

**ASSESSMENT SUMMARY SHEET FOR UKAB MEETING ON 15 Dec 2010**

Total: 14

Risk A: 1

Risk B: 1

Risk C: 12

Risk D: 0

<b>No</b>	<b>Reporting</b>	<b>Reported</b>	<b>Airspace</b>	<b>Cause</b>	<b>Risk</b>
2010053	Grob Tutor II (MIL)	Grob Tutor II (MIL)	G	Late sightings by the pilots of both ac.  Recommendation: It is recommended that outside CAS, where local procedures deem that an ATS may be automatically provided, that controllers state the actual service on the RT as a reminder to pilots of the ATS actually being given.	C
2010059	VC10 (MIL)	PA38 (CIV)	D	A conflict on the boundary of the Brize Norton CTR.	C
2010068	Tornado F3 (MIL)	Cessna 172 (CIV)	G	The C172 pilot infringed the RA(T) and flew into conflict with the military formation.	C
2010069	CL601 (CIV)	EA500 Eclipse (CIV)	G	A conflict between IFR traffic in IMC in Class G airspace.	C
2010072	EV97 Eurostar (CIV)	Rutan Long-Ez (CIV)	G	The Long-Ez pilot flew close enough to the Eurostar to cause its pilot concern.	C
2010076	Pik-20D (CIV)	PA28 (CIV)	G	Effectively non-sightings by the pilots of both ac.	A
2010081	EC135 (CIV)	Grob 109 (CIV)	G	Late sightings by the pilots of both aircraft.  Contributory Factor: The Grob pilot did not comply with RoA Rule 45.	B
2010083	Basset CC1 (MIL)	Dornier AlphaJet (MIL)	G	A Sighting Report.	C

2010086	Lockheed L1011 (MIL)	ASW 27 Glider (CIV)	G	A conflict in Class G airspace.	C
2010087	ASK21 (CIV)	PA44 (CIV)	G	The PA44 pilot flew over a promulgated and active glider site below the maximum height of the winch cable and into conflict with the ASK21 glider.	C
2010091	Cessna 152 (CIV)	PA28B (CIV)	G	<p>1. The PA28 pilot did not integrate into the circuit pattern established by the C152.</p> <p>2. The non-standard Andrewsfield circuit pattern is not published in the AIP.</p> <p>Recommendation: The Airfield Operator is recommended to review the Andrewsfield AIP entry.</p>	C
2010094	FK50 (CAT)	PA28 (CIV)	G	A Sighting Report.	C
2010098	Tucano (MIL)	R44 (CIV)	G	A late sighting by the Tucano crews and a probable late sighting by the R44 pilot.	C
2010106	Microlight (CIV)	Puma (MIL)	G	The Puma pilot flew close enough to the Microlight to cause its pilot concern.	C

## AIRPROX REPORT No 2010053

Date/Time: 19 May 2010 1245Z

Position: 5353N 00057W (076°  
Church Fenton 9nm -  
elev 29ft)

Airspace: Vale of York AIAA (Class: G)

Reporting Ac      Reporting Ac

Type: Grob Tutor II      Grob Tutor II

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

Alt/FL: FL30      3400ft  
SAS (1013mb)      QFE (1027mb)

Weather: VMC CLBC      VMC CLBC

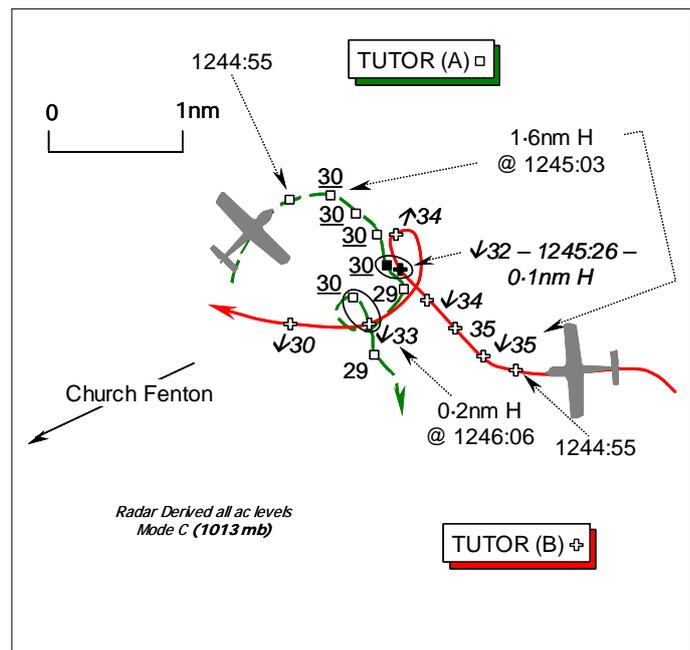
Visibility: 10km      10km

Reported Separation:

200ft V/200m H      200ft V/200m H

Recorded Separation:

200ft V/0.1nm H



**BOTH PILOTS FILED**

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

**THE PILOT OF GROB TUTOR II (A)** reports that he was conducting a local instrument flying training sortie under a TS from Church Fenton APP [situated at Linton-on-Ouse] on 233.45MHz under VFR. Elementary Mode S is fitted and the assigned squawk of A4546 was selected with Mode C. TCAS is not yet fitted. The aeroplane is coloured white; the white HISLs and landing light were on.

An overcast cloud layer at around 4000ft resulted in training sorties and other VFR traffic to the E of Church Fenton operating in a limited height band below cloud. He had recently heard a visual recovery call from the crew of Tutor (B) and there were no other instrument recoveries taking place on the frequency. Heading 200° 8nm from Church Fenton at 108kt, whilst repositioning just S of the MATZ stub in level flight at FL30 - about 3440ft QFE (1027mb) - he sighted another ac [Tutor (B)] about 150m away approaching from the L as it appeared from behind the canopy arch. Late acquisition of this ac resulted in closure to an assessed separation of 100m horizontally, some 100ft above his aeroplane crossing at an angle of about 50° from L to R. The respective vectors and relative geometry was not sufficiently dangerous to merit avoiding action being taken. Because of the late sighting any manoeuvre would not have significantly affected the minimum separation distance. He did not recall receiving a recent traffic call relating to Tutor (B) and called Fenton APP to report an Airprox. After this transmission, the pilot of Tutor (B) made a call that suggested the other pilot had seen his aeroplane and thus had achieved visual deconfliction, so he informed Fenton APP to disregard his initial Airprox RT report.

Once on the ground it became clear that the pilot of Tutor (B) had not acquired his aeroplane significantly before he heard his Airprox report. In his view, the two ac were too close for comfort so he contacted the ATC SUPERVISOR (SUP) at Linton-on-Ouse (LOO) and initiated an Airprox report. He stressed that the level of UHF RT on Fenton APP was very high at times; there was other traffic on VHF, the APP controller's workload was often high during the sortie and the service they were receiving was affected by that. Military ac RT made up a significant proportion of the traffic calls but the relative positions of ac continually change, thus once acquired, ac can very quickly go out of sight and once again become a potential conflict, but might not be called by ATC since it was acquired previously.

UKAB Note (1): The pilot of Grob Tutor (A) also submitted a supplementary HF report:

The canopy arch is a physical obstruction to visibility from the Tutor cockpit reducing the effectiveness of peripheral vision when monitoring attitude and instruments. The Tutor requires active body movement to clear the canopy arch blind spots.

Both before and after the Airprox he missed a number of traffic calls from ATC, which he attributes to two factors:

Although he was fit to fly he considered that fatigue reduced his cockpit work-rate including lookout and situational awareness while trying to maintain effective teaching.

During the sortie he had been adjusting both RT and intercom volumes to attempt to achieve lower levels than he would have routinely used in the past. They had been advised to use 'the minimum communications volume commensurate with ensuring full intelligibility of speech' following work to identify cockpit noise levels. Utilizing the cockpit communications at too low a level led to lower situational awareness through missed calls; ATC did re-call some traffic.

He added that the use of a TS is not a panacea to deconfliction in the local airspace, more especially so when traffic density is high due to military training users whose movements are not predictable by ATC or other pilots.

**THE PILOT OF GROB TUTOR II (B)** reports he was conducting a Staff Continuation Training (SCT) A2 workup sortie with another QFI, the PF, in an area some 10-15nm E of Church Fenton. Throughout the sortie he thought he had been receiving a TS from Linton ZONE on local Stud 12. The assigned squawk was selected with Mode C. Elementary Mode S is fitted, TCAS is not.

Visibility in his operating area was in excess of 10km, but throughout the sortie traffic called to them had proved difficult to see. Just prior to the final part of the air exercise a manoeuvring contact 3nm to the N had been called by APP. No visual contact was established with this traffic so he positioned his aeroplane to the S to attempt deconfliction with the reported ac. On completion of the exercise he elected to carry out a visual recovery to Church Fenton.

The PF informed Linton ZONE they were freecalling Fenton APP on 233.45MHz and squawking A7000. No further update was given by ZONE on the previously called traffic - Tutor (A). About 10nm E of Church Fenton they requested and were cleared for a visual recovery to RW24 by APP. The PF then initiated a descent from 4000ft QFE and pointed the ac to position at about 8nm on the extended centre line of RW24. Heading 340° at 120kt, passing 3400ft QFE in the descent, the PF noticed another aeroplane in close proximity and leveled their ac, passing just overhead the other aeroplane - Tutor (A). He estimated the minimum separation as some 200m horizontally and 200ft vertically. The pilot of Tutor (A) then reported an Airprox; they replied that it was with them and that they were visual with his aeroplane. They then completed a normal visual recovery.

**THE CHURCH FENTON APPROACH CONTROLLER (CFN APP)** reports that at no time did she hear an Airprox report transmitted on either of the two frequencies in use at the time. Between 7 and 8 speaking units were on frequency, 4 of which were under a TS, with 3 operating in Area "C". All traffic in the vicinity had been called under the conditions of the TS.

**THE LINTON-ON-OUSE ATC SUPERVISOR (SUP)** reports that having spoken to the pilot of Tutor (A) and listened to the RT recording it is evident that both UHF and VHF were very busy. The APP controller was calling a number of tracks to the crew of Tutor (A) and then focused her attention to an ac calling on VHF. Whilst this ac was being answered the pilot of Tutor (A) declared the Airprox, but this was not acknowledged due to the high workload and the RT frequency being distorted by dual transmissions.

**HQ 1Gp BM SM** reports that a report from Linton-on-Ouse (LOO) ZONE was not available, as the controller had been posted OOA. CFN APP is responsible for the provision of an ATS to ac

recovering and transiting close to Church Fenton. ZONE is responsible for the provision of ATS to other ac transiting within LOO's LARS area, whilst Departures (DEPS) is responsible for ac departing both LOO and CFN.

Following a hand-over from Linton DEPS the crew of Tutor (A) initially contacted CFN APP at 1233:57. APP's workload was high within a complex air situation, the controller reporting they were controlling between 7 and 8 speaking units at the time of the Airprox, of which 4 were under a TS. However, at no stage did APP 'reduce' the service offered due to controller workload.

At 1242:08, APP passed TI to the crew of Tutor (A), which was updated at the pilot's request at 1242:18 and acknowledged. By comparing the pilot's reports, RT tape transcript and radar recording it is evident that the subject of this TI was Tutor (B). The crew of Tutor (B) was in receipt of an ATS from ZONE, who passed TI on an ac subsequently identified as Tutor (A) at 1240:39, which was updated at 1242:48 and acknowledged by Tutor (B). At 1244:41, when ZONE acknowledged the crew of Tutor (B)'s call that they were, "*freecalling stud 4*", Tutor (A) was about 2½nm WNW of Tutor (B) in a RH turn. When Tutor (B) selected A7000 at 1244:48, Tutor (A) was 1.9nm NW of Tutor (B), indicating 600ft below the latter in a gentle R turn. Moments later the crew of Tutor (B) freecalled CFN APP on UHF at 1244:52, for a visual recovery, co-incident with a call on VHF from a civilian light ac (LA) leaving the Church Fenton cct. CFN APP responded to the crew of Tutor (B) first, by passing the A/D details. Although APP does mention this in their report, it is reasonable to suggest that the controller will have looked away from the radar display to the Electronic Tote to read the A/D details, and then looked at the fps to log the details of the flight.

Contrary to the report from the pilot of Tutor (B), who states that at the time of the Airprox he was in receipt of a TS, the RT tape transcript shows that the provision of an ATS was not established between the pilot and controller. The Linton-on-Ouse FOB states that pilots requiring a visual recovery will receive a BS, but that in order to reduce RT, the type of ATS will not be stated. CAP774 states that:

“..whether traffic information has been passed or not, a pilot is expected to discharge his collision avoidance responsibility without assistance from the controller.”

Furthermore, whilst CAP774 permits controllers to pass a warning to aircrew in receipt of a BS when they perceive a definite risk of a collision, in this case there is no evidence to suggest that APP was aware of Tutor (B)'s position and thus any risk of a collision. ZONE had passed TI on Tutor (A) to the crew of Tutor (B) twice and, at the point when Tutor (B) left ZONE's frequency, the pilot did not request an update of the TI. Consequently, in terms of the provision of a TS within CAP774, ZONE fulfilled their duties with respect to the provision of TI to Tutor (B).

At 1245:11, the radar recording shows Tutor (B) turning R onto a NW'ly track which, based upon the pilot's report, is the positioning turn onto the extended centreline of RW24. At this point, Tutor (A) is 1.1nm NW of Tutor (B), indicating 500ft below it.

CAP774 states that:

“the controller shall pass traffic information on relevant traffic, and shall update the TI if it continues to constitute a definite hazard, or if requested by the pilot.”

Following APP's initial transmission of TI to the crew of Tutor (A) about Tutor (B), both ac continued to manoeuvre, at one stage to within approximately 1.6nm and 300ft indicated Mode C; however, given the relative speeds of the ac and their track history, this did not constitute a definite hazard. Furthermore, CAP774 states that: 'controllers may also use their judgement to decide on occasions when such traffic is not relevant, e.g. passing behind or within the parameters but diverging.' From studying the radar replay it is clear that at no point does a further definite hazard exist between Tutor (A) and Tutor (B) until 1245:12 when Tutor (A) can be seen to have rolled out of his R turn onto a SE'ly track. Consequently, whilst there is a period of 2min 9sec, during which no transmissions or

landline conversations are evident on the APP transcript, there was no requirement for APP to have updated the TI until 1245:12.

APP's transmission to Tutor (B) regarding the A/D details was completed at around 1245:05, with Tutor (B) responding immediately. Whilst APP was listening to Tutor (B)'s readback, they will have been completing their logging on the fps, selecting a further fps for the departing civilian LA and arranging it – bearing in mind the number of fps already likely to be in front of them – deselecting the UHF and then selecting the VHF in order to respond to the civilian LA pilot. Although supposition, it is likely that while APP was engaged in these activities the confliction between Tutor (B) and Tutor (A) arose and became evident on radar.

At 1245:15, when APP responded to the civilian LA pilot horizontal separation between Tutor (A) and Tutor (B) was about 0.85nm. The civilian LA is probably the A7000 contact around 8nm SW of the location of the Airprox. The APP controllers focus will have been attracted to the area to the E of the MATZ and specifically Selby [about 7nm SW of the Airprox location] by the civilian pilot's call, the lateral separation between Tutor (A) and the civilian LA will have further served to attract APP's attention away from the confliction. Furthermore, the high workload will have served to raise the level of cognitive arousal in APP, the result of which will have been to induce attentional tunnelling such that they will have had a tight visual focus onto the LA's location on the radar display. After APP first responded to Tutor (B), the last opportunity that APP had in which to pass TI to Tutor (A) was at 1245:15. Had APP done so at this late stage, it would have left only 5-6sec before the CPA for the crew of Tutor (A) to have assimilated the information, spotted the conflicting traffic and taken suitable action. The CPA occurred at 1245:26 with Tutor (B) passing approximately 0.1nm down the port side of Tutor (A), an indicated 200ft above it on Mode C.

It is contended that once APP responded to the civilian LA pilot's call at 1245:15, the opportunity had effectively been lost to provide advice or TI to resolve this confliction. Whilst APP did not reduce the provision of a TS due to controller workload, given the statement by the captain of Tutor (A) that his lookout and SA was compromised through the effects of fatigue, it is unlikely that a 'reduced' TS would have had an effect on the outcome of the occurrence. Consequently, it is not considered to be a contributory factor. Whilst in hindsight APP could have utilised the window of opportunity at 1245:15 to pass TI to Tutor (A), it is impossible to determine where the focus of the controller's attention was at the point a confliction might have become evident at about 1245:12. APP was engaged in a number of tasks at the time that appeared to be of a higher priority, given that they were unaware of the building confliction and had discharged their TI responsibilities. The spike of workload presented by the co-incident calls on UHF and VHF will have interrupted APP's normal workcycle of dividing their attention between their ac and will have compelled them to complete a number of actions that required them to look away from the radar screen.

The LOO FOB states that:

“the Vale of York is notified as an Area of Intense Aerial Activity (AIAA) and thus it is paramount that robust see-and-avoid measures are employed in order to reduce the risk of collision.”

As such, the FOB details procedures relating to the provision and usage of operating sectors, in order to provide an element of de-confliction between LOO AIAA users.

SATCO has commented that whilst the recommendations for Tutor crews to obtain a TS whilst general handling in the Vale of York AIAA are adequate, the separation of ac in the clearly defined operating areas (A, B and C) is not being correctly utilised, resulting in several ac operating simultaneously in close proximity to each other in one area, whilst having no ac operating in either of the 2 remaining areas.

Whilst weather considerations will have a significant impact upon the utilisation of specific areas of airspace, SATCO's comment suggests that there may be a more significant issue with the lack of airspace de-confliction.

The UFSO at LOO highlights that the workload on CFN APP is an ongoing issue that ATC are trying to resolve in consultation with the resident flying units and it is certain that the workload faced by CFN APP was a contributory factor in this occurrence. This issue may have arisen following the decision by the controlling authority - HQ 22 (Training) Gp – to mandate that Tutor ac operate under a TS whenever available and practicable; however, LOO has not made this Command aware of any issue to do with excessive workload.

It is recommended that LOO undertake a review of airspace de-confliction procedures. Furthermore, it is recommended that LOO ATC conduct a safety survey on workload issues for CFN APP, in order to provide a considered safety assessment on which they may progress their work with the resident flying units.

UKAB Note (1): Analysis of the Claxby Radar recording at 1245:03, shows Grob Tutor (A) maintaining 3000ft (1013mb) in a R turn through E with Grob Tutor (B) 1.6nm to the SE descending through 3500ft (1013mb) steadying NW'ly following a R turn. The two ac converge on broadly reciprocal tracks to a CPA of 0.1nm at 1245:26, when both ac are shown passing port to port, Tutor (A) maintaining 3000ft as Tutor (B) descends to an indicated 3200ft. Thereafter Tutor (B) climbs to 3400ft, turns about and follows Tutor (A) on a SW'ly course, whence Tutor (A) executes a RH orbit at 3000ft as Tutor (B) crosses 0.2nm ahead from L to R descending through 3300ft some 300ft above Tutor (A), which heads S as Tutor (B) clears to the WNW. From the RT transcript it is clear that the Airprox was initially reported at 1245:30, referring to the first occurrence at 1245:26.

**HQ AIR (TRG)** comments that this Airprox occurred in the Vale of York AIAA, Class G airspace, where the primary method of avoidance is 'see and avoid' supported by TI provided by ATC. TI was passed but the constantly changing air picture in the AIAA quickly nullifies this information. Both crews saw each other albeit late and neither considered that avoiding action was required.

## **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 two of the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

This Airprox had occurred in the busy airspace of the Vale of York AIAA and in regard to the local internal airspace issues, the HQ Air Ops Member explained that Linton-on-Ouse has been directed to review de-confliction measures, which reassured the Board. It was evident from the comprehensive reports filed by the Captains of both ac that to help them discharge their responsibilities to 'see and avoid' other ac they had supplemented their own lookout capabilities with a TS from ZONE and APP during their sorties. However, Members agreed that both accounts represented late sightings by the respective crews, which in the Board's view was the crux of the issue. The report from HQ 1 Gp ATC showed that TI had indeed been passed to each pilot about each other's ac under the TS provided before the Airprox occurred. In the case of Tutor (A), APP transmitted TI 3min and 8sec before the CPA. Whereas ZONE passed TI to Tutor (B) that was updated 2min 38 sec before the Airprox, this was before Tutor (B) switched to APP and was thus 'deemed' to be under a BS for their visual recovery to base. The report also showed that the APP controller was focused on another ac moments before the Airprox occurred; consequently, no further updates were forthcoming from APP about each other's ac before they sighted one another. Therefore, TI had been passed but the manoeuvres of the two ac subsequently brought them back into conflict, which was not immediately apparent to APP and who was fully occupied with another flight under service on VHF to the SW. The Tutor crews on UHF would not have heard APP's transmissions on VHF and a controller Member explained that it was unfortunate that no form of cross-coupling of the frequencies was possible with current equipments at RAF Terminal ATSU's, which would have allowed the crews here to hear how busy the controller was at the time. As it was the PF of Tutor (B) saw and levelled his ac above Tutor (A), which was when the crew of Tutor (A) spotted Tutor (B). The Members agreed unanimously that the cause of the Airprox was late sightings by the pilots of both ac.

