637Z BH Friday

Position: 5133N 00114W (3½nm  
N of COMPTON VOR)

Airspace: N859 (Class: A)

Reporting Ac Reported Ac

Type: DHC-8 Q400 C-17A

Operator: CAT HQ Air (Ops)

Alt/FL: ↓FL150 FL160

Weather: NK CLBL VMC CLAC

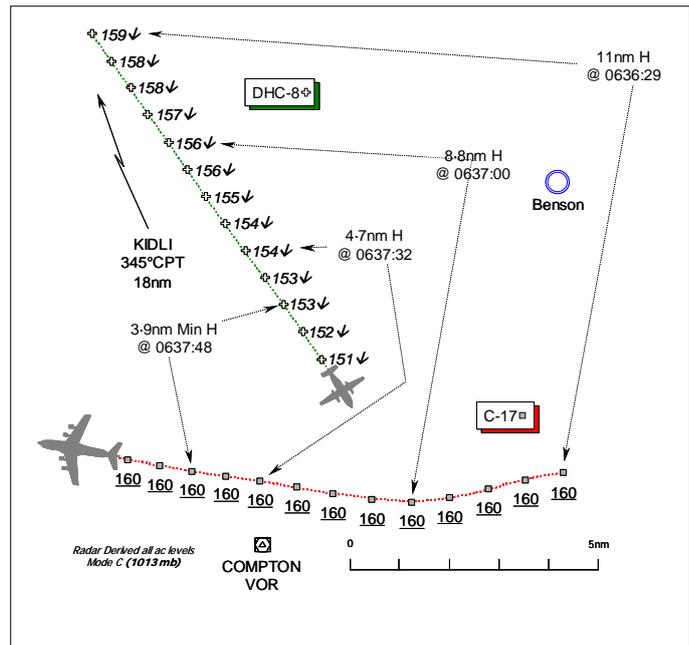
Visibility: 25km 40km

Reported Separation:

600ft V/3nm H 700ft V/3½nm H

Recorded Separation:

700ft V @ 3.9nm Min H



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE de HAVILLAND DHC-8 Q400 PILOT (DHC-8)** reports he was en-route from Leeds Bradford Airport to Gatwick IFR and in receipt of a RCS from LTCC on 133.175 MHz [TC MIDLANDS]. The assigned squawk was selected with Mode C; Mode S is fitted. Southbound at 250kt, they were cleared by London to descend to FL150. Descending clear above cloud, in between layers with an in-flight visibility of 25km, as they approached their assigned level a large dark-coloured ac with a T-tail was seen 3-4nm away on the nose crossing from L to R. TCAS displayed the other ac around 600ft above and about 3nm away. A TA caution was enunciated 'traffic traffic' and they positively identified the cause as the other ac they had spotted ahead - the C-17 - in level flight. An RA was not indicated and no avoiding action was taken. He assessed the risk as 'low' as they were flying in VMC, but added that in IMC it would be, potentially, more risky.

He reported the proximate traffic to London CONTROL, the controller advised that he was unaware of the identity of the other ac and would report the matter to his Watch Supervisor. No further action was taken by the DHC-8 crew mid-flight, but on arrival at Gatwick they identified the ac as a C-17 Globemaster and passed this information along to LTC with the exact occurrence time and level etc.

Apparently, their clearance should have been to 'Descend to FL150 level by KIDLI', but they were not given the clearance 'conditionally', they were simply 'cleared to FL150'.

**THE BOEING C-17A GLOBEMASTER III (C-17) PILOT** reports he was inbound to Brize Norton under IFR and in receipt of a RCS from London CONTROL [LACC Sector 23]. The assigned squawk was selected with Mode C; Mode S and TCAS are fitted.

Heading 270°, in the vicinity of COMPTON VOR at 250kt, flying level at FL160 in a standard stepped descent into Brize Norton, TCAS enunciated a TA. The ac believed to be in conflict – the DHC-8 - was acquired visually and on TCAS from about 4nm away. He estimated the minimum separation to be about 3½nm away to starboard, 700ft below their level and descending; therefore, the Risk of collision was 'low'. TCAS did not enunciate an RA and no avoiding action was taken.

The ac has a grey colour-scheme but the HISLs were on.

**THE OUTGOING LTC TC MIDLANDS (COWLEY & WELIN) SECTOR CONTROLLER (TC MID)** reports that he was working the bandboxed TC MIDLANDS Sector with 5-6 Gatwick inbounds which

he had sped up for TC SW. The DHC-8 was cleared down to FL150 at a speed of 250kt, but he had forgotten to instruct the crew to be level at FL150 by KIDLI. About 6min after he issued the descent instruction to the DHC-8 crew another controller took-over the sector, but he did not see that the DHC-8 was a little high when he handed the position over. He was not aware that the DHC-8 was high until he saw the replay of the radar recording.

**THE LAC SECTOR 23 TACTICAL CONTROLLER (SEC23 TAC)** reports that the C-17 called on frequency at FL160 as per the TC Capital – SEC23 Standing agreement. A short while later the LACC Multi Radar Tracking System SSR label for the DHC-8 turned green and was displayed as a foreground track descending through FL154, about 6nm N of the C-17. The respective tracks and Mode C levels of the two ac indicated that no risk of a collision existed and, although close, he was content that the DHC-8 would pass astern of the C-17 with 5nm horizontal separation. The S23 PLANNER, using the range & bearing tool, thought the minimum horizontal separation was 5nm. Neither TI nor avoiding action was passed to the C-17 crew. A short while later he queried the proximity and late descent of the DHC-8 with the TC SW CO-ORDINATOR, who explained it was in fact a TC MIDLANDS responsibility. Later, he was informed the minimum separation was 800ft vertically and 4nm horizontally.

**ATSI** reports the incident occurred on a Bank Holiday Friday; the controller had been in position since 0600 and was due to be relieved at 0630.

The LTC Manual of Air Traffic Services Part 2 (edition 3.09) page MID – 8 states that the Standing Agreement for Gatwick inbound from the COWLY sector to the WILLO sector is FL150 level KIDLI. Standing Agreements are part of the requirement for the silent transfer of traffic from one sector to another (without the need for individual co-ordination). In this case, the Standing Agreement also serves to ensure that ac from the COWLY Sector do not penetrate LTC COMPTON airspace.

The DHC-8 crew called the TC Midlands Sector on 121.025MHz at 0625 maintaining FL190 on a heading of 160°. TC MID acknowledged the call. The controller was operating with the COWLY and WELIN Sectors banded onto a single position. The sectors were reported as quiet for a Friday, hence the banded configuration. Under normal circumstances, the sectors would usually be split. The controller reported being comfortable with the traffic load on the combined sectors and did not believe that the banded configuration was a factor in the incident.

At 0627 the DHC-8 crew was instructed to fly a speed of 250kt. This was to allow the TC MID controller to deliver a stream of Gatwick inbound to the next sector, WILLO, in an orderly manner. At 0630 the TC MID controller instructed the DHC-8 to '*descend now flight level 1-5-0*'; this was read-back correctly by the pilot. The Mode S Selected Flight Level [SFL] of the DHC-8 changed to FL150 at 0630:16, with 27nm to run to KIDLI and its subsequent ROD was observed on the radar recording as about 500ft/min.

TC MID reported that in order to meet the requirements of the Standing Agreement for Gatwick inbound, it was usual to issue a descent clearance that included the instruction 'level by KIDLI'. However, experience and knowledge of ac performance was equally used in assessing whether or not, at the time of issuing the clearance an ac would be level at FL150 by KIDLI. TC MID believed that, in this instance, not using the level restriction in the clearance was uncharacteristic. Also, the controller reported that it was normal practice for TC MID controllers to annotate the FPS with 'L' when a level restriction had been passed in the clearance. As the controller had omitted to use the level restriction there was no 'L' on the FPS.

At 0634 a change of sector controller took place. The position handover was reported as taking approximately 1-2min and followed the standard format prescribed for LTC controllers. Traffic was handed over using a 'strips to radar' method. Neither the outgoing nor the incoming controller observed that the DHC-8 was high in relation to its position - which at 0634 was 5nm N of KIDLI passing FL171 in the descent. As the outgoing controller had not assimilated the DHC-8's slow RoD, this ac performance information could not be passed to the incoming controller.

At 0635 the incoming sector controller transferred the DHC-8 to the WILLO Sector, but before this occurred he did not assimilate the DHC-8's level in relation to its position; the flight passed abeam KIDLI at 0635:20 descending through FL165. The requirement of the COWLY to WILLO Standing Agreement [to be level at FL150 by KIDLI] had therefore not been met.

At 0637, as the DHC-8 passed FL156, the C-17 crossed the DHC-8's 12 o'clock from L - R at a range of 8-8nm maintaining FL160. The C-17 was under the control of LAC Sector 23, inbound to Brize Norton; however, the position of the C-17 placed it in the previously worked sector LTC Compton's airspace. It was also noted that the DHC-8 was actually within the area of responsibility of LTC NORTHWEST; as part of the standing agreement between the COWLY and WILLO sectors, Gatwick inbounds transit NORTHWEST's airspace silently.

[UKAB Note (1): As the C-17 drew R into the DHC-8's 1 to 4o'clock, the horizontal distance between the two ac reduced to less than the required separation of 5nm/1000ft [for LAC Sectors]. The CPA between the ac occurred at 0637:48 – 3.9nm/700ft. The loss of separation lasted for 37sec.]

After the loss of separation, the pilot of the DHC-8 reported the Airprox to the WILLO controller at 0639:20, to whom the C-17 was 'unknown' traffic. The proximity of the two ac was also noted by the LAC S23 controller who, due to the positions and tracks of the two ac, deemed avoiding action unnecessary, as there was no risk of collision.

This Airprox is attributable to both the outgoing and incoming LTC Midlands controllers. A number of causal factors, rather than one individual factor, culminated in the DHC-8 being incorrectly transferred from the TC MID Sector. Both controllers were responsible for ensuring that the DHC-8 exited the Sector in accordance with the terms of the Standing Agreement and to issue instructions to achieve this. The outgoing TC MID controller issued the DHC-8 with descent from FL190 to FL150, in the belief and expectation that with 27nm to run the ac would be level before KIDLI. Experience and knowledge are valid in assessing whether or not an ac will, on the basis of controller's instructions, achieve the required level. After the descent instruction was issued, the TC MID Controller did not notice the DHC-8's slow rate of descent. Had he done so he would have been able to instruct the aircraft to be level by KIDLI.

LTC has procedures in place to ensure a thorough handover of operational sectors between controllers, including procedures for identifying and handing over sector traffic. Both the outgoing and incoming TC MID controllers, when conducting the handover of the operating position, did not assimilate that the DHC-8 was too high in relation to its position from KIDLI.

The incoming TC MID controller then mistakenly transferred the DHC-8 to the WILLO Sector without affecting co-ordination with the receiving and adjacent sectors, as the flight was not in compliance with the Standing Agreement requirements for a 'silent' radar handover.

ATSI recommended that LTC undertake to review TC MIDLANDS controllers' use of appropriate instructions to ensure that ac subject to the COWLY – WILLO Standing Agreement are achieving FL150 by KIDLI.

**HQ AIR (OPS)** has nothing to add and concurs with the ATSI assessment.

## **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 together with reports from some of the controllers involved and the appropriate ATC and operating authorities.

It was plain that the descent instruction issued by the outgoing TC MID controller to the DHC-8 crew did not specify that they were required to be level at FL150 by KIDLI. A CAT pilot Member advised the Board that without any other amplifying instructions, and in accordance with company policy, the

crew would establish a RoD commensurate with national procedures that would achieve the most economical fuel consumption. This is what appeared to have happened.

With the aim of appraising CAT crews of what levels might normally be established by ATC, a CAT Member suggested that the levels associated with the Standing Agreements might be shown on the Standard Instrument Arrival (STAR) charts for London Gatwick, as is the case for the STAR charts produced by his company's supplier for another destination. The NATS Ltd Advisor was not averse to such a suggestion but another CAT pilot Member did not agree. The levels established are not shown in the AIP and might not always be used as they can be changed tactically. Whilst it might not be commonplace, there was considerable potential for controllers to issue tactical levels required by the extant traffic situation, having co-ordinated with other Sectors where appropriate. Crews might therefore become confused if they were instructed to do something different to that printed on the STAR without further explanation – increasing the potential for error. Another CAT pilot Member believed that the level selection was purely an ATC matter and should be issued by the controller as necessary. The suggestion of promulgating these Standing Agreement levels did not, therefore, meet with widespread approval and the overwhelming view of the Members was that additional information might clutter the chart to the detriment of clarity. Consequently, the suggestion was not taken forward.

It was evident that neither the outgoing nor the incoming TC MID controllers detected that the DHC-8 was too high as the flight passed KIDLI, so another opportunity to forestall this Airprox was lost. Thus the DHC-8 was not separated from the adjacent LAC and LTC Sectors traffic by the stipulated minima – 1000ft vertically - against the C-17 under the control of LAC S23, which compliance with the COWLY – WILLO Standing Agreement would have ensured. Moreover, when the incoming TC MID controller transferred the DHC-8 to WILLO and it was above the Standing Agreement level, a radar hand-over should have been effected. The Board agreed unanimously that the Cause of this Airprox was that the descent instruction issued by the outgoing TC MID controller did not require the DHC-8 to be level at FL150 by KIDLI. Furthermore, the incoming TC MID controller did not comply with the COWLY – WILLO Standing Agreement when the DHC-8 was transferred. Although a loss of stipulated separation occurred it was evident that TCAS had detected the other ac, the DHC-8 crew had seen the C-17 at range and was able to take further action if need be. Moreover at the distances involved here the Members agreed unanimously that no risk of a collision had existed.

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

- Cause:
- i) The descent instruction issued by the outgoing TC MID controller did not require the DHC-8 to be level at FL150 by KIDLI.
  - ii) The incoming TC MID controller did not comply with the COWLY – WILLO Standing Agreement when the DHC-8 was transferred.

Degree of Risk: C.

## **AIRPROX REPORT No 2010037**

Date/Time: 27 Apr 2010 1315Z

Position: 5139N 00105W (009° Benson  
A/D 2.3nm - elev 75ft)

Airspace: Benson MATZ (Class: G)  
Reporting Ac Reported Ac

Type: Puma HC1 Untraced Ac

Operator: HQ JHC NK

Alt/FL: 2500ft NR  
QFE (1023mb)

Weather: VMC Haze NR

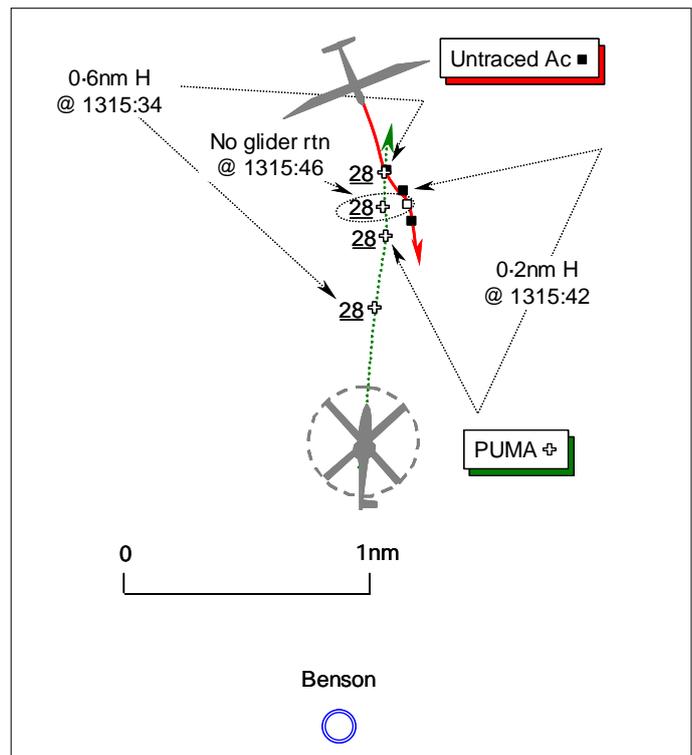
Visibility: 8km NR

Reported Separation:

150ft V/nil H

Recorded Separation:

<0.1nm H - see UKAB Note (1)



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

**THE PUMA HC1 HELICOPTER PILOT** reports that the Airprox occurred during an IFR training sortie whilst flying the Benson COPTER TACAN [BSO] procedure for RW19 and in receipt of a TS from Benson APPROACH (APP) on 376.65MHz. The assigned squawk of A3617 was selected with Mode C; Mode S is not fitted. The helicopter is coloured olive green, but the white HISL and landing lamp were on.

Flying outbound at 120kt from the BSO in VMC, level at 2500ft QFE (1023mb), heading 006° about 2.5nm from the overhead a white glider was first seen as it was passing 150ft above his helicopter on a reciprocal heading. Horizontal separation was 'nil'; no avoiding action was taken as the white glider was already passing overhead in a wings level attitude. ATC was informed on RT that the glider was close to the aerodrome and the sortie was continued uneventfully thereafter. He assessed the Risk as 'high'.

UKAB Note (1): Analysis of the Heathrow 10cm and 23cm radars shows the Puma identified from its A3617 squawk, overhead Benson tracking N with a slow moving southbound primary contact 3.2nm N of Benson that may, or may not be, the reported ac as its altitude cannot be determined. At 1315:34, the Puma indicates 2800ft Mode C London QNH (1027mb) some 1.8nm from the overhead, and maintains this altitude throughout the encounter, with the unknown contact at 12 o'clock – 0.6nm range. A slight L turn SSE'ly is discernable in the contact's track and at 1315:42 the contact is shown in the Puma's 1 o'clock – 0.2nm drawing to starboard. No return is apparent from the unknown ac on the next sweep, which is perceived to be the CPA, at a position 009° Benson aerodrome 2.3nm, with the Puma indicating 2800ft London QNH and thereby clear to the N and above the Benson ATZ. Horizontal separation of 0.2nm is again apparent as the primary contact draws aft into the Puma's 5 o'clock as the helicopter maintains its course and altitude.

The Puma pilot reports that a white glider passed 150ft above him; it is perceived that at the CPA, the unknown primary contact passed less than 0.1nm [<200yd] to starboard. Whilst it is unlikely, it is feasible that the primary contact shown might not be the reported ac.

The primary contact can be tracked E and S of Benson and eventually disappeared from coverage 15nm N of Lasham Glider launching Site. Extensive tracing action amongst local glider clubs in an

effort to identify the reported ac proved fruitless. Consequently the identity of the reported ac that may, or may not be, a glider remains unknown.

**BENSON DIRECTOR (DIR)** reports he was Mentor to a controller under training who had been on consul for about 1hour when the Airprox occurred. The trainee was not busy; he had worked only 2 ac during this training session, one at a time, and the workload was low with only one ac under an ATS when the Airprox occurred.

The trainee controlled well, calling any traffic displayed correctly and in good time. The Puma pilot was under his own navigation with a TS at 2500ft QFE, when he reported that whilst leaving the TACAN he had seen a glider 200ft above him. The trainee informed the Puma crew that the ac was not visible on radar as they were working 'SSR only', the pilot having been made aware of this and that it was a 'reduced' service on first contact. Nothing in the pilot's voice caused him concern over how close the ac were to each other. Apart from informing the Supervisor that there was a glider within the MATZ the event didn't prompt much reaction. The Puma pilot did not report the Airprox at the time on RT.

**THE BENSON ATC SUPERVISOR** reports that the Watchman ASR was OOS and the Airprox occurred on a relatively quiet day whilst operating in CC BLU/WHT weather conditions. Working SSR only, they had no idea of the scale of non-transponder equipped ac in the vicinity. The trainee DIR on console was competent and the DIR mentor very experienced. As stated by the controller, the tone of the Puma pilot's voice did not cause any concern and ATC was unaware he was filing an Airprox against the glider before the shift finished. This was yet another incident caused by a lack of TI due to a lack of primary radar.

**HQ AIR BM ATM SAFETY MANAGEMENT** reports that this Airprox occurred whilst Benson ATC was degraded due to the loss of their primary Watchman ASR; all radar services were being provided with secondary radar – SSR - only. The Puma crew was being provided with a reduced TS at the time of the incident and because the glider was not operating SSR the controller was unable to see it on the 'SSR only' radar display. The controller acted in accordance with the spirit of TS, with reduced capability due to the unserviceability of the primary ASR.

UKAB Note (2): The UK AIP at ENR 2-2-2-1, promulgates the dimensions of the Benson ATZ as a Circle radius of radius 2 nm centred on longest notified RW01/19, active H24, from the surface to 2000ft above the aerodrome elevation of 226ft.

UKAB Note (3): At 1300:49, DIR advised the Puma crew "*...identified, traffic service reduced service S-S-R only*", which was acknowledged. At 1315:39, DIR reported TI on an unrelated ac "*..traffic right 10'clock 6 miles crossing right-left 6 hundred feet above*". Visual contact was acknowledged by the crew 8sec later, who then added at 1316:04, "*..that traffic was a glider reciprocal heading directly above us.*" DIR responded at 1316:13 that this was "*..unlikely I can see that traffic SSR only, traffic I'm calling to you is now [the unrelated ac] right, 1 o'clock 3 miles crossing right left 5 hundred feet above...working...zone..*". Following the warning from the Puma crew about the glider, DIR queried whether it was above or below, whereupon the Puma crew responded that "*..it was above us by approximately 2-0-0 feet.*"

**THE PUMA HC1 HELICOPTER PILOT'S STATION** comments that the lack of primary radar must be considered to be a contributory factor. As the crew was flying under simulated IF conditions the PF would have been operating under an IF visor, with the PNF's attention divided between the instruments and lookout. The crewman's ability to lookout would be affected by his position in the ac.

A NOTAM had been issued that the ASR was out-of-service and unit aircrew had been briefed as to the dangers of operating in the vicinity of Benson during this period.

**HQ JHC** comments that this is a further example (see Airprox 2010 045 and 2010 030) of the difficulties of operating in the vicinity of the Benson ATZ, without a serviceable primary radar. It is

recognised that the crew was flying under simulated IF conditions with one pilot being under an IF visor, which would have reduced the overall quality of the lookout.

It is surprising that the crew did not indicate their intention to file an Airprox at the time, considering that they assessed the Risk of collision as 'high'. JHC crews will be reminded of the need to indicate their intention to file an Airprox at the time of the occurrence, in order to capture time-critical evidence. They will also be reminded that they can file an Airprox and then subsequently withdraw it if necessary, once further information has been established.

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

Information available included a report from the Puma pilot, a transcript of the relevant RT frequency, radar video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

It was unfortunate that the reported ac had not been traced and, without the reported pilot's account, the Board's assessment was inevitably incomplete. The speed and the observed track of the unknown contact shown on the radar recording suggested to some Members that it might well have been a powered glider, which could look virtually identical to a conventional glider when viewed from the Puma pilot's perspective below it.

