

ASSESSMENT SUMMARY SHEET FOR UKAB MEETING ON 15 Jun 2011

Total: 17	Risk A: 2	Risk B: 2	Risk C: 12	Risk D: 0	Risk E: 1
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<u>No</u>	<u>Reporting</u>	<u>Reported</u>	<u>Airspace</u>	<u>Cause</u>	<u>Risk</u>
2010169	EC135 (CIV)	Hughes 369E (CIV)	G	The Hughes 369 pilot did not comply with Rule 45 of the Rules of the Air and flew into conflict with the EC135.	C
2011008	ASK21 Glider (CIV)	PA28T (CIV)	G	The PA28 pilot flew close enough to a notified and active Glider Launching Site to cause concern.	C
2011011	Pegasus Quantum Micro-light (CIV)	AS355 (CIV)	G	The AS355 pilot flew through a notified and active Micro-light Site and into conflict with the Pegasus Quantum, which he did not see.	C
2011012	Grob Tutor TMk1 (MIL)	PA31 (CIV)	G	A conflict in Class G airspace resolved by the pilots of both aircraft.	C
2011013	Lynx Mk8 (MIL)	Hawk TMk1 (MIL)	G	A perceived conflict by the Lynx crew.	E
2011014	Lynx AH Mk7 (MIL)	Grob Tutor TMk1 (MIL)	G	Conflict in the Vale of York AIAA resolved by the Lynx crew.	C
2011017	Typhoon (MIL)	Grob Tutor TMk1 (MIL)	G	Sighting Report.	C
2011018	Alpha Jet (MIL)	Merlin (MIL)	G	The Merlin crew flew close enough to cause the Alpha Jet crew concern.	C

2011019	Merlin (MIL)	DA42 (CIV)	G	In the absence of TI, the Merlin crew was concerned by the proximity of the DA42.	C
2011020	Evektor EV97 Eurostar (CIV)	F15Ex2 (MIL)	G	The F15 crews flew close enough to cause the EV97 pilot concern.	C
2011022	BE24 (CIV)	DA40 (CIV)	G	Effectively, non-sightings by the pilots of both ac.	A
2011023	Merlin (MIL)	Untraced Glider (NK)	G	A conflict in Class G Airspace between the Merlin and an untraced glider.	B
2011028	Chinook (MIL)	Untraced Glider (NK)	G	A conflict on the instrument approach to Odiham.	C
2011029	Gazelle (MIL)	Grob Tutor TMk1 (MIL)	G	A non-sighting by the Tutor pilot and a late sighting by the Gazelle crew.	C
2011032	Evektor EV97 Eurostar (CIV)	Jurca Sirocco (CIV)	G	Effectively, non-sightings by the pilots of both ac.	A
2011034	Tornado GR4 (MIL)	Tucano (MIL)	G	A non-sighting by the Tucano crew and a late sighting by the Tornado crew.	C
2011035	PA38 (CIV)	Robin HR200 (CIV)	G	The Robin HR200 pilot joined for RW 26 when RW 08 was in use, and flew into conflict with the PA38.	B

- end -

AIRPROX REPORT No 2010169

Date/Time: 8 Nov 2010 1512Z

Position: 5231N 00214W (0.7nm
ESE Wolverhampton A/D
- elev 283ft)

Airspace: Wolverhampton ATZ (Class: G)