Whilst the crew of Tutor (A) had probably seen Tutor (B) a little later, they had not felt avoiding action was warranted and it was plain that the PF of Tutor (B) had sufficient time to level off and forestall the developing conflict. Both crews agreed that the vertical separation was 200ft at the closest point of 200m, which was broadly substantiated by the radar recording showing 200ft from the Mode C indications at the minimum range of 0.1nm. The Board agreed therefore, that despite the relatively close distances evident here, the avoiding action taken by Tutor (B) had been sufficient to remove any Risk of a collision.

Although APP had not specified the ATS when the crew of Tutor (B) called on their recovery to base, local regulations within the Unit FOB covered this issue and the crew was 'deemed' to be under a BS from APP during their visual recovery, not a TS as the Captain of Tutor (B) had reported. It was not clear to the Board whether the Captain of Tutor (B) had made an error in his report or whether he was under the impression that, having been in receipt of a TS from ZONE he would automatically continue under a TS with APP. Whilst not questioning in any way the principle of applying a BS automatically to traffic recovering visually, controller Members suggested that the implementation of this local modification to the regulations was unwise; an experienced controller Member observed that it took no time at all to say 'Basic Service', and doing so removed any uncertainty and reaffirmed to the pilot the exact nature of the ATS applied by the controller. Members agreed that it was unwise not to state the ATS clearly when the 'contract' was established between pilot and controller. Consequently, the Board were moved to make a Safety Recommendation through HQ (Air) AO BM to the MoD: It is recommended that outside CAS where local procedures deem that a specified ATS may be provided automatically, that controllers state the actual service on the RT as a reminder to pilots of the ATS actually being given.

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

Cause: Late sightings by the pilots of both ac.

Degree of Risk: C.

Safety Recommendation: It is recommended that outside CAS, where local procedures deem that an ATS may be automatically provided, that controllers state the actual service on the RT as a reminder to pilots of the ATS actually being given.



UKAB Note (1): Due to a change of procedures and unfamiliar personnel, although aware that an infringement resulting in a TCAS RA had occurred, Brize ATC was not aware that the incident had been reported as an Airprox until well after the event and only requested limited follow-up action.

**HQ Air BM SM** reports that the VC10 pilot's report, the tape transcripts from Brize Norton DIR and LARS and a Clee Hill radar recording were consulted in preparing this report; however there were no controller reports due to late notification of the incident by the unit. In addition, the SUP provided a report; however, this was in regard to the PA28 infringing the Brize CTR, rather than responding to the AIRPROX or the TCAS RA report made by the VC-10 pilot.

The VC10 was recovering to Brize IFR for an ILS to RW08. The PA28 was flown by a solo-student on a VFR Navex routeing from Filton to Wellesbourne, who had become unsure of his position. Based upon the PA28 pilot's reported airspeed and time taken to reach Cirencester after his initial call to LARS, he initially probably called them between 22 and 26nm W of Brize requesting a TS. This call does not appear on the LARS tape transcript and is wholly based upon the PA28 pilot's report. At this point the PA28 was instructed to standby due to the high workload of LARS.

At 1113:11 the PA28 re-contacted LARS stating that he was unsure of his position; at that point he was around 1.2nm from the Brize CTR, with the VC10 4.3nm directly to the N of him. At 1113:15, DIR provided the VC10 with TI regarding the PA28 reporting it as being, "*right one o'clock, 3 miles, crossing right left indicating 300 feet below.*" The TI was not acknowledged by the VC10 therefore it was repeated 15sec later; the PA28 was then on a constant bearing at a range of about 3.4nm.

CAP 774 states that under the terms of a TS, 'Controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5nm, in order to give the pilot sufficient time to meet his collision avoidance responsibilities.' In the absence of a report from DIR to the contrary, it is reasonable to argue from their tape transcript her workload was low, with the VC10 probably the only ac on frequency. At that point when there was 5nm separation between the ac there is no recorded interaction between DIR and the VC10 for the previous 1min 31sec; there appears to be no reason for the lack of more timely TI to the VC10, which may have allowed the crew more time to react to the situation. However, in the absence of a report from the DIR, this is supposition.

At 1113:31, the VC10 pilot reported visual with the PA28 with the bearing staying roughly stable and the range reduced to 3nm. JSP 552 235B.105.3 'ATC Procedures in Class D Airspace' states that, 'when providing a radar service to IFR aircraft within Class D airspace, controllers are to give avoiding action if radar derived or other information indicates that a particular unknown aircraft is lost.' Brize ATC has confirmed that an ac recovering for an instrument approach is considered to be IFR, unless the pilot advises that he wishes to operate VFR. However, JSP 552 235B.105.3 also states that controllers are to 'pass TI and, if requested, provide avoiding action.' In this instance, given that the VC10 was in receipt of a TS prior to entering the CTR, that the crew had reported visual with the PA28 prior to entering the CTR, that they were on a self-positioned recovery and that DIR had advised the VC10 that the PA28 was, "*possibly shortly to enter the Zone*", it is reasonable to suggest that the VC10 crew had assumed responsibility for maintaining their own separation against the PA28 and that DIR had fulfilled his obligations within the terms of the service.

At 1113:26, the PA28 re-stated that he was, "*unsure of position, request a position fix.*" At that point, the PA28 was about 0.75nm W of the CTR, with the VC10 3.4nm to the N of the PA28. At 1113:33, LARS informed the PA28 that his position was Brize 280° 10nm and suggested a heading of 300° to remain outside the CTR. At that point the VC10 bears 357° at a range of 3nm. In ATM terms, the wording used by LARS in giving the PA28 pilot his position report was very precise and indicated that she could positively identify the PA28, despite no formal method of identification being used. This suggests that she relied on data from UDF to make the identification, allied with an element of confirmation bias that the ac approaching the CTR from the W (the PA28) would shortly call Brize. This latter argument is supported by the report from the SUP about their attention being brought 'to an ac approaching the Brize CTR from [the] west.' This suggests that at least one of the radar controllers was monitoring the progress of the ac towards the CTR and brought it to the SUP's attention.

At 1113:21 the VC10 levelled with the Mode C indicating 2400ft, then at 1113:46 a climb is indicated, suggesting that the pilot was responding to the reported TCAS climb RA. At the radar sweep beginning at 1113:55, the “gentle evasive turn” reported by the VC-10 is evident on the radar replay. While this does not accord precisely with the timeline reported by the VC10 pilot, the cockpit environment would have been busy and it is understandable that the timeline reported might have been slightly inaccurate.

By the time that the PA28 acknowledged the suggested turn (23sec after LARS passed the instruction at 1113:56), the PA28 was only 0.1nm from the CTR, with the VC10 bearing 356° at a distance of 1.6nm. However, the PA28 pilot read back an incorrect heading of 030°, with the turn visible on radar almost immediately. Seven sec later LARS restated the heading of 300°, a heading that placed the PA28 directly into conflict with the VC10. At no stage did LARS offer any form of TI to the PA28 regarding the VC10.

In their handling of the PA28, LARS demonstrated a poor awareness of the meaning of the “student” prefix to the callsign and the information suggests that her sole focus was to minimise the extent of the infringement of the CTR. The suggested heading of 300° degrees, towards the VC10 is further evidence of this focus and, potentially, of ‘attentional tunnelling’ on the part of LARS such that she was unable to perceive the conflict with the VC10. Further evidence to support an ‘attentional tunnelling’ hypothesis is the presence of the confirmation bias in the identification of the PA28’s position. Therefore, it is reasonable to argue that LARS was focussed on watching the PA28 tracking towards the CTR because of the unit’s history of CTR infringements. Again, without a report from LARS this is supposition based upon the available information.

The SUP should have been best placed to assimilate all of the available information, to perceive the risk of conflict between the VC10 and the PA28 and to have provided pro-active guidance to LARS on her actions. Even after LARS had issued the conflicting heading, although the available time in which to react was relatively short, the SUP should have perceived the inherent risk of collision due to heading of 300° instructed, countermanded the LARS instruction and given a more suitable heading.

A further disappointing aspect of this occurrence is the apparent lack of regard paid to the “student” prefix to the PA28 pilot’s callsign. CAP 413 requires controllers “in so far as is practicable, to make due allowance for the limited experience and ability of student pilots in determining the pace and complexity of instructions and/or information which are subsequently passed.” HQ Air considers that, in this instance due allowance was not given.

While both the VC10 crew and the PA28 pilot became visual with each other and the VC10’s TCAS RA climb resolved the conflict, the occurrence was unnecessarily complicated by the turn instruction issued to the PA28 by LARS.

**HQ AIR (OPS)** concurs with the HQ Air BM SM comments and notes that the adherence to TCAS RA information by the VC10 minimised the risk.

## **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, and reports from the military ATC authority and the VC10 operating authority. Since additional information had become available after the meeting when the incident was first considered and HQ Air BM SM (not represented at that meeting) considered the cause originally agreed to be erroneous the incident was referred back to the Board for further consideration.

[UKAB Note (2): After the first meeting, HQ Air BM SM provided additional information including transcripts of both the LARS and DIR frequencies, which necessitated a review of the incident. Significantly the VC10 pilot reported to DIR that he was climbing in response to a TCAS RA at 1113:58 (20 sec after the ac had entered the CTR). Also LARS requested the PA28 to turn left on to

a heading of 300° at 1113:33 when the ac was 0.5nm to the W of the Zone boundary, heading 080° (directly towards the CTR and instrument approach path); the PA28 pilot read back and turned onto 030° despite the heading being challenged by LARS. Although it is possible that a tight left turn would have prevented the PA28 from entering the CTR, it would not have prevented the conflict or probably the VC10's TCAS RA].

Members observed that this incident had been complicated since it took place on the boundary of the Brize Norton CTR (Class G). The Board concurred HQ Air BM SM's concern regarding the level service afforded to the PA28 student pilot. Although there were slightly differing accounts of events, when he reported that he was uncertain of his position, the PA28 student pilot was given little meaningful assistance by LARS. The radar recording and (limited) transcript confirmed that, although uncertain of his position, at the time of his [first recorded, see Note (2)] call to LARS the PA28 had been outside the CTR and the ac had entered the CTR after the pilot incorrectly took up a track of 030° rather than the 300° suggested by LARS. A military controller Member observed that, although the suggested heading of 300° might just have kept the PA28 out of the CTR, it had not been an appropriate heading to separate it sufficiently from the intended track of VC10. Members observed however, that had the pilot turned onto 300° when suggested (at 1113.33), the VC10's TCAS RA would most likely still have occurred and the incident would still have happened, albeit with slightly different geometry.

[UKAB Note (3): It appears that the PA28 pilot had called LARS stating that he was unsure of his position some time before the start of the Tape transcript; see also HQ Air BM SM report above.]

Experienced military controller Members observed that there had been no apparent dialogue between DIR and LARS to attempt to resolve the conflict and, although well placed to do so, the SUP had not taken charge of the situation and ensured that the respective controllers separated the ac by a suitable horizontal or vertical margin.

The Board discussed the implementation of IFR separation for ac entering Class D airspace and agreed that controllers should attempt to put this in place before ac enter the relevant airspace. In this case however, there was no other IFR traffic from which to separate the VC10, all other pertinent traffic being VFR; therefore only TI was required (and provided, albeit later than optimal). Notwithstanding this, one controller said that at his unit they attempt to separate ac from known contacts 3nm before Zone entry; HQ Air, after the first meeting, pointed out that although this is not mandated, some (other) units consider it good practice.

When considering the part played by the respective pilots, the HQ Air Member opined at the original meeting that the VC10 crew acted correctly on the information before them but, based on the pilot's report, two airline pilot Members thought that he might not have reacted in accordance with recognised TCAS procedures (See UKAB Notes (2) and (4)).

[UKAB Note (4): The VC10 pilot's report provided a short summary of his recollection of events that was open to interpretation. Following the concern that the VC10 pilot might not have complied with recognised TCAS procedures, a copy of the VC10 TCAS procedures was requested from HQ Air and a full TCAS analysis requested from NATS. The TCAS simulation (with down-linked RA data) showed that the VC10 crew complied fully and correctly with the RA 'climb', 'do not descend' and 'clear of conflict' commands. The transcript showed that the RA was reported correctly to DIR but the 'Clear of Conflict', although implied, was not reported. In view of this additional information, the VC10 pilot's report at Part (A) above has been amended slightly to reflect an accurate sequence of events based on the RT transcript and TCAS analysis, which became available after the first Meeting.]

Bearing in mind the additional information at UKAB Note (4), the Board agreed that the VC10 crew had reacted appropriately to the information presented to them and had seen the PA28 at 3nm. That being the case they had not contributed to the cause of the incident. Although the PA28 entered the CTR without clearance, albeit with the knowledge of and in receipt of an indeterminate service from LARS, the TCAS RA was triggered while the PA28 was outside the CTR. A combination of these factors led the Board to determine that the cause of the incident had been a conflict on the boundary

of Class G and Class D airspace. Controller Members opined that although not contributing directly to the cause of the incident, the overall service provided by Brize ATC to both ac had been disappointing. Since the pilots in both aircraft were visual with each other and the VC10 crew reacted correctly to their TCAS RA, the Board concluded that there was no risk of collision.

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

Cause: A conflict on the boundary of the Brize Norton CTR.

Degree of Risk: C.

## **AIRPROX REPORT No 2010068**

Date/Time: 12 Jun 2010 (Saturday) 1208Z

Position: 5147N 00048W (3m W  
Halton - elev 370ft)

Airspace: Lon FIR (Class: G)

Reporting Ac Reported Ac

Type: Tornado F3 Cessna 172

Operator: HQ AIR (Ops) Civ Pte

Alt/FL: 2300ft 2400ft  
(QNH 1016mb) (NK)

Weather: VMC CLBC VMC CLBC

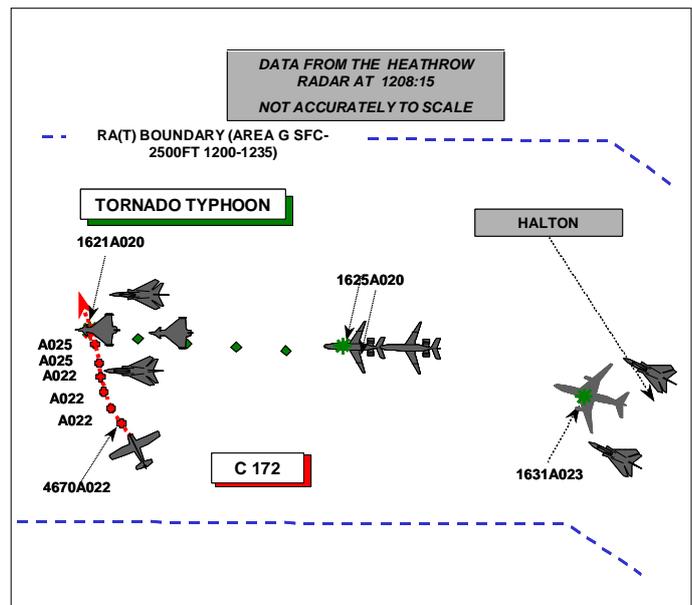
Visibility: >10km >10km

Reported Separation:

200ft V/100ft H NR

Recorded Separation:

500ft V/0 H



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

**THE TORNADO F3 PILOT** reports that he was in close formation with the leader of the lead section (2 Typhoons and 2 Tornado F3s) of a 30 ac extended formation participating in the Queen's Birthday Flypast in receipt of a TS from Luton Radar and squawking with Mode C. They had passed over London a few minutes previously but were still in a high workload situation, flying at 270kt and preparing to split the formation, when Luton Radar warned them of an unknown track at an unverified Mode C level [at an alt of 2200ft] directly ahead of them. At 1207 a formation pilot called the conflicting traffic estimated to be 2nm away just to the left of their track and in a turn. The intruder was a white high-wing light ac, which rolled out on a northerly heading on a direct collision course with his element so he called the formation to descend immediately.

The ac was then identified as a C172, passed slightly above and to the right of the formation (about 200ft above and 100ft to the right), close enough for the WSO to note the ac registration of the ac. If the descent had been made any later he would have to call an emergency formation break out manoeuvre requiring the separation of all the following elements.

The element No3's mission tape shows that at 1205 the formation was in receipt of a TS from Luton Radar and were flying at 2300ft on the QNH of 1016mb when Luton Radar transmitted, "C/S formation be advised 7000 contact 3 miles southwest of Halton westbound at 2200ft not verified" and Leader responded, "Got contact just northeast at 4000ft, looking for the other." The tape also recorded a sequence of calls starting at 1207 from the traffic to Luton, Luton Radar replying and a change of controller and a garbled transmission stepped on by internal calls from elements. It then records the following sequence: C/S 2 "Got him left 11.30...garbled", C/S 4 "C/S suggest we climb", Leader "Let's go down, let's go down". At 1207:55 "C/S Lead, just passed Halton. Light aircraft at 2300ft. All elements step down by 300ft". At 1208 Luton Radar transmits, "C172 C/S, First of the flypast below you now" and the C172 pilot responds "Roger, apologies for that."

The incident was reported at the time and he assessed the risk as being high.

**THE CESSNA 172 PILOT** reports flying a private flight from Denham to Wellesborne squawking 7000 with Mode C and monitoring Luton Radar. He was in the cruise and had just passed over the Chilterns, monitoring closely the activity at Halton, as it had been NOTAM'd as having intense gliding

activity, when he heard the Luton controller talking to the formation. The Controller stated that he had an unverified contact 5nm ahead of the formation at 2400ft; the formation leader replied that he had the contact visual. He immediately told the controller that he was on frequency and that he was probably the unverified contact. The controller then requested that he use a Luton squawk, which he did, but as he was changing the code a different controller instructed him to climb immediately to 2500ft.

He panicked a little at an unfamiliar voice and asked briefly to descend as he thought he might climb into cloud but no one acknowledged the call. On regaining his composure he immediately commenced a climb to ~ 2700ft and realised that the cloud was higher than he initially thought. This all took place in a few seconds and he saw the formation pass behind and below him. He assessed the risk as being Medium.

He continued with Luton until he was over Stow in Buckinghamshire when the Luton controller asked if they were still on frequency, which he confirmed and was then given a 7000 squawk was told to change to his en-route frequency.

After landing at Wellesbourne he checked his data and realised that had read the NOTAM but for whatever reason assimilated the restriction times to be local rather than UTC.

He totally accepts responsibility and realises the danger in which he placed the formation and his own ac and apologised for his error, requesting that this be relayed to all the crews involved.

**ATSI** reports that the incident took place at 1208:15, 18.5nm SW of Luton Airport and 3nm W of Halton. This position was within the RA (T) that was active from 1200 to 1235, extending from the surface to 2500ft amsl. The RA (T) Areas F and G were established to facilitate the passage of the large formation of ac departing the London CTR, routeing NW to Halton and then turning west towards Brize Norton. The formation was in receipt of a TS from LTC Luton INT DIR (Radar) and the reporting Tornado was the formation No2. The C172 was on a VFR flight from Denham to Wellesbourne Mountford.

The Luton weather was reported as:

METAR EGGW 121150Z 03007KT 360V060 9999 FEW026 SCT046 15/09 Q1016=

At 1200:00, as RA (T) Areas F and G became active, radar recording shows the C172 tracking NW, within RA (T) Area F, 12nm SE of Halton. The C172 was displaying a squawk of 7000 with Mode C indicating A2200ft. At 1206:12, as the formation tracked NW, Radar passed TI to it, "*Er (formation) C/S just be advised sir there is li-a seven thousand er about three miles southwest of Halton westbound two thousand two hundred feet but not verified*". The formation leader replied, "*Okay looking I have a contact just northeast at four thousand looking for the southwest contact.*" At 1205:28 radar recording shows the C172 tracking NW passing from RA (T) Area F to Area G and indicating A2200ft.

At 1206:46 two aircraft called together. A departure was instructed to climb 5000ft and then Radar asked, "*and the other station calling Luton*". At 1207:06 the C172 called "*er Luton (C172) C/S a one seven two from Denham er we're just tracking to Westcott I think we're your traffic you were reporting on the seven thousand squawk*", Radar replied "*er squawk four six seven zero please use your full callsign*" and at 1207:14 the pilot replied, "*four six seven zero er (C172) C/S*". At 1207:34 Radar advised, "*(C172) C/S you're into the er restricted airspace I suggest you climb immediately above two thousand five hundred feet there's fast military traffic that's two miles to the east of you proceeding westbound two thousand four hundred feet*". At 1206:50 the C172 pilot replied "*er we'd like to descend if we can ..... or er stay at this altitude due cloud*". At 1207:57 the radar recording shows the C172 and formation leader 1.1nm apart and closing. In response to the potential conflict, the formation leader transmitted, "*(formation) C/S just passed Halton west light aircraft two thousand three hundred feet all elements step down by three hundred feet*". At 1208:07 the C172 pilot advised, "*(C172) C/S visual and over two thousand five hundred (C172) C/S*". The radar recording shows the

two ac 0.5nm apart and closing, with the C172 indicating A2500ft and the formation leader at A2000ft. Radar then advised, "(C172) C/S roger the first of the aircraft is gonna pass below you now" and the C172 pilot makes an apology. At 1208:52 formation is transferred to Brize radar.