It was evident that this Airprox occurred above the Benson ATZ, but a pilot Member with considerable gliding experience suggested it was unlikely that a glider pilot, with no additional lift from a thermal en-route, would continue to descend towards the ATZ. This reinforced the Board's view that the aircraft had been a powered glider. The MAA Advisor highlighted that there had been a number of occurrences, involving gliders and powered ac, where ac had remained outside the ATZ but flown through the concomitant MATZ - as here. Outside the embedded ATZ, the observation of MATZ procedures is not compulsory for civil pilots. Nevertheless a MATZ Penetration Service is available from military ATSUs to ac flown by civilian pilots for the increased protection of those who wish to fly through this airspace. Guidance for civilian pilots about MATZ penetrations is contained in the AIP (currently ENR 2-2-3-1 dated 11 Feb 2010) and in the Board's view, good airmanship would dictate observance of those procedures.

In the light of this and a number of similar incidents, some Members of the Board considered it to be unfortunate that glider pilots do not communicate more with military ATSUs; the more that ATC knew about ac in the vicinity, the safer for all and the quality of TI correspondingly better. A CAT pilot Member with considerable gliding experience explained that many gliders are not fitted with RT and, even if they are, not all pilots will have an RT licence. He also suggested that, in his experience, the response from some ATSUs was not always helpful, and hence glider pilots' apparent reluctance to communicate. Nevertheless the BGA Member stressed the importance of talking to the respective ATSU where feasible. However, ATC was also handicapped here by a major long-term unserviceability. It was plain that with the ASR out-of-service and no supporting SSR data, DIR was unable to provide any TI about the unknown ac to the Puma pilot at all. As highlighted by the Command, this was yet another Airprox illustrating the difficulties of providing an ATS in Class G airspace without a primary ASR.

Whilst some Members believed that there was sufficient information available on which to base a conclusion as to Cause and Risk, others considered that without a report from the untraced pilot, much was merely speculation. One Member suggested this Airprox was the result of the untraced pilot's poor airmanship in penetrating the Benson MATZ without calling ATC, but others recognised this was unsound as the unknown ac might not have been fitted with RT, the pilot might not have had a RT licence and civilian pilots are legitimately entitled to do so. Furthermore, it was not at all clear if the unknown contact visible on the Heathrow Radar was the ac seen by the Puma pilot. Members suggested that a descending glider pilot was unlikely to overfly the Puma at the separation reported here of 150ft if he had seen it in time to afford it greater separation. Another possibility was that if the unknown contact was indeed the ac seen by the Puma pilot, it seems he might have turned L to try

and afford greater separation, suggesting a late sighting by the untraced pilot at close quarters. Some Members were drawn to a late sighting by the Puma pilot as the Cause but, whilst the other ac was plainly seen by the Puma pilot, he reports that the white glider was already passing a mere 150ft overhead in a wings level attitude when seen and thus effectively, a non-sighting on his part. With such a diversity of views some Members were not convinced that they could draw meaningful conclusions whereas others believed that it was a risk-bearing encounter. Eventually the Board determined by a majority verdict that this Airprox was effectively, a non-sighting by the Puma crew and possibly a non-sighting by the untraced pilot. However, given the scant information available and the uncertainty as to whether the radar recording did illustrate the ac seen by the Puma pilot the overwhelming view of the Members was there was insufficient information on which to base an assessment of the actual Risk that pertained.

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

Cause: Effectively a non-sighting by the Puma crew and possibly a non-sighting by the untraced aircraft pilot.

Degree of Risk: D.

## AIRPROX REPORT No 2010042

Date/Time: 03 Mar 2010 1932Z NIGHT

Position: 5109N 00200W (2nm SW of Deptford Down)

Airspace: UKNLFS NRR1 (Class: G)

Reporting Ac Reported Ac

Type: Sea King HC4 Mi-17

Operator: HQ JHC HQ JHC

Alt/FL: 1000ft 1500ft  
RPS (1010mb) RPS (1010mb)

Weather: VMC Sleet VMC CLOC

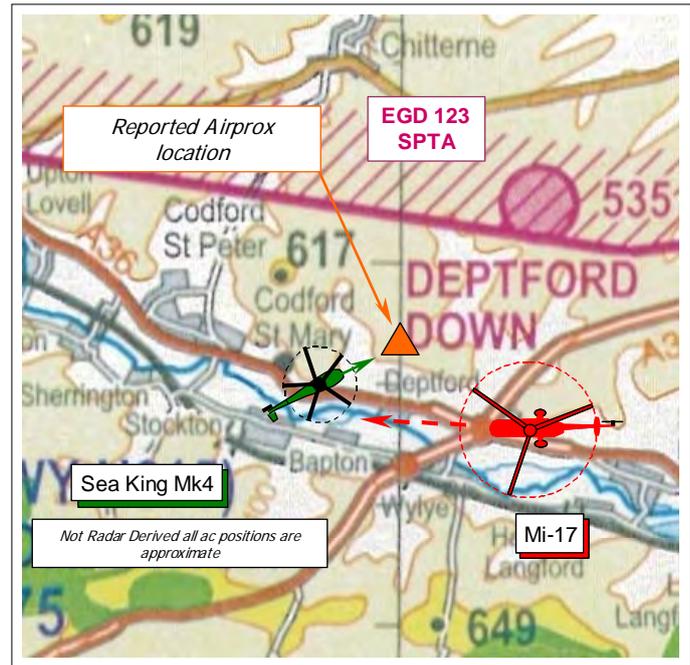
Visibility: >10km 15km

Reported Separation:

Nil V/200m H 200m H

Recorded Separation:

Not recorded



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE WESTLAND SEA KING HC4 PILOT** reports that he was conducting a night low-level VFR cct training sortie using Night Vision Devices (NVDs) on Salisbury Plain Training Area (SPTA) and in communication with Salisbury OPS – an A/G Station - on 280.00MHz. The upper red HISL was on with the navigation lights set to steady/dim; the IR lights were 'off' as the flash was putting off the pilot in the RH seat whilst in the hover. A squawk of A7002 [Danger Areas General] was selected with Mode C on.

Whilst setting up for a datum autorotation at Deptford Down, heading 060° at 90kt, flying level at 1000ft PORTLAND RPS (1010mb), the aircrewman reported another ac - the Mi-17 - passing 200m down the starboard side of his helicopter at the same level but flying in the opposite direction. Assessing the Risk as 'medium', no avoiding action was taken as he thought the Mi-17 crew, once visual with his Sea King, had taken avoiding action. In order to set up for the autorotation, his Sea King helicopter was 1nm outside EG D123 when the Airprox occurred.

It would seem that the other crew was operating on a Boscombe Down ATC frequency and were warned of his Sea King's presence.

**THE Mi-17 PILOT** reports that he was conducting a dual night training sortie without NVDs and was in receipt of a BS from Boscombe APPROACH (APP). His Mi-17 displayed conventional night lighting, including flashing red anti-collision lights. A squawk was selected with Mode C on.

APP provided traffic information about another ac – the Sea King – which he believed he had visually identified so he thought there was no conflict with it. However, it transpired that the Sea King had actually been mis-identified for another light further in the distance. Approaching a position above the A36 between the villages of Deptford and Codford St Mary, about 1½nm S of the southern boundary of EGD123 (SPTA) (at 51°09'N 002°00'W), heading 280° at 100kt at an altitude of 1500ft PORTLAND RPS (1010mb), the Sea King was first seen passing down the starboard side 200m away on a reciprocal heading. There was no time available to take avoiding action and he assessed the Risk as 'high'. His workload was also 'high', which he attributed to the fully instructional reversionary night navigation sortie with a foreign student pilot and flight engineer. Furthermore, both crews were operating on different frequencies due to their position and operating area, but he added that a frequency change to Salisbury OPS was due before the next turning point along their route.

**THE BOSCOMBE DOWN APPROACH CONTROLLER (APP)** reports some 2 months after the incident [see UKAB Note (1)] that his recollection of the event may not be exact so long afterwards. He was the ATCO i/c and APPROACH controller working a fairly busy rotary radar training circuit (RTC) pattern; in addition he was controlling rotary VFR arrivals and departures and covering the LARS frequency. The Mi-17 departed from Boscombe Down under VFR low-level to the W under a BS for a clockwise NAVEX around SPTA. Even though the flight was under a BS, he called traffic operating in the vicinity of Deptford Down as he assessed it posed a risk of collision and, as such, had a duty of care to do so. The pilot then reported changing to the SPTA frequency. Later, just as he was about to leave the building at the end of night flying, he received a telephone call from Yeovilton asking if he had any rotary traffic flying in the vicinity of Deptford Down that evening as one of his pilots has come into close proximity to what he believed to be a Mi type helicopter. Yeovilton was informed of the ac airborne at the time and the telephone number of the Squadron passed. No mention was made that an Airprox had occurred or would be filed, so he did not file a report at the time, but left a note for the morning Supervisor about the telephone call. No further mention of the incident was received regarding an Airprox until about 2 months later when he was informed by the UKAB that an Airprox had been filed.

UKAB Note (1): This Airprox was first notified to the UKAB on 11 May, in excess of 2 months after the event occurred on 3 Mar. Boscombe Down ATC was contacted direct by UKAB staff on 12 May and controllers reports together with an impound of the relevant RT frequency was requested. The reported Mi-17 pilot was identified on 20 May and his report was received on 14 Jul.

UKAB Note (2): This Airprox occurred outwith recorded radar coverage.

**HQ AIR BM ATM SAFETY ANALYSIS** reports that this Airprox investigation has been undertaken some time after the event. This has led to a lack of evidence other than the controllers report provided. The aircraft in question was under a BS. The controller passed TI because he thought there was a definite risk. HQ Air ATM SM does not believe that ATC contributed to this Airprox.

UKAB Note (3): Analysis of the APP RT tape transcript reveals that the Mi-17 crew called APP at 1931:50 and was placed under a BS for the low-level departure via Wilton. Later, after APP passed the PORTLAND RPS of 1010mb, the controller queried the Mi-17 crew's operating altitude, which the pilot reported at 1937:52 as, *"..15 hundred on 1-0-1-0"*. Moments later at 1938:10, APP passed TI to the Mi-17 crew, *"[C/S] traffic North-West 2 miles tracking South, indicating 1 thousand feet"*, to which the Mi-17 crew replied *"[C/S] looking"* and then 3 sec later at 1938:18, added *"[C/S] visual"*. Just over 2min later at 1940:30, APP warned the Mi-17 crew *"[C/S] indicating on the southerly edge of D 1-2-3 which is active to 3 thousand feet"*. This was acknowledged by the Mi-17 crew who reported switching to their en-route frequency.

**MOD LF OPS** comments that military crews operating from Units based in LFA1/NRR1 are NOT required to book into the area for day or night flying. Other aircrew based outside the LFA/NRR are required to book into LFA1/NRR1 with the LFBC at Wittering. The booking is for statistical purposes, no information is passed on to other LFA1/NRR1 users unless they are performing an unusual flight or operating without, or, with reduced lighting, when prior approval must be obtained and an avoidance or NOTAM promulgated. In this context, the Sea King operating with IR lights off did constitute reduced lighting.

**THE WESTLAND SEA KING HC4 PILOT's UNIT**, having subsequently identified the second ac as an Mi-17 and discussed this incident with that unit, comments that the Captain of the Mi-17 had mis-identified the Sea King operating at Deptford Down for another ac. He therefore only saw the Sea King when they had closed to a range of about 200m. A contributory factor to the incident was that the two ac were operating on separate frequencies whilst in the same vicinity.

**HQ JHC** comments that there are a number of scenarios which may have happened but the length of time passing between the incident and the filing of the report and detail of the reports means that the true cause and contributory factors is difficult to establish.

Whilst each ac involved was operating on a different frequency, the controller passed pertinent and timely information which should have prevented an Airprox. It appears that misidentification caused the Mi-17 pilot to feel comfortable that he was not flying towards the Sea King. It might be expected that if they had been operating on the same frequency they would have had more situational awareness and been in a better position to prevent the Airprox, but TI on the possible conflicting ac had been passed by Boscombe Down App. The Mi17 pilot states in his report that a frequency change to Salisbury Ops was due before the next turning point. It may have been prudent and better airmanship to have changed frequency earlier, particularly as they were closer to SPTA than Boscombe MATZ.

It is not clear from the report whether the manoeuvre by the Sea King to set up the datum autorotation (a circuit) contributed to the crew's ability to see the Mi-17. The ac may also have been on reciprocal headings at similar heights for a short period of time making it difficult to see relatively stationary lights against any background lights.

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

Information available included reports from the pilots of both ac, a transcript of the Boscombe Down APP frequency, radar video recordings, a report from the air traffic controller involved and reports from the appropriate ATC and operating authorities.

The Sea King pilot reported he was flying at 1000ft RPS, whereas the Mi-17 pilot said he was at 1500ft RPS, and confirmed as such on RT before the TI was issued by APP. This TI to the Mi-17 crew quoted the Sea King as southbound indicating 1000ft (probably with the data displayed to APP referenced to 1013mb), suggesting there should have been about 500ft separation between the two helicopters when the Sea King was downwind. However the Sea King might have been climbing to set up for the autorotation when TI was given and, as the Airprox occurred out with recorded radar coverage, there was no independent view of the geometry and separation that pertained here. It seemed clear that the Sea King was somewhat higher than its pilot reported as he said these two ac had passed starboard-to-starboard, at about the same level. Another aspect was, however, that the Sea King crew was using NVDs and the Board was aware of the difficulties of range perception when using these devices. In spite of this, both pilots' accounts agreed that the two helicopters were 200m apart at the closest point and apparently too close for comfort at night.

The debate then centred on the frequencies in use at the time; the Mi-17 crew was about to switch to Salisbury OPS – the frequency used by the Sea King crew – that is normally used within SPTA, but as an A/G Station they cannot provide any form of ATS. Nevertheless, if all ac operating in the vicinity are on the same frequency and making appropriate RT calls, then pilots can form a mental air picture of what is happening around them. This was not possible here because the Airprox occurred just before the Mi-17 crew switched across whilst outside SPTA.

Both helicopters were displaying conventional lighting appropriate to their tasks and were plainly there to be seen. The Mi-17 pilot's frank admission that he had misidentified some lights when he was given TI on the Sea King was clearly an important factor, and thus he was plainly unaware of the other helicopters close proximity as they approached each other. Therefore, the Mi-17 pilot, busy monitoring what the other members of his crew were doing, was unable to engineer any greater separation before the close quarters situation arose. The Members agreed unanimously that their effective non-sighting was part of the Cause.

While it was clear from their report that the Mi-17 crew had not seen the Sea King in time to take avoiding action, it was not clear to the Board whether the Sea King pilot saw the Mi-17 early enough to take avoiding action had he thought it necessary. The Mi-17 should have been in the Sea King crew's field of view as it approached from the E and they should have been able to spot it as they turned inbound towards Deptford Down to set up for their autorotation. Although the Sea King pilot reported that the Mi-17 was first seen passing down their starboard side, he also reported that he took no avoiding action since it appeared that the Mi-17 crew had already done so. The implication,

that the Sea King could have taken avoiding action if necessary, led some Board Members to conclude that this was a late sighting. However the majority view prevailed and it was agreed that the Sea King crew, for whatever reason, did not see the Mi-17 in time to take effective avoiding action, so this was effectively a non-sighting on their part and the other half of the Cause. Furthermore, with neither crew aware of the close proximity of the other helicopter in time to take avoiding action the mutually agreed horizontal separation of 200m existed purely by chance. Some thought this separation sufficient to mitigate any actual Risk of a collision but others disagreed. The Board concluded, by a majority vote, that an actual Risk of collision had existed in the circumstances reported here.

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

Cause: Effectively non-sightings by the crews of both aircraft.

Degree of Risk: A.

## AIRPROX REPORT No 2010044

Date/Time: 16 Mar 2010 0955Z

Position: 5309N 00050W (4nm N Newark-on-Trent)

Airspace: Lincolnshire AIAA (Class: G)

Reporting Ac      Reported Ac

Type: Grob Tutor(A)      Grob Tutor(B)

Operator: HQ AIR (TRG)      HQ AIR (TRG)

Alt/FL: 4800ft      4500ft  
(RPS 1020mb)      (RPS 1020mb)

Weather: VMC CLBC      VMC CLBC

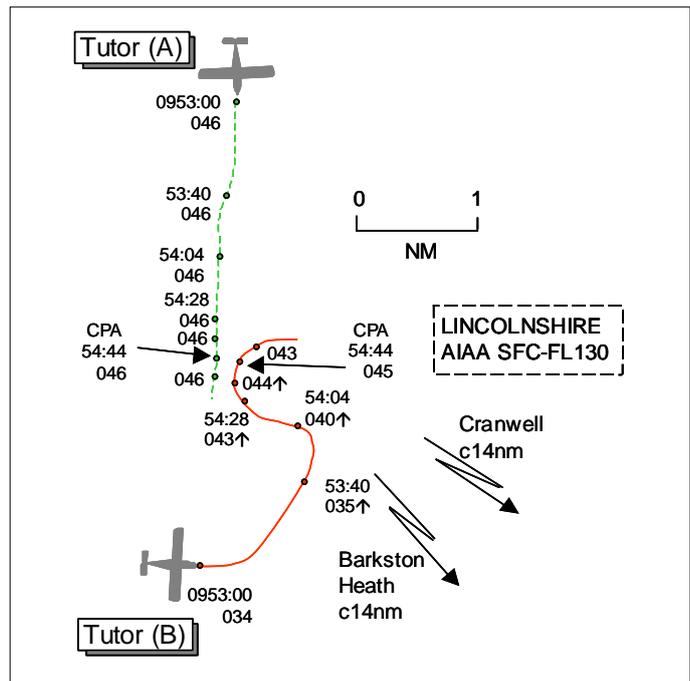
Visibility: 25km      30km

Reported Separation:

Nil V/100yd H      Nil V/200m H

Recorded Separation:

100ft V/0-2nm H



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

**THE GROB TUTOR (A) PILOT** reports conducting a QFI training sortie from Barkston Heath and listening out on 282.6MHz, squawking 2637 (Cranwell conspicuity code) with Modes S and C. The visibility was 25km flying 500ft below cloud in VMC and the ac was coloured white with HISLs switched on. About 3nm NW of Newark heading 180° flying straight and level at 4800ft Barnsley RPS 1020mb, another Tutor was seen in his 10 o'clock range 100yd in a steep RH turn to the E. No avoiding action was taken as the other ac carried out the appropriate manoeuvre, passing 100yd away at the CPA. He assessed the risk as very high. He went on to say that the vision from his ac was poor as the opposing ac was shielded behind the canopy arch and it also blended in with the background cloud of a similar colour to the Tutor. Also his harnesses were tight which made looking around the canopy arch more difficult.

**THE GROB TUTOR (B) PILOT** reports flying as a solo student from Cranwell operating in the Cranwell NW sector and in communication with Barkston Director, he thought, on 282.6MHz, squawking 2637 with Modes S and C. The visibility was 30km flying 1000ft below cloud in VMC and the ac was coloured white with strobe, nav and landing lights all switched on. He had been authorised for aerobatics but did not conduct them owing to the cloud base. Instead he elected to conduct GH along the river Trent N-S at 4500ft RPS 1020mb between Newark and a disused power station 10nm N of Newark in the Trent Valley. About 5nm N of Newark heading N at 100kt he saw a Tutor conflicting in his 11 o'clock range 300m heading S at the same level, although no immediate threat was apparent. However, separation closed to within 200m so he made an avoiding action R turn onto E and, once level, re-established visual contact. The other ac was by then no threat heading in the opposite direction. He assessed the risk as low.

**HQ AIR BM SAFETY MANAGEMENT** reports that initial investigation showed that frequency 282.6 MHz is published as Barkston Director, operated by RAF Cranwell ATC; however, this was being used as a discrete frequency for operators and no ATS was being applied to this ac at the time of the incident.

**HQ AIR (TRG)** comments that this Airprox occurred in good visibility within the Lincolnshire AIAA. Both crews should have seen each other earlier than they did but it was the pilot of Tutor (B) who saw Tutor (A) with sufficient time to take effective and appropriate avoiding action.

UKAB Note (1): The Claxby radar recording clearly captures the incident. At 0953:00 Tutor (A) is seen tracking S level at FL46 (4810ft RPS 1020mb) with Tutor (B) in its 12 o'clock range 3-9nm tracking E level at FL34 (3610ft RPS). Tutor (A) continues generally S maintaining FL46 whilst Tutor (B) turns NE'ly and is seen to commence a climb and a L turn at 0953:40 before rolling out on a W'ly track 24sec later, climbing through FL40 (4210ft RPS); lateral separation is 1.5nm. Just over 30sec later at 0954:28 Tutor (B) is turning R through a NW'ly heading, climbing through FL43 (4510ft RPS) in Tutor (A)'s 1130 position range 0.7nm. The next sweep 8sec later shows Tutor (B) turning through N climbing through FL44 on the same relative bearing from Tutor (A) at a range of 0.4nm. The CPA occurs on the next radar sweep at 0954:44 with the subject ac passing port to port range 0.2nm, Tutor (B) still turning R and indicating FL45 (4710ft RPS), 100ft below Tutor (A). Tutor (B) is then seen to diverge rapidly and descend 200ft shortly before steadying on an E'ly track.

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

Information available included reports from the pilots of both ac, radar video recordings and reports from the appropriate ATC and operating authorities.

Members could add little to this incident. Within the Lincolnshire AIAA Class G airspace both crews had equal responsibility to maintain separation from other ac through see and avoid. The comments made by Tutor(A) pilot with respect to the canopy arch and his harness affecting his lookout scan were noted. However, known factors such as these should be alleviated by either moving the ac's flightpath or the pilot's head to clear the 'blind areas'. The possibility of replacing the fixed harness with an adjustable one, a type which was fitted to the T67M Firefly fleet, is an issue which is being investigated by HQ Air. The Tutor's colour and the ability to visually acquire an ac against a backdrop of cloud may have also added to the situation. Nevertheless, in light of the good visibility and with both ac below the main cloudbase, Members agreed that there had been ample opportunity for both crews to acquire visually each other's ac for some time prior to the CPA. However, Tutor(A) crew only saw Tutor(B) an estimated 100yd away as it passed down their LHS, effectively a non-sighting, whilst Tutor(B) pilot saw (A) late, 300m away, and elected to continue briefly before executing a R turn to avoid, estimating 200m separation. The radar recording revealed that actual separation was about 0.2nm, 400yd and the HQ Air Training Member thought that with the geometry that pertained, Tutor(B) pilot should have taken action earlier instead of waiting. That said, although Tutor(A) crew were undoubtedly surprised by the appearance of Tutor(B), the Board believed that earlier sighting and robust actions taken by Tutor(B) pilot had been effective in removing any risk of collision.