Reporting Ac Reported Ac

Type: EC135 H369E

Operator: Civ Comm Civ Pte

Alt/FL: 600ft 600ft
QFE (955mb) QNH

Weather: VMC VMC

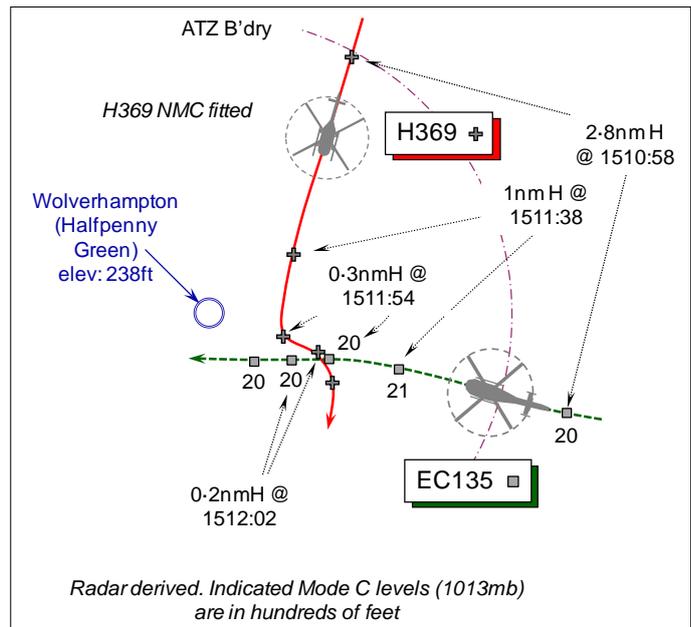
Visibility: 5km 5nm

Reported Separation:

Nil V/500m H 100ft V/1nm H

Recorded Separation:

0.2nm H (~370m)



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE EUROCOPTER EC135 HELICOPTER PILOT reports he was returning to base at Wolverhampton/Halfpenny Green from Cradley Heath (7nm SE of the aerodrome) VFR and in receipt of a BS from Halfpenny Green INFORMATION on 123.00MHz, he thought, but actually an A/G Service at the time of the Airprox. A squawk of A0032 was selected with Mode C; Mode S and TCAS I is fitted.

Advising Halfpenny Green RADIO that he was inbound from Merry Hill the A/G Operator replied with the runway in use – RW10 - and the QFE. Flying in VMC some 100ft below cloud with an in-flight visibility of 5000m, a contact was seen displayed on TCAS 6nm to the N but with no height information, which he informed his crew about. Once established on the RH downwind leg for RW10, at a range of 1.5nm DME, level at 600ft QFE (955mb) heading 270° at 100kt he called 'Downwind', to which the A/G Operator promptly replied 'no reported traffic'. As he read-back the message his LH seat observer pointed across to their 3 o'clock position and said, 'apart from that helicopter!' As he looked to his R he saw a black Hughes 500 type helicopter with a very distinctive 'T' type tail - the Hughes H369 - heading straight towards him which suddenly and abruptly made a turn to the L to pass behind him. He felt the best course of action was to maintain his height, heading and speed and let the H369 pilot take the avoiding action. Minimum horizontal separation was 500m at the same height and he assessed the Risk as 'high'.

After landing back at base, he contacted the FISO to discuss the incident whereupon it emerged the H369 pilot had not been in contact with Halfpenny Green. He then called Birmingham ATC who advised that they had a radar recording of the incident and that the H369 had indeed made a turn to the L before turning back on his original course soon afterwards at an approximate speed of 125kt. Details of the helicopter trace from Birmingham were then passed to Bristol Airport ATC who later advised that they had spoken to the H369 pilot during flight and confirmed the identity of the Hughes helicopter.

UKAB Note (1): The UK AIP at AD2 EGBO AD 2.17 notifies the Wolverhampton ATZ as a circle radius 2nm centred on RW16/34, extending from the surface to 2000ft above the aerodrome elevation of 283ft. The ATZ hours are coincident with the aerodrome Flight Information Service. An A/G Service - Halfpenny Green RADIO - may operate for short periods.

THE MCDONNELL DOUGLAS HUGHES 369E HELICOPTER (H369) PILOT reports that he had departed from a private helicopter landing site near Sutton-in-Ashfield Nottinghamshire, VFR, bound for a private site at Wellington Somerset. After tracking W to avoid the congested airspace around Birmingham whilst in communication with East Midlands ATC, he turned onto a southerly heading towards Gloucester/Bristol. Switching from East Midlands, squawking A7000 - NMC fitted - he called some aerodromes en-route that he thought were in range including Wolverhampton/Halfpenny Green from whom he received no response, but he continued to listen out on their frequency as he was being forced towards their ATZ by weather. Heading 180° at 120kt, flying in a level cruise at an altitude of 600ft QNH, both he and his passenger had seen the EC135 in their 10 o'clock about 2nm away, at approximately the same height before the other pilot called, he thought, 'finals', but because of the poor visibility he could not ascertain its direction of flight instantly. After indicating that it was on 'final' for the active runway, Wolverhampton/Halfpenny Green cleared the other pilot to land and reported no traffic in the area. At this point, he thought 3nm E abeam of Halfpenny Green, the route of the other helicopter became clear and he turned away from the aerodrome so as not to conflict with the traffic. He also made a radio call indicating that he was visual with the helicopter. He passed some distance behind the helicopter and continued en route; minimum separation was estimated at 100ft vertically, 1nm horizontally and the assessed Risk as 'none'.