While operating within the notified RA (T) Area G, the formation was in receipt of a TS from Luton Radar. The C172 was not in receipt of an ATC service and infringed the restricted airspace. Luton Radar provided the formation with TI on the unknown contact. When the unknown C172 called and was identified, Luton Radar suggested an immediate climb to above 2500ft and passed TI on the lead formation. The formation leader instructed all elements of the formation to step down by 300ft and the C172 commenced a climb to above A2500ft.

CAP493, Manual of Air Traffic Services Part 1 (11/03/10), Section 1, Chapter 11, page 5, paragraph 4, states:

#### 4.1 Definition

- 4.1.1 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.

#### 4.5 Traffic Information.

- 4.5.1 The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information.
- 4.6.1 Whether traffic information has been passed or not, a pilot is expected to discharge his collision avoidance responsibility without assistance from the 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.

UKAB Note (1): The recording of the Heathrow radar (and others) shows the event clearly, as shown in the diagram above, with the C172 squawking 7000 with Mode C.

**HQ AIR (OPS)** had nothing to add.

### **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.

The Board noted that the C172 pilot had checked the NOTAMs but Members were unable to come to any conclusion as to why he had assimilated the RA (T) activation times as being local rather than UTC, which is always used in NOTAMs.

Members commended the C172 pilot for squawking with Mode C, which had allowed Luton Radar to see his ac with its alt displayed and provide timely TI to the formation leader, who in turn initiated avoiding action. Further, the C172 pilot was listening out on the Luton Radar frequency and on

hearing the formation, immediately identified himself to the controller who gave him avoiding instructions.

Aided by the TI provided by Luton and information calls from other formation members, the formation leader saw the infringing C172 about 2nm away and descended the formation at the same time as the C172 was being advised to climb above the RA (T) by Luton Radar. The C172 pilot saw the formation about 4-5nm away and the pilot climbed soon after being advised to do so by Luton, further ensuring that there was no risk of collision and that there was 500ft vertical separation when the ac crossed.

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

Cause: The C172 pilot infringed the RA (T) and flew into conflict with the military formation.

Degree of Risk: C.

## AIRPROX REPORT No 2010069

Date/Time: 11 Jun 2010 0808Z

Position: 5138N 00115W (8nm N CPT)

Airspace: Oxford AIAA (Class: G)

Reporting Ac Reported Ac

Type: CL601 EA500 Eclipse

Operator: Civ Comm Civ Pte

Alt/FL: FL50 FL50

Weather: IMC KLWD IMC KLWD

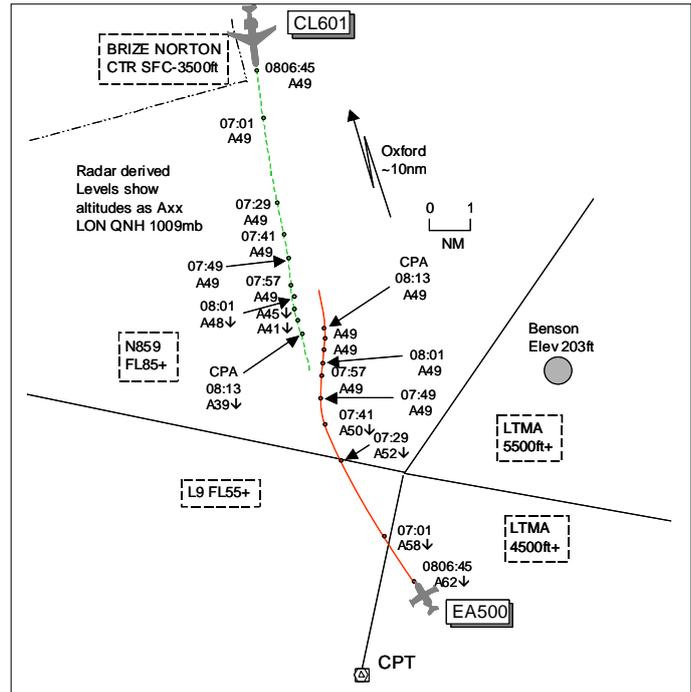
Visibility:

Reported Separation:

NR Not seen

Recorded Separation:

1000ft V/0-6nm H



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE CL601 PILOT** reports outbound from Oxford on a positioning flight to Farnborough IFR. Clearance was obtained from Oxford Tower before take-off for a standard RW01 CPT departure, which involves a climb to FL50 via the Oxford O/H and then a transfer to Brize for a radar service. Wx conditions at the time were OVC 900ft with N'yly wind of 10kt. They departed RW01, made a L turn as usual to route back through the O/H and then direct CPT. Very quickly they entered cloud and became completely IMC with no visibility whatsoever. They contacted Brize and requested and received a TS squawking 3710. As usual they were displaying TCAS at a range of 25nm and they noted a few ac, which were also pointed out by Brize, none of which were deemed to be a threat and the climb was uneventful. About 15nm N of CPT level at FL50 a TCAS contact suddenly appeared ahead of their track at about 10nm; this contact did not drift into the TCAS display from the edge as expected but suddenly appeared as if a transponder had just been switched on. It was his habit to scan the TCAS display very frequently when in such conditions so he saw the exact moment when this contact appeared. He commented to his co-pilot "look at that" and immediately zoomed in the TCAS range to 10nm. He was the PF so already had his finger hovering over the Touch Control Steering (TCS) button ready for a possible RA. At the same time he saw the contact, Brize also gave them a traffic alert about the same new contact, Brize stating it was 5nm ahead and descending through their level. Both he and the co-pilot noted the contact was indicating 100ft above them and showing a down arrow so they believed it would keep descending below their level. He couldn't tell if the contact was coming towards them or flying slowly in the opposite direction but for sure they were getting closer. The other ac levelled at FL50, the same level as them, and was now getting closer, perhaps 2nm or less. He was just about to take avoiding action when they received a TCAS RA commanding a descent, which he duly did. As he initiated a rapid descent he thought he heard Brize try and give them avoiding action but he wasn't sure. They descended to FL35 and observed the other traffic on their display passing O/H before they then climbed to FL50 and continued onto Farnborough without further incident. He was satisfied that they had reacted in a timely and correct manner as per their SOPs. He had a lot of experience flying in uncontrolled airspace (especially around Oxford) and understood the risks involved. With hindsight he thought given their direction of flight they should have been at FL55 (odds +500ft) but FL50 seems to be the standard level used when transiting towards CPT. He assessed that this had been a 'close one' with a serious risk of collision which, thanks to TCAS and training, was avoided.

**THE EA500 ECLIPSE PILOT** reports that he was not aware of being involved in an Airprox inbound to Oxford IFR. He was contacted 2-5 weeks post incident and could not recall any incident during this flight or that his TCAS generated a TA. Having been told that the other ac had manoeuvred following a TCAS RA he has asked for his TCAS system to be tested without delay. He recalled that he had been in communication with London and then Oxford Approach squawking an assigned code with Modes S and C. He was kept at FL50 after CPT as Oxford Approach stated there was departing traffic. At the time he was flying in cloud and did not see any other ac. As he approached the OX Approach asked if he could make a descent for the approach so he requested a RH orbit – on the safe side of the holding pattern – to lose height. This was agreed and he was asked he could make the approach from his current position, which he did without a problem. He was fully aware of the heavy traffic situation at Oxford during weekdays and was used to having to hold so working with ATC in the way he did was not unusual. He was also aware of the handover procedures from London to Oxford Approach.

**HQ 1Gp BM SM** reports that owing to the late notice provided to the ATSU of this Airprox and the availability of unit ATC staffs, this analysis has had to be completed without reference to reports from Brize LARS and the Supervisor. Consequently, this analysis has had to rely solely on the LARS tape transcripts and the CLH radar replay.

The CL601 was pre-noted by Oxford Kidlington Approach (OXF APP) to LARS at 0756:03, outbound from Oxford Kidlington, routing towards Farnborough. OXF APP stated during the pre-note that the CL601 was, “looking for five [FL50] but actually I might stop at four for the moment.” No mention was made of any reason for the capped level. At 0803:13 OXF APP contacted LARS stating that they, “may see [traffic] coming from the south at flight level five zero on a zero-six-five-four squawk [the EA500].” There is no formal, or suggested, request made by OXF APP for coordination. At this point, the EA500 is approximately 38nms SE of BZN at FL121 and almost certainly beyond the edge of LARS’s surveillance display.

At 0804:20 the CL601 flights called LARS, “*Brize hello it’s CL601 c/s climbing flight level four zero er turning towards the overhead of Oxford and then Compton*”. LARS replied, “*CL601 c/s Brize Radar identified climbing flight level five zero what type of service do you require?*” It is unclear whether the controller forgot that the CL601 was initially climbing to FL40 mistakenly saying FL50, or whether they used the wrong word to instruct the flight to climb to FL50. Given that the CL601 crew read back an instruction to climb to FL50 and that this was not challenged by LARS, this suggests that the controller’s intention was to issue a climb to FL50. Although OXF APP had stated that Brize “may see [traffic] coming from the south,” at the point that LARS issued the climb the radar replay shows that there was no traffic to affect the climb, with the EA500 31.8nm SE of the CL601, descending through FL103. The CL601 subsequently requested and was placed under a TS.

At 0805:48 LARS commenced a pre-note on the CL601 to Farnborough APP, with LARS stating at 0806:22 that they were, “*watching that Oxford one coming off at CPT to see what he’s gonna do*.” At this point, the EA500 is approximately 17nms SSE of the CL601, descending through FL71. The conversation between Farnborough APP and LARS finished at approximately 0806:38.

At 0806:47 LARS passed TI to the CL601 on the EA500, correctly describing the EA500’s position as, “*...left eleven o’clock one-three miles crossing left right, at flight level six zero descending*.” This was acknowledged by the CL601 crew. At 0807:29 LARS contacted OXF APP requesting TI on the EA500, receiving the response that the ac was, “*He’s descending to join visually zero-one right*.” At this point, the EA500 is approximately 7nm away indicating FL52. LARS asked OXF APP to confirm that the EA500 was continuing their descent, to which OXF APP replied, “*Yes*.” OXF APP then re-affirmed at 0807:37 that the EA500 is “*He’s continuing visually*.” Not only will this conversation have enforced in the mind of LARS that the EA500 crew were continuing their descent, thereby easing the confliction, but that they were also operating VFR and would therefore be able to effect their own separation.

Immediately after this conversation at 0807:40 LARS updated the TI to the CL601, “*CL601 c/s previously called contact left eleven o’clock six miles opposite direction at flight level five zero*”

*descending*". The CL601 crew replied that they could see the conflicting traffic on TCAS (0807:47) adding that it appeared level. This prompted LARS to offer, "*CL601 c/s do you require avoiding action?*" However, no reply was received. At this point the EA500 bears approximately 170° at a range of 3-3nm. At around 0807:57 with around 2-3nm separation, the EA500 appears to increase the rate of turn in the slow R turn that they had been following. It is not known whether this was prompted by becoming visual with the CL601, but on the basis that after the CPA the ac appears to resume a more N'y direction, this appears possible. At 0808:07 (the next sweep of the radar) with around 1-1nm separation, the CL601 has commenced a descent to avoid the EA500.

CAP774 states that under the terms of a TS 'whether traffic information has been passed or not, a pilot is expected to discharge his collision avoidance responsibility without assistance from the controller' and that the responsibility for upgrading the service to a DS rests with the pilot. Despite this, in trying to provide the CL601 with the best service possible, LARS immediately asked the CL601 whether they required avoiding action. The CL601 crew does not respond immediately to this transmission, responding 24sec later that they were, "*...clear of conflict returning five zero.*" Whilst it is unclear from the tape transcript whether the CL601 received a TCAS RA, it is clear from the pilot's response that they manoeuvred vertically to avoid the conflict.

In the absence of a report from LARS the following is supposition; however, from an ATM perspective, this situation presented them with a moral dilemma as to whether to issue avoiding action having offered it, in the absence of agreement from the CL601. Shortly after LARS asked the CL601 whether they required avoiding action, the R turn started by the EA500 begins to become evident on radar, hence the risk of collision is reducing. Under the terms of a TS, LARS had clearly fulfilled their obligations and their training will have underlined the importance of allowing aircrews time to assimilate information and act accordingly. BM SM Spt contends that LARS acted correctly in not issuing further instructions in the absence of a response from the CL601. LARS complied with the terms of the TS, but used sound professional judgement to extend beyond this remit by offering avoiding action and then allowing the crew time to resolve the situation.

Given the traffic picture presented to LARS at the point that the CL601 flight first called, it would be wholly inappropriate to suggest that LARS could have limited the CL601 to FL40, as per the pre-note from OXF APP and as a result of the TI about the EA500, "*coming from the south at flight level five zero.*" Under the terms of a TS, LARS acted appropriately throughout and extended beyond their remit in offering deconfliction advice when they perceived the seriousness of the developing situation.

**THE OXFORD APP** reports that the incident was not reported to ATC at the time and had no recollection of the incident. After looking at the fpss it appeared that the EA500 was estimating CPT at 0822 and the CL601 departed at 0803. An acceptance level of FL50 was allocated to the EA500 and the CL601 was restricted to FL40 against that ac under a radar service from Brize Radar. Subsequently the EA500 elected to make a visual approach. The APP was not aware at what time or where the incident occurred.

**ATSI** reports the Airprox occurred at 0808:14, in Class G airspace, 12-6nm SSE of Oxford Airport and 8-5nm NNW of Compton VOR (CPT). The Canadair CL601 was making an IFR positioning flight from Oxford to Farnborough via CPT. The Eclipse EA500 was inbound IFR to Oxford from Pontoise (LFPT) via CPT. Oxford Approach (APP) and Tower (ADC) were operating as separate positions, with both controllers seated at the same desk. Oxford Approach provides an Approach Procedural Control Service without the use of surveillance equipment. A radar service can be provided by RAF Brize Norton LARS, in accordance with a Letter of Agreement (LOA). ATSI had access to RT transcription, radar recordings and written reports. The area surrounding Oxford is a complex traffic environment, with a varied combination of activity in Class G airspace. The unofficial met observation for Oxford was reported as: EGTK 110810Z 36005-10KT 9999 BKN010 OVC012 13/11 1009=

At 0747:55 the CL601 flight called Oxford Tower requesting start for Farnborough in receipt of ATIS information 'C' and QNH 1009mb. The CL601 pilot confirmed that he was happy for a handover straight to Farnborough and at 0756:03 a clearance was requested from Brize LARS, "*(CL601)c/s Challenger C L sixty- two on board.....looking for five but actually I might stop at four for the moment*

*he's only going Compton to Farnborough but he wants radar to radar if he can please he'll be off zero one...".* Brize LARS asked if Oxford had a partial airways clearance and Oxford APP confirmed that the ac was not entering CAS, *"No they won't he's not entering. He's going under isn't he radar to radar."* Brize Radar asked for confirmation of the c/s and gave departure instructions, *"(CL601)c/s....is cleared for a standard Compton your stop flight level four zero request five zero with me inbound to Farnborough squawk three seven one zero".* This was read back by APP as, *"three seven one zero one two four decimal two seven five".* Brize responded with, *"that's correct"* and Oxford added, *"Flight level four zero thank you".* This incorrect read back caused APP to assume that the CL601 would maintain FL40. At 0759:55 ADC passed this clearance to the pilot of the CL601, *"Brize clears (CL601)c/s for a standard Compton departure climb flight level four zero squawk three seven one zero onward clearance with Brize Radar one two four decimal two seven five".* The pilot gave a correct read back. The standard Compton departure is not a published procedure and the pilot requested confirmation that the standard departure from RW01 is a L turn through the O/H and then direct to CPT. This was confirmed by ADC.

Simultaneously, at 0802:00, APP advised LARS that the CL601 was about to depart, ADC gave the CL601 flight take-off clearance and LTC (S Coordinator) requested a level for the inbound EA500. FL50 was allocated, with QNH 1009, frequency 125.325MHz and in response the LTC (S Coordinator) confirmed that the EA500 would be released out of FL70. At 0803:13 APP passed details of the inbound EA500 to Brize Radar, *"and just for information you may see coming from the south at flight level five zero on a zero six five four squawk.....(EA500)c/s".* This was acknowledged with, *"Okay"* and at 0804:01 the outbound CL601 was transferred to Brize LARS. The written report from the pilot of the CL601, states that a TS was requested from Brize Radar.

At 0806:12 the EA500 flight called Oxford APP passing CPT descending to FL50 and the details were passed to Benson Radar, who indicated that they had no traffic to affect. At 0807:02 Oxford APP asked the EA500 pilot if he required the NDB100 for circling or the NDB to RW01. The pilot confirmed that he would prefer circling and requested the visibility. APP passed the latest Wx, *"At the moment we have in excess of ten kilometres with cloud broken at one thousand feet overcast one thousand three hundred feet".* The pilot then requested to join base leg for RW01 and was cleared for a visual join, R base for RW01. CAP493, Manual of Air Traffic Services, Part 1, (11/03/10) – (MATS Pt1), Section 3, Chapter 1, page 12, paragraph 12.1, states: 'To expedite traffic at any time, IFR flights, either within or outside controlled airspace, may be authorised to execute visual approaches if the pilot reports that he can maintain visual reference to the surface and: a) the reported cloud ceiling is at or above the level of the beginning of the initial approach segment; or, b) the pilot reports at any time after commencing the approach procedure that the visibility will permit a visual approach and landing, and a reasonable assurance exists that this can be accomplished.'

APP incorrectly approved the visual approach when the cloud ceiling was below the beginning of the initial approach segment for the instrument procedure. This is not considered to be a factor in the Airprox. APP still assumed that the CL601 is climbing to FL40 and did not coordinate the descent with Brize Radar.

At 0807:29 Brize LARS called, *"Hello it's Brize zero six five four".* Oxford responded, *"He's descending to join visually for zero one right hand".* Brize asked *"He's he's co- continuing his descent is he"* and Oxford answered *"Yes he's going to descend ok".* Brize LARS acknowledged with *"Roger thank you.....".* At 0807:40 APP, in the belief that the CL601 was climbing to FL40, passed incorrect TI to the EA500 flight, *"(EA500)c/s traffic is a Challenger climbing FL40 working Brize he's on a 3710 squawk at this time remain outside the Brize Control Zone".* Under a PS, APP could not pass accurate TI on the CL601 as the flight was no longer in communication with Oxford and the intentions of the CL601 at this point were unknown to APP.

At 0807:57 the radar recording shows both ac maintaining altitude 4900 ft (FL50 based on QNH 1009 and 1mb equal to 27ft) and 2-3nm distance apart, on reciprocal tracks. Shortly afterwards at 0808:13, at the CPA, the radar recording shows the CL601 has descended to altitude 3900ft (FL40), passing 0.6nm W abeam the EA500, indicating altitude 4900ft (FL50).

Brize LARS had initially issued a clearance for the CL601, "...stop flight level four zero request five zero with me...". Oxford APP gave a partial read back "Flight level four zero.." and mistakenly presumed that the CL601 was climbing to maintain FL40, when in fact the ac had climbed to FL50, whilst in receipt of a service from Brize Radar. MATS P1, Section1, Chapter 10, Page 2, paragraph 4.1, states: 'Great care must be taken when co-ordinating aircraft that are climbing or descending, or are expecting further climb or descent, to ensure that accurate information is given and that any agreement takes account of the actual or proposed flight profile and/or cleared level.'

The poor read back of clearance by Oxford APP combined with the use of non-standard phraseology during the telephone conversations between the two units contributed to a misunderstanding by Oxford APP. MATS Pt1, Appendix E, Page 2, paragraph 1.1, states: 'Radiotelephony provides the means by which pilots and ground personnel communicate with each other. Used properly, the information and instructions transmitted are of vital importance in assisting in the safe and expeditious operation of aircraft. However, the use of non-standard procedures and phraseology can cause misunderstanding. Incidents and accidents have occurred in which a contributing factor has been the misunderstanding caused by the use of non-standard phraseology. **The importance of using correct and precise standard phraseology cannot be over-emphasised.**'

Neither, Oxford APP or Brize LARS requested co-ordination or agreed any course of action that would have resolved the potential conflict earlier. Oxford APP was providing a PS to one flight and Brize LARS a service to the other. Both units were aware of the inbound and outbound IFR ac.

The EA500 was in receipt of a PS from Oxford Approach, who could not effectively achieve the deconfliction minima because the CL601 was no longer participating in the PS. No agreement or plan had been coordinated to ensure that separation would be assured. MATS Pt1, Section 1, Chapter 11, Page 10, paragraph 6.1.1, states: 'A Procedural Service is an ATS where, in addition to the provisions of a Basic service, the controller provides restrictions, instructions and approach clearances, which if complied with, shall achieve deconfliction minima against other aircraft participating in the Procedural Service. Neither traffic information nor deconfliction advice can be passed with respect to unknown traffic.'

TI on the inbound EA500 had been passed to Brize LARS before the CL601 was transferred to them. Oxford APP had an expectation that Brize LARS, with the benefit of surveillance equipment, would be in a position to determine if coordination was required. MATS Pt, Section1, Chapter 10, Page 1, states: 'Traffic information passed between ATS personnel is information about aircraft that is relevant to the provision of an air traffic service. The purpose of traffic information is to enable the recipient to determine whether or not any action is necessary to achieve or maintain the required separation between the subject aircraft. For example, after receiving traffic information, a controller may consider it necessary to issue avoiding action or may request co-ordination with respect to the traffic.'