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

Cause: Effectively a non-sighting by Tutor(A) pilot and a late sighting by Tutor(B) pilot.

Degree of Risk: C.

## AIRPROX REPORT No 2010046

Date/Time: 13 May 2010 1016Z

Position: 5119N 00102W (10nm WNW Farnborough)

Airspace: LFIR (Class: G)

Reporting Ac Reported Ac

Type: C510 Mustang Pioneer 200

Operator: Civ Comm Civ Pte

Alt/FL: 3400ft 2000ft?  
(QNH 1015mb) (QNH)

Weather: VMC CLBC VMC CLOC

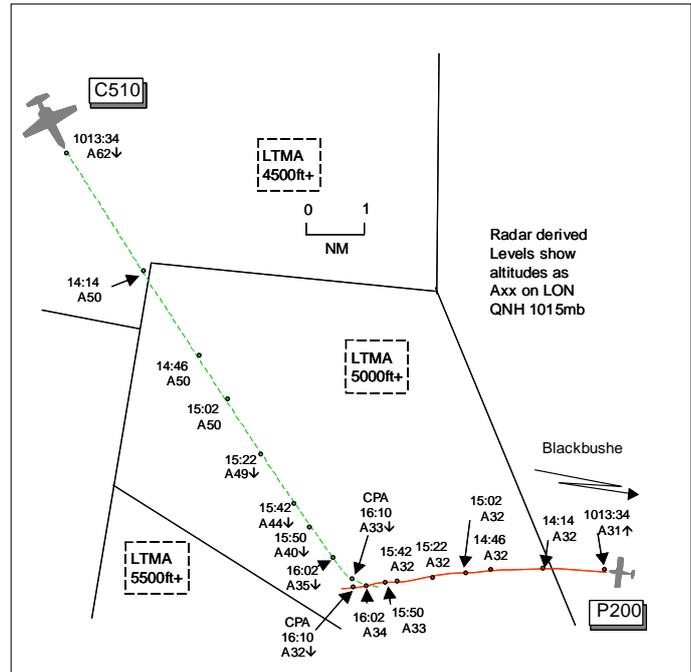
Visibility: >10km >10km

Reported Separation:

Nil V/250m H 500ft+V/500m+H

Recorded Separation:

100ft V/0.1nm H



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

**THE C510 MUSTANG PILOT** reports inbound to Blackbushe IFR and shortly after leaving CAS, and following a handover from London Control to Farnborough when they were waiting for a TS to be given, they had a TCAS TA; TCAS 1 was fitted. The visibility was >10km flying 500ft below cloud in VMC and the ac was coloured white/grey/blue with anti-collision, nav and strobe lights switched on. Heading 140° at 190kt and level at 3400ft QNH a visual sighting was made of light ac traffic, a high wing C172 type he thought, in their 12 o'clock, range 300m, crossing from L to R at the same level. The A/P was disconnected and an immediate L turn (45° AoB) was initiated to pass behind the conflicting traffic; estimated separation was 250m. He was unable to report the incident to Farnborough LARS [actually Approach] immediately owing to workload but he subsequently telephoned to report it. He assessed the risk as high.

**THE PIONEER PILOT** reports flying a local sortie from Blackbushe under VFR, heading 300° at 100kt and in receipt of a BS from Farnborough on 125.25MHz, squawking an assigned code with Modes S and C. He had just become airborne for a local GH sortie prior to carrying out some ccts. He initially selected 0447 squawk and passed his initial message to LARS giving his flight details. He headed out to the NW to avoid Odiham MATZ and then turned W'ly to avoid R101/104. Normally he would operate between 2000ft and 3000ft but he could not recall his level at the time. As he was in contact with Farnborough he did not anticipate any traffic to be as near to his position as it was, even allowing for a much higher airspeed. He recalled feeling that the other ac, a Cessna Mustang, did come very close and reported this to the controller. He was reassured that the other ac's pilot was visual with his ac and was manoeuvring to avoid him. The other ac was seen late out to his R descending from above and he estimated it passed him by 500-1000ft vertically and 500-1000m horizontally. He did not feel the need to report an Airprox as he was left with the impression that the situation had been under control (but not his own), believing the Mustang was under a TS. Subsequently however, it seemed that he was mistaken and that both flights were under a BS. With hindsight, this situation highlights the potential dangers that exist between small light ac and faster/larger ac in busy airspace. In Class G the 'see and avoid' doctrine inevitably works less well if ac have disparate airspeeds. He assessed the risk as low.

**THE FARNBOROUGH APPROACH CONTROLLER** reports mentoring a trainee as OJTI. The Cessna Mustang called inbound via the silent handover procedure through CPT descending to 5000ft direct to ODIMI. The ac was entering an area of high traffic density N of Odiham. The pilot called

visual with Blackbushe on his first call and was descended to 3400ft. The trainee called Blackbushe to advise them of the impending arrival before he informed the crew that further descent and routing direct to Blackbushe was approved. He also told the crew that there was traffic in their 12 o'clock 0-5nm at a similar level; the pilot called visual with the traffic and was transferred to Blackbushe. The trainee was busy with Farnborough approach traffic and no level of service was agreed with the Mustang pilot.

**THE FARNBOROUGH LARS CONTROLLER** reports seated alongside an OJTI and trainee on Approach. His frequency was busy and he had been informed about a number of movements by the trainee pointing at his screen but with no verbal communication; he did not recall any Blackbushe inbound being pointed out. He was monitoring the radar and the trainee's fss as a precaution. He first saw the Cessna Mustang about 12nm NNW of Blackbushe and on looking ahead saw an unknown ac climbing out from Blackbushe as well as an aerobatic squawk 5nm NW of Blackbushe. He tried calling the unknown ac 2-3 times but without success and the unknown was noted at 3200ft. He indicated that this unknown ac was not on his frequency to the Approach controller and this was acknowledged. A short while later he noticed the Mustang descending through 4000ft towards the unknown and about this time the Pioneer pilot called so he issued a squawk and asked the Approach controller, "*what are you doing with that?*", highlighting the Mustang at close range. No comment was received from either the trainee or mentor but he was acknowledged. He looked at Approach's fss on the Mustang to see that descent to 3400ft had been given. He decided to ask the Pioneer pilot to descend (as it was at 3200ft) in order to give both ac some form of deconfliction as the contacts were on a collision course; he passed TI to the Pioneer pilot. He considered turning the Pioneer but a R turn to the N would have worsened the situation and a S turn would have perhaps made the Pioneer pilot unable to sight the Mustang. As the ac closed to 0-5nm the OJTI told him that the Mustang pilot was visual with the Pioneer. He told the Pioneer pilot to maintain his level (which had not changed) given that the Mustang flight was visual and, assessing its descent profile, it looked as if it would continue descent. At no point was he given any indication of the Mustang's intentions by the Approach OJTI or trainee except the visual sighting of the Pioneer by the Mustang pilot at very close range.

**ATSI** reports that the Airprox occurred at 1016:08 in Class G airspace 7.2nm W of Blackbushe Airport. The Cessna Mustang (C510), inbound to Blackbushe IFR, was released to Farnborough Radar by London Control, on a silent handover, leaving CAS by descent to 5000ft and on track ODIMI. On initial contact the C510 pilot reported Blackbushe in sight.

Farnborough MATS Pt2, (17/11/09) states:

Page APR-17, paragraph 4.2.5, 3) 'LTC will instruct aircraft to leave CAS descending to the acceptance altitude 5000ft (London QNH) on track ODIMI'.

Page APR-3, Paragraph 2.4, 'Upon identification after departure, when leaving CAS or free-calling Farnborough Approach inbound, the pilot is to be requested what level of service is required by using the phraseology: "*What type of Radar service do you require?*"'

Page APR-31. 3) 'Aircraft inbound to Blackbushe leaving CAS will be controlled as if they were a Farnborough inbound to the point where they have left CAS. The aircraft will then be offered the appropriate ATSOCAS until the aircraft can continue its approach to Blackbushe visually.....The Blackbushe FISO will be notified of the inbound estimate and may inform Farnborough of the runway in use at Blackbushe and relevant airfield information'.

The Pioneer 200 (P200) flight was on a local VFR flight from Blackbushe and in receipt of a BS, having just established contact with Farnborough LARS(W).

Farnborough Approach (Radar) position was manned by a late-stage trainee (level 4) and newly qualified OJTI. Farnborough LARS(W) was seated next to the Radar trainee and the frequency was reported as busy. The workload was assessed as medium to heavy and radar recording shows a number of contacts manoeuvring in the area to the WNW of Blackbushe with labels overlapping and garbling.

ATSI had access to radar recordings, RT transcription together with controller and unit reports. It was not immediately apparent that the P200 was involved in the Airprox, because the C510 pilot had initially thought that the other aircraft involved was a C172. Consequently the LARS(W) report was written some time after the incident.

METAR EGLF 131020Z VRB02KT 9999 SCT048 12/M01 Q1015=

LARS(W) observed a number of contacts including, the C510, an aerobatic squawk and an unknown contact climbing out of Blackbushe. Radar recording shows this unknown contact displaying a Blackbushe departure squawk of 0447. LARS(W) tried unsuccessfully to establish communication with this unknown contact and then advised Radar that it was not on his frequency. At 1013:36 the (P200) pilot called LARS(W) reporting on a local VFR flight from Blackbushe, operating in the Newbury area at 3100ft. A BS was agreed and the LARS(W) controller passed the squawk 0440 and QNH 1015mb. The pilot correctly acknowledged this and at 1014:16 radar recording shows the squawk of the unknown contact change from 0447 to 0440. The distance between the 2 ac was 9nm, with the C510 12.2nm NW of Blackbushe, indicating A4900ft

At 1014:48 the C510 flight called Farnborough Radar, "*Farnborough good morning (C510)c/s five thousand feet one zero one five direct ODIMI*". Radar replied, "*(C510)c/s Farnborough Radar good a-good morning Q N H one zero one five*", and the C510 pilot responded, "*one zero one five and er Blackbushe in sight (C510)c/s*". At 1015:05 Radar responded, "*(C510)c/s descend to altitude three thousand four hundred feet resume own navigation direct Blackbushe*". The pilot of the C510 acknowledged this and Radar then notified Blackbushe of the imminent arrival. Radar recording shows the C510, 9.9nm WNW of Blackbushe. At the same time Radar was distracted vectoring a Farnborough inbound onto the ILS RW24.

LARS(W) observed the C510 inbound and at 1015:22 advised, "*(P200)c/s just advise if you want to climb above altitude four thousand feet please inbound jet traffic*". The P200 pilot replied, "*er negative we'll remain at er three two for a while (P200)c/s*". At this point radar recording shows the C510 starting the descent. At 1015:42 the Radar controller advised the C510, "*...descent approved you confirm you are visual with Blackbushe*" and the pilot replied, "*Affirm visual with Blackbushe er (C510)c/s*".

The LARS(W) controller's written report states that he noticed the C510 passing 4000ft and asked Radar what they were doing with the C510 but obtained no reply. At 1015:50 Radar transmitted, "*(C510)c/s roger maintain yo-maintain your own terrain clearance descent approved into Blackbushe traffic twelve o'clock half a mile left to right indicating three thousand three hundred feet*". The C510 pilot replied, "*In sight (C510)c/s*". Radar informed the pilot, "*(C510)c/s Blackbushe are on runway zero seven their QNH one zero one five one in the circuit.*" This was acknowledged. At this point the radar recording, timed at 1015:50, shows the two ac 1.6nm apart and converging.

Simultaneously at 1015:54 LARS(W) requested, "*(P200)c/s could I just ask you to descend to three thousand feet there's just an inbound aircraft just er above you.*" The P200 pilot replied "*Roger descending three thousand (P200)c/s*". The Radar OJTI informed LARS(W) that the C510 had the P200 in sight. Then at 1016:03 the LARS(W) controller gave a warning using the wrong c/s, "*...that traffic's just half a mile north of you three thousand three hundred feet has you in sight Business Jet*". At 1016:08 the P200 pilot reported, "*er roger we've just er crossed paths ????? making a sharp er left turn (P200)c/s*". The LARS(W) controller added, "*(P200)c/s he did have you in sight*" and the pilot responds, "*Understood (P200)c/s*". Radar recording at 1016:10 shows C510, indicating altitude 3300ft passing 0.1nm to the N of the P200, indicating altitude 3200ft. Shortly afterwards the P200 was advised that there is no altitude restriction and the C510 is transferred to Blackbushe.

The pilot of the C510 did not request, nor did Radar ask the C510 pilot, what ATSOAS service he required. The pilot reported visual with Blackbushe and was cleared for descent and own navigation. The phraseology used by the Radar controller, "*maintain your own terrain clearance descent approved*" and "*roger radar service terminates,*" is consistent with the provision of a TS. However the

controller, in his written report, considered that because a radar service had not been agreed, a BS was being provided. The C510 pilot reported that he was waiting for a TS to be issued.

Radar recording shows a number of contacts ahead of the C510 and due to garbling it was difficult to distinguish between individual ac or levels. In the period leading up to the incident, the frequency was busy and there was little verbal communication between the two control positions. The LARS(W) controller reports that he was informed about movements, by the trainee pointing. Whilst the LARS(W) controller was aware of both ac, he was not aware of the intentions of the Radar controller to descend the C510. When he did challenge this, it was too late to react in a timely manner. The controllers were seated on adjacent consoles and were in possession of information that could, through agreement or coordination, have resolved the potential conflict.

Timely TI was not passed to the C510 pilot. The Radar OJTI reported that he would normally have provided a TS with restricted TI due to the high density of traffic. The Radar controller was aware of the high density of traffic in the area but did not pass any information regarding the general airspace activity, which would have aided the situational awareness of the pilot.

Farnborough Approach Radar was manned by a late stage trainee (level 4), under the supervision of a newly qualified OJTI. This was the first time the OJTI had worked with this particular trainee and the unit training records indicated a high expectation of the trainee skill level. The OJTI was aware that an appropriate level of service should have been offered to the C510 and in this case believed that a TS with restricted TI should have been offered. The OJTI had also expected TI would have been passed earlier.

MATS Pt1 (01/07/10), Section 1, Chapter 11, page 1, paragraph 2.2.1 states: 'Within Class F and G airspace, regardless of the service being provided, pilots are ultimately responsible for collision avoidance and terrain clearance, and they should consider service provision to be constrained by the unpredictable nature of this environment. The Class F and G airspace environment is typified by the following:

- It is not mandatory for a pilot to be in receipt of an ATS; this generates an unknown traffic environment;
- Controller workload cannot be predicted;
- Pilots may make sudden manoeuvres, even when in receipt of an ATS'.

Due to the rapidly increased workload and a number of contributory factors, the Radar controller did not agree a level of ATSOCAS service, or pass TI. The C510 pilot had reported visual with Blackbushe and Radar started to transfer the flight direct to Blackbushe. The C510 was approaching an area of high traffic density and the unknown contact had just changed squawk from 0447 to 0440. There was an added distraction caused by the requirement to provide vectors to Farnborough inbound traffic onto the ILS. No TI was provided to the C510; however, a warning was given 1min and 2sec after the initial call. It is difficult for an OJTI to decide when to step in with an advanced level trainee. This is a judgement based on a combination of circumstances, training and experience. On this occasion the OJTI allowed the trainee to continue, without recognising the complexity of the situation. The OJTI did not ensure that the C510 was offered an appropriate level of service with appropriate TI.

The P200 was in receipt of a BS from Farnborough LARS(W). No service had been offered or agreed with the pilot of the C510. When it became apparent that definite risk of collision existed, a warning was given to both flights by each controller and each pilot reported the other ac in sight.

MATS Pt1 (01/07/10), Section 1, Chapter 11, page 4, paragraph 3.1.1 states: 'A Basic Service is an ATS provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. This may include weather information, changes of serviceability of facilities, conditions at aerodromes, general airspace activity information, and any other information likely to affect safety. The avoidance of other traffic is solely the pilot's responsibility'.

MATS Pt1 (01/07/10), Section 1, Chapter 11, page 4, paragraph 3.5.1 states: 'Pilots should not expect any form of traffic information from a controller, as there is no such obligation placed on the controller under a Basic Service outside an Aerodrome Traffic Zone (ATZ), and the pilot remains responsible for collision avoidance at all times. However, on initial contact the controller may provide traffic information in general terms to assist with the pilot's situational awareness. This will not normally be updated by the controller unless the situation has changed markedly, or the pilot requests an update. A controller with access to surveillance derived information shall avoid the routine provision of traffic information on specific aircraft, and a pilot who considers that he requires such a regular flow of specific traffic information shall request a Traffic Service. However, if a controller considers that a definite risk of collision exists, a warning may be issued to the pilot'.

The unit has identified some important factors and learning points regarding OJTI training. The importance of newly qualified, low hour OJTIs, in particular, being aware of when it is necessary to give advice, guidance and when to step in on the frequency with more advanced late stage trainees has been highlighted. Appropriate action has been taken to debrief all OJTIs at the unit with an intention to disseminate the learning point throughout NATS.

## **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 authorities.

It was clear that there were differing viewpoints and expectations by all parties involved in this incident. No agreement as to the level of ATS was made between the C510 crew and Farnborough APP. The C510 crew were expecting a TS after leaving CAS, however, they did not request a service during the initial RT exchange or query it with APP when no service was specified. The APP trainee did not offer a service nor ask which service the crew required, contrary to MATS Part 2. The mentor was aware that no level of service had been agreed and subsequently debriefed the trainee on this point; however, the phraseology used by the trainee was consistent with a TS. From the RT transcript it was apparent that immediately after the initial RT exchange the C510 pilot reported Blackbushe in sight which allowed the APP to de-restrict the C510 from its IFR route to ODIMI and release it on a direct track. Members thought that because of the short timescale involved, as APP would expect the flight would be transferring to the Blackbushe frequency after he had coordinated the flight with the Blackbushe FISO, it was understandable that establishing a radar service, which would be terminated almost immediately afterwards, was not warranted. Also, even if a TS had been agreed, any TI was subject to controller workload and he had been busy speaking to Blackbushe and vectoring an inbound ac to Farnborough. LARS had gleaned information from APP's fps display and attempted to coordinate the P200's potential confliction but without success. After LARS informed the P200 pilot of the "inbound jet traffic" and attempted to build in some vertical separation from it, APP removed the C510's 3400ft altitude restriction, which negated LARS' action. Although the ATS scenario was less than ideal Members were mindful that, irrespective of the level of service, within the Class G airspace the crew of the C510 and the pilot of the P200 were responsible for their own separation from other traffic through see and avoid. Both LARS and APP issued a warning to both pilots but the pilots only saw each other's ac late and this had caused the Airprox.

The P200 pilot was told that the C510 pilot had his ac in sight but was understandably concerned as he saw it pass close to his R and behind him. Although TCAS 1 had alerted the C510 pilot to the P200, his late visual sighting had necessitated prompt and robust avoiding action, estimating he passed with 250m separation; the radar recording shows 100ft vertical and 0.1nm (185m) horizontal separation. Taking all these elements into account the Board agreed that the C510 pilot's actions had been effective in removing the actual collision risk but that safety had not been assured during the encounter.

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

Cause: Late sightings by the pilots of both ac.

Degree of Risk: B.

## **AIRPROX REPORT No 2010047**

Date/Time: 4 May 2010 (Tuesday) 1425Z

Position: 5342N 00232W (4½ nm SSE of Samlesbury)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: Bell 206B Robinson R44

Operator: Civ Comm Civ Pvt

Alt/FL: 1000ft NR  
QNH (1027mb) NR

Weather: VMC CLBC VMC NR

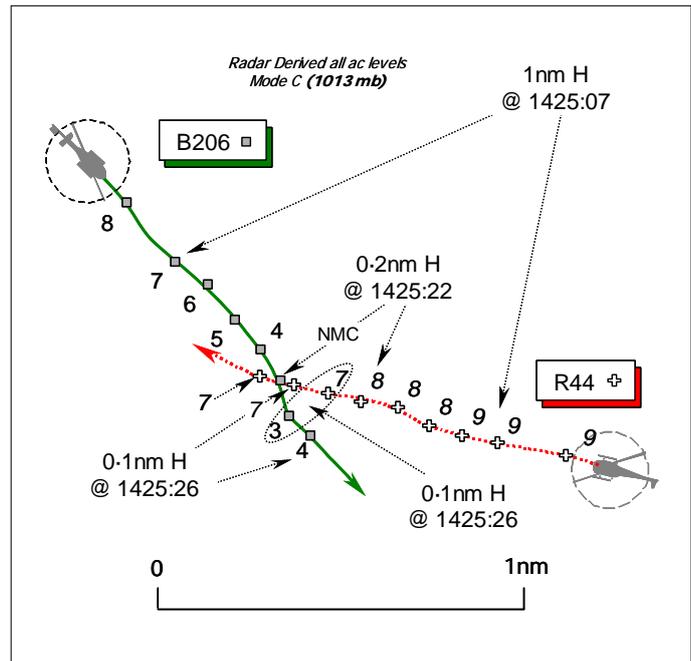
Visibility: 10km NR

Reported Separation:

200ft V/500m H 400ft V

Recorded Separation:

400ft V/0.1nm ~ 200yd H



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

**THE BELL B206B JET RANGER (B206) PILOT** reports he was conducting a pipeline survey VFR at 100kt, whilst in receipt of a BS from Warton APPROACH (APP) on 129-525MHz.

About 2min before the Airprox occurred APP reported an unknown contact in his 10 o'clock at a range of 3nm at the same level. He warned his observer and increased his lookout but continued with the pipeline inspection at 500ft agl – about 1000ft Warton QNH (1027mb) – in VMC some 3000ft below cloud. APP continued to issue warnings as the separation against the unknown ac decreased, but about 4½ nm SSE of Samlesbury at ½nm range he had not established visual contact and so elected to descend to low-level and turn R away from the pipeline. TCAS I then enunciated 'TRAFFIC'. As he descended to 300ft agl he saw a blue and silver R44 or R22 helicopter, sky-lined now in their 8 o'clock position about 500m away and about 200ft above him - as confirmed by his TCAS I display. His observer noted it was an R44, blue and silver in colour. He thanked Warton for their assistance and informed them that he would file an Airprox.

Warton APP had no radio communication with the R44 but tracked it to a landing site near Maghull. Subsequently, when he landed at Blackpool, some enquiries were made and he discovered the aircraft registration, he thought, and advised the R44 pilot that an Airprox would be filed. It was suggested that the other pilot had seen his Jet Ranger, but not until he had descended to low level.