It is probable that Oxford APP had planned that the outbound would climb to FL40 and offered FL50 to the inbound. An agreed course of action was not coordinated with Brize LARS who gave an initial restriction FL40 but added 'request climb five zero with me'. APP gave an incorrect read back and a misunderstanding occurred. In the complex airspace surrounding Oxford, the added benefit of the radar surveillance, provided by Brize and Benson, serves to enhance the flight safety environment. However the radar provision is subject to these radar units' own operational requirements and controller workload capacity. The procedural nature of the service provided by Oxford requires that inbounds are transferred early. ATSI considers it essential that Oxford MATS Part 2 provides tactical and coordination procedures sufficient to ensure that separation between Oxford IFR ac, inbound and outbound, is not compromised. It is therefore recommended that:

Oxford Airport review tactical and coordination procedures for inbound and outbound IFR ac. Controllers are reminded of the importance of using correct and precise standard phraseology.

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

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

It was clear to the Board that Brize LARS and Oxford APP were providing incompatible ATC services and were working, effectively, in isolation. That said, the two controllers had exchanged information but neither elected to agree formal coordination, which led to assumptions being made and erroneous information being passed. The APP's mindset was that the CL601 was climbing to maintain FL40 and would be separated from the EA500, which had been allocated FL50. However, the CL601 was not working APP and therefore it was not participating traffic; APP would have needed to agree a course of action with LARS to ensure separation. However, there was no requirement for LARS to provide separation to the CL601 whose pilot requested and had been provided with a TS. LARS climbed the CL601 to FL50 and the crew was given TI on the EA500 from APP whilst LARS had watched it approaching CPT from the SE. There was no requirement for LARS to inform Oxford APP about the CL601's climb to FL50, and he did not do so; however, had this information been passed onto Oxford APP, it would have changed APP's SA on the developing situation. LARS passed TI to the CL601 crew when separation was 13nm with the EA500 descending through FL60. LARS then queried with APP the intentions of the EA500 and was told that it was descending to join visually for RW01 with a RH cct. This was an assumption by APP for, in the procedural environment, APP would not have been aware that it had levelled at FL50 unless the controller had asked for the EA500 pilot to report a passing level having been cleared to descend. This erroneous TI had led LARS to believe that the EA500 would be descending out of conflict and this was relayed to the CL601 crew in updated TI with 6nm separation. The CL601 crew queried this 'descent' with LARS, informing the controller that TCAS showed the EA500 had levelled-off at the same level. Pilot Members considered that flying in IMC under a TS was unwise and that a DS should have been requested, either from the outset but certainly when the potential conflict had been highlighted by LARS' TI. LARS were unaware of the CL601's in-flight conditions and had only passed TI, as required under the TS, but had quickly asked whether avoiding action was needed on receiving the updated level information on the EA500. This service 'upgrade' offer was not taken up as the CL601 crew was reacting to the TCAS RA descent.

Simultaneously with this exchange between LARS and the CL601 flight, APP, whose SA had not been updated during any of the exchanges with LARS, was passing erroneous TI to the EA500 pilot stating that the CL601 was climbing to FL40. This information may have led the EA500 pilot to maintain FL50 instead of descending for his approach to Oxford, the pilot being unaware from his TCAS equipment of the CL601's proximity. This anomaly could not be explained considering the geometry of the encounter apart from the TCAS equipment being u/s. Pilot Members wondered what type of approach the EA500 pilot was planning to carry out, having been cleared by APP for a visual join onto R base for RW01 when the cloud ceiling was below the level of the beginning of the initial approach segment for the instrument procedure, contrary to MATS Part 1, whilst the ac in flying IFR in cloud in IMC. Whether there had been some confusion between what the pilot wanted and what APP cleared the flight to do was not clear; however, the onus was on the EA500 pilot to inform APP if he could not comply with the ATC instruction issued.

Members noted the CL601 Capt's observations when he saw the EA500 suddenly appear in conflict on his TCAS display. However, the recorded radar clearly shows a continuous radar return on the EA500 squawking an ORCAM assigned code tracking NW'ly and descending within CAS towards CPT. While the Board could not explain the late appearance of the EA500 on the CL601's TCAS, the CL601 crew had seen the approaching EA500 about the same time that LARS had passed TI, had monitored the deteriorating situation and had taken robust avoiding action following the TCAS RA. Although SOPs had led to frequency/ATSU split seen in this incident, Members agreed that both Brize LARS and Oxford APP had, in isolation, discharged their responsibilities but that this been an entirely avoidable Airprox, where coordination would have nipped the incident in the bud. Removing the ATC aspects from the equation and with both flights

flying under IFR in IMC, the Board agreed that this incident had been a conflict within Class G airspace and the robust actions taken by the CL601 crew had quickly removed the risk of collision.

Members endorsed the ATSI recommendations that Oxford Airport review tactical and coordination procedures for inbound and outbound IFR ac and that controllers are reminded of the importance of using correct and precise standard phraseology.

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

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

Degree of Risk: C.

## AIRPROX REPORT No 2010072

Date/Time: 5 Jun 2010 1523Z (Saturday)

Position: 5148N 00001E (~2nm SE Ware)

Airspace: LFIR (Class: G)

Reporting Ac Reported Ac

Type: EV97 Eurostar Rutan Long-Ez

Operator: Civ Pte Civ Pte

Alt/FL: 850ft 1250ft  
(QNH 1018mb)

Weather: VMC CLBC VMC CAVOK

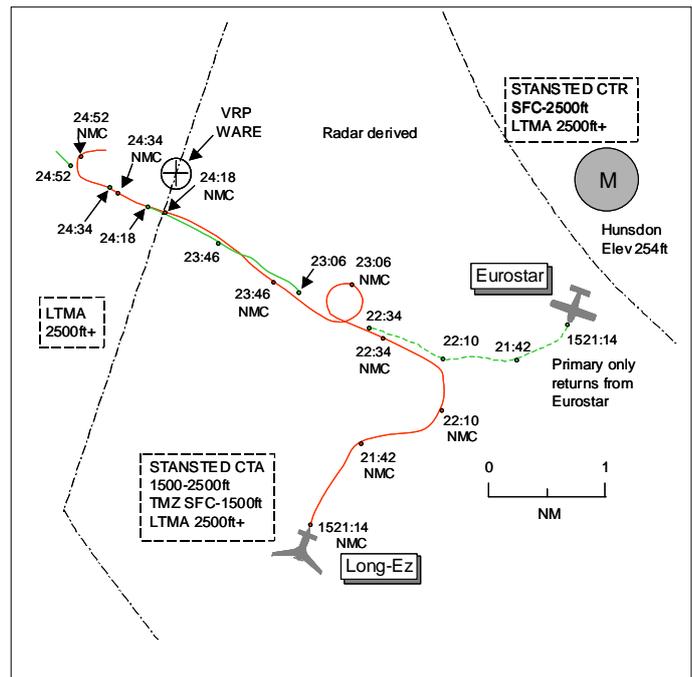
Visibility: 50km >10km

Reported Separation:

10ft V/50ft H 500ft V&H

Recorded Separation:

NR



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE EV97 EUROSTAR PILOT** reports flying en-route from Hunsdon airfield [8nm SW Stansted] to Bourn VFR with another PPL-holder and listening out on the Microlight common frequency 129.825MHz; no transponder was fitted. The visibility was 50km flying 4000ft below cloud in VMC and the ac was coloured silver; no lighting was mentioned. He departed the cct to the S and on reaching the A414 he turned R onto heading 290° at 80mph. He was cruising at 850ft QNH 1018mb to comply with the TMZ entry/exit rules for non-transponder fitted ac into and out of Hunsdon. After turning onto heading 290° he handed over control to the other pilot for the rest of the flight. Some 3min later he suggested that they could track to the N of Ware, 10° R turn needed, or continue on their present track routing to the S. The PF elected to continue on track negating the need to turn. Some 15sec later they were overtaken by a very fast white coloured Rutan Long-Ez on their starboard side, about 10ft above and 50ft distant; its speed well over 110mph. The Long-Ez then made a climbing R turn and disappeared behind them. A few minutes later the same ac returned and flew alongside about 100ft away at the same height before it rolled L then R and then did a climbing R turn away, departing to the NE. He thought he might see the ac's registration letters but although he could see the whole underside of the Long-Ez no markings were visible. He was concerned that had they turned when he suggested they would certainly have been hit by this ac. He assessed the risk as high.

**THE RUTAN LONG-EZ PILOT** reports flying a local sortie from North Weald VFR and monitoring the Farnborough frequency 132.8MHz and Essex Radar on 120.625MHz squawking 7010 [aerodrome traffic pattern conspicuity code] with NMC. The visibility was 10km in CAVOK VMC and the ac was coloured white; no lighting was mentioned. To the W of Stansted CTR whilst under the CTA stub and within the TMZ flying at 1250ft and 125kt he saw an Evektor Eurostar tracking NNW'ly about 3-4km ahead. He believed he recognised this ac as one owned by pilots/CFIs, with whom he had flown, from a local airstrip. He overtook the silver coloured Eurostar to the R and above it, separated by 500ft, and was visual contact with it throughout. He orbited to their R, having slowed down on the first pass to 90kt, he passed the Eurostar again for a second time to their R, again by 500ft or more. He believed there was never a risk of collision but he may have startled the Eurostar pilot as he approached from behind and above. Even if the Eurostar pilot had commenced rapid manoeuvring, his vertical and horizontal separation was sufficient to maintain a good margin of safety between them. He contacted Essex owing to traffic density and because his track took him over Hunsdon and

right up to the CTR boundary and was given an assigned squawk 0202 but was not informed of an Airprox being filed; the Eurostar flight was not heard on any of the local frequencies. He opined that given the restrictions within the TMZ flying below 1500ft and the proximity of Luton and Stansted CTRs and with multiple ac and powered paragliders known to operate, this area is very restricted. He is investigating the fitting of a small TCAS system and to upgrade to Mode S to perhaps avoid such incidents from occurring as well as making his presence known to other flights by monitoring microlight frequencies used in the Ware area.

**ATSI** comments that the Essex Radar frequency was analysed and the Long-Ez pilot called at 1535:50, just over 12min post Airprox, stating he was on squawk 7010 at 1000ft in the Stansted stub near to Hunsdon inbound to N. Weald. The controller issued a discrete code for identification purposes and then informed the pilot that with only Mode A he should have called for transit of the TMZ. The pilot was then told to squawk 7010 and to contact N. Weald.

UKAB Note (1): The ANO Rules of the Air Regulations 2007 Rule 8 Avoiding aerial collisions Para (2) states, 'An aircraft shall not be flown in such close proximity to other aircraft as to create a danger of collision.' (3) 'Subject to sub-paragraph (7) [not applying to police ac], an aircraft shall not fly in formation unless the commanders of the aircraft have agreed to do so.'

UKAB Note (2): The recorded radar does not capture the CPA as the EV97 Eurostar fades from radar; however, the geometry of the encounter can be verified. At 1521:14 a primary-only return, believed to be the Eurostar, is seen 1.25nm S of Hunsdon tracking 190° whilst the Long-Ez is 2.75nm to its SW, squawking 7010 NMC tracking 030°. The Eurostar then commences a R turn and by 1521:42 is seen tracking W'ly whilst the Long-Ez is turning R onto a track of 080°, separation 1.5nm. At 1522:10 the Long-Ez is seen to be turning L through 350° with the Eurostar in its 11 o'clock range 0.4nm tracking 295°. The Long-Ez then turns onto a similar heading and closes to 0.2nm behind the Eurostar before the Eurostar fades after the radar sweep at 1522:34. Just over 30sec later the Long-Ez is seen turning in an orbit through heading 100° 1.8nm SE of Ware VRP when the Eurostar re-appears on radar tracking 295° 0.4nm to its W. The Long-Ez rolls out onto a similar track to that of the Eurostar and closes to 0.2nm at 1524:18. The Eurostar fades for 3 radar sweeps, re-appearing as a pop-up contact at 1524:34 in the Long-Ez's 12 o'clock range 0.1nm. Thereafter the Eurostar fades again before it appears again at 1524:52 still tracking 295° whilst the Long-Ez is turning through heading 030° just over 0.1nm to its NE. From there the Long-Ez diverges to the NE before tracking SE'ly towards North Weald.

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

Information available included reports from the pilots of both ac, copy CD of the relevant RT frequencies, radar video recordings and a reports from the appropriate ATC.

It was noted that the Long-Ez pilot did not comply with the requirements for entry into the TMZ. Listening out was of no use; a positive call to either Farnborough or Essex/Stansted was required, as the ac was not fitted with Mode C. However, this element had not contributed to the Airprox. The EV97 pilot was complying with the exemption granted to ac operating to and from Hunsdon. Members expressed concern that the Long-Ez pilot had, on the spur of the moment, elected to carry out a close fly-past of the Eurostar, believing he knew the pilot onboard. An experienced pilot Member opined that making a snap decision in the air without any pre-planning or prior consideration of the potential hazards was poor airmanship and a recipe for unforeseen consequences to fall out of the actions taken. This manoeuvre had undoubtedly startled the Eurostar pilot as the Long-Ez had approached unseen from behind and passed close-by with a faster airspeed. The opportunity was there earlier for the Eurostar pilot to see the Long-Ez, when the ac were approaching each other on opposite direction tracks but, for whatever reason, Long-Ez's initial approach from the SW went unnoticed. Although the Eurostar pilot was concerned about the Long-Ez pilot's manoeuvres, Members agreed that the Long-Ez pilot was always in a position to manoeuvre his ac further away should it be necessary, which allowed the Board to conclude that any risk of collision had been effectively removed.

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

Cause: The Long-Ez pilot flew close enough to the Eurostar to cause its pilot concern.

Degree of Risk: C.

## AIRPROX REPORT No 2010076

Date/Time: 27 Jun 2010 (Sunday) 1140Z

Position: 5224N 00106W (5km SW Husbands Bosworth)

Airspace: Lon FIR (Class: G)

Reporting Ac Reported Ac

Type: Pik-20D PA28

Operator: Civ Club Civ Pte

Alt/FL: 2100ft 3000ft  
(QFE 1000mb) (QNH)

Weather: VMC CLBC VMC CAVOK

Visibility: 15km 30km

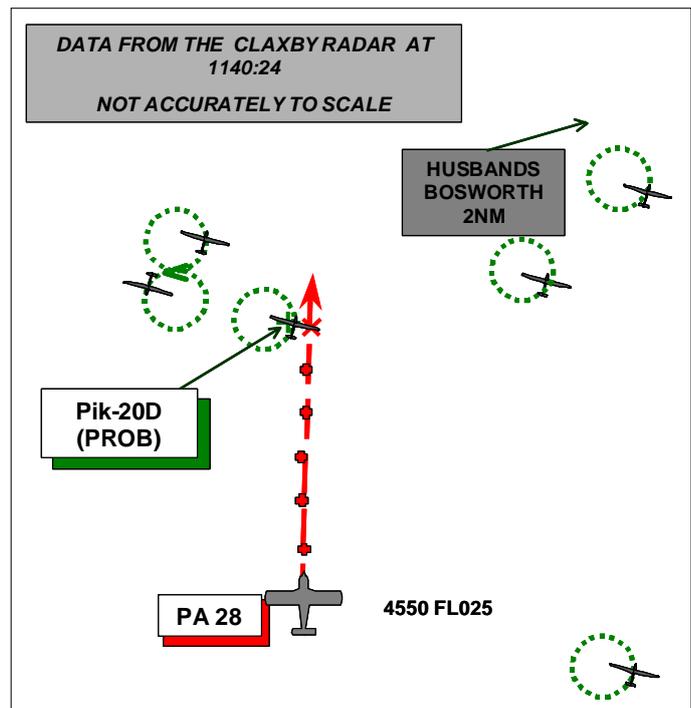
Reported Separation:

25ft V/20m H 500ft V/1nm H

Recorded Separation:

NR V/0.1nm H (See UKAB Note

(1)).



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

**THE Pik-20D PILOT** reports that he had just released from an aerotow to 2000ft QNH (1000mb) for a competition flight, behind a Chipmunk; he had turned left as is normal procedure and joined another circling glider just to the E of the release position. After one turn of 360° at 50kt and again passing through E, a PA28 (Reg given) passed immediately behind him at 2600ft QNH traveling from S to N. The PA28 was not seen by the reporting pilot, or by the other glider pilot who was 100-150ft below him, until it passed very close to them when they both saw the ac. The white and blue PA28 did not deviate from its Northerly track and he also took no avoiding action as it was too late and the PA28 was then departing to the N. His ac was not ACAS or SSR equipped.

His starboard wing would have obscured the approach of the PA28 as he was in a 40° bank left turn so his glider would have presented a partial plan-form to the PA28. The event was NOTAMed as high glider activity and there were in excess of 40 gliders and up to 7 tug ac in the area. He considered transiting the area at 2500ft i.e. the normal aerotow release height so close to and upwind of the Airfield is not good airmanship.

He reported the Airprox to the Midland Regional Competition Director by Radio, assessing the risk as being high, and continued the flight. He attached a Data-Logger file of his ac and the glider below him.

**THE PA28 PILOT** reports flying a private VFR flight from Booker to Full Sutton, at the time in receipt of a BS from East Midlands, squawking as directed with Mode C, tracking 360° at 3000ft QNH and 100kt; ACAS was not fitted. While 10nm N of DTY he changed heading 20° to the W to avoid Husbands Bosworth, turned on his landing light and saw several gliders about 5nm ahead. His 2 passengers were both qualified pilots and were also keeping a good lookout and both were satisfied that their new track would keep them clear of Husband Bosworth airfield and all the gliders they saw.

However, just after this they became aware of a glider passing left to right about 200ft below them [probably the reporting ac]. He assessed the risk as being low.

UKAB Note (1): At 1139:00 the PA28 [identified by its elementary Mode S] can be seen on the recording of the Claxby radar, 7nm SSW of Husbands Bosworth, squawking 4550 (East Midlands) tracking N at FL025 (2650ft amsl). There are many primary only contacts to the S and SSE of the airfield but none directly on its track. At 1140:16, 4 primary contacts pop up in the PA28's 1030, the closest at ½ nm and the furthest at 1½ nm. At 1140:24 the PA28 at FL025 passes 0.1nm to the E of a primary contact 4nm SE of Husbands Bosworth, ¼nm SW of the reported position. That being the case there is little doubt that the primary contact is either the reporting ac or the one below.

UKAB Note (2): The gliding competition was NOTAMed as follows:

(H1993/10 NOTAMN

Q) EGTT/QWGLW/IV/M /W /000/055/5226N00103W005

A) EGTT B) 1006190000 C) 1006272359

D) SR-SS

E) MAJOR BRITISH GLIDING ASSOCIATION (BGA) GLIDING COMP INCLUDING X-COUNTRY ROUTES. MAIN ACTIVITY WI 5NM RADIUS PSN 5226N 00103W (HUSBANDS BOSWORTH AD, LEICESTERSHIRE). UP TO 50 GLIDERS AND 8 TUG ACFT MAY PARTICIPATE. GLIDERS WILL NORMALLY OPR BLW THE INVERSION LVL OR BTN THE TOPS OF ANY CU CLOUDS AND 500FT AGL. AFTER LAUNCH MOST ACFT MAY BE CONCENTRATED DOWNWIND OF THE SITE OR ON THE FIRST LEG OF THE X-COUNTRY RTE. FOR INFO ON ROUTES FOR THE DAY AND LIKELY ETD CONTACT GLIDER CONTEST CONTROL TEL 01858 881582. RTF CONTACT 127.575MHZ. AUS 10-06-0066/AS2.

F) SFC G) 5500FT AMSL)

**ATSI** reports that the Airprox occurred at 1140 in class G airspace, at a reported position of 3nm SW of Husbands Bosworth gliding site. The glider pilot's reported level was 2100ft QNH 1000mb, (2586ft on QNH 1018mb with 1mb equal to 27ft). The forecast Barnsley RPS for the period was 1012mb. The reason the glider pilot used a setting of 1000mb is not known.

The radar recordings for the period show a number of intermittent contacts manoeuvring in the vicinity of Husband Bosworth. The East Midlands Radar (Radar) controller was not aware that an Airprox had occurred; consequently no report was received from him or the unit. ATSI had access to RTF and radar recordings and the pilots' reports.

The East Midlands weather was:

METAR EGNX 271120Z 21006KT 170V250 9999 FEW042 25/12 Q1018=

At 1133:11 the PA28 pilot contacted East Midlands Radar and advised that he was en-route from Wycombe Air Park to Full Sutton in Yorkshire via the DTY and GAM at alt of 2800ft on the QNH of 1018mb and requested a BS and zone transit. Radar advised the PA28 to remain outside CAS until cleared and issued a squawk 4550 with QNH 1018mb. At 1133:59 the radar recording shows the PA28 transponder code change from 7000 to 4550, 38nm SSE of East Midlands Airport and 13.9nm to the SSW of Husband Bosworth gliding site. At 1135:37 Radar advised the PA28 that it was well S and outside the range of East Midlands radar. Radar agreed to provide a BS only, reminding the pilot to remain outside CAS until cleared.

At 1140:21, as the PA28 approached the reported Airprox position, radar recording shows the PA28 to be 3nm SW of Husband Bosworth gliding site, indicating FL025 (2635ft on QNH 1018mb with 1mb equal to 27ft). The recording also shows an unknown ac displaying a 7000 squawk, without mode C, 1.6nm NW of the PA28, tracking W. Also shown in the vicinity is a very weak and intermittent primary contact, but this very soon fades from radar coverage. At this point the Radar controller gives the PA28 clearance to transit the Eastern control area of East Midlands not above altitude 2500ft VFR; the pilot acknowledges the clearance but makes no mention of any other ac in the vicinity. The PA28 then continues N without further incident.

The PA28 was in receipt of a BS from East Midlands Radar. Manual of Air Traffic Services Part 1, Section 1, Chapter 11, page 4, paragraph 3, 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'.

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

Information available included reports from the pilots of both ac, radar recordings, a report from the air traffic controller involved and a report from the appropriate ATC authority.

A GA specialist Board Member suggested that the PA28 pilot had not assimilated the intensity of the gliding traffic in the Husbands Bosworth area when he planned his flight. In his opinion, although planning to avoid a gliding site by 2nm is normally adequate, on the day of a major competition such as this one, it was not. On discussing why the PA28 pilot, although aware of the gliding activity, had not opted to avoid it by a larger margin, Members noted that the NOTAM could have portrayed the situation more clearly (the main glider concentration was upwind of the launch site not downwind as stated in the NOTAM). The gliding Member undertook to discuss standardised NOTAM text for competitions with the BGA.

The gliding Member also informed the Board that the glider pilot would have been in a busy phase of flight just before departing on his cross-country flight and also that while thermalling, his ability to lookout would have been restricted by his angle of bank.

Members pointed out that the PA28 pilot was completely entitled to fly in that area, was aware of the gliding activity at Husbands Bosworth and made provision for it; however, they agreed that it would have been wiser to avoid the area by a larger margin.

That being the case, and since the incident took place in Class G airspace, the Board agreed that both pilots had an equal and shared responsibility to see and avoid other ac. Members agreed that the glider pilot had not seen the PA28 until it was too late to take any avoiding action. When assessing the miss-distance they noted the significant disparity in the two pilots' estimates, one being very close and the other being 1nm. The most likely explanation, they agreed, was that the PA28 had seen another similar glider in the same area rather than the reporting glider. Therefore, since neither pilot had seen the other ac in time to take any avoiding action and the miss-distance had been of the order of that reported by the glider pilot, Members agreed unanimously that there had been a risk that the ac would have collided.

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

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

Degree of Risk: A.

## AIRPROX REPORT No 2010081

Date/Time: 2 Jul 2010 1647Z

Position: 5137N 00029W (1.9nm  
NE Denham - elev 249ft)

Airspace: ATZ (Class: G)

Reporting Ac Reported Ac

Type: EC135 Grob 109

Operator: Civ Comm Civ Pte

Alt/FL: 1000ft 1000ft  
(QNH 1012mb) (QNH 1012mb)

Weather: VMC CLBC VMC CLBC

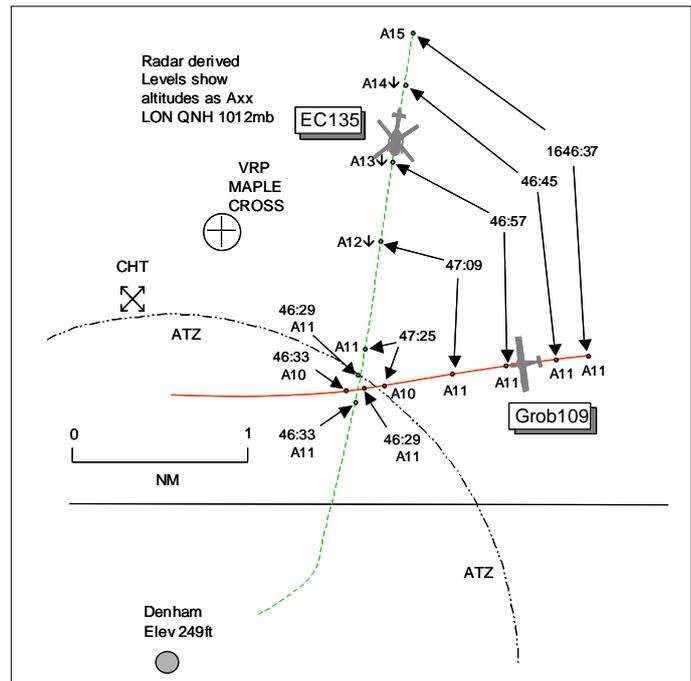
Visibility: >10km >10km

Reported Separation:

20ft V/30m H 50ft V/250ft H

Recorded Separation:

<100ft V/<0.1nm H



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE EC135 PILOT** reports inbound to Denham VFR and in receipt of an AFIS on 119.475MHz squawking 7000 with Modes S and C. The visibility was >10km flying 2000ft below cloud in VMC and the ac was coloured black/cream/silver; no lighting was mentioned. He was joining the cct heading 180° at 130kt and 1000ft QNH 1012mb on R base leg for RW24 from the Maple Cross VRP. There was one other ac in the cct to his R, which he was looking for when he received a TCAS 'traffic' alert a 1nm range in his 11 o'clock indicating the same level. The bearing remained constant but he could not see the other ac, which might have been shielded by part of his own ac's structure. He finally saw the other ac, a Grob 109 Motorglider, at about 50m range and initiated a hard pull-up, the Grob passing 20ft beneath and 30m clear. He assessed the risk as high.

**THE GROB 109 PILOT** reports en-route to a private site in Wiltshire VFR and listening out with Elstree on 122.4MHz squawking 7000 with Modes S and C; Flarm was fitted. The visibility was >10km flying 1500ft below cloud in VMC and the ac was coloured white/blue with strobes and landing lights switched on. When to the NNE of Denham heading 270° at 90kt and 1000ft QNH 1012mb he saw a helicopter as it came into his 2 o'clock. He moved the stick forward -1G to avoid the helicopter which did not appear to move, believing the pilot had not seen his ac. The helicopter passed 50ft above and 250ft clear horizontally and he assessed the risk as medium. The Flarm trace clearly records the incident captured from the Flarm microphone; however, he was unsure whether the noise was him swearing, objects coming back down onto the parcel shelf or the noise of the helicopter. He opined that he was intending to listen with Denham as he went past but his mental speed was behind that of the Grob. The incident was a big wake-up call and it took a few minutes for him to calm down. He had flown into Denham many times and knew the joining procedure but why he was flying at that height and not looking R or L for traffic he could not say. At the time he was flying towards the lowering sun and spending much time looking forward.

UKAB Note (1): The UK AIP at AD 2-EGLD-1-4 Para 2.17 ATS Airspace promulgates Denham ATZ as a circle radius 2nm centred on the longest notified RW (06/24) at 513518N 0003047W from surface to 2000ft aal; airfield elevation 249ft. Para AD 2.18 ATS Communication Facilities promulgates Denham Information as 0700-1900 Summer. Page 1-5 Para 2.22 Flight Procedures states at 1. c) 'Circuit joining is achieved by establishing a long base leg and giving a position report at Chalfont St Giles for left hand circuits or Maple Cross for right hand circuits. The ATZ should be entered at a height of 750ft agl (1000ft amsl). Joining traffic should give way to circuit traffic.' Also at

1. f) 'Helicopters should follow the fixed-wing procedures unless alternative arrangements have been made.'

UKAB Note (2): The ANO Section 2 The Rules of the Air 2007 Rule 45 Flight within aerodrome traffic zones Para 1) shall apply to those aerodromes in Table III c) 'An aerodrome having a flight information service unit' at such times 'During the notified hours of watch of the flight information service unit'. Para (4) states 'If the aerodrome has a flight information service unit the commander shall obtain information from the flight information service unit to enable the flight to be conducted safely within the zone.'

UKAB Note (3): The radar recording at 1646:37 shows the EC135 3.9nm NNE of Denham tracking 190° indicating altitude 1500ft QNH 1012mb with the Grob 109 in its 11 o'clock range 2.1nm tracking 260° indicating altitude 1100ft QNH. The ac continue on steady tracks, closing on a line of constant bearing, the EC135 commencing a slow descent at 1646:45. Forty seconds later at 1647:25 separation has reduced to 0.2nm, the EC135 level at altitude 1100ft, 100ft above the Grob 109, which is on the boundary of the ATZ. The next sweep at 1647:29 separation reduces to 0.1nm, the EC135 is entering the ATZ with both ac showing altitude 1100ft. The CPA then occurs before the next sweep, as 4sec later the ac are separated by 0.1nm with the ac having crossed, the EC135 still showing 1100ft 100ft above the Grob 109 now showing 1000ft. The CPA therefore is assessed to <0.1nm and <100ft. Thereafter the EC135 tracks towards the extended C/L for RW24 whilst the Grob 109 tracks W'ly, passing 1.5nm N of Denham; this track is confirmed from the Grob 109's GPS trace.

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

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies and radar video recordings.

The Board noted that the Grob pilot did not comply with the requirements of Rule 45 of the Rules of the Air. Had the Grob pilot called on the Denham frequency he probably would have heard the EC135 pilot's transmissions and therefore improved his SA with respect to any potential conflicts. Members agreed that this element had contributed to the Airprox. That said, without this additional information the crux of this incident boiled down to both pilots being responsible for their own separation from other traffic through see and avoid. The EC135 flight had right of way and its pilot received a traffic warning on TCAS of the approaching Grob in his 11 o'clock range 1nm. However he was unable to visually acquire the Grob until very late. As the ac were approaching on a line of constant bearing, the Grob may well have been obscured by part of the EC135's cockpit structure; however, best practice to mitigate this known degradation to lookout is for the pilot to move his head or move the ac's flightpath. The Grob pilot reported that he was flying into sun and concentrating on looking ahead when he saw the helicopter very late in his 2 o'clock. The opportunity for both pilots to see each other's ac was there for some time prior to the CPA; however, it was not to be and it was these late sightings that had caused the Airprox.

Turning to risk, after seeing the confliction both pilots reacted promptly and robustly in a complementary manner, the EC135 pilot pulling up whilst the Grob pilot bunted, with both pilots reporting reduced separation margins at the CPA. These avoiding action manoeuvres flown were enough to convince the Board that the actual risk of collision had been removed but that safety had been compromised during the encounter.

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

Cause: Late sightings by the pilots of both ac.

Degree of Risk: B.

Contributory Factors: The Grob pilot did not comply with RoA Rule 45.



He added that the pilot workload was low during the recovery phase and stressed that the vision from the front of the cockpit to clear his ac's flight path was good.

**THE BOSCOMBE DOWN RADAR CONTROLLER (RAD)** reports that at the time of the incident, the Basset was manoeuvring some 15nm W and NW of Boscombe Down and operating on frequency 243.4MHz. The Alphajet was about 25nm W of the aerodrome at FL150 operating on Stud 5 and a Tornado was preparing to depart, the crew having been instructed to contact Stud 5 once airborne.

As the Basset started to fly S at FL60, the Alphajet crew called for a GCA recovery to RW23 and was vectored towards Boscombe Down and instructed to descend to 3000ft QFE. During the internal handover to DIRECTOR (DIR), a Tornado crew reported airborne, climbing not above FL240. The Alphajet descended quickly and was about 4000–5000ft 10nm W of the aerodrome, therefore, it was called to the Tornado crew, who reported visual so the handover was continued. As the handover was taking place, the Basset crew made a couple of RT calls on 243.4MHz [Stud 15] and was instructed to standby. Once the handover was complete, the Basset pilot called on Stud 5 questioning why he was not receiving any calls on 243.4MHz, why he had not been told about the inbound Alphajet or the departing ac and reporting that he was filing an Airprox.

**THE BOSCOMBE DOWN ATC SUPERVISOR (SUP)** provided a full and frank account. He reports that at the time of the Airprox all positions were manned, with fresh controllers. The Unit is under substantial pressure to train controllers as quickly as possible but had struggled with meagre traffic levels throughout the week. However, there was suddenly an increasing level of traffic during the period 1200-1300Z. The Zone position - C/S RADAR - had 4 ac working in the Boscombe 'Triangle', 3 of which were on 371.825MHz (Stud 5) and one on 234.4MHz (Stud 15), which would provide excellent training value so he decided to reshuffle some personnel in order to get a trainee into the RAD seat. The trainee in question had only had half of her lunch break but was happy to go on console.

In addition to this, as the Local Examining Officer (LEO), he had previously been trying to complete a Supervisor check on another controller who was in the DIRECTOR (DIR) seat. The desperately needed radar pattern traffic was now about to materialise as some of the ac in the 'Triangle' started to recover. Although not under formal examination conditions because he was on duty as Supervisor, he was watching what the candidate in DIR was doing from his adjacent Supervisor position as the controller was about to have 3 ac in the pattern. BDN Approach (APP) had very little workload and was also a qualified and experienced Supervisor who was therefore asked to keep an eye on RAD's traffic levels, as the greater proportion of his own attention was focused on the DIR position.

An ac called for recovery from the NE of Yeovilton, which was handed over to DIR, who by this time had recovered the preceding ac into the visual cct and had a Tutor downwind on his second approach. Very shortly after this, the Alphajet crew called for recovery about 8-9nm W of BDN. He instructed RAD to descend the Alphajet down to 2500ft and hand it over to DIR as the slower Tutor, ahead in the pattern, was descending through 2000ft. RAD complied with this instruction, but then her workload began to increase with a Tornado on departure. Although a 'Call for Release' (CFR) was in place, APP had released the Tornado without a climb out restriction (COR) against the inbound Alphajet. The reason for this was that at the time of the take-off clearance, the inbound was sufficiently far away not to be a problem. Unfortunately, due to the length of time between the take-off clearance and the Tornado actually leaving the RW, this separation had reduced to a point where, in hindsight, a COR was needed.

The trainee RAD controller was working the Basset on the quiet frequency, the Alphajet descending inbound towards the aerodrome ready for handover and about to get the Tornado outbound on a reciprocal track. DIR had traffic downwind in the pattern, another ac inbound from about 20nm W and was about to be handed the Alphajet at about 7nm W. APP had only one or two ac on under BS, and LARS was not busy. RAD was fairly busy on Stud 5, having just completed a radar handover and about to commence another, whilst also receiving a further outbound track. The RAD mentor did not hear the Basset pilot on Stud 15; however, having heard the RT tape replay, the mentor is now

aware that the Basset crew had called several times without reply and had then been told to 'standby' twice whilst the handovers were in progress. During this period, the RAD mentor had removed her headset several times so that she could liaise verbally with the controllers and had lost SA on the departing Tornado. His [the SUP's] instruction, which in hindsight was unnecessary, to RAD to descend the inbound Alphajet had caused a conflict against the Tornado, which was climbing. To make matters worse, the Tornado, flying VFR, had turned onto a westerly track directly towards the inbound Alphajet, having had no information on its position and although there was approximately 5-6nm separation at this point, a dangerous situation was now developing. APP suggested to RAD that the inbound jet be turned onto 070° to resolve the conflict, however he did not believe that RAD heard this as she was busy providing TI to each of the conflicting ac. The Tornado crew called visual with the Alphajet and vice versa and both ac continued on course. All of this took place on 371-825MHz - Stud 5. The Basset crew had been on the quiet frequency of 234-4MHz – Stud 15 - and had not been given TI on the two occasions it would have been beneficial. In addition, RAD had perhaps also neglected the Basset during the handovers to the DIR. The Basset crew then switched to Stud 5, which caused some confusion as RAD was trying to reply on Stud 15, not knowing that the crew had changed frequency. The Basset pilot announced that he was now on Stud 5 and asked if there was a problem with the other frequency, as he had not heard any calls for some time. RAD informed him that they had been busy on Stud 5. He appeared to be annoyed that he hadn't been told about this, and asked for guidance as he believed that he had come within 2000ft of two ac, which were not called. At this point, the RAD mentor stepped in and stated that traffic had not been called as (in her opinion) it was irrelevant. He believed this may have upset the Basset pilot further, who declared that he would file an Airprox, which the mentor acknowledged. A relief was then organised for RAD first and reporting action commenced.

The situation that had developed regarding the Alphajet and Tornado on Stud 5 was a more pressing matter to resolve than providing TI to the Basset. Whilst the TS provided for the Basset had been deficient, due to workload, he did not believe that an Airprox occurred. Nevertheless, he was sympathetic to the pilot's complaint and it is clear that the incident warranted reporting action.

From his perspective he was:

- Under operational pressure to provide as much training as possible.
- Also under similar pressure to complete the Supervisor check ride.
- The live traffic that was needed for both occurred at the same time.
- His attention as Supervisor was not equally divided amongst the control staff.
- He lost SA on the departing Tornado and inadvertently created a problematic situation for RAD, which increased their workload and contributed to degradation of service for the Basset crew.

This was a lesson in priorities for him; he incorrectly placed the needs of training and endorsement above his immediate duties as Supervisor, as a result, a potentially unsafe situation developed.

**SATCO BOSCOMBE DOWN** comments that whilst acknowledging the Basset pilot's concerns, he did not feel that an Airprox actually occurred, more that the pilot correctly wished to highlight certain points and see what lessons can be learnt. The whole situation arose due to a number of human factors that could possibly have been either avoided or mitigated against and the controllers involved have been de-briefed as to their part.

The RAD controller on whose frequency the incident occurred was instructing at the time and was in the area of 'how much do I allow the UT to continue on her present course' to gain the experience as to when or if he should have taken control. Had all ac been on the same frequency everyone would have been aware of the workload; however, the instructor was dealing with the priority and did not assess the Basset to be in unsafe confliction. Had the controller cross-coupled the frequencies each pilot would have known the work rate, or alternatively and as a minimum, a reduction of service due to workload should have been broadcast to all involved.

The SUP has been overly critical of himself. Despite his best intentions there is still a limit to how much a Supervisor can assimilate and although his attention was more focused on DIR, which is the

traditional position where problems occur, he had an extremely experienced controller in each of the other positions who could have been more proactive in this situation. The point that all Stations are under pressure to endorse controllers is nothing new and although possibly a contributory factor, did not in his opinion, have an over bearing impact on this situation.

There have been lessons learnt in which my controllers have taken on board but it bears more to experience levels rather than to changes in procedures.

**HQ 1Gp BM ATC SM** reports that although from the RAD perspective the transcript commences at 1256:15, the Unit Safety Management Officer at Boscombe Down (BDN) has confirmed that there are no transmissions on the RAD frequencies for the 5min leading up to the occurrence timeline.

Both ac involved in the Airprox and the Tornado were operating under a TS and no reductions of service were issued. The Alphajet entered a descent from FL200 at 1255:29 and is shown descending through FL195 at 1255:41, at which point the Basset is about 2.6 nm SSE indicating a level cruise at FL57. The indicated level at 1255:47 was FL189; the Alphajet's Mode C data then 'drops out' and is not shown again until 1256:31, indicating FL66 [1000ft above the Basset]. Consequently, the Alphajet descended 12300 feet in 37sec over a distance of approximately 4.3nm, equating to a RoD of broadly 16800ft/min, assuming the descent was maintained throughout this period. This high RoD will have caused the SSR Mode C information to 'drop out' and it is highly likely that a similar effect will have been witnessed on the BDN radar displays, although this is impossible to determine conclusively.

The Alphajet crew called RAD at 1256:15 requesting a, "*pickup for radar PAR*" at which point the Basset was about 1nm SW at FL54. The end of the Alphajet pilot's transmission on Stud 5 was coincident with the Basset crew's transmission on Stud 15. The CPA of 1nm horizontally is maintained through 1256:18, but it is impossible to determine the vertical separation in the absence of Mode C data. At this point RAD had 2 ac on frequency (the Alphajet on Stud 5 and the Basset on Stud 15) with a 3<sup>rd</sup> (the Tornado) about to get airborne. CAP774 states that

"..traffic is normally considered to be relevant when, in the judgement of the controller, the conflicting aircraft's observed flight profile indicates that it will pass within 3nm and, where level information is available, 3000 ft of the aircraft in receipt of the Traffic Service. However, controllers may also use their judgement to decide on occasions when such traffic is not relevant, e.g. passing behind or within the parameters but diverging."

When RAD responded to the Alphajet pilot at 1256:24, the radar replay shows that the 2 ac were no longer a factor to each other and that there was no longer a requirement for RAD to pass TI to these ac about each other. However, an earlier opportunity to pass TI to the Basset and the Alphajet existed. Had RAD had access to Mode C for the Alphajet they would have been expected to be aware of the risk of conflict between the 2 ac. However the BDN USMO has confirmed that there were no transmissions on the RAD freq for 5min prior to the Alphajet crew calling for recovery, which suggests that the RAD controller did not perceive a risk of conflict. This supports the hypothesis that the high RoD of the Alphajet caused the ac's SSR Mode C information to drop off BDN's radar display, thereby removing the visual prompt for the impending conflict. However, this characteristic is well known and, given that the Mode C data was not displayed for around 37sec, this should have provided an opportunity for RAD to recognise the conflict and provide TI to the Basset and Alphajet crews before the latter called for recovery.