His helicopter has a dark livery; the HISLs and pulse landing lights were all on. The pipeline conspicuity squawk of A0036 was selected with Mode C.

UKAB Note (1): The registration offered by the B206 pilot was subsequently found to be incorrect by one letter, as the suggested helicopter identification had not flown in this vicinity at all. However, the pilot of the R44 helicopter seen by the B206 pilot was subsequently traced.

**THE ROBINSON R44 HELICOPTER PILOT** provided a brief written account supplemented with further information provided in a telephone call to UKAB staff. He reports that he was returning from Rochdale to Blackpool [a track of about 290° - 28nm] under VFR in VMC, but not in receipt of an ATS. A squawk of A7000 was selected with Mode C; his helicopter has a blue and silver colour-scheme and the HISL was on.

In the vicinity of Darwin [2nm SE of the Airprox location] he saw the Jet Ranger from a range of about 2/3nm crossing ahead from R – L at low-level - about 700-800ft below his helicopter he estimated. He was unconcerned by this as the Jet Ranger appeared to be operating at low level. No avoiding action was warranted and he estimated the minimum vertical separation to be about 400ft. This was about all he could recall, but he stressed that he kept the Jet Ranger in sight throughout. He opined that in future, whilst in transit, he will call an appropriate ATSU and endeavour to elicit TI about ac operating nearby.

**ATSI** reports that the Jet Ranger pilot, on a pipeline patrol, established communication with the Warton APR at 1407. The pilot requested a BS routeing Nelson-Preston-Ramsbottom to Blackpool. The controller confirmed the BS and passed the Warton QNH (1027mb). The pilot read back the ATS and reported he would be not above 1500ft ALT. The controller commented *“Roger I see your squawk”*. The helicopter was squawking A0036 (Helicopter Pipeline/Powerline Inspection Flights).

At 1424, TI was issued to the Jet Ranger pilot *“traffic information for you southeast range 2 and a half...it’s 15 hundred feet descending gonna go down your right hand side at the moment heading about 2-8-0”*. The pilot reported looking. The traffic information continued to be updated over the next minute.

APP	<i>“If you’re on a steady heading he’s half past 12 range 1 and a half”.</i>
Jet Ranger	<i>“roger still looking”.</i>
APP	<i>“Okay I see you in a right turn he’s on your left side and just 1 hundred feet above you”.</i>
Jet Ranger	<i>“right dropping low level not seen at all”.</i>
APP	<i>“Okay traffic shows 2 hundred feet above left 10 o’clock a mile”.</i>
Jet Ranger	<i>“Got him visual thanks a lot sir we’re dropping low low level to...stay..clear of him”.</i>
APP	<i>“Okay”.</i>

The pilot of the Jet Ranger described the traffic as probably an R44 helicopter.

A Basic Service is an ATS:

*‘..provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. Basic Service relies on the pilot avoiding other traffic, unaided by controllers. It is essential that a pilot receiving this service remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight. Pilots should not expect any form of traffic information from a controller, as there is no such obligation placed on the controller under a Basic Service outside an ATZ, and the pilot remains responsible for collision avoidance at all times. A controller with access to surveillance derived information shall avoid the routine provision of traffic information on specific aircraft, and a pilot who considers that he requires such a regular flow of specific traffic information shall request a Traffic Service. However, if a controller considers that a definite risk of collision exists, a warning may be issued to the pilot’.*

On this occasion the controller realised the potential for a close confliction and issued appropriate warnings to allow the pilot of the Jet Ranger to sight the R44.

The St Anne’s radar recording [which was not that used by Warton] shows that as the two helicopters passed 0.1nm apart at 1425:26, the Jet Ranger was indicating 300ft (1013mb) – about 720ft QNH (1027mb) – with the subject R44 indicating 700ft (1013mb) - about 1120ft QNH (1027mb).

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

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequency, radar video recordings, and reports from the appropriate ATC authority.

Notwithstanding the caveats applicable to the provision of TI under a BS, the APR evidently believed that a definite risk of collision existed here and astutely issued warnings to the B206 pilot in the form of a number of transmissions of TI. The steady flow of pertinent TI provided enabled the B206 pilot to formulate a good mental air picture, which ultimately enabled him to take effective action to forestall a close quarters situation. The Board commended the Warton APP controller for the conscientious service he provided to the B206 pilot, however, it was important to point out that pilots should not expect this as the norm under a BS. There is no compunction on the part of the controller to identify or monitor a flight under a BS and pass this intensive level of information. It was fortunate, therefore, that the APR was not constrained by other more pressing tasks and was able to do so here.

It was clear that each pilot was legitimately proceeding about their respective tasks and Members noted that the B206 pilot had wisely elected to interrupt his task and descend out of harm's way. Although the TCAS I would have also contributed to the B206 crew's SA as they descended, they had only spotted the small R44 helicopter after it started to draw L down the port side, some 400ft above him the unverified Mode C of the R44 reflected at the CPA of 0.1nm.

The R44 pilot was plainly unconcerned having spotted the B206 as it crossed ahead, without any warning from ATC, but after the B206 pilot had initiated his descent in avoidance, so from his perspective no avoiding action had been necessary. Members pointed out that it was always worthwhile communicating with local ATSU's whilst in transit. Useful information can be obtained merely from listening to other pilots' transmissions on the frequency; nevertheless, if pilots wanted to receive TI about other ac in the vicinity then a TS should invariably be requested.

The Board concluded that this Airprox had been the result of a conflict in Class G airspace that had been resolved by the B206 pilot, assisted by timely TI from the APR. Given the B206 pilot's prompt descent below the level of the R44 and the latter pilot's sighting, Members agreed unanimously that there had been no Risk of a collision.

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

Cause: A conflict in Class G airspace resolved by the Bell 206B pilot, assisted by timely TI from the APR.

Degree of Risk: C.

## AIRPROX REPORT No 2010051

Date/Time: 30 Apr 2010 0650Z

Position: 5308N 00255W (17nm SSE WAL)

Airspace: UAR UN862/Y99 (Class: C)

Reporting Ac      Reported Ac

Type:            B737-800            A319

Operator:        CAT                    CAT

Alt/FL:            ↑FL300              FL280

Weather:        VMC CLAC            NK NR

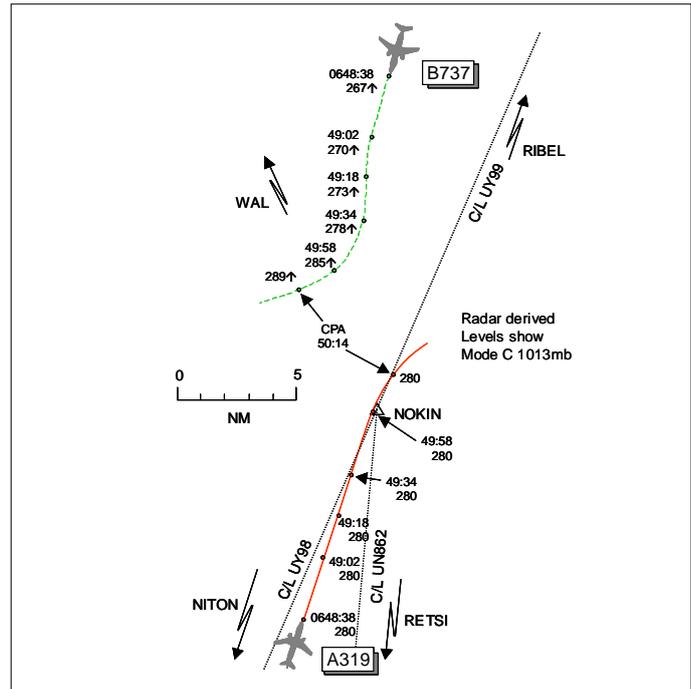
Visibility:      50km                  NR

Reported Separation:

NR V/5nm H        NR

Recorded Separation:

900ft V/5-4nm H



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

**THE B737 PILOT** reports enroute to Nantes IFR and in receipt of a RCS from London, squawking 6354 with Modes S and C. Whilst climbing to FL300 at 415kt they were issued with an 'avoiding action' R turn against traffic 10nm ahead which passed, on TCAS, about 5nm away. Although the visibility was 50km clear above cloud in VMC, they did not see the other ac. A TCAS TA was generated during the encounter and he assessed the risk as 'reportable'.

**THE A319 PILOT** reports 2 months post incident that he remembered the circumstances but did not feel threatened by the situation. He thought that a TCAS TA may have been received during the incident and that the turn given by ATC resolved the confliction.

UKAB Note (1): The A319 company was contacted shortly after the incident. However the request for completing a CA1094 sent by UKAB was addressed to the wrong fleet manager. It was only approximately 7 weeks post incident that this was discovered and the brief statement from the Capt of the A319 was obtained.

**THE LAC S5T CONTROLLER** reports working fairly hard when he handed over the A319 to Scottish. To create room for more fpss he discarded the A319 fps. When the S'bound B737 flight first called, his Planner told him that he was released to FL300 subject to an ac highlighted on his display. Forgetting the A319 he climbed the B737 and, on realising his error courtesy of STCA, he took avoidance action.

**THE PRESTWICK CENTRE S29 RADAR CONTROLLER** reports STCA alerted his trainee and himself that the B737 and A319 were in potential conflict at NOKIN. He initiated avoiding action with the A319 whilst LAC S5 turned the B737. Standard separation was not lost.

**ATSI** reports that the A319 flight departed Bristol International at 0631, destination Glasgow, and called LAC Sector 5 (S5) at 0636:20 in the climb to FL150 routing to TALGA. The Sector was manned by a Planner (P) and Tactical (T) controller and had recently been split from S23 as the traffic levels had built on the combined sectors. S5 was described as reasonably busy with no non-serviceability issues or undue distractions.

The B737 flight departed Leeds Bradford at 0635, destination Nantes, and called Prestwick Centre (PC) Sector 29 (S29), 118.775MHz, at 0643:40 in the climb to FL200 on a heading of 210°. PC S29T was manned by a mentor and trainee: the trainee's ability was described as experienced, having completed approximately 350hr of training. A Planner controller was also present. The sector was described as moderately busy with no non-serviceability issues or undue distractions.

The Standing Agreement for LAC S5 traffic from Bristol via N864/Y98 to PC S29 is 'FL240 level 20nm before REXAM/NOKIN'. The S5T initially climbed the A319 to FL220. The S5P reported that, in order to assist the tactical controller, higher climbs were being obtained for ac. The S5P coordinated FL280 for the A319 with PC S29 at 0637 and, at 0638:10, the S5T instructed the A319 flight to "*continue present heading ... climb flight level two eight zero*". This was read-back correctly by the A319 pilot. The A319 was subsequently instructed to resume its own navigation to NITON and then to NOKIN before being transferred to PC S29 at 0646:40.

The S5T reported that, in order to make room for other strips, after transferring the A319 to S29, the A319 fps was discarded from the strip display. The flight's SSR data block remained visible on the situation display.

The Standing Agreement for PC S29 traffic from Leeds S'bound via N862 is 'Climbing FL270 level KARNO'. Such traffic is released for climb within S29 airspace (upper vertical limit is FL285). At 0646 the S29T climbed the B737 to FL270 and this was read-back correctly. The ac was still on its heading (210°) and was 31nm N of NOKIN.

At 0647 the A319 flight called PC S29 22nm S of NOKIN maintaining FL280 to NOKIN and the crew was instructed to route "*NOKIN RIBEL MARGO*". Approximately 1min later, at 0648:10, the S29T instructed the B737 flight to "*resume own navigation RETSI and contact London Control 133.6*". RETSI is S of NOKIN on N862 and this now placed both ac on reciprocal tracks towards NOKIN 30nm apart. The S29T reported that, as the B737 was close to NOKIN, the next convenient waypoint of RETSI was chosen. The S29T also reported that it was expected that S5 would not climb the B737 above FL270 until it had passed the A319 at FL280.

The B737 called LAC S5 at 0648:40 stating "*...coming up to two seven zero direct RETSI*". The S5T responded by climbing the B737 to FL300 and requesting its desired cruising level. At this time the track history (and Mode S heading information) of the B737 indicated it was heading 210°. The 2 ac were now 23nm apart and subsequent updates of the situation display showed the B737's position indication symbol turning L towards RETSI. The S5P had previously coordinated a higher level for the B737 with S7, which is above S29 levels. Higher climb had been approved by S7 subject to S7's own traffic, which was also climbing. The coordinated climb was written on the B737's fps and the S5P 'pointed-out' the S7 traffic to the S5T on the Tactical's situation display.

The S5P was heard to comment that the S5 controlling team "*...thought [the B737] had come over on a heading*". At 0649:00 the S5T instructed the B737 to "*...turn right fifteen degrees*". The S5T commented that this 15° turn was on top of the assumed heading it was believed the B737 had been transferred on; the 'direct RETSI' report had not been assimilated. Following a correct read-back the S5T updated the turn instruction to "*...make that a hard right heading two five zero degrees*". The S5P then called S29P at 0649:20 stating "*we're going right on [B737 c/s] which is against the [A319 c/s]*", by which time the S29T mentor had taken over the frequency from the trainee and was issuing avoiding action on to a heading of "*east*" to the A319. The A319 was also passed TI. At 0649:30, the S5T instructed the B737 flight to "*...make that two five zero avoiding action ... radar heading two five zero*". At this time the B737 was passing FL275 and its Mode S information indicated that it was heading 189° with the A319 in its 12 o'clock, reciprocal track, range 12nm at FL280. STCA activated on S5 and S29: minimum separation was recorded at 0650:14 as 5.4nm and 900ft – within the required parameters of 5nm or 1000ft.

At 0650:10, as the B737 was passing FL290, the S5T instructed the B737 flight to resume its own navigation to LAMAT. At the same time the S29T mentor instructed the A319 flight to resume its own navigation to RIBEL.

**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 authorities.

Controller Members believed they understood the sequence of events that led to S5T climbing the B737 into conflict with the A319, which caused this Airprox. The LAC S5T had dispensed with the A319's fps after transferring the flight to PC S29. The B737 flight had then called on frequency climbing to the Standing Agreement level of FL270 but released for climb within PC S29 airspace. S5P had previously coordinated further climb for the B737 to a higher level with S7 subject to S7 traffic, then annotated the B737's fps accordingly, and pointed out the S7 traffic to the S5T. This may have induced S5T to climb the B737 straight away, forgetting the A319 at FL280.

Both controllers were alerted to the situation by STCA and issued prompt complementary avoiding action turns to the R. Both aircrews reacted to the instructions given which resulted in no loss of separation. These factors were enough to allow the Board to conclude that any risk of collision had been effectively removed.

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

Cause: The LAC S5T climbed the B737 into conflict with the A319.

Degree of Risk: C.

## AIRPROX REPORT No 2010052

Date/Time: 20 May 2010 1019Z

Position: 5405N 00130W (4nm SW of Dishforth - elev: 117ft)

Airspace: UKDLFS/FIR (Class: G)

Reporting Ac Reported Ac

Type: Lynx Mk 9A Tornado GR4

Operator: HQ JHC HQ Air (Ops)

Alt/FL: 1000ft 1700ft  
QFE (1027mb) RPS (1028mb)

Weather: VMC CLBC VMC CLBC

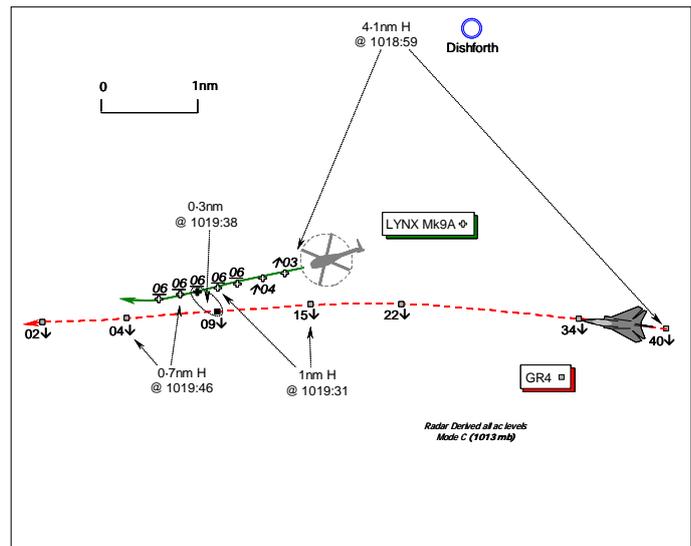
Visibility: 45km 10km

Reported Separation:

Nil V/200m H 1200ft V

Recorded Separation:

0.2nm [400yd] H



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE LYNX MK 9A HELICOPTER PILOT** reports he had departed Dishforth en-route to Blackpool under VFR and had been provided with a BS whilst working Linton ZONE. His helicopter has a grey/green camouflage scheme, but all the ac's lighting including the HISLS were on. A squawk of A0426 was selected, he thought [actually A7000] with Modes C & S on, but the Airprox occurred whilst switching from a BS with Linton ZONE on 118.550MHz to Leeds/Bradford.

In a level cruise at 1000ft Dishforth QFE (1027mb), heading 263° about 5nm S of Ripon at 100kt, a Tornado GR4 was first seen as it passed down his port side on the same course. No avoiding action was taken, and the Tornado was seen to be in descent through his level to low-level, passing close enough to cause disturbance to his helicopter from its wake turbulence. The three crew members aboard assessed the horizontal separation to be no more than 200m; the Risk was not assessed. He switched back to Linton ZONE to advise that an Airprox would be filed.

**THE TORNADO GR4 PILOT** reports that they were executing a descent to low-level and in receipt of an ATS from Linton ZONE, who briefed them about a helicopter on the planned descent track at low-level but he cannot recall the height that was specified by the controller. As they descended through BKN cloud cover at 5000ft, they gained VMC and the descent was continued VFR. Heading 270° at 400kt about 10nm W of Linton-on-Ouse, just as they prepared to ask ZONE for more TI about the helicopter, the Lynx and its lights were seen by both he and his navigator approximately in their 1 o'clock heading away from their flight path and below them. Both crew members commented on the intercom that they would be clear and the descent was adjusted to maintain more than 1000ft clear of the Lynx, which passed by in their 3 o'clock about 1200ft below them with a low Risk, but he was not sure about the horizontal separation. They were visual with the helicopter throughout; no avoiding action was necessary as the Lynx had been seen and assessed to be clear to the right of the ac's nose by both pilot and navigator

Their HUD video was broken, but they believed that compared to the briefed height passed by ZONE and their own their ac's height observed against the helicopter, their spacing was adequate. His ac has a grey camouflage scheme but the HISLS were on.

**THE LINTON ZONE CONTROLLER** reports that his workload was 'medium to low' whilst operating the position with 235.2MHz – UHF and 118.550MHz - VHF. The GR4 crew was handed over from London MIL at FL145 for a let-down to low-level in the Linton area. When ready for descent, the GR4 crew was issued the Linton QFE (1029mb) and instructed to descend to 2500ft iaw the terrain safe level (TSL) and local airspace restrictions. The GR4 crew confirmed that they did not want the standard Linton MATZ crossing - 3nm to the N of the A/D E - W at 500ft QFE - and would maintain 3000ft QFE above the MATZ. At the same time a number of other ac were handed over for a TS or free-called and the Lynx was prenoted by Dishforth TOWER outbound via Newby Hall (a local reporting point) en-route to Blackpool. In accordance with standing regulations, the helicopter should have squawked A4530; however, when the Lynx crew called on VHF they reported squawking A7000 and the helicopter was never 'formally' identified, he thought. The Lynx pilot's initial call was 'stepped on' by traffic on UHF and he had to repeat his message. At this time, the GR4 was 5nm N of Linton, the crew confirming that they were VMC and visual with the surface. As the GR4 was indicating 4000ft and descending, TI was passed to the crew about the Lynx, he thought, as 'Traffic 12 o'clock - 3nm, indicating 700ft. This TI was acknowledged and the GR4 crew confirmed that they were happy to switch en-route, so they were given the Barnsley RPS (1028mb) and released. The Lynx crew reported changing to Leeds/Bradford APPROACH, but shortly afterwards returned to his frequency and asked if he had been working a Tornado. He replied that he had and that the GR4 crew had been given TI about his Lynx. The Lynx pilot then reported an Airprox with a horizontal separation of 500ft; he had been operating in VMC, below 1000ft, with a cloudbase in excess of 2000ft.

UKAB Note (1): The Transcription Unit was requested to review the Leeds/Bradford RT recording; it was confirmed that no transmissions of relevance were recorded.

**HQ AIR BM ATM SAFETY MANAGEMENT** reports that the GR4 was correctly identified on handover from LATCC (Mil) and placed under a TS by Linton ZONE. The Lynx crew called ZONE at 1017:48, approaching Newby Hall southbound at 500ft QFE (1027mb). Although the controller's report states the Lynx was never formally identified, the tape transcript reveals the controller did report to the pilot at 1018:06, that the helicopter was "*identified basic service*". The pilot then added that he was operating VFR squawking A7000, would be switching to Leeds shortly and "IFR from there". This was acknowledged by ZONE who reiterated the BS and passed the Barnsley RPS of (1028mb). At the time, the Lynx was not squawking the recognised Dishforth departure squawk of A4530, nor was the reported identification consistent with the position report method; however, this is not considered a causal factor. During the Airprox the GR4 crew was flying in VMC and in sight of the surface. ZONE identified that the Lynx's track would take them into close proximity with the GR4 and passed TI to the GR4 crew at 1019:00 about the Lynx, "*..Traffic 12 o'clock 2 miles opposite direction [sic] indicating 8 hundred feet*"; at no point was TI given to the Lynx crew about the GR4. [UKAB Note (2): It is apparent that ZONE passed incorrect advice about the Lynx's course.]

As the Lynx crew was flying VFR under a BS, ZONE acted in accord with the service provided; however, best practice would have been to pass a warning to the Lynx crew about the presence of the GR4 approaching from astern.

UKAB Note (3): The Claxby Radar recording shows the Lynx Mk9 departing to the S of Dishforth squawking A7000 with Mode C before turning westerly. The GR4 approaches from the E in a continual descent through 4000ft (1013mb), which equates to an altitude of 4450ft BARNSELY RPS (1028mb) at a range of 4.1nm from the Lynx. Maintaining a broadly westerly course, the GR4 closes from the Lynx's port quarter, the latter maintaining a level cruise at 600ft (1013mb) – about 1050ft RPS (1028mb) to a range of 0.3nm at 1019:38, when the GR4 is shown descending, 300ft above the helicopter. The GR4 overtakes the Lynx to port, in between sweeps, and is next shown indicating 200ft below, after descending through the Lynx's level into the helicopter's 11:30 - 0.7nm. The parallel track displacement is in the order of 0.2nm as the GR4 passed abeam the Lynx. The GR4 then opens on a steady track but the Lynx subsequently turns R into an apparent orbit.