BDN reports that the RAD position was manned by a trainee and an experienced mentor. It is possible that the trainee was unaware of the problems associated with high RoD/RoC and their impact upon Mode C data. The absence of any input from the RAD mentor suggests that they did not detect that the Mode C information was not being displayed, which could have alerted them to the high RoD of the Alphajet towards the Basset. Given the length of time that the Mode C had not been displayed the level of oversight provided by the screen controller to the trainee is questionable. Normally, the SUP would provide an additional level of oversight at this point; however, the SUP had tasked another SUP qualified controller on APP with monitoring RAD, allowing the SUP to focus on

DIR. Whilst it is unclear what APP understood were their responsibilities towards RAD, the SUP reports asking them to 'keep an eye on the RAD traffic levels' which does not imply the level of oversight that a SUP normally exercises. This lack of supervision can be seen to be a further contributory factor to the Airprox.

From 1256:15, when the Alphajet crew called for recovery, until 1258:41, it is clear that RAD's workload was high, with no opportunity to respond either to the Basset crew's RT call or to pass TI to them about the Alphajet, given that RAD had, arguably, higher priority tasks. CAP774 states that: 'controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5nm'. Given RAD's workload, it is clear that the TI passed to the Tornado crew about the Basset at 1257:57, "*traffic 12 o'clock 2 miles crossing right left at flight level 5-5*" represented the first opportunity to pass any information. At this point, although RAD described the range between the Tornado and the Basset as "*..2 miles..*" the radar recording reveals it was about 3-5nm, with the Tornado climbing through FL65, already some 900ft above the Basset.

[UKAB Note (1): Minimum horizontal separation between the Basset and the Tornado occurred at 1258:56, as the westbound Tornado passed 0.6nm astern of the southbound Basset; vertical separation of 3600ft was evident at this point - the Basset indicating FL56 and the Tornado FL92 respectively.]

CAP774 states that:

"..there may be circumstances that prevent controllers from passing timely traffic information ... e.g. high workload... Controllers shall inform the pilot of reductions in traffic information along with the reason and the probable duration; however, it may not always be possible to provide these warnings in a timely fashion."

Insofar as it applies to the Basset and the Tornado, RAD's workload prevented them passing TI to the Basset crew and prevented them passing a reduction of service to all ac on their frequency. RAD was however able to supply TI to the Tornado on the Basset. This was clearly a short burst of intense workload affecting the RAD position that was exacerbated by operating 2 separate frequencies. Whilst SATCO BDN has stated that the RAD mentor was trying to ensure that the trainee received the most training value, CAP774 states that 'controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5 NM.' Insofar as it applies to the reported Airprox between the Basset and the Alphajet, the 37sec absence of Mode C data should have allowed both the trainee to assimilate the information and pass TI and for the mentor to interject to provide TI in the absence of a response from the trainee. The fact that this did not occur suggests that neither controller perceived the risk of conflict, drawing into question the level of oversight provided by the screen to the trainee.

The self imposed pressure on the SUP to eke out the maximum utility from this busy session for ATC training, seeing them delegate part of their Supervisory responsibility can be seen to have been a contributory factor to this Airprox. Insofar as the Basset and the Tornado was concerned, within the limitations imposed by their workload, RAD fulfilled their obligations for the provision of TI under a TS.

BDN ATC are completing work to include high RoC and RoD profiles and their subsequent impact on the surveillance picture within local training materials. When operating at high intensity levels, all ac will be put onto one frequency if BDN controllers believe that the provision of TI to all ac may be prejudiced. All BDN mentor and instructor controllers have been briefed that whilst they should give trainees every opportunity to learn, this should not be at the expense of safety and expedition.

## **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 authority.

The Board noted that the recorded LATCC (Mil) data shows that the Alphajet's Mode C was not captured by the Burrington SSR recording in the period of 44 sec before the point of minimum horizontal separation. Members were aware that, in general, a RoD in excess of 10000ft/min will not be captured by ground based SSR interrogators or TCAS equipment. So when the Alphajet crew initiated their recovery to base, their high RoD – in the order of 16800ft/min - had prevented the Burrington SSR interrogator from displaying their descent because their steep descent caused the SSR Mode C information to 'drop out'. Pilots should always bear in mind that a RoD in excess of 10000ft/min could mask their ac's Mode C from SSR interrogators and importantly, make their ac invisible to TCAS, which might well prevent an RA from being triggered when warranted.

The LATCC (Mil) radar recording was all that was available to the Board, as Boscombe Down ATC does not record their data separately. Controller Members accepted that, in all probability, the Boscombe Down SSR would also have been affected in a similar manner (albeit that it rotates at a higher rate than the Burrington SSR and provides a quicker data refresh rate) and probably did not display the Alphajet's Mode C to the controllers as the ac descended. It was understandable that the Basset pilot was concerned when he did not get a reply on the quiet frequency he was operating on. If RADAR had seen the Alphajet's Mode C winding down then the controllers would almost certainly have proffered TI if they had the capacity to do so. However, the report from HQ 1Gp ATC shows that the RADAR controllers' workload was a factor here and both were apparently unaware of the Alphajet's descent before it passed the Basset. The Basset pilot was somewhat mistaken when he reported the Alphajet had passed directly overhead as the radar recording had shown that the minimum horizontal separation was 1nm as the Alphajet crossed from L - R ahead, just moments before its crew called RADAR. Moreover, when the Alphajet's Mode C was next evident it was 1.9nm away to the SE of the Basset and shown to be 1000ft above the latter whilst clearing rapidly to the SE. Although not illustrated here, when the Tornado passed by about 2½min later it flew clear astern of the southbound Basset with vertical separation of 3600ft.

There were clearly several points within the provision of the ATS, together with the Supervisory aspects, that had warranted review here and it was evident that the Unit had drawn some useful learning points from this report. However, the HQ Air (Ops) Member stressed that if the Basset pilot had been concerned about the absence of TI, then a better reporting mechanism was that of a Hazard Report on a DFSOR. As it was, given the geometry of this encounter and the separation evident, the Board agreed that this report had been the result of a sighting by the Basset pilot and no Risk of a collision had existed.

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

Cause: A sighting report.

Degree of Risk: C.

## **AIRPROX REPORT No 2010086**

Date/Time: 6 Jul 2010 1407Z

Position: 5150N 00158W (15nm  
NW of Brize Norton - elev  
287ft)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: Lockheed L1011 ASW 27 Glider

Operator: HQ Air (Ops) Civ Pte

Alt/FL: ↓3500ft 3500ft  
QFE (1014mb) QFE

Weather: VMC CBCL NR

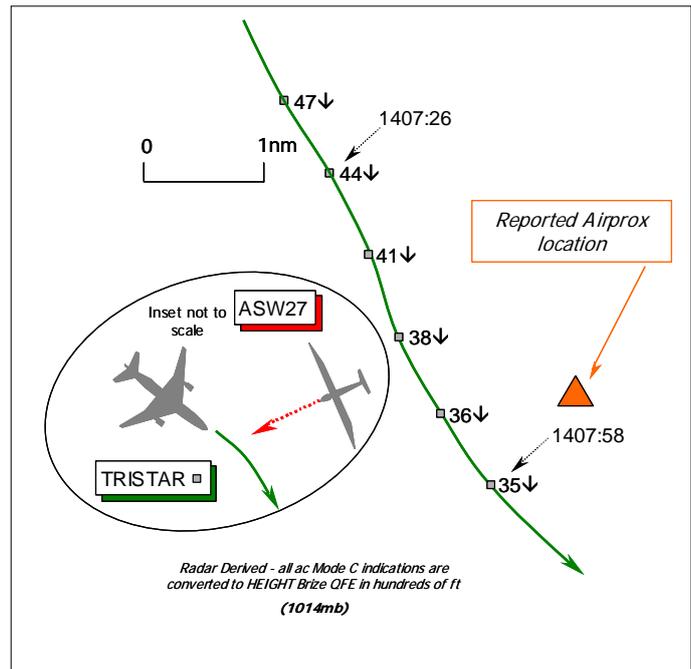
Visibility: 30km 10nm

Reported Separation:

200-300ft slant range 25-50m H

Recorded Separation:

Not recorded



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

**THE LOCKHEED L1011 TRI-STAR PILOT** reports he was inbound to Brize Norton under IFR in VMC and was in receipt of a TS from Brize DIRECTOR (DIR) on 133-750MHz. The assigned squawk of A3743 was selected with Mode C; TCAS and Mode S are fitted. The ac has a grey colour-scheme but the HISLs and anti-collision lights were all on.

In a gradual L turn towards the BZN TACAN, his ac was approaching a position about 15nm NW of Brize Norton at 250kt whilst levelling at their assigned altitude of 3500ft, he thought, when DIR called TI on an intermittent contact in their 11 o'clock with no Mode C readout. A white glider was eventually seen with difficulty at 11 o'clock about ½nm away, [whilst actually descending through 4700ft QFE according to the RT transcript] against the slightly low horizon on what appeared to be a constant relative bearing. To avoid it he initiated a gentle R turn away from the glider, which passed within 200-300ft of his ac to port and slightly low. Assessing the Risk as 'medium', he stressed that there were four crewmembers on the flight deck all looking out due to their being multiple contacts in the vicinity. He was subsequently informed about a gliding competition.

**THE SCHLEICHER ASW 27 GLIDER PILOT** reports he had departed from, and was returning to Nympsfield, in VMC in a level cruise at a height of 3500ft some 1500ft below cloud. Flying a SW'y course, approaching a position some 7nm E of Staverton at 60kt, the other ac was seen [the range was not specified] and a dive executed to avoid it. Minimum horizontal separation was about 25-50m as the other ac crossed ahead from R-L 'too close for comfort' he opined.

**BRIZE NORTON DIRECTOR (DIR)** reports that the Tristar was inbound to Brize Norton for a procedural TACAN approach and was descending to 3500ft QFE (1014mb). There was a mass of contacts in the sky as there was a gliding competition in progress. She called TI with no height information to the Tristar pilot, who reported visual and said that he would be filing an Airprox.

**THE BRIZE NORTON ATC SUPERVISOR (SUP)** reports that the controller was working 1 ac on recovery and 4 tracks crossing the Brize CTR; her workload was well within her capability. There were multiple glider contacts all around Brize Norton, due to several competitions from different glider sites. However, there was less traffic along the route of the inbound ac. The conflicting glider was

called in good time at a range of 10nm by the controller and the TI was updated again at 2nm. The pilot subsequently reported visual with the glider, but opined in a later telephone conversation that it had been a late sighting, possibly due to the background conditions and the size and colour of the glider. In the Supervisor's view, the controller fulfilled her responsibilities under the TS.

**HQ 1Gp BM SM** reports that as the AIRPROX is not shown on the Clee Hill Radar recording, this analysis is based wholly upon the reports raised by the Tristar pilot, Brize DIR and the SUP together with the DIR RT transcript.

The Tristar crew was in receipt of a TS from DIR, whilst inbound for a procedural TACAN approach to RW26 at Brize Norton. At 1405:37, DIR passed TI to the Tristar crew on an intermittent primary radar contact, *"..traffic 12 o'clock 10 miles intermittent contact no height"*, which was acknowledged by the crew. This TI was updated by DIR at 1407:05, with the primary only contact described as, *"..left 11 o'clock, 2 miles manoeuvring."* Some 12sec later at 1407:17, the Tristar crew reported that they were, *"..visual with glider"* and in the background it is possible to hear a voice stating *"coming right"*, which accords with the pilot's report that they entered a gentle R turn to avoid the confliction.

Whilst DIR could have included as additional information with the TI that the contact may have been a glider, given the notified competition, the reverse argument is that had the ac not been a glider, this may have provided the crew of the Tristar crew with a false expectation, thereby introducing a further hazard to the situation. Consequently, from an ATM perspective, DIR fulfilled their responsibilities for the provision of TI in line with CAP774.

The CAA has been examining options for the carriage of Low Power SSR Transponders (LPST) on gliders. It is likely that in this instance, the carriage of a LPST by the glider would have provided increased SA for both the Tristar crew and ATC, facilitating a more focussed visual search for the crew and the operation of the Tristar's TCAS as the final safety barriers.

It was recommended that further work was conducted to mandate the carriage of transponders throughout UK airspace.

UKAB Note (1): This Airprox is not shown on recorded radar as the glider is not evident at all. The Tristar is shown descending through 4700ft QFE (1014mb) at 1407:18, when the crew reported visual contact on the glider. The descent is maintained as the Tristar turns gently R in accordance with the reported avoiding action turn whilst maintaining the descent at about 1800ft/min.

**HQ AIR (OPS)** comments that with the TI given and the nature of the conflicting traffic, the Tristar crew did well to see and avoid the glider by the margin they did. ATC also provided a good service given the constraints. If the glider had been able to squawk with a Mode C readout there would have been a significantly improved opportunity for the Tristar to achieve a greater separation. Small, white ac with no conspicuity aids such as HISL or SSR operating without RT contact in the vicinity of busy aerodromes will always present a hazard.

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

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

Members discussed the difficulty of detecting gliders on radar. The DAP Advisor briefed the Board that work was ongoing by the CAA, following recent AAIB Safety Recommendations on this topic, to investigate a variety of glider conspicuity measures, including the increased use of RT by glider pilots for communication with ATSU's and the radar conspicuity of gliders with a composite structure. With the Tristar pilot reporting it was difficult to see the white glider, the carriage of some form of lightweight SSR transponder with altitude reporting would have made the glider conspicuous to the Tristar's TCAS and enhanced the crew's SA.

As it was the radar controller had seen the glider's primary radar contact and passed TI to the Tristar crew when the range was 10nm. She then updated the TI at a range of 2nm and it was plain to the Members that the controller had done a good job here in forewarning the Tristar crew about the approaching glider. These two transmissions had been instrumental in helping the Tristar crew to acquire the ASW27 visually – with difficulty ½nm away the Tristar pilot reported - allowing them to turn away from it and maximise what separation there was. Whilst it was unclear at what range the ASW27 pilot had spotted the Tristar, it appeared to have been quite close but in sufficient time to enable him to take robust avoiding action by diving away from the Tristar. As the glider was not shown on recorded radar it was not possible to determine the minimum separation that applied here; the Tristar pilot reported a minimum of 200ft and the ASW27 pilot a maximum of 50m. The Members agreed unanimously that this Airprox had been the result of a conflict in Class G airspace, but whilst the separation was undoubtedly less than ideal, the Board agreed that the combined action of the pilots involved ensured that any Risk of a collision was effectively forestalled.

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

Cause: A conflict in Class G airspace.

Degree of Risk: C.

## AIRPROX REPORT No 2010087

Date/Time: 11 Jul 2010 1102Z (Sunday)

Position: 5203N 00033E (0.25nm SW  
Ridgewell G/S - elev 273ft)

Airspace: LFIR (Class: G)

Reporting Ac Reported Ac

Type: ASK21 PA44

Operator: Civ Club Civ Pte

Alt/FL: 1000ft↑ 1400ft  
(QFE) (QNH)

Weather: VMC CLBC VMC CLBC

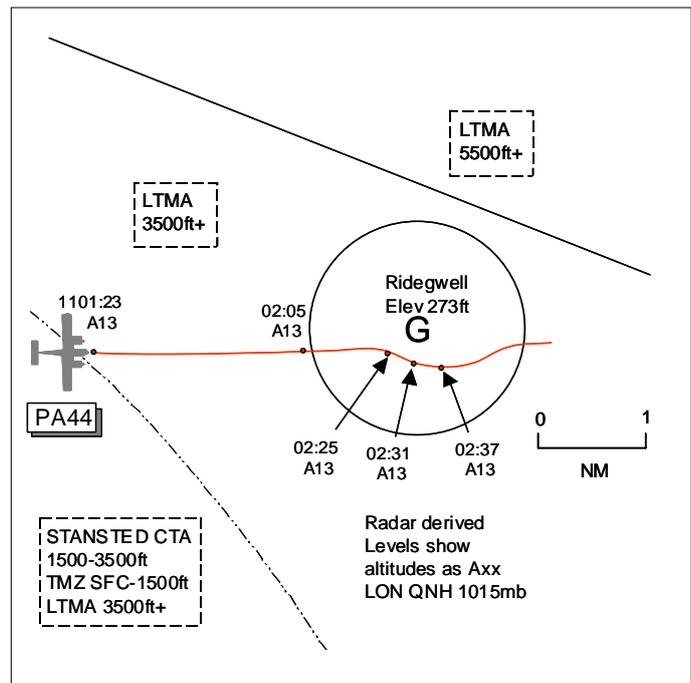
Visibility: NR >10km

Reported Separation:

Nil V/100ft H 100ft V/900m H

Recorded Separation:

NR



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE ASK21 PILOT** reports flying a dual 'trial lesson' sortie from Ridgewell seated in the rear seat. The Wx was VMC with about a 5000ft cloud base and his ac was coloured white; no radio, lighting or transponder was fitted. When close to the top of the winch launch on RW23, as the glider was levelled-off prior to release at 1000ft QFE a maroon/black coloured twin-engine ac was first seen by the front seat pilot before it passed very close in front of his ac, about 100ft away at the same level, from R to L. The passenger in the front seat commented that the other ac had had to deviate to avoid a collision before it was seen to turn onto an E'ly heading to their L once passed.

**THE PA44 PILOT** reports en-route to Germany VFR and in communication with London Information on 124.6MHz squawking 7000 with Modes S and C. The visibility was >10km flying below cloud although in turbulent air in VMC and the ac was coloured white/blue with strobe lights switched on. Cruising at 1400ft QNH heading 100° at 140kt he had opened his flight plan with London Information and was monitoring the frequency. He was on course from the S edge of the Duxford ATZ direct to Felixstowe and planning to route S of Ridgewell glider site [pilot's chart shows planned track passing 1.5nm S of Ridgewell]. Whilst scanning the airspace and watching out for the glider site he spotted an ac more or less head-on, therefore with a small silhouette, in his 11 o'clock at range 2.5km and well below. Shortly afterwards he realised that it could be a climbing glider on a winch launch and it was obvious to him that the glider would stay on his LHS of his flightpath. He turned R about 50° with significant bank to stay clear and increase separation, estimating he passed 100ft above and 900m distant. He assessed the risk as low.

UKAB Note (1): The UK AIP at ENR 5-5-1-5 promulgates Ridgewell as a Glider Launching Site centred on 520253N 0003330E where aerotow launches take place and winch launches may be encountered up to 2000ft agl during daylight hours, site elevation 273ft amsl.

UKAB Note (2): The radar recording does not capture the Airprox as the ASK21 glider does not show at all, but the PA44's track can be verified. At 1101:23 the PA44 is seen 3nm W of Ridgewell tracking 090° indicating unverified altitude 1300ft QNH 1015mb. This track is maintained until 1102:25 when the PA44 is seen to commence a R turn when 0.3nm SW of Ridgewell still indicating 1300ft. Six seconds later at 1102:31 the PA44 passes just under 0.4nm S abeam before it then turns L to regain its original track about 1nm E of Ridgewell.

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

Information available included reports from the pilots of both ac and radar video recordings.

Although the PA44 pilot had intended to fly S of the glider site, the radar recording clearly shows the ac tracking towards the Ridgewell O/H at altitude 1300ft. Although the ASK21 does not show on the recording, the PA44's R turn away from the glider, as reported, is seen as it passes almost O/H. The PA44's track through the O/H at an altitude below the promulgated winch cable release height placed it into conflict with the launching glider, and this had caused the Airprox. Members could not reconcile the disparate separation distances reported by both pilots. The ASK21 pilot only saw the PA44 as he levelled out towards the top of the launch, estimating it passed 100ft in front from R to L at the same level. Although the PA44 pilot saw the ASK21 at a reasonable distance well below, it was only when he realised that it was on a winch launch that he made a R turn away to increase separation, estimating it passed 100ft below and 900m clear to his L. From the limited information available Members believed that, on the balance of probability, the PA44's sighting and avoidance of the ASK21 had resulted in a separation somewhere between the 2 pilot's estimates; as such, his actions had been effective in removing any risk of collision.

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

Cause: The PA44 pilot flew over a notified and active glider launching site below the promulgated winch cable release height and into conflict with the ASK21 glider.

Degree of Risk: C.

## AIRPROX REPORT No 2010091

Date/Time: 10 Jul 2010 (Saturday) 1525Z

Position: 5153N 00026E  
(Andrewsfield A/D – base  
leg RW09RHC – elev:  
286ft.)

Airspace: Andrewsfield ATZ (Class: G)

Reporting Ac      Reported Ac

Type: Cessna 152      PA28B

Operator: Civ Trg      Civ Pte

Alt/FL: 600ft      600ft  
QFE (1006mb)      QFE (1005mb)

Weather: VMC      VMC Sky Clear

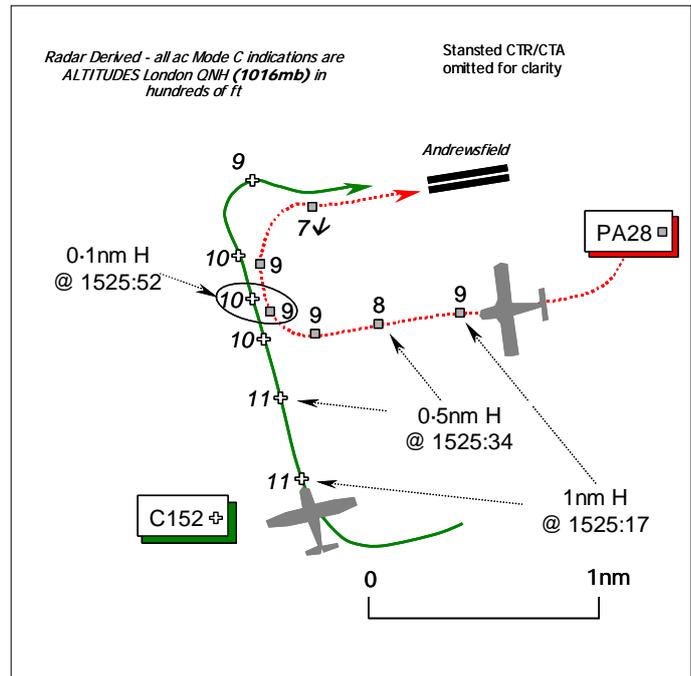
Visibility: >20nm      >20km

Reported Separation:

Nil V/150m H      Not seen

Recorded Separation:

100ft V/0.1nm H



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE CESSNA 152 PILOT** reports that he was instructing a student flying in the cct at Andrewsfield and in communication with Andrewsfield RADIO A/G Station. He occupied the RH seat as the instructor, with his student the PF in the LH seat. The visibility was excellent, but there was significant thermal and mechanical turbulence from a strong southerly wind and, especially on base leg, there were noticeable updrafts.

After take-off and one cct on RW27, the runway-in-use was changed to RW09. Ccts at Andrewsfield are RH and are unusually wide for noise-abatement reasons. The downwind leg of the RH cct for RW09 (RW09RHC) takes ac S of the A120 dual-carriageway. The pilot of a PA28 called for joining instructions and stated that his was the first of 7 ac arriving from Peterborough. 'Joining instructions' [aerodrome information] for RW09RHC were given to the PA28 pilot by Andrewsfield RADIO and subsequently repeated. After his student called downwind for RW09RHC, the PA28 pilot called joining overhead but despite scanning opposite runway ends and beyond he was unable to see the ac. The PA28 pilot called downwind and again he could not locate the ac, which concerned him as visibility was excellent. On base leg, about to turn final at 70kt descending through 600ft QFE (1005mb) with 20° of flap, he spotted the PA28 in his immediate R 3 o'clock at the same height, [a telephone call with UKAB Staff suggested this was at a range of about 200m] on what would have been the downwind leg of a close-in cct to RW09RHC. Initially he thought the PA28 would position behind his C152 and he started to make a call on the RT requesting the PA28 pilot's intentions. He noted in hindsight that he got the registration wrong and the actual phraseology he used was very ambiguous, so all in all it was a rather pointless call. As he called he realised that the PA28 pilot had not seen his C152 as the PA28 had started to turn onto final. If he had continued his approach the two ac would have been at the same place at the same time, so he took control from his student increased power and turned L away from base leg. As he had lost visual contact with the PA28 he then turned R, back onto final. At this point the PA28 was now on short final about to land. Once they were re-established on final, he commenced a go-around for another cct and reported the Airprox on the RT. During this cct two more ac of the visiting group called at various positions in the cct, but he was unable to locate them at the stated points. So he made a rather unprofessional radio call '[C152 C/S] downwind and NOT visual with any other traffic'.

After landing he met with the pilot of the PA28, who was very apologetic. It was his first visit to Andrewsfield and had relied on his co-pilot/front-passenger, a licensed pilot, who had previously visited Andrewsfield on several occasions. The PA28 pilot agreed that as P-I-C he should have checked the cct details. The PA28 pilot said he had consulted his flight manual before flight, but, unfortunately, the page for Andrewsfield does not detail the cct location. The PA28 pilot had not seen his C152 at all whilst concentrating on the runway, or noticed their RT calls, even though the calls had been answered by Andrewsfield RADIO.

Subsequently, he checked both the UK AIP and a popular chart manufacturers VFR manual; neither publication provide much detail on the cct location, but both state that Andrewsfield is strictly PPR by telephone only.

**THE PA28B PILOT** reports that he contacted Andrewsfield RADIO about 10nm out to obtain aerodrome information and was told the RW in use was RW09R [two 18m wide parallel runways are used by day], RH cct, with the QFE 1005mb. He reconfirmed the RW in use and then announced his intention to join crosswind from the N. He approached Andrewsfield from the N, taking care to remain clear below the 1500ft base of the Stansted CTA and shortly before reaching the aerodrome called that he was approaching crosswind for RW09, which the A/G operator acknowledged. Completing the pre-landing checks and selecting the first stage of flap, he adjusted the power to maintain cct height of 700ft and a speed of 100kt. Upon reaching crosswind he announced on the RT, '[PA28B C/S] crosswind for 0-9 right hand', which again was acknowledged by Andrewsfield RADIO. His passenger, an experienced pilot who had obtained the PPR briefing from Andrewsfield earlier, assisted him with positioning advice. Turning downwind A/G acknowledged his '..downwind 0-9 right hand' RT call and, as advised by his passenger, he continued downwind aiming for a lake to the SW of the aerodrome that he said would be the correct place to turn base leg. He took a good look around but the only other ac he saw was a distant airliner. Repeating his pre-landing checks and approaching the lakes, he selected the second stage of flap adjusting power to maintain 100kt at 700ft and turned base leg calling on RT '[PA28B C/S] base 0-9'. The wind was from the S necessitating a short base leg and almost immediate turn onto final. During the turn onto final, another pilot [the C152 instructor] announced his ac registration, called going around and reported an Airprox. Since he could not see the C152, he decided the safest course of action would simply be to continue his approach to land and did so. During the approach from the N and during the whole of the cct he did not hear any transmissions from any other ac.

After the C152 landed he sought out the pilot and discussed the event with him. The C152 pilot identified himself as an instructor based at Andrewsfield whose student had been the PF. The C152 pilot informed him that the correct cct at Andrewsfield has the downwind leg to the S of the A120 whereas his PA28 was N of that line; this had confused the C152 instructor about his PA28's position – he said that in spite of looking for the PA28 the C152 instructor could not see it. It seemed the C152 instructor had heard all the RT calls but stated that he had only seen the PA28 at the very last moment while on his base leg and had to take avoiding action. He also said that pilots new to Andrewsfield often fly too close in and that PPR conversations often do not cover this point.

He opined that there are some interesting contributory factors to this Airprox:

His passenger reported that the PPR request discussion had not included any information that ccts should be S of the A120 dual carriageway.

He has an up-to-date plate for Andrewsfield from a major purveyor of aeronautical information, dated 25 Feb 98. It does not show the preferred cct pattern or the A120 dual carriageway.

His passenger also has a plate, from a different supplier, that specifies PPR is only required for non-radio fitted ac and makes no mention of a preferred cct pattern.

Accepting that he was distracted whilst positioning to avoid causing a noise nuisance to the surrounding villages, this led to less effective lookout. The southerly wind made the turns onto base

leg and final tighter than normal and this caused him to crane his neck to see the RW position, again hindering his lookout.

Following this Airprox he considers:

He will be much more cognisant of the danger of other ac being present in the cct who are not transmitting and will not permit other pressures to distract him from his lookout again. Moreover, when ac commander, he will take responsibility for dealing with PPR next time.

He would also like to point out that the plate for Andrewsfield from the major purveyor of aeronautical information should be updated to show the preferred cct and the current position of the dual carriageway. If this had been shown, he would have followed it. Similarly, the plate from the other supplier needs to be updated.

PPR discussions should emphasise this preferred cct. To be more than a mile away from the aerodrome at a height of only 700ft does not feel like a safe procedure and he did not believe any pilot would choose this in favour of a closer cct given the required cct height - an engine failure at 700ft downwind would result in an emergency landing with little prospect of being able to turn into wind.

The C152 instructor was aware that pilots new to Andrewsfield often make the mistake of flying their downwind leg N of the A120. In these circumstances, he would have expected any experienced pilot who was at all concerned to have made a radio call to confirm his position. In fact any call from him would have alerted him to the presence of another ac in the cct and thereby avoided this Airprox.

His aeroplane has a white, grey and red livery; the red fin strobe and white wingtip HISLs were on.

UKAB Note (1): The UK AIP at AD 2-EGSL-1 – 3 notifies the Andrewsfield Aerodrome Traffic Zone (ATZ) as a circle radius 2nm centred on the midpoint of RW09/27, extending from the surface to 2000ft above the aerodrome elevation of 286ft. An A/G Station - C/S Andrewsfield RADIO - operates on 130.550MHz.

UKAB Note (2): The UK AIP at AD 2-EGSL AD 2.22 — FLIGHT PROCEDURES, specifies:

- a. Circuit height 700ft QFE, normal direction: Runway 09/27 - RH. Microlight circuits at 500ft QFE inside the normal circuit pattern.
- b. i. Andrewsfield Local Flying Area (LFA) and Procedures: Part of the Andrewsfield ATZ (to the northwest of the Aerodrome) lies within the London Stansted CTR and the remainder lies partly within and partly beneath the London Stansted CTA. Subject to any listed restrictions, flights without reference to Stansted ATC may be made within the confines of the LFA [which exists within the same lateral limits as the ATZ with a vertical limit of 1500 ft QNH.]

UKAB Note (3): The Stansted 10cm Radar recording illustrates this Airprox clearly. The C152 is shown steady on a base leg for RW09RHC at 1100ft London QNH (1016mb) – equating to a cct height of 700ft – with the PA28 downwind indicating 900ft London QNH (1016mb) 1nm away but inside the pattern established by the C152. The ac close to a horizontal separation of 0.2nm, where the PA28 turns R onto a parallel base leg to the C152 and at 1525:52, is in the latter's 4 o'clock at the CPA of 0.1nm/100ft. Thereafter, the PA28 turns inbound onto final as the C152 pilot executes the reported delaying manoeuvre before following the PA28 onto final and then executing a go-around.

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

Information available included reports from the pilots of both ac and radar video recordings.

The Board recognised that A/G Stations are not required to record their RT frequencies and it was not possible to determine independently what actual RT transmissions were made during the period of this Airprox, or by whom. There was no indication that the C152 might have been mentioned by the A/G Operator at some stage, moreover, the PA28 pilot reported that he heard no other transmissions that indicated to him that there was another ac in the cct, until he had overtaken the C152 and had turned onto final. Nevertheless, the PA28 pilot had called at a range of 10nm and he should have been able to hear several RT calls from the C152 pilots, who could potentially have executed two ccts in that period. The C152 instructor had emphasised that his student had made a downwind call before the PA28 pilot called joining. Therefore, it was not clear why the PA28 pilot had not heard that transmission, but there was no reason to suppose that the C152 instructor would not have been ensuring that his Student was making the requisite transmissions correctly during their cct. Pilot members emphasised that it was the responsibility of the pilot joining the circuit at uncontrolled aerodromes to look out and listen for other ac already circuiting to ensure their safe integration into the cct.

Conversely, the C152 instructor pilot was aware of the PA28 joining the cct from the latter pilot's transmissions and had been endeavouring to spot the ac, but it might have been quite difficult to see the PA28 astern, whilst flying the downwind leg and would only have been clearly in the C152 instructor's field of view when they turned onto base-leg. The PA28 pilot should have been looking out for other ac in the cct and the C152 should have been visible to him in the clear sky. Whilst pilot Members recognised that the PA28 pilot was unfamiliar with Andrewsfield and his focus would have been on the RW to his R, the radar recording clearly illustrated the geometry of this encounter and that the C152 was in the PA28 pilot's field of view. Regardless of any RT calls, as there may well have been ac joining non-RT, the C152 was already established in the aerodrome cct and was there to be seen by the PA28 pilot who did not conform to the pattern of traffic formed by the ac ahead of him. The Members agreed unanimously that part of the Cause was that the PA28 pilot did not integrate into the circuit pattern established by the C152.

The C152 pilot had mentioned that he had not seen the PA28 earlier because the visiting pilot had not flown the recommended cct pattern. Consequently, the C152 instructor had been looking in the wrong place for the other ac. The Board was briefed that the locally based C152 pilot had stressed his concern that the preferred cct pattern was not well promulgated and the foreshortened cct flown by the PA28 with the downwind leg N of the A120 dual-carriageway is often flown by visitors who are unfamiliar with the preferred cct pattern. Moreover it was suggested that the PPR brief was not always as detailed as it might be. Certainly the PA28 pilot reported that when his passenger had 'booked in' their ac with Andrewsfield before the flight and obtained the PPR, nothing was mentioned about the location of the cct pattern. Whilst the Andrewsfield website clearly showed the preferred pattern, the Board was briefed that the PA28 pilot was correct in stating that this cct was not replicated in either of the popular commercially available aeronautical guides and more importantly it was not detailed in the Andrewsfield entry within the UK AIP. Visiting pilots were expected to read the website prior to visiting it seemed, because of the LoA detailing the arrangements for the LFA within the Stansted CTR. The Board was briefed on the aerodrome details contained on the website entry which stated that:

'.....we have developed a circuit pattern which is in agreement with everyone and we ask visitors wherever possible to fly these patterns.'

Although the PA28 pilot had not flown the non-standard pattern specified, it appeared to be optional. Nevertheless pilot Members stressed that this information on the non-standard cct should be promulgated in the AIP, which commercial aeronautical information suppliers would then extract from this authoritative source and include in their own publications as a matter of course. This Airprox illustrated clearly what can ensue when important procedural details are omitted from National aeronautical publications. If such details of the non-standard cct had been available in the UK AIP to the PA28 pilot there was no reason to suppose that he would not have followed it, but clearly he could not do so if it is not incorporated. The Board concluded therefore, that the other part of the Cause was that the non-standard Andrewsfield circuit pattern is not published in the UK AIP. Moreover, Members agreed unanimously that a Safety Recommendation was warranted; thus the

Board recommended that the aerodrome operator review the Andrewsfield AIP entry, with a view to including details of the stipulated non-standard cct pattern.

Turning to the inherent Risk, it was plain that the PA28 pilot was unaware of his proximity to the C152 less than 200m to port of his aeroplane as he flew his base-leg and then turned onto final ahead of it. It was only when the C152 instructor made his RT call that the PA28 pilot was aware of the other ac now astern. The C152 instructor had little time to react when the PA28 was first spotted in his 3 o'clock, about 200m away. However, his robust avoidance manoeuvre, confirmed on the radar recording, effectively giving way to the PA28 at close quarters was a wise decision, which the Members agreed unanimously had removed the Risk of collision.

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

- Cause:
- i. The PA28 pilot did not integrate into the circuit pattern established by the C152.
  - ii. The non-standard Andrewsfield circuit pattern is not published in the UK AIP.
- Degree of Risk: C.
- Safety Recommendation: The Aerodrome Operator is recommended to review the Andrewsfield AIP entry.

## AIRPROX REPORT No 2010094

Date/Time: 10 Jul 2010 1105Z (Saturday)

Position: 5159N 00120W (9nm N  
Oxford - elev 270ft)

Airspace: Oxford AIAA (Class: G)

Reporting Ac Reported Ac

Type: FK50 PA28

Operator: CAT Civ Trg

Alt/FL: 1800ft 2000ft  
(QNH 1018mb) (QNH 1018mb)

Weather: VMC CLBC VMC CLBC

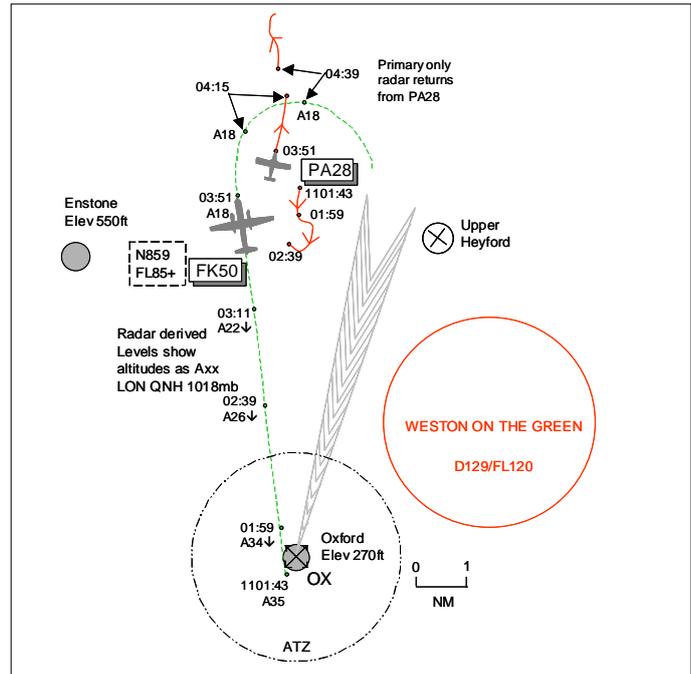
Visibility: 10km 10km

Reported Separation:

Nil V/<0.5nm H 500ft V/0.5nm H

Recorded Separation:

<0.5nm



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE FK50 PILOT** reports inbound to Oxford, IFR and in communication with Oxford Approach squawking an assigned code with Modes S and C. They were positioning for RW19, level at 1800ft QNH 1018mb at 150kt. Although they had been informed of several ac in the proximity of Oxford, they did not expect to see a PA28 a couple of hundred metres away (<0.5nm) on a conflicting course during their inbound turn towards the LLZ at the same altitude. They increased their AoB to tighten the turn towards the LLZ, later informing ATC of the incident after landing.

**THE PA28 PILOT** reports flying a trial lesson from Oxford, VFR and in receipt of a BS from Oxford Approach squawking 7000 with Mode C, he thought [no squawk seen on the radar recording]. The visibility was 10km flying 1000ft below cloud in VMC and the ac was coloured blue with nav lights switched on. He believed he was approximately 6.5nm bearing 340° from Oxford at the time at 2000ft QNH and 90kt when he thought he heard APP informing an FK50 flight of a PA28 [actually an AA5 overflight] to the NW of Oxford and that APP was referring to his ac. APP then asked him to "hold off" for the FK50, which he acknowledged and made his heading 360°. He became visual with the FK50 about 3-5km away and considered that he should continue until it turned inbound, which it did 500ft below and 0.5nm away behind his ac. He did not believe there was a chance of collision as both he and the FK50 crew were visual with each other – after landing he heard the FK50 crew state they had seen a PA28, which they were told to expect, he thought – and he believed he would have appeared on the FK50's TCAS. Also, owing to his speed, he did not believe that the FK50 would catch up. He assessed the risk as low.

**THE OXFORD APPROACH CONTROLLER** reports the FK50 was handed over from LACC descending to altitude 3500ft and was cleared to the OX and onto the NDB ILS approach for RW19 on reaching. The PA28 flight called in the Upper Heyford area (7nm N) for a VFR straight-in approach to RW19 and was told to hold N of Upper Heyford, he thought, due inbound IFR traffic having priority. The base turn for the RW19 ILS approach commences at 6.5nm, S of Upper Heyford. Without radar it was impossible to say when the FK50 commenced the turn or where the PA28 was holding off. The FK50 crew reported commencing the turn and was asked to report established on the LLZ, the crew then reported visual with the PA28. The FK50 completed the approach without further incident and the PA28 positioned behind.

**ATSI** reports that the Airprox occurred at 1104:32 in Class G airspace 9nm to the N of Oxford Airport and 3.9nm to the NW of Upper Heyford. Oxford ADC and Oxford APP were operating split positions, without the aid of surveillance equipment. The FK50 was inbound to Oxford from Jersey in receipt of a PS whilst the PA28 was operating on a local VFR detail from Oxford airport and in receipt of a BS. No METAR was available for Oxford; however, the Brize Norton weather was reported as: METAR EGVN 101050Z 23007KT 9999 FEW030 BKN042 BKN230 23/14 Q1018 BLU NOSIG=

The PA28 flight departed Oxford and at 1053:56 called Oxford Approach. A BS was agreed and the PA28 pilot was asked to call when changing frequency or when ready to rejoin. At 1059:16 the FK50 flight reported 8nm S of the 'OX' in the descent to 3500ft on QNH 1017mb, requesting an ILS approach for RW19. At 1059:48 APP advised, *"(FK50)c/s roger Weston on the Green danger area one two niner is active to flight level one three zero on reaching the Oscar X-ray route outbound for the ILS runway one nine to report beacon outbound"*; this was acknowledged by the FK50 crew. About 40sec later at 1100:45 an AA5 flight called APP overhead Enstone at 2800ft, routeing from Wellesbourne to Lydd via the Oxford O/H and requested a BS. A BS was agreed and APP passed TI on the FK50 routeing through the Oxford O/H going outbound at 3500ft descending to 1800ft for the ILS. The AA5 pilot acknowledged the TI and advised, *"The traffic's copied Basic Service and we're looking (AA5)c/s"*. APP then passed TI on the AA5, *"(FK50)c/s that traffic just called me an AA five Tiger overhead Enstone which is approx ten miles to the northwest of Oxford routeing towards the overhead two thousand eight hundred feet VFR"*. At 1101:47, the FK50 crew reported, *"Understood Sir and we're presently overhead er Oscar Xray and proceeding outbound er it's the (FK50)c/s"*. The FK50 crew was asked to report localiser established. Immediately after this at 1101:56 the PA28 pilot called APP, *"(PA28)c/s is Upper Heyford request straight in runway 19"*. APP replied *"(PA28)c/s negative er hold off at Upper Heyford er there's Fokker fifty traffic just outbound on the ILS you can come in behind him"*. The PA28 pilot responds, *"OK Wilco (PA28)c/s"*.