**HQ JHC** comments that the Lynx crew did not assess the Risk of collision. It is assumed that the Captain filed an Airprox because the GR4 passed close enough to cause disturbance to his helicopter from its wake turbulence but it is not clear to what level the disturbance was.

It appears that the GR4 crew was convinced that they were not affecting the Lynx in any way. The GR4 pilot's report states that they were visual with the ac throughout and they attempted to adjust vertical separation but did not attempt to increase lateral separation. However, this increase in vertical separation did not lead the helicopter crew to believe that there was sufficient separation to avoid the wake turbulence having an effect. If the Lynx had been notified of the GR4 approaching from astern, he would have been prepared for the GR4 and the possibility of wake turbulence but the GR4 was in a better position to take any action.

**HQ AIR (OPS)** had no comment as the recorded and reported separation was in excess of 1000ft.

## **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 controller involved and reports from the appropriate ATC and operating authorities.

In the view of the Air Cmd fast-jet pilot Member, the separation accorded to the Lynx helicopter by the GR4 crew was satisfactory. Nevertheless, it was evident that with no prior warning from ATC the Lynx crew had been surprised by the appearance of the GR4. The JHC Member emphasised the potential hazard to helicopters from the wake turbulence of jets at close quarters but it was not evident whether the reported 'disturbance' to the helicopter from the GR4's wake was a definite hazard in this instance. Clearly the Board was charged with assessing the Risk of a collision between the two ac and not necessarily wake turbulence issues, however, the Board agreed that the Lynx pilot was entirely correct in reporting this Airprox so that the circumstances could be looked at for the benefit of the whole aviation community.

Members recognised that the Lynx crew, operating on VHF, would not have known at the time if the GR4 crew, operating on UHF, were visual with their helicopter as the jet overtook them to port and clearly at odds with the Rules of the Air. Controller Members agreed with HQ Air ATM Safety Management view that best practice would have been for ATC to pass a warning to the Lynx crew about the presence of the GR4 approaching from astern. In the absence of any technical ability to cross-couple ATC frequencies, the military terminal ATC Member spoke of local initiatives to put transit traffic onto the same VHF frequency where feasible, so that pilots might benefit from hearing other crews transmissions and improve their SA. This was in the same vein as a previous UKAB Safety Recommendation (2009-117) relating to ac in the visual cct operating on the same frequency, which had been accepted by the MOD. However, as the GR4 crew had not advised ZONE that they were visual with the helicopter, nor the controller questioned this, the Lynx crew would have been none the wiser here, so undoubtedly only a warning could have helped the Lynx crews SA. On the other hand, the Lynx crew were operating VFR under a BS and should not expect TI routinely. The Board was advised that a frequently used fast-jet low-level entry point lay to the W and helicopter crews should expect to encounter fast-jets in this vicinity, but plainly with this geometry the Lynx crew were unable to affect the outcome.

The GR4 crew having, the benefit of TI from ZONE, albeit partially incorrect, sighted the helicopter but the range of visual acquisition was not quoted. Nevertheless the GR4 crew had spotted it beforehand and it was only they that could choose what separation to afford the helicopter as they descended through its level. The radar recording shows that they passed about 400yd clear as they overtook the Lynx, but they were level with it as they passed abeam at the closest point, which had evidently caused the Lynx crew concern. Pilot Members opined that it would have been better airmanship to have afforded the helicopter a wider berth. The Board concluded therefore that this Airprox had been caused by the Tornado GR4 crew flying close enough to the Lynx to cause its crew concern, but that no Risk of a collision had existed in these circumstances.

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

Cause: The Tornado crew flew close enough to the Lynx to cause its crew concern.

Degree of Risk: C.



The DR400 departed Newcastle Airport VFR at 1348, en-route to land at Eshott airfield, situated 15nm N. Newcastle TWR transferred the ac to Newcastle Radar and at 1353:55 and the pilot reported leaving CAS *"(DR400) C/S one mile east abeam Morpeth staying visual leaving the zone to the north"*. (Morpeth is situated on the N boundary of the Newcastle CTZ). A BS was agreed and the DR400 was passed the Tyne Regional Pressure setting 1022mb. The controller erroneously passed the airfield QNH 1022mb, instead of the Tyne Regional Pressure setting of 1017mb.

At 1357:25 radar recording shows the DR400 approach the coast 12nm NNE of Newcastle Airport and then disappear from radar coverage.

A change of controller then occurred and at 1400:53 the oncoming Radar controller requested a position check from the ac *"(DR400) C/S just check your position please"* and the pilot replied, *"(DR40) C/S just north of er Amble approaching er Alnmouth"*. (Alnmouth is situated 1.9nm SSW of RAF Boulmer).

The controller reported that he thought that the DR400 was manoeuvring in the Amble area and responded *"(DR400) C/S roger that's understood report when you're returning to Eshott to land please."*

At 1403:18 the Sea King pilot called Newcastle Radar and the controller acknowledged three times asking the Sea King to *".....pass your message"*. Then after a pause at 1403:37 the Sea King responded *"Er Newcastle er (Sea King) C/S we'd like to declare an Airprox er small white low fixed wing aircraft south to north he appeared to be about three hundred feet we're five P.O.B. squawking double oh two three and er routeing down the coast."* Newcastle Radar acknowledged and passed the Newcastle QNH 1022mb and the Tyne RPS of 1017mb.

The Newcastle Radar controller believed the ac involved to be the DR400 and at 1404:08 advised the DR400 *"....the Sea King's just called an Airprox with you I didn't have you on Radar he's just er filed an Airprox on you as you passed overhead the Boulmer site"* and the pilot replied *"Yeah that's understood we were in good visual contact there was no confliction"*. Newcastle Radar then asked the DR400 *"Roger did you have the helicopter in sight confirm"* and the pilot replied *"Affirm we had him in sight all the time from er about a minute out"*. Newcastle Radar then updated the Sea King *"(Sea King) C/S that aircraft is on my frequency I didn't have him in radar contact but he had you in sight and he did have all the way"* and the Sea King pilot responded *"Er that's copied he was below five hundred feet and he wasn't speaking to Boulmer so we would like to file the Airprox (Sea King) C/S."* Newcastle Radar advised the DR400 pilot *"and (DR400) C/S did you copy he will be filing an Airprox as you did not call the Boulmer site and you are very low level in his area."*

At 1418 the Sea King is transferred to Durham Radar and at 1424 the DR400 reported visual with Eshott and advised that he was leaving the frequency.

The DR400 was in receipt of a BS from Newcastle radar. The controller had not anticipated that the DR400 would continue N of Amble and therefore did not consider suggesting that the DR400 call Boulmer radio. The Sea King was not in receipt of a service from Newcastle Radar at the time and reported the Airprox when making the first call to establish RT contact. Newcastle Radar was unable to pass any warning to either ac.

CAP 493, MATS Pt1, Section 11, Page 4, (dated 01/07/2010) states:

3.1.1 A Basic Service is an ATS provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. This may include weather information, changes of serviceability of facilities, conditions at aerodromes, general airspace activity information, and any other information likely to affect safety. The avoidance of other traffic is solely the pilot's responsibility.

3.5.1 Pilots should not expect any form of traffic information from a controller, as there is no such obligation placed on the controller under a Basic Service outside an Aerodrome Traffic

Zone (ATZ), and the pilot remains responsible for collision avoidance at all times. However, on initial contact the controller may provide traffic information in general terms to assist with the pilot's situational awareness. This will not normally be updated by the controller unless the situation has changed markedly, or the pilot requests an update. A controller with access to surveillance derived information shall avoid the routine provision of traffic information on specific ac, and a pilot who considers that he requires such a regular flow of specific traffic information shall request a Traffic Service. However, if a controller considers that a definite risk of collision exists, a warning may be issued to the pilot.

As a result of the Airprox Newcastle Airport have made an internal recommendation to remind all controllers that any ac operating in the Boulmer area should be asked to contact Boulmer Radio to make their intentions known.

**HQ AIR (OPS)** comments that the simple process of a courtesy call to Boulmer Radio iaw Newcastle MATS Pt2, Section 1, Chapter 9, page 4, paragraph 6.4, (dated 04/08/2009) could have prevented this Airprox. However, even under high workload situations, the responsibility to clear own flightpath remains and crews operating in Class G airspace must maintain a good lookout at all times.

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

Information available included reports from the pilots of both ac, a transcript of the Newcastle APR frequency, radar recordings, a report from the air traffic controller involved and reports from the appropriate ATC and operating authorities.

The Board considered that better communication could have prevented this incident. Members accepted, however, that there was no obligation on Newcastle APR to request the Robin pilot to call Boulmer Radio as the controller was not aware that the ac was operating in the Boulmer area; that being the case, the MATS Part 1 regulation did not apply and it was agreed that Newcastle ATC had not played a significant part in this incident.

The Robin pilot, however, was locally based, would have been familiar with the area and aware of the SAR operations at RAF Boulmer; Members therefore considered that, despite there being no mandatory avoidance or ATZ, good airmanship would have been to either avoid the area or to call Boulmer Radio (as the Microlight pilot had done when he approached slightly earlier). Further, Members observed that the Robin pilot reported that, although his ac was fitted with a transponder, Mode C was switched off, therefore denying controllers and pilots of ac equipped with TCAS valuable information that can be used to help prevent collisions; they agreed, that this is not considered good practice.

Since both ac had been operating legitimately in Class G airspace, the pilots had an equal and shared responsibility to see and avoid other ac. The Sea King crew, possibly due to their high workload immediately after takeoff, did not see the Robin until after it had passed below their ac. The Robin pilot, however, saw the Sea King but did not estimate or report how far away it was at first sighting, leaving Members to speculate based on other information. The Robin pilot reported seeing the helicopter when he was 1nm SE of Boulmer and this, in turn, is about ½nm from the incident position; that being the case, Members agreed that the Robin pilot's sighting of the helicopter had been later than optimum. Although the Robin pilot might have expected the Sea King to give way to his ac in accordance with the Rules of the Air (Rule 9 (3)), his report says that upon sighting the helicopter he immediately turned left and descended. Pilot Members agreed that pilots with the right of way should always assume that their aircraft has not been seen until there is positive evidence to the contrary; this incident provides a good example of a situation that frequently occurs, as the Sea King pilot (s) did not see the Robin until after the two ac had crossed.

In the absence of radar evidence, it was impossible to verify the separation between the aircraft at the CPA. Given that both pilots reported that the Robin passed directly beneath the helicopter, that the

estimated separation was between 100ft and 300ft, and the Sea King crew did not see the Robin before the CPA, the Board considered that normally accepted safety standards had been eroded.

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

Cause: Effectively a non-sighting by the Sea King crew and a late sighting by the Robin pilot.

Degree of Risk: B.

**AIRPROX REPORT No 2010060**

Date/Time: 21 May 2010 (Friday) 1332Z

Position: 5127N 00144W (5NM S SWINDON - elev 297ft)

Airspace: Lon FIR (Class: G)  
Reporting Ac Reported Ac

Type: AH64 APACHE GLIDER

Operator: HQ JHC NK

Alt/FL: FL020 NK

Weather: VMC CLBC NK

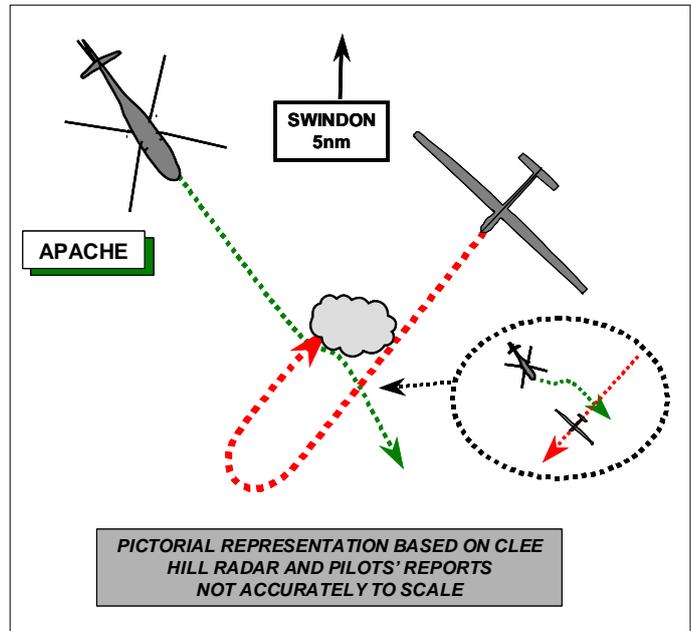
Visibility: 20km NK

Reported Separation:

V 100ft/H 250m NK

Recorded Separation:

NK



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

**THE APACHE PILOT** reports flying a singleton IF training transit sortie from Lyneham to Middle Wallop in receipt of a TS from Lyneham APP, squawking as directed with Modes C and S. The student was the handling pilot from the rear seat and the captain in the front seat was conducting the lookout and operating the radar in the air/air mode; TCAS was not fitted. They were heading 130° at 110kt and at FL30 in good visibility but just below the base of the scattered cloud when a white glider appeared from behind a cloud less than 300m away tracking from L to R in front of them and at the same level. They took avoiding action in the form of a left turn descending to FL20 but the glider continued, its pilot apparently not having seen them.

He informed Lyneham APP of the Airprox and continued the sortie. He assessed the risk as being high.

UKAB Note (1): Despite extensive procedural tracing action the glider could not be identified.

UKAB Note (2): The recording of the Clee Hill radar shows the incident clearly. The Apache approaches the CPA from the NW tracking about 140°, level at FL030. The glider paints as a primary only contact tracking about 210°. At 1331:56 the Apache commences a rapid descent to FL028 and a left turn when the glider is in its 12 o'clock at 0.2nm, before recovering to FL030 and a Track of 140°. After the CPA the glider turns right onto a reciprocal track.

The Lyneham APP Controller provided a report containing the same information as in the Supervisor's report below. For brevity it has not been included.

**THE LYNEHAM SUPERVISOR** reports that he was in the ACR at the time of this incident monitoring the traffic flow from the Supervisor's console. The Watchman Primary Radar was deselected and undergoing a flight check but the SSR supplied via Brize MSSR was operational. The weather was colour code BLUE with 30km vis (although on the surface it appeared slightly hazy) and SCT cloud at 4000ft.

The APP/DIR task was bandboxed with 2 ac on separate frequencies, one on departure being provided with a TS (reduced - SSR only) outside the Lyneham CTR [the Apache] and one requiring

an ILS against the stream to RW24. Pending departures and arrivals initially negated the requested ILS approach being permitted and a substantial amount of chatter was experienced as the aircrew pressed for the IRT profile to be granted. Coincident to this the reporting ac was on an IFR departure and given a reduced TS after leaving the CTR. The Airprox was reported at 1333Z, when the Apache was about 3.5nm SE of Marlborough tracking SE descending from FL35 to FL30, immediately after the glider was seen as it emerged from cloud close to the Apache.

The initial Airprox transmission was confused with transmissions from another ac and, due to the immediacy of the incident and the pilot's reaction, only scant details were provided about the direction of travel/markings etc of the glider they encountered; however the minimum separation distance was reported as 300ft. At the time there were no SSR returns in the reported position of the conflicting traffic.

Since the glider did not show on the Lyneham radar [at the time SSR only], therefore the controller was not able to provide any TI to the Apache pilot.

**HQ AIR BM Safety Management** reports that they recognises the difficulties of providing an effective radar service to ac when the unit is restricted to SSR only. The tape transcript and reports provided indicated that, although the ac was departing from a previous approach and had already been under a reduced TS, this service and restrictions were not reinstated fully on climb out. That said, it is not considered the causal factor. The controller was effectively unaware of the presence of the glider and therefore, SM Spt ATM believes the controller did not contribute to the Airprox.

**HQ JHC** comments that flying just below the base of scattered cloud is inappropriate, especially when in receipt of a reduced service from ATC. Even with excellent lookout skills, operating in the vicinity of cloud hampers the ability to see other aircraft early. ATC were unable to provide TI on an unseen aircraft and collision avoidance was the pilot's responsibility. The Apache pilot took avoiding action when he came into conflict with the glider and it is assumed that the glider was blissfully unaware of the conflict! This Airprox is another reminder to aircrew to be extra vigilant when operating in Class G airspace without primary radar cover.

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

Information available included reports from the Apache pilot, transcripts of the relevant RT frequencies, radar recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board noted the difficulty controllers face when operating with reduced radar coverage; although the glider contact showed clearly as a primary-only contact on the recording of the Cleve Hill radar, it did not show on the controller's SSR-only picture and therefore he was not able to give the Apache crew any warning of its presence. This has been a feature of several Airprox recently, particularly involving gliders, and is the subject of staff action at HQ Air.

The Board was concerned regarding the apparent high incidence of gliders not being able to be traced by the Radar Analysis Cell (RAC). Members were briefed on the process used and the difficulties encountered; it was pointed out that modern gliders routinely fly long, often very long, cross country flights and can be encountered, largely in Class G airspace, almost anywhere in the overland area of UK. The gliding specialist Member undertook to research the problem and another Member agreed to brief RAC staff on gliding activity.

It was pointed out that, although gliders do sometimes operate in cloud, it was most likely that the glider involved had been just below the cloudbase and had probably been obscured or not visible to the Apache safety pilot until a late stage. That being the case, Members agreed that the pilot could not reasonably have been expected to see the glider any earlier and therefore the incident had been a conflict between 2 ac operating legitimately in Class G airspace. Since the Apache pilot saw the glider in time to react and build in some vertical and lateral separation there was no risk of collision and the conflict was resolved.

Members endorsed the HQ JHC comment that the Apache pilot had been unwise in operating at FL30 just below the cloudbase, therefore restricting the time available to see and avoid other ac.

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

Cause: Conflict in Class G airspace resolved by the Apache pilot.

Degree of Risk: C.

## AIRPROX REPORT No 2010061

Date/Time: 24 May 2010 1507Z

Position: 5108N 00157W (7nm W  
Boscombe Down)

Airspace: Boscombe ARA (Class: G)

Reporting Ac      Reporting Ac

Type: Alpha Jet      Lynx AH7

Operator: MoD ATEC      MoD ATEC

Alt/FL: 6500ft↓      FL65  
(QFE 999mb)

Weather: VMC CLOC      VMC CLBC

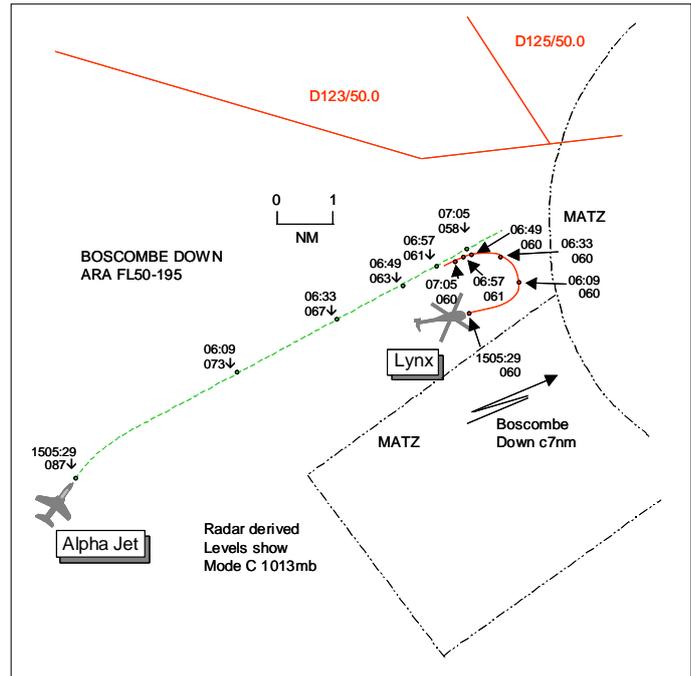
Visibility: >10km      25km

Reported Separation:

100ft V/100m H      200ft V/200m H

Recorded Separation:

c100ft V/<0.1nm H



**BOTH PILOTS FILED**

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

**THE ALPHA JET PILOT** reports flying a local sortie from Boscombe Down and in receipt of a TS from Boscombe, squawking an assigned code with Modes S and C. The visibility was >10km in VMC and the ac was coloured black/white; no lighting was mentioned. Whilst cleared for descent to 3000ft QFE into the radar pattern on heading 050° at 280kt, a contact was called 'Lynx 12 o'clock 5nm similar heading indicating 1000ft below. The front seat pilot was flying heads-in, as this was an IRT, and rear seat pilot was responsible for lookout. Descending through 6500ft QFE a follow-up call was provided stating 'Lynx 12 o'clock 2nm crossing R to L 400ft below. No further TI was received prior to the rear seat pilot seeing the Lynx co-altitude at an estimated range of 150m. Owing to the ROD of the Alpha Jet and the slight relative bearing change at the time of the visual pick-up, it was quickly realised that a collision was not going to happen but the 2 ac passed within 100m laterally, to their R and 100ft vertically above. There had been no time for the rear seat pilot to take control. He opined that the rear seat lookout was compromised by the presence of the Alpha Jet blast screen canopy arch, front fuselage, and by the constant relative bearing of the 2 ac. At no stage did either crewmember believe that the risk of collision was high or that any other course of action was necessary given their SA and the conditions on the day. He assessed the risk as high.

**THE LYNX PILOT** reports flying a local sortie from Boscombe Down and in receipt of a TS from Boscombe squawking an assigned code with Modes S and C. The visibility 25km flying 2000ft below cloud in VMC and the ac was coloured red/white/blue. During data gathering for the ETPS Level Flight Performance exercise, which involved considerable heads-in time, other traffic was reported as initially 5nm and then 2nm at a similar height and descending under ATC control and was considered no conflict. Heading 270° at FL65, he thought, and 70kt flying into sun an Alpha Jet was seen 0.25nm away before it quickly passed seconds later dead ahead and then to their R 200m away and approximately 200ft below with no time to take avoiding action. He assessed the risk as high.

**THE BOSCOMBE DOWN APPROACH RADAR CONTROLLER** reports operating bandboxed without a Director (DIR), controlling ac on both UHF and VHF over a wide range, in a busy ac and airspace environment. He already had the Lynx on frequency operating approx 10-20nm W of Boscombe Down GH in the block FL050-080 under TS. Zone handed over the Alpha Jet for a PAR recovery, approx 25nm SW of Boscombe on a TS.

The Alpha Jet had been placed on a heading of 050°, he thought [actually 065°], and was in the descent to 3000ft QFE, passing through approximately 8000ft approx 10nm SW of the Lynx. Once on frequency, he passed TI to both flights on their relevant positions with the Alpha Jet now approx 5nm SW of the Lynx, 1000ft above descending. He assessed that the normal ROD for an Alpha Jet would be sufficient to get below the Lynx before they came into close proximity and as such felt that the heading of the Alpha Jet was safe and the most expeditious for his recovery. As the ac closed on each other, he assessed that the ROD of the Alpha Jet was slower than normal and a TI update would be required; he gave this to both flights. The Lynx manoeuvred towards the Alpha Jet and the contacts merged at co-alt. Three days after the event, he was informed that the pilot was filing an Airprox.

Of note, Boscombe based ac are automatically under a reduced service within 15nm of Boscombe due to high traffic density and limits of surveillance cover.

During the incident, he was also providing a TS to 2 x Twin Squirrels on a separate frequency, operating approx 20-30nm NE in close proximity to CAS, SPTA D123/5 and numerous primary contacts, which were drawing his attention away from the other ac on frequency.

The unit has been operating extended hours to meet operational tasks, meaning that the number of controllers available is less than normal. As such, he was unable to call upon a DIR as he may have done considering the number of ac, their relative positions and the airspace he was operating within.

He had an interrupted sleep the night before and although he could not be sure as to its effect, if any, fatigue may have played a part in the incident as it was towards the end of a busy day.

**THE BOSCOMBE DOWN SUPERVISOR** reports the Wx conditions were extremely good, all equipment was fully serviceable and the Radar controller had been in the seat for approximately 30min. Although the intensity was estimated in the Approach room as medium, he was aware that Tower was getting busy and as there was a u/t ADC so he elected to go upstairs to Supervise.

At approximately 1600Z, he received a call from the Alpha Jet pilot, who told him that he felt he had been given a vector during his recovery that had caused him to merge with a rotary, the Lynx. This was the first that he, as the SUP, had heard of the incident. He asked the pilot if the conflicting traffic had been called; he said it had been called to him on a couple of occasions, but they were not visual with it until late, adding that the front seat pilot was heads down in the cockpit. He explained to the pilot exactly what the provision of TS was, and what responsibilities the controller had, but said he would speak to the controller, listen to the tapes and then call him back. At this stage the pilot did not mention reporting the incident as an Airprox.

He spoke to the controller, who confirmed that the contacts did get close; however, he had called accurate TI to both crews about each other. He asked the controller if he felt he had vectored the Alpha jet into conflict with the Lynx, and he said that the Alpha Jet was already on a heading after handover from Zone. Sup then listened to the tapes, which confirmed that the Alpha Jet had been handed over approximately 20 miles SW Boscombe descending to height 3000ft QFE – the Lynx was still over 10 miles away and not in direct conflict. Once identified on stud 4 (233-850), the controller passed TI to the Alpha Jet pilot about the Lynx and passed the information to the Lynx crew about the Alpha Jet. This information was again updated by 2 miles.

He contacted the Alpha Jet pilot to inform him that after listening to the tapes, speaking with the LEO and the controller, I felt that the APP Radar controller had not knowingly vectored the Alpha Jet into conflict with the Lynx, and that accurate TI had been passed in good time, then updated by 2 miles. The pilot's initial thoughts were that as he was recovering for a radar pattern, receiving vectors and descent instructions from ATC, he should not be coming into close proximity with other ac, and that ATC should maybe give further vectors to maintain separation. SUP explained this was not the responsibility of the controller under the terms of TS, and asked whether he was completely happy with both ATC and the pilot's responsibility when receiving a TS; he said he was happy. The pilot

said he would be filing an Airprox report so he informed him that he would impound the tapes and ensure the appropriate paperwork was completed.

After recent events, he believed that there is a misunderstanding among the aircrew at Boscombe Down as to what the terms of a TS are, and that they believe that when they recover for a GCA under a TS, ATC will maintain separation from all other ac; this could be causing complacency in the cockpit regarding the amount of heads up visual scanning they do, compared with when manoeuvring in a block to the W of Boscombe.

**HQ AIR BM SAFETY MANAGEMENT** reports that SO2 SM Spt ATM acknowledges the workload the controller was under at the time. Best practice remains to have available manpower to man APP and DIR separately during busy periods. The lack of available manpower, on this occasion, led to a reduction in SA which restricted the controller's ability to manage effectively the traffic he had on frequency. Notwithstanding the provisions of a TS, in this situation the Alpha Jet's ROD and turn of the Lynx was not assimilated and acted upon. TI was timely and accurate; unfortunately the Alpha Jet handling pilot was head down and the rear seat pilot reports his lookout being compromised by the presence of the Alpha Jet blast screen canopy arch and front fuselage.

SO2 SM Spt ATM also acknowledges that working practices were complicated due to extended hours operations to meet operational tasks which lead to a lack of available manpower. Consideration should be given at Unit level to the knock-on effect of operating hours and availability of manpower.

UKAB Note (1): CAP774 UK Flight Information Services Chapter 3 Traffic Service Page 1 Para 1 states 'A traffic Service is a surveillance based ATS, where in addition to the provisions of a Basic Service, the controller provides specific surveillance-derived traffic information to assist the pilot in avoiding other traffic. 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'. Page 2 Para 6 Deconfliction states 'Whether traffic information has been passed or not, a pilot is expected to discharge his collision avoidance responsibility without assistance from a controller. If after receiving traffic information, a pilot requires deconfliction advice, an upgrade to Deconfliction Service shall be requested. The controller shall make all reasonable endeavours to accommodate this request as soon as practicable and provide deconfliction advice at the earliest opportunity. When providing headings/levels for the purpose of positioning and/or sequencing or as navigational assistance, the controller should take into account traffic in the immediate vicinity, so that a risk of collision is not knowingly introduced by the instructions passed. However the controller is not required to achieve defined deconfliction minima'.

UKAB Note (2): The Alpha Jet pilot made his initial call to APP after transfer from Zone at 1505:31 when the ac was 14.5nm WSW of Boscombe Down and turning R from heading 050° onto heading 065°, which was assigned by APP during the handover. The ac descends through FL87 (8300ft QFE 999mb) with the Lynx it its 1 o'clock range 7.6nm tracking 075° level at FL60 (5600ft QFE). After APP confirmed the Alpha Jet was cleared to 3000ft QFE and the level of service (TS) he then established the pilot's decision height and intentions from the PAR. Immediately after, APP transmitted (1506:11) "*Alpha Jet c/s Lynx twelve o'clock five miles similar heading indicating one thousand feet above, correction, one thousand feet below*". By now the Alpha Jet was descending through FL73 (6900ft QFE) with the Lynx, which was in a L turn passing through heading 010°, in its 1230 position range 5.3nm level at FL60 (5600ft QFE). APP's transmission was acknowledged with an abbreviated c/s after which the APP immediately transmitted "*Lynx c/s A-Jet south west four miles tracking north east with me one thousand feet above descending inbound*". A garbled transmission was received in reply before APP transmitted (1506:29) "*Alpha Jet c/s Lynx twelve o'clock two miles crossing right left four hundred feet below*". The radar shows the Alpha Jet descending through FL67 (6300ft QFE) with the Lynx just R of its 12 o'clock range 3.1nm turning L through heading 300°, 300ft below. No reply was received before APP transmits (1506:51) "*Lynx c/s previously reported A-Jet one mile tracking east similar height descending*" which was acknowledged with c/s. About 10sec later the APP instructed the Alpha Jet crew to R onto 080° which was acknowledged - no mention was made on the RT by either crews of an Airprox. The CPA occurs between radar sweeps: the

sweep at 1506:57 shows the Lynx steady on an almost opposite direction track of 250° in the Alpha Jet's 12 o'clock range 0-5nm, both ac showing FL61 (5700ft QFE). The next sweep at 1507:05 shows the Alpha Jet descending through FL58 in the Lynx's 6 o'clock range 0-3nm, having passed ahead and to the R of the Lynx, which is indicating FL60. By interpolation, the CPA is estimated to be 100ft vertically and a lateral separation of <0.1nm.

## **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 authorities.

Both crews were operating legitimately in Class G airspace of the Boscombe Down ARA where they shared an equal responsibility to see and avoid other aircraft. It was noted that the Lynx crew were operating on a flight test exercise within 15nm of Boscombe Down where there is automatically a reduced level of ATS. An ATCO Member commented that if the Lynx crew's task prevented them from fulfilling their responsibilities with respect to a TS they should have either asked for a DS and/or positioned their ac into a more suitable area, well clear of the Boscombe O/H. Although aware of the provisions of a TS and DIR's need to position the Alpha Jet towards the Boscombe O/H to feed into the radar pattern, Members unanimously agreed that the instructions given by DIR had vectored the Alpha Jet towards the Lynx which was a part cause of the Airprox. However, Members were also acutely aware of pilots' responsibilities in receipt of a TS. Despite APP twice passing accurate and timely TI to both the Alpha Jet and Lynx crews as they converged, the pilots only saw each other late and this was another part cause. An experienced Test Pilot Member expressed concern about both crews' lack of reaction to the TI and apparent misunderstanding about the provisions, limitations and responsibilities associated with a TS. The Board concurred.

The Lynx crew's lookout was degraded owing to the test flying profile and flying into sun as the ac approached the CPA, the crew only seeing the Alpha Jet about 0.25nm ahead before it quickly passed 200m to their R and 200ft below, having descended through their level. Similarly, the Alpha Jet crew only saw the Lynx when it was co-alt range 150m before it passed 100m to their R and 100ft above. Both crews reported there being insufficient time to take avoiding action. These factors left the Board in no doubt that the subject ac had passed purely by chance, without any positive steps being taken by any party to break the chain of events, leading the Board to conclude that a definite risk of collision existed during this encounter.

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

Cause: APP vectored the Alpha Jet towards the Lynx and, despite receiving accurate and timely TI, the pilots of both ac saw each other late.

Degree of Risk: A.

## AIRPROX REPORT No 2010070

Date/Time: 11 Jun 2010 (Friday) 1324Z

Position: 5654N 00448W (1½nm  
E of Roybridge)

Airspace: UKDLFS LFA14 (Class: G)

Reporting Ac      Reporting Ac

Type: Tornado GR4      Tornado GR4

Operator: HQ Air (Ops)      HQ Air (Ops)

Alt/FL: 320ft      250ft  
agl      RadAlt

Weather: VMC CLBC      VMC CLBC

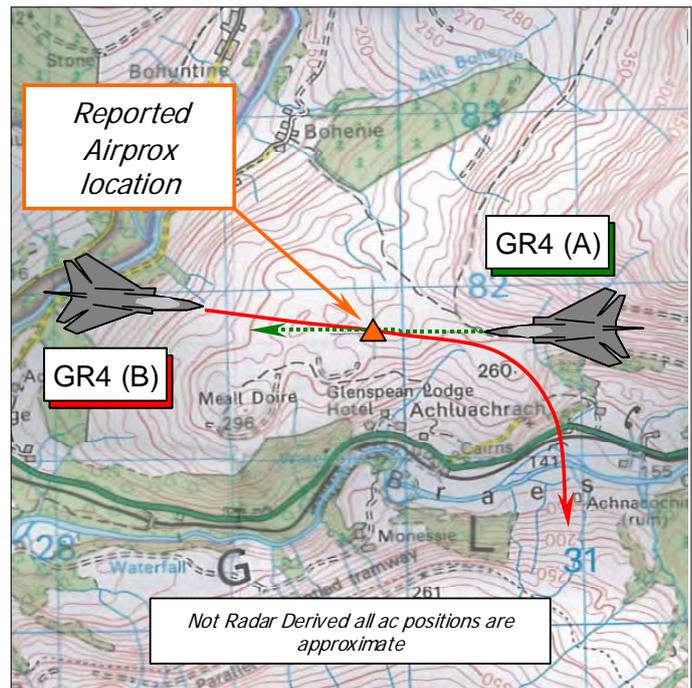
Visibility: 50km      40km

Reported Separation:

50ft V/nil H      ½nm H

Recorded Separation:

Not recorded



**BOTH PILOTS FILED**

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

**THE PILOT OF TORNADO GR4 (A)** reports flying as the wingman of a two-ship formation during a VFR low-level training sortie, whilst monitoring the LFS frequency and so not in receipt of any ATS. A squawk of A7001 was selected with Mode C; neither TCAS nor any other form of CWS is fitted. The ac is camouflaged grey but the HISLs were on.

He was flying in a 1min trail using the Terrain Following Radar (TFR) at 320ft agl in VMC with a BKN layer above at 2000ft and an in-flight visibility of 50km in light drizzle, when a radio call was received from his leader informing them of a jet flying in the opposite direction also at low level, which he acknowledged. Approaching a position about 1½nm E of Roybridge in Glen Spean [Lat & Long of 56°54' N 004°48'W given] heading 270° at 420kt, they immediately saw a single Tornado GR4 in their 1 o'clock about 100m slant range ahead, approximately 50ft below his ac, heading in the opposite direction. Unable to react in time, no avoiding action was possible as the other GR4 passed about 50ft vertically below, flying straight and level, with a 'high' Risk of a collision and cleared into his 7 o'clock. He immediately pulled up to 700ft agl whilst scanning for a possible wingman as the other ac made a hard R turn and departed to the S. No wingman was seen. He stressed that there had been no perceived movement 'in the canopy' before the other ac was sighted. The sortie was continued without further incident.

**THE PILOT OF TORNADO GR4 (B)** reports he was listening out on the LFS frequency whilst turning E out of the Great Glen at 420kt, whereupon he gained tally on another Tornado GR4 about 3nm ahead and L of the nose. Flying at 250ft RadAlt, he and his navigator began to look for a No2 in the normal positions they expected a wingman to be relative to a lead ac, but none was seen so he positioned his ac to pass the Tornado GR4 they could see [GR4 (A)'s leader] with around ½nm horizontal separation. Wagging his ac's wings to acknowledge to the other ac that he was 'tally' [visual] no response was observed from the GR4 [GR4 (A)'s leader]. About 1min later, as his ac was turning R, another Tornado GR4 [GR4 (A)] was observed in the mirrors crossing astern on a similar track to that of the first. He estimated the separation in the mirrors against this second ac [GR4 (A)] to be about ½ nm and the Risk 'low'.

A squawk of A7001 was selected with Mode C; neither TCAS nor any other form of CWS is fitted. The ac is camouflage grey but the white HISLs were on.

UKAB Note (1): This Airprox occurred outwith recorded radar coverage.

**HQ AIR (OPS)** comments that this confliction occurred between ac operating independently within the LFS. Both were aware of the likely presence of a wingman but unfortunately were unable to gain visual contact until after they had passed. TCAS or another form of cooperative CWS would undoubtedly have helped to improve SA and aid an earlier visual acquisition. Work is in progress to equip the Tornado GR4 with a CWS.

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

Information available included reports from the pilots of both ac and comment from the appropriate operating authority.

Members agreed that the difficulties of visual acquisition were the crux of this Airprox and the Board was cognisant of the work under way to equip the Tornado GR4 with a CWS. The crew of GR4 (A) was evidently unable to sight GR4 (B) in sufficient time to take avoiding action, despite their leader's warning. Flying in 1nm trail, at a closing speed of 14nm/min allowed little time for a full visual scan after the lead crew's heads-up. The small cross-sectional area of the grey GR4 – head-on – with no crossing motion to draw attention to it evidently masked its presence until the last moment. The pilot's candid comment that he was unable to react in the time led the Board to conclude that this was, effectively, a non-sighting by the crew of GR4 (A).

Despite looking for the other ac the crew of GR4 (B) did not see GR4 (A) before the conflict arose. When the crew of GR4 (B) sighted GR4 (A)'s leader, they recognised the possibility of a wingman being in the vicinity. However, the crew was unable to spot GR4 (A) for the very same reasons as their colleagues in the other Tornado. Unaware of the proximity of the other jet above them until it was first seen in the pilot's rear-view mirrors as they turned, this was once more, effectively, a non-sighting by the crew of GR4 (B).

Having determined the Cause to be, effectively, non-sightings by the crews of both ac, Members considered the inherent Risk. As the pilot of GR4 (B) only saw GR4 (A) in his mirrors afterwards, Members leaned towards the pilot of GR4 (A)'s view of the geometry and separation as being potentially more reliable. Without the benefit of a radar recording the geometry could not be independently verified but there was no reason to doubt the veracity of the separation quoted by the pilot of GR4 (A) – that he flew 50ft vertically above GR4 (B). With neither crew involved able to affect the outcome of this very close quarters encounter beforehand, any separation that did exist was purely fortuitous. Therefore, on the basis of the pilots' frank accounts, Members agreed unanimously that there had been a Risk of collision.

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

Cause: Effectively, non-sightings by the crews of both ac.

Degree of Risk: A.

## AIRPROX REPORT No 2010071

Date/Time: 12 June 2010 (Saturday) 1237Z

Position: 5306N 00017W (6nm  
W Coningsby)

Airspace: London FIR (Class: G)  
Reporting Ac Reporting Ac

Type: Typhoon x 3 C150

Operator: HQ Air (Ops) Civ Pte

Alt/FL: 2000ft 2000ft  
(QFE 1024mb) (RPS)

Weather: VMC CLBC VMC CLBC

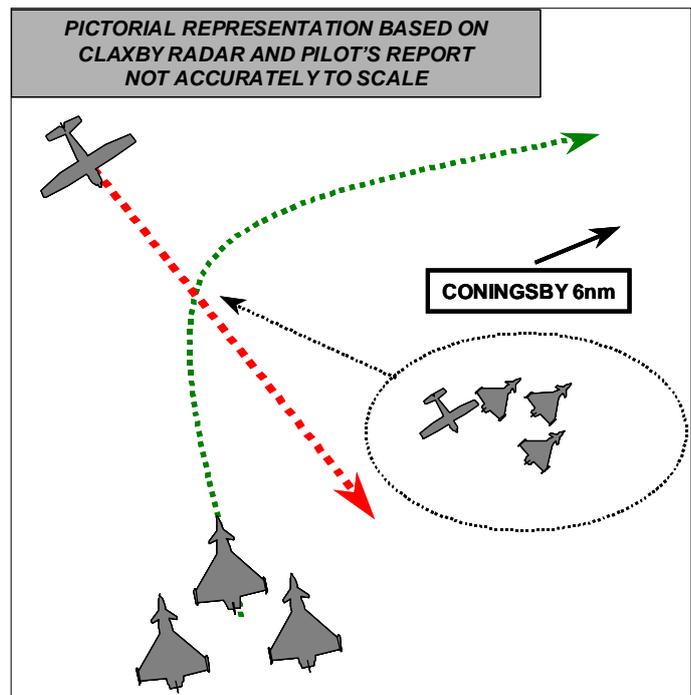
Visibility: 40km 30km

Reported Separation:

0V / 100-200ft H 200ft V/ 100m H

Recorded Separation:

100ft V/ 0.2nm H



**BOTH PILOTS FILED**

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

**THE TYPHOON FORMATION No2 PILOT** reports that 3 Typhoons in 'vic' formation were returning to base after participating in the Queen's Birthday Flypast. They were recovering through initials for RW07 at RAF Coningsby and were in receipt of a TS from Coningsby ATC; no TCAS was fitted but the No2 ac had a crew of two. They were 6nm out turning right through 040° at 2000ft QFE and 300kt and had just been handed over from APP to TWR when they had a close encounter with a civilian light ac. The ac approached from their 10 o'clock at the same alt and it was not reported by ATC; it was a white, single-engined type with a red top surface and it passed about 100-200ft behind them. They assessed the risk of collision as being medium to high. At the time the two wingmen were focused on maintaining position and, although a formation is relatively hard to manoeuvre, a turn away was initiated.

**THE C150 PILOT** reports flying a private flight with a passenger inbound to Cromer from Scampton, in a white and maroon ac without TCAS. The flight was one of a number of part-prepared and filed standard routes. [A map was provided]. On the evening of 9 June 2010, the NOTAMS were printed from the Website for a narrow and direct route. In the event on Saturday [12 Jun], an overland route via Sutton Bridge was flown. The navigation warning for Coningsby was not seen in the NOTAMS; however, in accordance with Scampton SOPs, when airborne Waddington ZONE was contacted for a MATZ penetration and a BS. They were cruising level at 2000ft on the Barnsley RPS and 80kt, squawking as directed with Mode C and when abeam Waddington, a MATZ crossing of Coningsby was also requested; the Controller immediately responded instructing them to squawk 7000 and free-call Coningsby on APP [VHF]. In response to his initial call to Coningsby, the controller requested that they avoid the airfield by 6nm and 10000ft vertically. They therefore turned right onto a Southerly track to comply with this instruction thus remaining at least 6nm from the airfield. A heading change to parallel track was initiated when overhead the E edge of Ruskington [6nm to the W of Coningsby and the Eastern edge of the **Cranwell** MATZ]. Almost immediately a 3-ship formation of military fast jets, later identified as Typhoons, was seen in the upper part of their windscreen very close in their 1 o'clock position and slightly above; he assessed collision angle as being 140°. He immediately pushed the nose down to avoid them and his passenger only caught a glimpse of the nearest ac passing slightly higher as it emerged on their starboard side; he anticipated wake vortex problems but

none materialised. Shortly afterwards, the controller advised “nothing further to conflict - contact Marham on 124.15”. This request was somewhat surprising as the service is normally provided out to 30nms and 3 calls to Marham indicated they had closed.

He did not report the incident on the radio but did so later and resubmitted when he was made aware that the Typhoons had also reported the incident, assessing the risk as being high.

UKAB Note (1): The recording of the Claxby radar shows the incident clearly. At 1236:00 the C150, squawking 1757 tracks 150° towards the CPA at a level of FL022; meanwhile the Typhoons are 3nm in its 12 o'clock descending through FL030 on a reciprocal track. They continue to close, the C150 still at FL022 and the Typhoons descending until they are displaced by 0.6nm at the same level, when the Typhoons commence a right turn inbound Coningsby passing just ahead of the C150. The CPA is at 1236:33 and the separation is as shown above.

UKAB Note (2): The transcript does not show any inter-formation dialogue regarding the C150 by the Typhoons. The formation transfers from APP to TWR at 1237:22 [after the ac cross at 1236:33]. On transfer to TWR the Typhoon leader first mentions the presence of ‘a light aircraft’ at 1238:36 but TWR suggests that it was unknown but might in the Cranwell cct. Both APP and TWR frequencies are very busy.

**HQ AIR BM Safety Management** reports that a formation of 3 Typhoons was returning to RAF Coningsby for a pre-arranged Families’ Day. They were under a TS and had been released ‘own-navigation’ for a timed arrival while a C150 was routing to the W of RAF Coningsby VFR under a BS.

Although the Typhoons had been released own-navigation to facilitate their timed arrival, they were still subject to a TS. Although another ac squawking 7000 was called to the Typhoons twice, at no time was TI passed on the Cessna. The APP controller was making many liaison calls to TWR regarding the co-ordination of flypasts (as seen from the transcript). Furthermore, the late call of another formation, the subsequent control instructions and the liaison required, increased significantly the controller’s workload, distracted him from his primary task and reduced his ability to scan the radar effectively.