The main procedure for ILS RW19 requires an ac to proceed outbound on QDR 001 (Cat A & B), QDR 354 for (CAT C), descend altitude 1800ft, at 6.5nm commence a R turn to intercept the LLZ. Upper Heyford is positioned 6.6nm to the NNE of Oxford Airport and lies just to the E of the extended C/L for RW19.

[UKAB Note (1): The radar recording between 1101:43 and 1102:39 shows an intermittent primary contact, believed to be the PA28, manoeuvring 6-7nm N of Oxford airport and 3nm WNW of Upper Heyford, close to the instrument let down area. The primary only return fades after the sweep at 1102:39, when it is 3nm N of the FK50 and turning through a NW'ly heading.]

In response to a request from Approach the FK50 pilot reports at 1103:10, *"now passing two thousand two hundred feet er (FK50)c/s"*. APP then approved the transit of the AA5 via the Oxford O/H at 2800ft VFR on QNH 1017 and asked the AA5 pilot to report in the O/H. The radar recording shows a contact displaying a squawk of 7000, routeing from Enstone towards the Oxford O/H and passing 2.7nm SW of the FK50.

[UKAB Note (2): The PA28 reappears on radar at 1103:51 7.5nm N of Oxford tracking 010° in the FK50's 0130 position range 1.1nm, the FK50 level at 1800ft QNH 1018mb.]

At 1104:18 the FK50 crew reported, *"traffic in sight er (FK50)c/s"*. The Approach controller responds, *"(FK50)c/s roger I see you in the right turn report localiser established"*. It is probable that the traffic that the FK50 crew reports in sight is the PA28. Shortly afterwards, at 1104:29, the AA5 pilot reports O/H Oxford.

[UKAB Note (3): At 1104:15 the radar recording shows the FK50 in a R turn with the PA28 crossing through its 12 o'clock range 1nm tracking N; the PA28 then fades from radar. The PA28 reappears 24sec later at 1104:39 tracking N 0.8nm NW of the FK50, which is turning though an E'ly heading. The CPA is not captured but it is estimated to be <0.5nm]

At 1105:19 FK50 flight reports localiser established and is transferred to the Tower. Immediately after this at 1105:25 APP asked the PA28 flight, *"(PA28)c/s are you visual with the Fokker fifty"*

*inbound*” and the PA28 pilot replies, *“Affirm just descending behind him (PA28)c/s”*. APP then informs the pilot, *“(PA28)c/s roger er caution the vortex wake recommended spacing is four miles”*. The PA28 flight is advised to continue for a straight in approach RW19 and passed the QNH 1017. The PA28 is then transferred to the Tower at 1107:11 when the pilot reports the field in sight.

At 1117:33 the FK50 pilot contacted the Tower to report the occurrence, *“Er just to inform you that we are er we were during the turn inbound towards er to intercept the localiser err and a piper aircraft what it seemed to be a piper at about half a mile same altitude one thousand eight hundred feet”*. The ADC acknowledged the call, *“(FK50)c/s er roger I believe the approach controller was aware of that traffic and er if er you want to take it further then you’ll have to you you’re happy er give us a call in the tower.”*

The APP in his written report states that without radar it was impossible to say when the FK50 commenced the turn or where the PA28 was holding off.

CAP493 Manual of Air Traffic Services MATS Pt1 (01/07/10), Section 3, Chapter 1, page 5, paragraph 8, states:

‘A particular watch should be kept for situations where a VFR flight may approach the aerodrome in a sector in which other aircraft are letting down on an instrument approach aid, or where sequencing is in operation. D/F indications, where available, will assist in this respect. In these circumstances the pilot of the VFR flight should not be given clearance for a straight-in approach and should be advised to avoid the initial and final approach areas.’

The pilot of the PA28 was in receipt of a BS and reported at Upper Heyford, requesting a straight in approach. It appears that the position report from the pilot was incorrect. The PA28 pilot did not report, nor did the controller request level information from the PA28. For traffic in receipt of a PS, MATS Pt 1 requires that the controller shall provide TI, if it is considered that a confliction may exist, on ac being provided with a BS. Based on the position report from the PA28 at Upper Heyford, it is probable that APP considered the PA28 was not conflicting traffic and was holding E of the final approach and instrument let down. However, because the reported position of the PA28 was close to the final approach sector, albeit to the E, it would have been appropriate for the controller to have passed TI to the FK50.

The PA28 was in receipt of a BS and 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.’

The pilot of the FK50 was in receipt of a PS and MATS Pt1 (01/07/10), Section 1, Chapter 11, page 10, paragraph 6, states:

‘Procedural Service

6.1.1 A Procedural Service is an ATS where, in addition to the provisions of a Basic Service, the controller provides restrictions, instructions and approach clearances, which if complied with, shall achieve deconfliction minima against other aircraft participating in the Procedural Service. Neither traffic information nor deconfliction advice can be passed with respect to unknown traffic.

Traffic Information

6.5.1 The controller shall provide traffic information, if it is considered that a confliction may exist, on aircraft being provided with a Basic Service and those where traffic information has been passed by another ATS unit; however, there is no requirement for deconfliction advice to be passed, and the pilot is wholly responsible for collision avoidance. The controller may, subject to workload, also provide traffic information on other aircraft participating in the Procedural Service, in order to improve the pilot’s situational awareness.’

## **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.

Although the FK50 flight was carrying out an instrument approach under IFR and was receiving a PS, the incident occurred in Class G airspace where pilots are responsible for maintaining their own separation from other traffic through see and avoid. The FK50 crew were surprised when they saw the PA28 during their turn towards the LLZ particularly as no TI had been passed on the PA28 by APP. Moreover, the PA28's transponder was either unserviceable or not switched on so that the FK50 crew were not aware of the ac's presence from the FK50's TCAS equipment. Pilots are strongly encouraged to ensure that their transponders are working correctly and selected to transmit Mode C throughout their flight in accordance with national procedures. That said, it would not be unusual for there to be ac flying VFR in the area not working ATC who, in the procedural environment at Oxford, would be unaware of all of the traffic. It was unclear why Oxford APP did not pass TI for, although it appears that the PA28 pilot's position report at Upper Heyford was inaccurate, the proximity of the disused aerodrome to the FAT, where APP told the PA28 pilot to hold, was close enough for the passing of TI to be warranted. This RT exchange between the PA28 pilot and ATC was there to be heard by all flights on frequency and could have improved the FK50 crew's SA to the potential confliction if they had heard and assimilated it. One controller Member opined that the D/F equipment at Oxford should have indicated the PA28's bearing and indicated its position relative to the FAT; however, the serviceability of the equipment was unknown. The PA28 pilot was told about the FK50 and saw the airliner at some distance and elected to continue on a N'y track until the FK50 turned inbound towards the ILS behind his ac, about 0.5nm away. The FK50 crew saw the PA28 ahead and increased the AoB to tighten their turn watching it pass clear to their L by 0.5nm. In the Board's view, the PA28 pilot had fulfilled his responsibilities and this Airprox was the result of a sighting by the IFR FK50 crew of the VFR PA28 traffic, where the actions taken by both crews had removed any risk of collision during the encounter.

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

Cause: A sighting report.

Degree of Risk: C.

## **AIRPROX REPORT No 2010098**

Date/Time: 21 Jul 2010 1504Z

Position: 5449N 00040W (2nm  
W Whitby)

Airspace: UKDLFS/Lon FIR (Class: G)

Reporting Ac      Reported Ac

Type: Tucano                      R44

Operator: HQ AIR (TRG)      N/K

Alt/FL: 400ft                      NK  
(RPS 999mb)                      (N/K)

Weather: VMC CLBC              NK

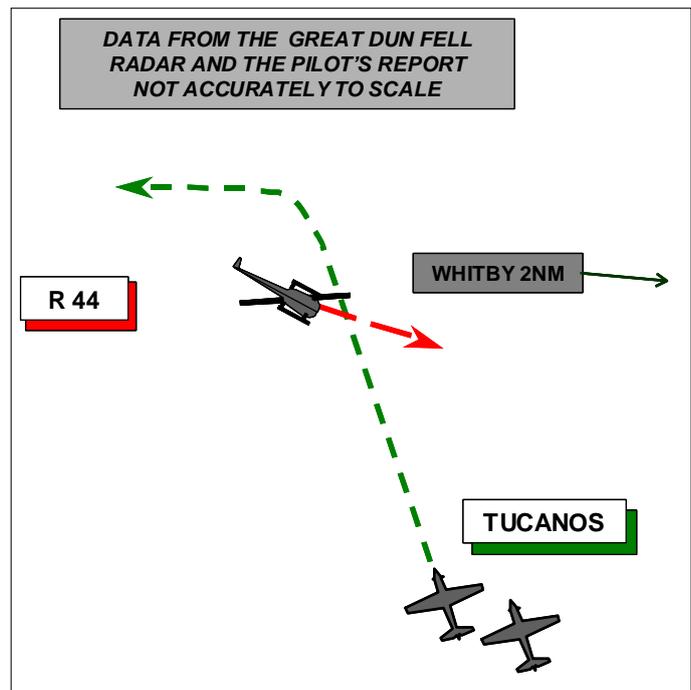
Visibility: 30km                      NK

Reported Separation:

100ft V/ 0 H                      NK

Recorded Separation:

NR



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

**THE TUCANO PILOT** reports he was flying as No2 of a pair of black ac, with an instructor in the rear seat, with all lights switched on, Squawking 7001 with Mode C on a basic training LL navigation exercise in LFA 11; TCAS 1 was fitted but they were not in receipt of an ATC service. At a turning point just to the W of Whitby their attention was drawn to a large flock of birds that were resting on the ground. While heading 350° at 240kt, just after seeing the birds he saw a helicopter ½nm away, tracking from left to right, at about 250ft agl but bunting aggressively to avoid their formation - the helicopter was dark blue with white lettering, the top of the rotor blades could be seen as the ac pitched nose down and the flight path of the helicopter was such that it disturbed the birds on the ground and passed directly underneath both the leader and the No2. At the time both formation members had climbed from a nominal 250ft agl to around 400ft agl since they were near a town and in a busy phase of flight approaching a turning point. The crew considered that this combined with the helicopter's bunt had prevented a collision with one or other of the ac.

UKAB Note (1): The radar recording shows the ac to be loose arrow formation with the leader on the left.

Neither crew received any TCAS information regarding the helicopter so it appeared to them that it had not been squawking with Mode C.

No avoiding action was possible and he assessed the risk as being high.

**THE R44 PIPELINE INSPECTION PILOT**, his secretary and his company were contacted on at least 7 occasions and although it was confirmed that he was flying the ac involved, he did not provide a report. It is understood that the helicopter was operating from a private farm strip 7nm N of Driffield [~20nm S of the incident position].

UKAB Note (2): The recording of the Great Dun Fell radar shows both Tucano ac throughout the period operating at low level indicating about FL013 (1000ft amsl – terrain variable up to 980ft amsl) in the vicinity of Whitby. The Helicopter does not paint as either a primary or a SSR contact at any time.

**THE TUCANO UNIT** comments that this appears to have been a close call. During a recent Flight Safety visit to the Station it was pointed out to HQ staff that probably the biggest airborne threat to Tucano operations is a mid-air-collision with a non-squawking GA aircraft or glider. TCAS is not a panacea and cannot replace effective lookout but the MoD should apply as much pressure as possible to make Squawking in all UK airspace mandatory.

**HQ AIR (TRG)** comments that it is disappointing the helicopter pilot has not responded to the UKAB request for comment. This was a close encounter in the UKDLFS but it seems that the Tucano formation pilots and helicopter pilot saw each other with sufficient time to take effective avoiding action. Of note, non-squawking ac do not show on TCAS therefore lookout continues to be the primary tool in 'see and avoid' airspace.

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

Information available included reports from the Tucano pilot, radar recordings and a report from the Tucano Station and operating authority.

Members were concerned that despite repeated requests and apparent concern about the incident, the R44 pilot did not provide a report. They were also concerned that he did not make use of the PINS process and was apparently not squawking, both of which would have made his presence known to the TCAS-equipped Tucano crews. It was emphasised that all operators should embrace the significant safety initiatives taken in the pipeline inspection industry consistently and proactively.

Specialist Members opined that the R44 is not well suited to pipeline inspections or the aggressive control inputs sometimes required for avoidance on such inspections.

Nevertheless the incident occurred in the Class G airspace where pilots share an equal responsibility to see and avoid other ac. Given only the report by the Tucano pilot, it seemed that the R44 pilot saw the Tucano late, but in time for an avoidance manoeuvre. Members also concluded that the sighting of the small helicopter at ½nm was later than optimum, but since no additional avoidance was required there had been no risk of collision.

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

Cause: A late sighting by the Tucano crews and a probable late sighting by the R44 pilot.

Degree of Risk: C.

## AIRPROX REPORT No 2010106

Date/Time: 28 Jun 2010 1539Z

Position: 5129N 00252W  
(3nm N CLEVEDON  
VRP)

Airspace: Lon FIR (Class: G)

Reporting Ac Reporting Ac

Type: MICROLIGHT PUMA

Operator: Civ Pte HQ JHC

Alt/FL: 1200ft 1000ft  
(QNH) (RPS)

Weather: VMC CBLC VMC CAVOK

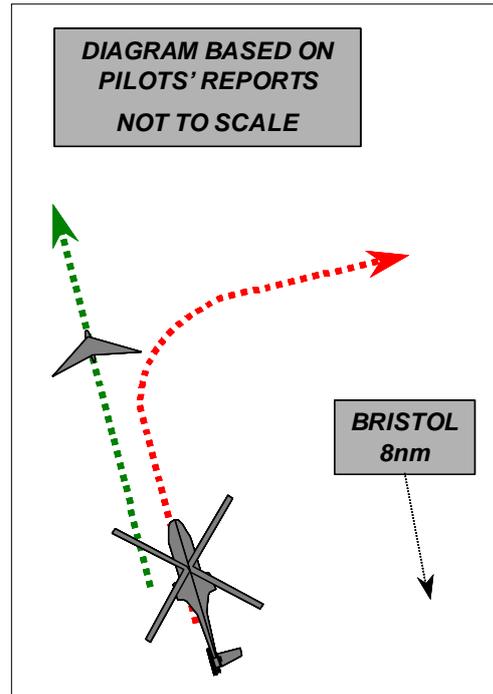
Visibility: 25nm 10km

Reported Separation:

0ft V/30m H 200ft V/200m H

Recorded Separation:

NR



### **HALF TRACK**

## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE MICROLIGHT PILOT** reports flying a flexwing microlight with no SSR fitted, on a private flight from Bodmin to Broadmeadow Farm Microlight Flying Club (near Hereford) at 50kt, in good VMC and listening out on the microlight frequency. While heading 359° to the W of Bristol, despite wearing a headset he heard a noise and, on looking behind his ac, he saw a green Puma helicopter about 30m away at the same height. The Puma pulled up in his 4 o'clock position, stayed there for a few sec and then dropped away to his right, as he turned left away from it. He reported the incident by letter to the BMAA and thence to the UKAB.

He assessed the risk as being low.

UKAB Note (1): The report was received almost 2 months after the incident. The reported time of the incident was 3hr 21min in error.

UKAB Note (2): The pilot provided a map of his route. The track was tangential to the Western edge of the Bristol CTR. The position of the Airprox was indicated as being over the Bristol Channel, 8nm NW of Bristol (the CTR is 5nm radius).

**THE PUMA PILOT** reports that he submitted this report following the submission of an Airprox by a microlight pilot. He was on a training flight in transit from Benson to Gloucester at 1000ft, some 10nm to the W of Bristol Lulsgate, heading 010° at 120 kt and in receipt of a BS from them. He was asked by the controller if he could identify a microlight ac that had just infringed Bristol's CTR and was departing the area to the W. The reported position of the microlight was in the vicinity of their planned track and so he agreed to assist.

After some 5min his crew spotted the microlight 300m away, vertically displaced by some 200ft [below i.e. 800ft agl] and horizontally displaced by about 200m to their R. He attempted to see the microlight's registration but it was plain-white in colour with no apparent markings or lighting and so he turned away to the right from the abeam position and reported the lack of markings to ATC.

He does not consider that there was any risk at any time.

UKAB Note (3): A photograph of the microlight shows it to be predominantly white in colour with the registration on the (flex) wing (only) in standard size black letters.

**ATSI** reported that the incident was reported to have occurred, 3nm N of Clevedon, a VRP situated 5nm NW of Bristol Airport at 1900 (UTC).

The [reporting] microlight pilot's report was received some time after the event and consequently, the RT recordings of the event were no longer available.

The Flexwing microlight was on a flight from Bodmin Airfield to Broadmeadow Farm Microlight Flying Club while the Puma helicopter was on a VFR flight from Weston Helicopter Museum, which is situated 8.8nm SW of Bristol Airport and was inbound to Gloucestershire Airport. The Bristol Radar Controller was asked to provide a report some time after the incident and believes that the incident might have occurred much earlier. The Bristol ADC observed a microlight passing 3nm W of the airfield, tracking N and reported the sighting to Radar. The Radar Controller observed that the traffic was within the Bristol CTR and was able to track the aircraft Northbound.

At 1732 (UTC) the Puma Helicopter departed VFR, from Weston Helicopter Museum. A BS was agreed and the Puma was allocated a squawk of 5056. The Puma tracked NE and because the microlight was believed to have infringed the Bristol CTR, the Radar Controller asked the Puma pilot to assist in identifying the microlight. The Radar controller relayed the position of the microlight and this resulted in the Puma pilot sighting a white microlight, with no visible registration marks.

At 1740:01 the Clee Hill radar replay shows the Puma, 9.3nm to the NNW of Bristol Airport, indicating a Mode C altitude of 900ft, in a right turn with an intermittent contact to its NW. The Radar Controller continued to track the microlight until it disappeared from radar cover, NNW of Newport [16nm NNW of Bristol] when she considered that no further tracing action could be achieved.

The Puma helicopter was VFR in receipt of a BS.

CAP493, Manual of Air Traffic Services Part 1 (11/03/10), 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.

The Bristol International METAR was:

EGGD 281720Z 26011KT 9999 FEW025 19/07 Q1022=

UKAB Note (4): The recording of the Clee Hill Radar shows an unidentified and very intermittent primary only contact pop up at 1731:55, 3.5nm NW of Bristol Airport (inside the CTR), then disappear. At 1733:54 a contact squawking 7000 at FL009, presumed to be the Puma, first appears just to the W of Weston tracking NE. It continues to track NE, below the Bristol TMA and the primary presumed to be the Microlight reappears 7nm NNW of Bristol for 2 sweeps; at 1738:08 the Puma turns left towards the Microlight's last seen position, but it does not reappear. At 1739:19 the Puma (FL011) turns right apparently breaking away to the E. Although the Microlight contact is very intermittent, there is little doubt that it was at least 1½ nm inside the Bristol CTR. (The W/NW/N boundary of the CTR is more or less coincident with the M5 motorway, which in turn is just over a mile to the E of the coast).

UKAB Note (5): Both the Controller and the Puma pilot were subject to respective regulations as follows:

Controller:

MATS Pt 1 Ch 2 Sect 1 17.1 and 17.2

### **17 Search Action**

17.1 The senior controller is to institute search action if the identity of an aircraft, which has been involved in an incident or has apparently infringed legislation, is not known.

17.2 Data is to be examined, other units consulted and every means used consistent with safety in an attempt to identify the aircraft. ATS surveillance systems should be used to track the aircraft until it has landed and the track and time correlated with movement at the appropriate aerodrome. If necessary, the aircraft's position indication may be transferred to another unit to enable tracking to be continued.

Puma Pilot:

JSP 550 R110.110, Formation Flying and R110.115 Flying in the Company of Civil Aircraft pertain. In these circumstances the Puma was not permitted to 'formate on' or 'fly in the company' of the Microlight.

Comment was requested from **HQ JHC** but was not forthcoming.

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

Information available included reports from the pilots of both ac, radar recordings, reports from the air traffic controller involved and a report from the appropriate ATC authority.

The HQ Air (Ops) Member informed the Board that there are several other relevant, but classified, regulations governing interception and shadowing of civil ac which ensure that, when tasked, such activities are conducted in a manner that ensures the safety of both civil and military ac. He also informed the meeting that helicopters are not permitted to conduct these tasks and that he could not be certain of the safety aspects as, to the best of his knowledge, no trials involving microlights have been conducted.

The GA Member stated that, in common with other small ac, flexwing microlights should always be avoided by a wide margin by larger ac.

There was little doubt that the Microlight had previously infringed the Bristol CTR but at the time of the incident was well outside it. It was not clear to Members whether the Controller had acted in accordance with the regulations in MATS Part 1. However, civil controller Members agreed unanimously that Bristol APR had been over-zealous in seeking the assistance of the Puma to identify the microlight after any potential danger had passed. In reacting to the controller's request, apparently in contravention of JSP 550 regulations, the Puma pilot had also acted unwisely and, although there was never any risk of the ac colliding, his chosen flightpath caused the microlight pilot concern.

Members noted that the Microlight pilot had reported the incident and the attempt to visually identify the infringing ac, although correctly marked, had not been successful; it followed therefore that the incident was unnecessary. In the view of the Board this incident would have been better investigated as an airspace infringement rather than an Airprox.

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

Cause: The Puma pilot flew close enough to the Microlight to cause its pilot concern.

Degree of Risk: C.