Best practice during Families’ Days which involve timed arrivals and the pressure that this creates, requires careful consideration of manning in order to provide effective display liaison and coordination.

**HQ AIR (OPS)** comments that there was a break down in the TS provided to the Typhoon formation which meant the C150 went unreported, unfortunately it was also not detected by the lead pilot’s visual lookout scan. ATC Manning levels for events such as Families’ Days needs to be carefully considered as the tasks associated with their coordination can easily saturate even the most competent of controllers if personnel numbers are insufficient. They also questioned the wisdom of transiting such a busy piece of airspace under a BS, although the ability of a C150 to avoid a formation of 3 fast jets would be at best limited, which would be better than nothing.

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

Members were concerned that despite both pilots/crews being in receipt of an ATC service, the Typhoons a TS and the C150 a BS, neither was warned of the impending (head on) conflict with the other ac. Further, the C150 had not intended to route through the area of the airfield approach but was, in effect, asked to do so by Coningsby APP. While taken in isolation the request to remain clear of Coningsby by 6nm (or 10000ft) was reasonable, Members agreed that the controller should have foreseen that this would most likely mean that the C150 would route to the W of the airfield and

through the approach lane, as any other alternatives were not viable. Since the C150 called APP on VHF before the Typhoons were on frequency (UHF) there was no way that the Typhoon Leader could determine from RT transmissions that the C150 might be in the area. Following the instruction to 'free-call' Coningsby, the C150 pilot called APP on the published VHF frequency. At that time APP was controlling the Typhoon formation on UHF but simultaneously transmitting on a different VHF frequency (DIR). That being the case the C150 pilot would not have heard any transmissions made by APP to the Typhoons.

In sum neither pilot/crews could have been aware of the presence of the other ac from any ATC action, therefore lookout was the only means available for them to avoid the conflict. While some controller Members reasoned that in Class G airspace 'see and avoid' should take primacy, others said that when in receipt of an ATC service there is an understandable expectation that they will assist.

In addressing the lookout issues Members noted that 2 of the 3 Typhoon handling pilots would have been concentrating largely on closing to and maintaining close formation. Also the leader would have been busy lining up smoothly with the RW centreline and achieving his timed arrival; Members considered, however, that he also had a significant lookout responsibility. The C150 was level at 2000ft and the formation, although initially above and descending, was levelling at 2000ft just before commencing the right turn onto the centreline and, since the C150 should have been visible to them, the leader's non-sighting was part of the Cause. Members debated whether or not the C150 pilot's sighting of and reaction to the formation had been early enough for him to change the ac flightpath. Although there were differing opinions, a majority agreed that it had not and therefore his was an 'effective non' rather than a 'late' sighting.

Since in effect none of the pilots involved saw the opposing ac in time to take effective and timely avoiding action, it was agreed that there had been an erosion of normally acceptable safety standards.

A GA Member commented that the C150 pilot's checking of the NOTAMs pertaining to his flight had not been adequate in that he had done this check too early (3 days before the incident) to reveal any late changes. Also the 'filtering' criteria had not been correct for the route he actually flew, rather than the one he previously planned some time earlier. In other respects his planning and execution had been good and by understanding and applying correctly other procedures he had learned about the increased weekend activity at Coningsby while airborne and adhered to the NOTAMed avoidance.

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

Cause: In the absence of TI to the Typhoon formation or a warning to the C150 pilot, a non-sighting by the Typhoon Leader and effectively a non-sighting by the C150 pilot.

Degree of Risk: B.

## AIRPROX REPORT No 2010073

Date/Time: 28 May 2010 0911Z

Position: 5114N 00001E (6nm S BIG)

Airspace: LTMA (Class: A)

Reporting Ac Reported Ac

Type: A321(A) A321(B)

Operator: CAT CAT

Alt/FL: ↓FL100 FL118↑

Weather: IMC VMC CLOC

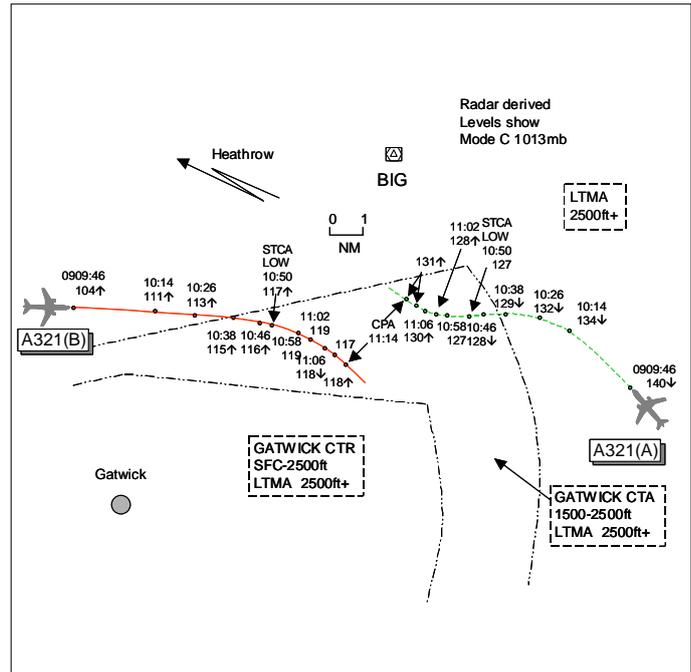
Visibility: NR 10nm

Reported Separation:

800ft V/NR H 800ft V/10nm H

Recorded Separation:

1300ft V/2-8nm H



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

**THE A321(A) PILOT** reports inbound to Heathrow IFR on radar heading 270° descending to FL100. ATC issued heading of 330° and then a 'stop decent now' before TCAS generated an RA 'climb' demanding >1000fpm. The RA guidance was followed and the other ac passed with an estimated separation of 800ft vertically and he assessed the risk as low.

**THE A321(B) PILOT** reports outbound from Heathrow IFR heading 085° at 310kt and climbing to FL170. Passing FL118 they received a TCAS TA followed by an RA 'descend' before ATC issued 'stop climb FL120 turn R heading 180°. The RA guidance was followed and the turn was commenced, the other ac was not seen visually but passed ahead and to their L by an estimated 800ft vertically and 10nm laterally. He assessed the risk as none.

**THE LTC BIG CONTROLLER** reports A321(B) was following a DVR SID and was on a radar heading to pass behind the A321(A), which was inbound to BIG and had already been transferred to Heathrow INT. A321(A) made an unexpected L turn before reaching BIG whilst descending through about FL140; this placed the ac head-on. A321(B) was passing FL114 and was instructed to turn R heading 180° and stop climb FL120. Separation was maintained but the A321(B) crew reported a TCAS RA

**THE LTC HEATHROW INT** reports the A321(A) flight called on frequency descending to FL80 and was instructed to leave BIG heading 270°. After a few seconds it became apparent that the crew had taken the heading of 270° straight away, which placed the ac in conflict with the climbing A321(B) which was working TMA S. According to the Mode S information A321(B) was going to climb through the A321(A)'s level, so he gave avoiding action to A321(A); no separation was lost. Later when listening to the RT replay neither his UCE, Safety Manager or himself were able to tell whether the A321(A) crew had read back their initial clearance correctly. It wasn't apparent whether he had used an abbreviated read back of 'Biggin 270' or 'heading 270'.

**ATSI** reports that the Airprox occurred on 28 May 2010 involving A321(A) inbound to the BIG VOR for an arrival at London Heathrow and A321(B) on a DVR4G departure from London Heathrow; the Airprox occurred approximately 3nm S of BIG VOR at FL120.

The A321(A) flight called the LTC BIG frequency (120-525MHz) at 0904:50 (UTC). The BIG sector was manned by a single controller and was bandboxed with the LTC TIMBA sector. A321(A) was passing FL190 for FL150 - in accordance with the Standing Agreement between LAC S17 and the BIG sector - and had approximately 39nm to run until BIG. Replay determined that the ac was 'own navigation', routing TIGER – BIG, although this was not mentioned on the RT.

The A321(B) flight, a departure from London Heathrow RW27L, called the BIG frequency at 0906:13, passing altitude 2800ft for altitude 5000ft. The flight was instructed to squawk ident and at 0907:07 BIG instructed A321(B) to, "*climb flight level eight zero*". The flight was then instructed to continue on its present heading, the heading was 140°. At 0908:27 A321(B) was instructed to, "*climb flight level one seven zero*", and this was read-back correctly. Immediately after issuing this instruction BIG cleared A321(A) to descend to FL100, which was also read-back correctly. FL100 was the release level to INT as there was a Category A flight operating at FL090 in the vicinity of OCK and BIG VORs.

At 0909:10 A321(B) was instructed to turn L on to a heading of 095°. The BIG controller's next transmission, at 0909:17, was to A321(A) to, "*contact Heathrow 119.72 [sic]*". At this time the ac was passing FL147 in the descent.

ATSI Note (1)- MATS Part 1 Appendix E (Attach) Page 6 para 3.4.5 states 'All six figures shall be used when identifying frequencies irrespective of whether they are 25KHz or 8.33KHz spaced' therefore the correct identification of the frequency for Heathrow INT is 119.725.

Between 0908:48 and 0909:30, whilst A321(B) was below FL100, the ac was observed to climb at a rate of between 3000 and 4000fpm, speed 250kt. However, on passing FL100, the ac's speed began to increase and the rate of climb dropped to between 1000 and 2000fpm.

A321(A) flight called the LTC Heathrow INT (N) frequency (119.725 MHz) at 0909:48 stating, "*A321(A) c/s down flight level one hundred*". INT was operating as both the INT N and INT S controller at the time. INT instructed A321(A) to, "*leave Biggin heading two seven zero degrees*". The A321(A) pilot replied, "*heading two seven zero degrees A321(A) c/s*".

At 0910:14 A321(A) commenced a LH turn into A321(B)'s 12 o'clock at a range of 13.4nm. A321(A) was passing FL134 in the descent and A321(B) was passing FL111 in the climb.

At 0910:16 BIG adjusted the heading of A321(B) R onto a heading of 105°. Immediately after the pilot's read-back, at 0910:25, BIG instructed A321(B) to "*make a right hand turn now heading one eight zero degrees*". After the pilot's read-back BIG instructed A321(B) to, "*stop your climb flight level one two zero*". The pilot read-back the amended level and re-iterated the R turn onto 180°.

At 0910:38 INT instructed A321(A) to "*turn right heading three three zero degrees avoiding action*". This was read-back by the A321(A) pilot. INT then instructed A321(A) to, "*stop descent*". By 0910:46, the ac were on reciprocal tracks, in each other's 12 o'clock at a range of 6.9nm, A321(A) was passing FL128 (SFL100) and A321(B) was passing FL116, SFL still indicating FL170.

Low-Level STCA activated at 0910:49. Mode S downlinked RA messages indicate that A321(B) received a 'Descend' RA at 0910:50 and at 0910:52 A321(A) received a 'Climb' RA.

[UKAB Note (1): The radar recording at 0910:50 shows A321(A) levelling-off at FL127 with A321(B) climbing through FL117 and commencing a R turn.]

At 0910:58 INT transmitted to A321(A): "*just confirm it's avoiding action right heading three three zero degrees*". [UKAB Note (2): Minimum vertical separation of 800ft occurs at this time with the ac 4.6nm apart, with both ac in level flight, A321(A) at FL127 and A321(B) at FL119.]

At 0911:01 High-Level STCA activated. At the same time the R turn of A321(B) began to take effect with the ac at FL119, SFL now indicating FL120. A321(A) was still tracking W and now climbing through FL128, SFL indicating FL100.

[UKAB Note (3): The next sweep at 0911:06 reveals A321(A)'s R turn beginning to take effect with the ac climbing through FL130 with A321(B) descending through FL118. Four seconds later the ac close to 3nm with A321(A) passing FL131 with A321(B) level at FL117. The CPA occurs on the next radar sweep at 0911:14 with the ac passing port to port separated by 2.8nm, A321 (A) showing FL131 with A321(B) climbing through FL118.]

The required minimum separation in LTMA airspace is 3nm horizontally or 1000ft vertically.

At 0911:16 BIG instructed A321(B) to turn L onto a heading of 085°. After reading-back the new heading the pilot stated that, "*we had a TCAS descent now coming back flight level one two zero*". BIG acknowledged this and then cleared the flight for further climb to FL170. Shortly after A321(B) was transferred to LAC S15.

At 0911:17 INT instructed A321(A) to descend to FL100. After reading-back the clearance the pilot informed the LL INT controller, "*we had a TCAS RA*". This was acknowledged by INT and A321(A) was then vectored for an arrival to RW27R.

It is standard practice on the BIGGIN sector to instruct W'ly DVR departures to fly a SE'ly heading to enable climb through ac descending into the BIG VOR hold. The departures can then be turned back towards DVR when separation against the inbound traffic is assured, either by vectoring so the departure goes behind the inbound, or a level change has been achieved.

As A321(B) was passing FL085, with a slow speed and high ROC, BIG turned the departure onto a heading of 095°, which was in front of the arriving A321(A)'s trajectory as it passed through FL148. This was a solution that required the controller to monitor the flight paths of the departure and arrival as separation was not assured until a level change had been achieved.

The pilot of A321(A) incorrectly read back the 'leave BIG heading 270 degrees' instruction issued by INT as 'heading 270' and this was not detected by the controller. A321(A) then turned head-on to A321(B). At this point the high ROC of the departure had decreased as its speed increased.

When both controllers assimilated the ensuing situation neither used the correct form of avoiding action phraseology, which is: "(callsign) Avoiding Action. Turn/Climb immediately (instruction) (traffic information)" – MATS Part 1 Appendix E (Attach) page 11.

A321(B)'s turn onto 180° was not seen to take effect until 36sec after the instruction had been given and A321(A)'s turn took 29sec to take effect. In addition INT instructed A321(A) to, "stop descent" without specifying a level; this is non-standard phraseology.

Both ac received complementary RAs at approximately 0910:50, which was after they had been given turn instructions. However, neither pilot announced on the RT that they were responding to a TCAS RA until the encounter was over.

ATSI Note (2): The UK AIP ENR 1.1.1 Para 5.6.6 states 'A pilot who has deviated from an air traffic control instruction or clearance in response to an RA shall: a) As soon as possible, as permitted by flight deck workload, notify the appropriate ATC unit of the RA, including the direction of any deviation from the current ATC instruction or clearance'.

## **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 authorities.

The Board agreed that the instruction issued to the A321(A) crew by the INT to 'leave BIG heading 270' was explicit but, for whatever reason, the crew misunderstood the instruction and turned immediately onto the heading, which was a part cause of the Airprox. The NATS Advisor informed Members that, although the master RT recording clearly revealed that the A321(A) crew had read back 'heading 270', the desk-side replay was not at all clear, as highlighted by the Heathrow INT post incident; the issue of RT clarity desk-side is being investigated by NATS Engineering. The Board agreed that INT had not assimilated the incorrect read back and this was a second part cause. Members commented that if any received transmission is unclear at the time, the controller should always challenge the crew to repeat it.

Turning to risk, both INT and BIG controllers noticed A321(A)'s early turn and both issued timely and complementary avoiding action R turns to both flights ahead of STCA activating. Although both ac were apparently slow to turn - the ATC turns were given before TCAS RAs were received - the early intervention by ATC was in good time, with both crews following their complementary RAs and the ac turning out of conflict with no loss of separation. Members were disappointed that neither crew made an appropriate RT call advising that they were responding to TCAS RAs, only informing the respective controllers afterwards. Nevertheless, all of these factors when combined were enough to allow the Board to conclude that any risk of collision had been effectively removed.

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

Cause: The A321(A) crew misunderstood their instructions and the LTC Heathrow INT did not assimilate the incorrect read back.

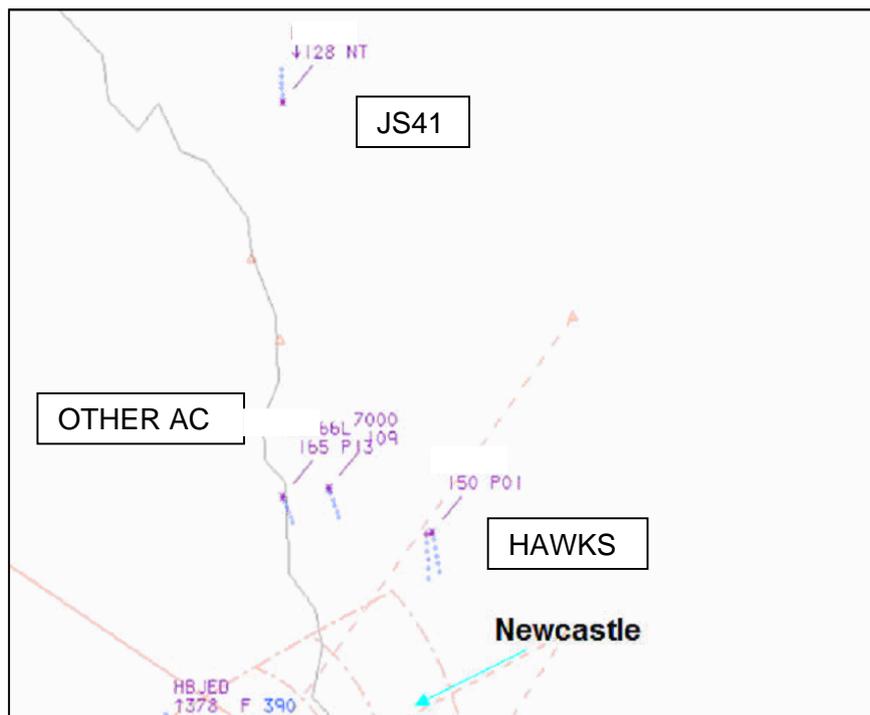
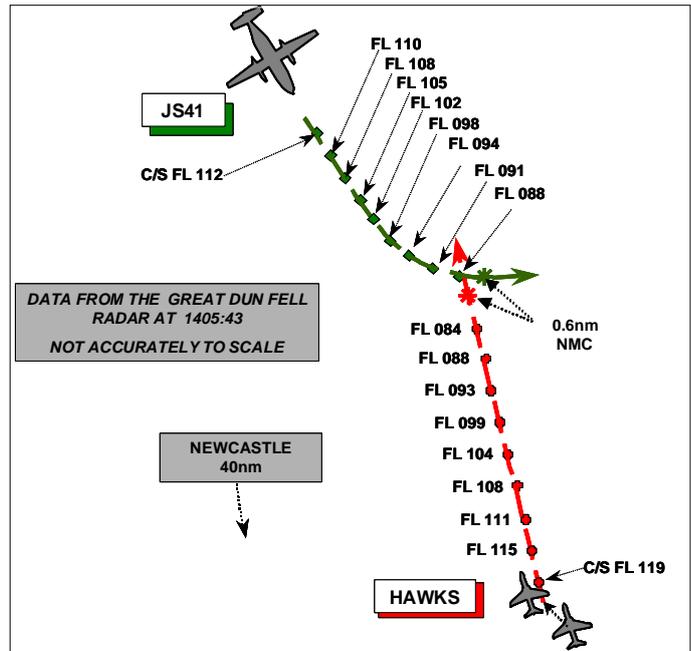
Degree of Risk: C.

**AIRPROX REPORT No 2010075**

Date/Time: 24 Jun 2010 (Thursday) 1406Z

Position: 5545N 00140W (40 NM N Newcastle)  
Airspace: Scottish FIR (Class: G)  
Reporting Ac Reported Ac  
Type: Jetstream 41 Hawk X 2  
Operator: CAT HQ AIR (OPS)  
Alt/FL: FL90 FL90  
Weather: VMC CLAC VMC CLAC  
Visibility: >50km 40km  
Reported Separation:  
 Not Seen 1000ft V/1nm H

Recorded Separation:  
 NR V / 0.6nm H (See UKAB Note (1)).



Time 1403:30

UKAB Note (1): On the sweep of the CPA the Mode C of both ac drops out. On the sweep before the CPA (8 sec) the JS41 indicates FL088 and the Hawks FL084 and on the sweep after the JS41 087 and the Hawks FL078. Therefore, by interpolation, the vertical separation was about 600ft.

UKAB Note (2): The incident shows clearly on the recording of the Great Dun Fell Radar, a snapshot at 1430:30 of which is shown above.

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

**THE JETSTREAM 41 PILOT** reports flying a scheduled passenger flight under IFR in receipt of a DS from ScACC, squawking as directed with Modes C and S. While about 50nm N of Newcastle flying at 240kt they were given a Southerly heading due to military traffic that had been called by the controller. They then were given 3 or 4 incremental heading changes of 10° to the left and then told to descend from FL100 to FL70 and to expedite decent. A short while later an 'Avoiding Action' instruction was given to turn left onto a heading of 090° and, as they passed through FL90, still in the turn, a descending TCAS RA was issued with 'Adjust Vertical Speed', commanding a reduction in their vertical speed. This was carried out in accordance with company SOPs. They were unable to acquire visually the other ac and exact headings and flight levels could not be recalled as they were concentrating on reacting to the TCAS. He reported the incident on the radio and assessed the risk as being low.

**THE HAWK PILOT** reports that he was leading a formation of 2 Hawks on a Nav training flight with students in the rear seats, squawking as directed with Mode C. They were transiting N for a planned low level entry at Boulmer and were under TS from ScACC (Mil). TI was passed regarding a JS41 ac in the descent to Newcastle. While in the descent at M0.7, with the No2 closing to close formation for a cloud penetration, they saw the ac about 2nm away at the same level in their 1 o'clock position and clearing to their right. It was visually assessed that there was no collision risk and neither they nor the JS41 took avoiding action as the formation was passing well behind and about 1000ft below the Jetstream. They continued their descent to low level uneventfully and assessed the risk as being none.

**The ScACC (Civil) Controller** reports that he took over the TAY Sector at about 1400 while the JS41 was receiving a DS so he continued to provide that service to the ac, which was about to descend into Newcastle. Shortly thereafter the pilot requested a descent and he cleared it to FL100, the level he coordinated with Newcastle; simultaneously he passed TI on opposite direction traffic consisting of 3 ac, one at FL165 (squawking 6131), one at FL150 (the Hawks) and one squawking 7000 indicating FL109 (unverified). As the JS41 descended he decided to turn it left to take it away from the unknown ac (squawking 7000 at FL109). At the time the Hawks were behind that ac maintaining FL150 and were working a military console. The Hawks then started to descend and TI was given to the JS41.

The Hawks then became a likely conflict so he passed further TI and cleared the JS41 to a lower level of FL70, which he coordinated with Newcastle, in order to descend it below the Hawks.

Other ac were calling on the frequency and he did not have time to call the military controller, so he was unaware what type of service was being given to the conflicting Hawks. He initially passed a turn of 20° degrees to left and then upgraded it to avoiding action with further left turn on to 090° and again updated the TI. The conflicting traffic was seen to be descending at a greater rate than the JS41 so he stopped the JS41's descent as the conflicting traffic passed below it by about 600ft and passed TI. As the ac passed, the JS41 reported receiving a TCAS vertical RA in the same direction as he had given but the crew was not visual with the Hawks. He then gave the JS41 further TI, turned it back towards Newcastle and transferred it to them.

**The ScACC (Mil) Controller** reports that he had taken a silent internal handover of a formation of 2 Hawks that were in the descent from FL150 to FL050 on a TS. On his first transmission to the Hawks he passed TI regarding the JS41 at '11 o'clock, 20 miles opposite direction'. He was then called by another ac climbing out of low level in the Rannoch area for a transit back to Lossiemouth. He then returned his attention to the Hawks passing further TI on the JS41 at 'left 11 o'clock 5 miles'. The Mode C of each ac was similar; however, the Hawks were descending quicker than the JS41. He then got a STCA red conflict alert so he called the traffic again; the position was left 11 o'clock 1 mile 200ft above.

At this point he was surprised to see that the JS41 had turned left towards the Hawks and went over the top of them by 200ft [he assessed]. At this point the Hawk leader called visual with the JS41 as it passed overhead and he then asked for a DS, which he gave, but by then the confliction had passed.

TAY sector then called and asked if he was working the Hawks. He replied that he was and he [the ScACC Civ Controller] said that he was reporting the incident. At 1406 the Hawks went en-route.

When he first took over the Hawks he thought that the JS41 would come just within 5nm [before the heading changes] so he called the traffic to them. He assumed that if the JS41 were receiving a DS then TAY would have called to coordinate it, as normally they are very quick to do so. He always felt that the ac would pass down each other's left hand side until the JS41 turned left towards the Hawks, so the thought of stopping off the Hawk's descent was discarded and, as he had called the traffic several times to the Hawks, he assumed they were happy to continue.

**ATSI** concurred the most comprehensive NATS report, which is summarised below.

**THE NATS REPORT** indicates that, although the incident highlighted the limited time both controllers had to initiate co-ordination and that there was a difference in understanding as to the responsibilities for its initiation.

The investigation indicated that, had co-ordination taken place prior to the descent of the Hawks, there would have been an opportunity to prevent the incident, but circumstances prevented that co-ordination from being achieved.

The Military controller's focus for resolution of the incident was based on the fact that he was providing a TS to the Hawks and he was satisfied that, although he might not achieve 5nm, there was sufficient spacing between the ac to allow for TI only if there was a problem, then TAY Sector would initiate co-ordination.

TAY Sector controller was attempting to achieve the DS minima of 5nm or 3000ft against 3 opposite-direction tracks. His initial plan to take the JS41 laterally away from the unknown and conflicting ac squawking 7000 at FL109 and to go underneath the Hawks that [at that time] were maintaining FL150, was sound until the Hawks began to descend at a greater rate than the JS41.

He was then faced with a situational 'fait accompli' since he did not have sufficient spacing (less than 7nm) between the two conflicting ac to achieve 5nm.

In summary, both the civil and military controllers provided their respective services as required. The civil controller (providing a DS) attempted to provide 5nm lateral deconfliction from two [other] tracks and 3000ft vertically from the Hawk formation but their unexpected and rapid descent resulted in that plan being thwarted. The military controller provided a TS as required and was expecting the JS41 to pass to the W of the formation (albeit separated by slightly less than 5nm) and not to turn left towards it. Although there was about 80sec available to react to the changing situation, there would have been time to initiate co-ordination; however, other calls, attempts to resolve the developing conflict and an expectation that the other controller would initiate the co-ordination resulted in no contact being made between the controllers until after the event

No 'Personnel' causal factors were identified in the report since none could be attributed to military controller, civil controller or any of the aircrew involved; they considered that all the action taken by the controllers was both in accordance with the rules and appropriate under the circumstances. The lack of co-ordination, however, was considered to have contributed.

The primary causal factor was considered to be an interaction outside CAS where two controllers attempted to follow their responsibilities but where the circumstances still resulted in an Airprox.

The following systemic factors were identified:

- a. Conflicting ac operating different agencies with different services.
- b. Hesitation regarding co-ordination or agreement initiation responsibilities [Causal Factor 4]

**HQ AIR BM ATM Safety Management** reports that NATS report covers many of the issues surrounding this Airprox and HQ Air BM SM accepts the findings with the following observations:

- a. Although 'neither party attempted to coordinate the conflicting tracks' is an accurate reflection of what occurred, it was the responsibility of the civil controller, at the time holding executive control of the JS41 under a DS, to achieve separation or co-ordination.
- b. Causal Factor 4 gives concern. There should be no doubt that a controller vested with the executive authority to control a flight under a DS should not wait to receive a course of action to resolve any confliction. Regardless of the service being provided to the conflicting traffic [the other ac], that controller must take action to avoid any confliction by providing avoiding action or initiating coordination. In this case, the late descent of the Hawks reduced the planning time available to the civil controller, which in turn hindered his ability to resolve the situation by avoiding action alone.

The procedural fail-safes within this Airprox worked on this occasion. The Hawks were VFR, receiving a TS and, with the aid of the accurate TI passed by the military controller, became visual with the JS41.

Any move to amend the current guidelines to military controllers regarding burden of responsibility to coordinate traffic could lead to further confusion. If this situation had been reversed, current guidelines would mean the military controller would instinctively seek resolution to the confliction and not assume the other controller would carry out coordination or avoiding action.

**HQ AIR (OPS)** has no comment since the Hawks were in sight of the JS41 and avoided it by a suitable margin.

UKAB Note (3): A Deconfliction service is defined in CAP 774 as:

A Deconfliction Service is a surveillance based ATS where, in addition to the provisions of a Basic Service, the controller provides specific surveillance-derived traffic information and issues headings and/or levels aimed at achieving planned deconfliction minima, or for positioning and/or sequencing. However, the avoidance of other traffic is ultimately the pilot's responsibility.

CAP 774 also defines the deconfliction minima as:

The deconfliction minima against unco-ordinated traffic are:

- 5 NM laterally (subject to surveillance capability and regulatory approval); or
- 3,000 ft vertically and, unless the SSR code indicates that the Mode C data has been verified, the surveillance returns, however presented, should not merge. (Note: Mode C can be assumed to have been verified if it is associated with a deemed validated Mode A code. The Mode C data of aircraft transponding code 0000 is not to be utilised in assessing deconfliction minima).

And states the following caveat:

High controller workload or RTF loading may reduce the ability of the controller to pass deconfliction advice and the timeliness of such information. Furthermore, unknown aircraft may make unpredictable or high-energy manoeuvres. Consequently, it is recognised that controllers cannot guarantee to achieve these deconfliction minima; however, they shall apply all reasonable endeavours.

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

Despite that there was no risk of collision in this incident, Members found determination of the cause challenging as there were differing opinions regarding the responsibilities of controllers when controlling ac in Class G airspace. All agreed however, that both ac had an equal right to operate there and consequently the pilots had an equal and shared responsibility to avoid other ac. Both pilots had elected to make use of an ATC service to assist them with their responsibility. The Hawk leader requested a TS and expected to be informed of other ac to aid his visual acquisition and enable him to take visual avoidance. In providing this service, the ScACC (Mil) controller passed accurate TI, first indicating that the JS41 was descending and flying in the opposite direction to the Hawks and then identifying it had turned L towards the Hawk formation. This enabled the Hawk leader to see the JS41 and assess that there was no requirement for avoidance action. One controller Member was uncertain about when the Hawk Leader first saw the JS41 [the time of the "Tally" call on the transcript and the pilot's report confirm that this was at about 2nm], as it seemed that this had been just as or after it commenced its turn onto E and he regarded this as being late; most other Members, however, disagreed. Despite that the actual separation had been less (in both planes) than the Hawk pilot estimated, it was of the order of 600ft vertically which the HQ Air (Ops) Member reminded the Board, is more than the IFR separation required in some circumstances; Members agreed that it had been reasonable. Although a more positive breakaway might have prevented the (passive) TCAS RA, the HQ Air (Ops) Member also pointed out that the No2 Hawk was still closing into close formation on the Leader and therefore a positive break away was inadvisable. It was pointed out that IFR traffic, whether civil or military, cannot expect any priority over VFR operations when routing through Class G airspace and the Rules of the Air for Collision Avoidance, i.e. the 'See and Avoid' principle applies.

The JS41 pilot being on an IFR CAT flight, sought greater separation from other ac and so the pilot asked for a DS where the controller attempts to provide 5nm or 3000ft separation from other traffic [UKAB Note (3)]. One civil controller Member opined that in practice this is hard to achieve but another disagreed saying that his unit do it routinely and do not encounter any procedural difficulties. Further, there was disagreement regarding the option to coordinate and an apparent difference between civil and military procedures; a civil controller stated that the coordination responsibility was mutual, but the military viewpoint was that the responsibility lay solely with the controller providing the DS who is required to endeavour to achieve either 5nm or 3000ft deconfliction minima, whereas one providing a TS does not.

Although the radar picture above illustrated that the civil controller was not faced with a straightforward problem to resolve, it seemed to Members that there were 2 potentially viable alternative solutions: namely to turn the JS41 to the W of the approaching 'wall' of ac or to attempt to coordinate directly with the military console controlling the Hawks (displayed on his radar screen). Notwithstanding this however, the Controller's selected course of action would most likely have provided the deconfliction minima he was seeking but this was dependant on the Hawks not descending, which unfortunately they did at 1403:33, immediately after the radar snapshot above. Although the controller had already passed the JS41 pilot a left turn (onto 170°) 16sec before the Hawk's descent was first visible, the 2<sup>nd</sup> turn (onto 160°) was 25sec after the descent commenced and the 'avoiding action' turn onto 090° at 1404:57 (the 4<sup>th</sup> left turn) when the JS41 (FL105) was just 300ft below the Hawks (FL108). A Member observed that after the first turn, which was understandable, the 3 subsequent ones exacerbated the situation rather than resolving it. Another Member opined that the ScACC civil controller might have expected that his military counterpart would anticipate the need to position the JS41 for an approach to Newcastle, since its squawk indicated that to be its destination, and consequently request the Hawk formation to stop its descent. A military controller Member opined that the initial assumption that the Hawks would not descend had been injudicious since military ac frequently descend in that area in order to enter low level near

Amble. He also pointed out that there was no onus on the military controller as he was providing a TS [see HQ Air BM SM report], which the TAY Sector controller could have deduced since the Hawks did not turn away. Following the extensive discussion a majority of Members agreed that the actions of the military controller had been appropriate.

Excepting that the civil controller did not achieve the deconfliction minima that he was attempting to, the Hawk formation was not descending when he formulated his plan, which was otherwise workable and, had the Hawks not descended, the JS41 would have been separated [UKAB Note (3)] from both the unknown ac squawking 7000 and the subject Hawks. Members noted that the TAY Sector controller was working traffic in CAS and Class G Airspace simultaneously. A controller Member opined that, if the controller's workload was such that he did not have the capacity to make a coordination call, then the sector was undermanned and he could have exercised the option to downgrade the Service provided to the JS41. Although it could be argued that he did not modify the plan sufficiently when it became apparent that the Hawks had started to descend, in the 80sec available he was also dealing with another ac and most Members thought his actions understandable. A Member suggested that it might be advantageous if all the ac in the area had been on the same frequency. After the Meeting it was pointed out by HQ Air that, although there is a MoU between Aberdeen and ScACC (Mil) regarding the handling of IFR traffic departing to the S through Class G Airspace, since the JS41 was not an Aberdeen departure and this would not have applied.

In assessing the cause of the incident, Members noted that although the deconfliction minima desired were not achieved (resulting in the JS41 receiving a passive TCAS RA), due to assumptions subsequently revealed to be incorrect, they agreed with the NATS investigation which found that there had been no 'personnel' causal factors. That being the case, Members somewhat reluctantly agreed that this incident had been a conflict between 2 ac operating legitimately in class G airspace.

The FOI Advisor reminded the Board of FOD COM 33/2009 regarding guidance on risk assessments for operators of CAT flights outside CAS.

The Director informed the Board that he would be discussing this incident and other similar ones with the CAA and MoD as part of his periodic review.

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

Cause: A conflict in Class G airspace between IFR and VFR traffic.

Degree of Risk: C.

## **AIRPROX REPORT No 2010079**

Date/Time: 22 June 2010 (Tuesday) 1310Z

Position: 5043N 00247W  
(BRIDPORT)

Airspace: Lon FIR (Class: G)

Reporting Ac Reporting Ac

Type: Paraglider Merlin

Operator: Civ Pte HQ JHC

Alt/FL: 400ft 800ft↑  
(N/K) (Rad Alt)

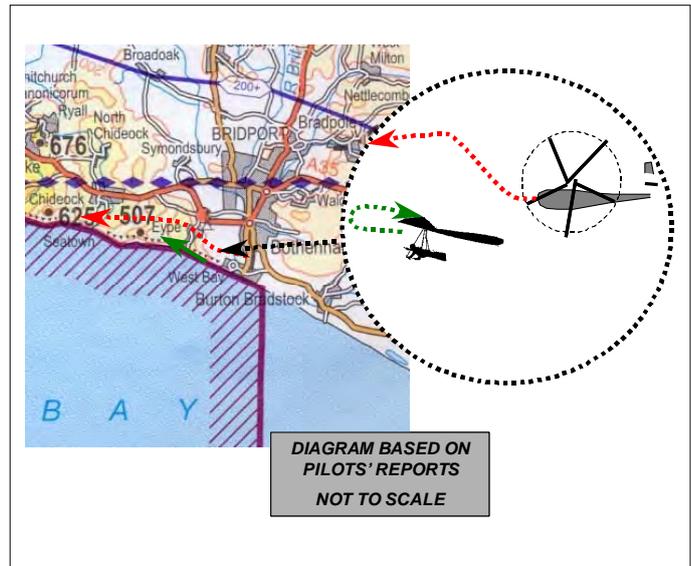
Weather: VMC CAVOK VMC CAVOK

Visibility: 15nm >10km

Reported Separation:

NK 300ft V/ 1nm H

Recorded Separation:



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

**THE PARAGLIDER PILOT** reports flying a brightly coloured paraglider with no lights, radio or SSR, cliff-soaring along the S Dorset Coast near Bridport at about 400ft amsl and at 20kt. There were other paragliders in the area. A dark coloured helicopter appeared from his blind area, behind and above. The helicopter may well have judged his rotor downwash would pass well inland of these paragliders but that day the wind strength he experienced above Thornecombe Beacon some 15min earlier was weak and only just significant enough to allow him to reach a maximum height of 600ft (around 70ft above the beacon). The helicopter pilot took some avoiding action but then climbed above several other paragliders and continued in a Westerly direction immediately above the paragliders. He assessed the risk as being Medium and provided a photograph of the event.

He considers that pilots should be advised to avoid paragliders a wide margin downwind and not fly above them where they cannot be seen.

Later on the same day a Lynx helicopter travelling along the coast eastwards saw the paraglider activity and diverted his track to pass well inland, before returning to the cliffs having safely passed them.

**THE MERLIN PILOT** reports conducting a training flight in a dark green ac with strobes and nav lights switched on. The event occurred during a low level transit to Bodmin Moor in an area where the flight was authorised to 50ft msd in LFA 2. However in that area the Capt elected to maintain 500-1000ft msd in the vicinity of the coast, due to potential bird activity and the high number of built up areas. In the lead up to the event the ac was at 800ft agl and tracking West at 140kt. The paragliding activity was spotted at a distance of about 1.5nm so the Captain elected to climb immediately to well above 1000ft agl and route North (downwind) of the activity. At all times the crew of 5 maintained 'eyes out' and were confident that more than adequate separation was maintained throughout.

The event was not discussed further, as the crew did not consider it to be an Airprox.

UKAB Note (1): The incident took place below the base of recorded radar cover.

UKAB Note (2): The photographs provided show the weather to be CAVOK and the Merlin to be an estimated 250m N of the cliff-line.

UKAB Note (3): The incident took place just on the boundary of DGD012, which was active at the time up to 3000ft. Plymouth Mill provides a DACS but they have no record of any contact with the Paraglider(s). It is understood that it is common for paragliders to operate on the cliff-line in that area and the RN accepts this to be outwith the Danger Area.

**HQ JHC** comments that it appears that the Merlin pilot was visual with the paragliding activity in sufficient time to take appropriate avoiding action but that it was not deemed adequate by the reporting paraglider. Conversely, the (unverified) avoiding action of the Lynx helicopter was more to the satisfaction of the reporting paraglider. It may be that the size of each helicopter may have influenced the perception of the paraglider. The apparent discrepancy between the actions of the two helicopter pilots may be attributable to a difference in each (helicopter) pilot's perception of the distance required to avoid disturbing the paragliding activity. In both cases there appears to be a low risk of collision.

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

Information available included reports from the pilots of both ac and a report from the Merlin operating authority.

The Board noted that paraglider sites are not promulgated on Military Low Flying Charts since paragliding activity can be encountered at almost any suitable hill or cliff location, depending on the weather and wind conditions. This site, like other similar cliff locations, is a location favoured by paragliders when there is an onshore breeze since it generates good 'lift'. Although in this instance, as witnessed by the photograph provided by the paraglider pilot, the Merlin was far enough away (vertically and probably horizontally) for there to be only a minimal risk of the paraglider experiencing any noticeable downwash or wake turbulence, being a large helicopter it was nevertheless close enough to cause the paraglider pilot concern.

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

Cause: The Merlin flew close enough to the paraglider to cause its pilot concern.

Degree of Risk: C.

## **AIRPROX REPORT No 2010088**

Date/Time: 14 Jul 2010 (Wednesday) 0953Z

Position: 5250N 00028W (12nm  
SSE Cranwell)

Airspace: Lincolnshire AIAA (Class: G)

Reporting Ac      Reported Ac

Type: Tutor                      Tutor

Operator: HQ AIR (TRG)      HQ AIR (TRG)

Alt/FL: 6000ft                      NR  
(RPS 994mb)

Weather: VMC CLOC                      NR

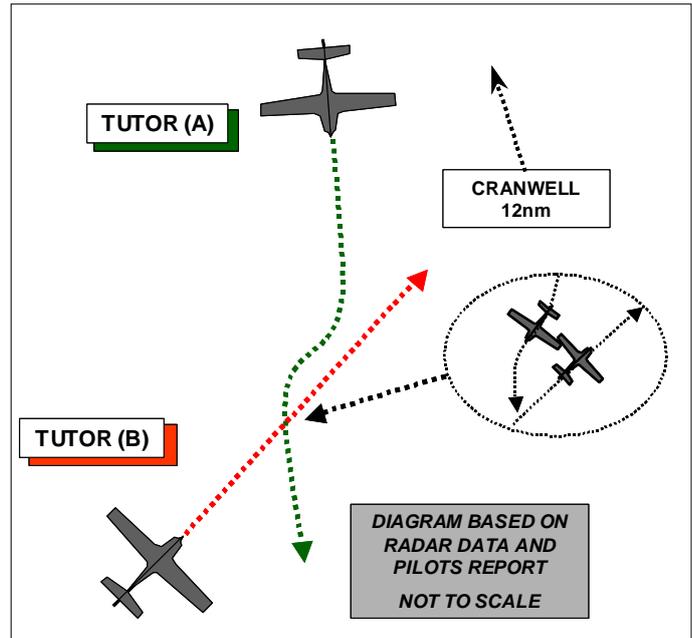
Visibility: 30km                      NR

Reported Separation:

100ft V/ 100m H      NR

Recorded Separation:

100ft V/0.1nm H



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

**TUTOR (A) PILOT** reports flying an instructional flight from Cranwell in a white ac, not in contact with any unit but squawking a Cranwell conspicuity code. During the climb, heading 180° at 80kt and passing 6000ft, the student pilot flew a gentle pitch up and right turn to avoid another Tutor ac, and subsequently reported the sighting to the instructor. The opposing Tutor was first seen in the 2 o'clock low position, at a distance of 100M and about 100ft below. The instructor only saw the ac as it passed below departing towards their 8 o'clock. In retrospect, having not seen the other ac until after it passed, the instructor considered the risk of collision as medium.

**TUTOR (B) PILOT** reports that 2 months after the incident he was informed that he had been involved in an Airprox. Given that it has been 2 months since the incident, he was unable to recollect the flight and could not recall feeling that ac separation and thus safety was compromised at any time.

UKAB Note (1): The time of the Airprox given by the reporting pilot (Tutor (A)) was 1 hour in error and the incident could not be correlated with the radar recording. Immediately after the event the pilot was on leave and only after he returned to duty could the amended time be reconciled with the radar data. When this was completed the pilot of Tutor (B) was contacted and an ASIMS report requested.

UKAB Note (2): The recording of the Claxby radar shows the incident clearly. In the lead up to the CPA at 0952:30, Tutor (A) can be seen climbing through FL062 in a Southerly direction and Tutor (B) is in its 2 o'clock, tracking 040° and level at FL065 (i.e. Tutor (A) is in Tutor (B)'s 1130, 1.6nm away and 300ft below it). The ac continue to close on unaltered headings until 0952:53 when Tutor (A) at FL064 commences a descending right to pass behind Tutor (B), which has descended by 200ft. The CPA with the separation of 100ft V/0.1nm H is at 0952:59, with Tutor (A) passing above and behind Tutor (B).

**HQ AIR (TRG)** comments that out of the 4 crew members involved in this Airprox it is disappointing that only one saw the other ac before the CPA. However, even though the sighting was late it was in time to allow a gentle avoiding action to be flown removing any risk of collision. The Tutor fleet is

about to fitted with a CWS that will assist with SA thereby reducing the risk of repeating this type of Airprox.

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

Information available included reports from the pilots of both ac, radar recordings and a report from the Tutor operating authority.

The Board noted that both ac had been operating legitimately and independently in the busy airspace of the Lincolnshire AIAA where the principal means of collision avoidance was the Rules of the Air - 'see and avoid' principle. Under these Rules Tutor (A) should have given way to Tutor (B) and, albeit perhaps later than optimum, the pilot did so. Although the pilot of Tutor (B) did not see Tutor (A), since its (student) pilot had the other ac in sight throughout and deemed that only a gentle avoidance manoeuvre was required, Members agreed that there had been no risk of collision.

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

Cause: A non-sighting by the crew of Tutor (B) and a late sighting by the crew of Tutor (A) .

Degree of Risk: C.