He had been listening out on the Wolverhampton/Halfpenny Green frequency for about 5min before arriving in the vicinity of the aerodrome but this was the first communication he had heard from the other helicopter, or indeed any ac on the frequency.

ATSI reports that the Airprox occurred at 1512:02, in Class G airspace, 0.7nm ESE of Wolverhampton/Halfpenny Green, between a Eurocopter (EC135) and a Hughes 369E helicopter (H369). At the time of the Airprox Halfpenny Green was providing an A/G Service. The QFE was reported as 955mb.

The EC135, based at Wolverhampton, was returning VFR after the completion of a task at Cradley Hill, which lies to the E. The H369 was operating on a VFR flight from Sutton in Ashfield (Nottinghamshire) to Wellington (Somerset).

The Birmingham 1450Z METAR was:

10008KT 6000 -RA BKN007 BKN010 04/03 Q0965=

ATSI had access to radar recordings provided by NATS Swanwick and RTF recordings provided by Wolverhampton. The timing of the RTF recordings is estimated to have a timing error of approximately +1.5min, compared with the radar recording. A correction has been applied, with the incorrect time in brackets.

The EC135 reported inbound and at 1508:55 [1510:25], A/G passed the EC135 pilot information, "*(EC135)c/s Halfpenny Green RADIO Runway 1-0 QFE 9-5-5 millibars.*" This was acknowledged, "*1-0 9-5-5 and we're er just overhead er Merry Hill this time.*" At 1510:23 the radar recording shows both helicopters tracking toward the aerodrome. The EC135 is shown 3.9nm E of the aerodrome, displaying a squawk of A0032, with Mode C indicating FL20. The H369, is shown 3.3nm NNE of the aerodrome, displaying the conspicuity squawk A7000 without Mode C. At 1510:58 the radar recording shows the H369 entering the ATZ, 2nm NNE of the aerodrome and the EC135 approaching the ATZ from the E, with horizontal separation of 2.8nm. The RTF recording indicates that no RT call was received by A/G, prior to the H369 entering the ATZ. At 1511:54 the radar recording shows both helicopters on a converging course. The EC135 is 0.9nm ESE of the aerodrome and the H369 is shown in the EC135's half past 12 position at a range of 0.3nm, crossing from R to L. At about 1512:03 [1513:33], the EC135 pilot reports, "*Er (EC135)c/s is er downwind for 1-0*" and A/G replied, "*(EC135)c/s roger no other reported traffic.*" The EC135 pilot responded, "*No reported traffic (EC135)c/s*" and shortly afterwards, "*er apart from the er Hughes 5 hundred.*" At 1512:02, the radar recording shows the two helicopters in close proximity at a position 0.7nm ESE of

the aerodrome. The H369 is shown after turning L to pass 0.2nm behind the EC135, which is indicating FL20 (converts to a height of 434ft QFE (955mb) at 1mb equal to 27ft). A call is then received, *“we’re visual with the helicopter”* and this was believed by ATSI, to be from the H369 helicopter pilot. The A/G operator may have believed that this call was from the EC135 pilot. A/G responded to the EC135 pilot’s call, *“my apologies er (EC135)c/s.”*

The H369 pilot’s written report indicated that a call was made to A/G without a response and also that he reported listening out on the frequency 5min prior to arriving in the vicinity of the aerodrome, without hearing any other ac on frequency. The RTF exchange between A/G and the EC135 pilot, occurred 3min prior to the Airprox.

The H369 pilot’s written report also indicated that the EC135 helicopter had been sighted before the EC135 pilot reported on ‘final’. This is considered by CAA ATSI to be the ‘downwind’ call made by the EC135 pilot at 1512:03.

At 1515:30 [1517.00], another helicopter called A/G, requesting information on traffic 5nm S of the aerodrome. A/G responded and indicated that this may have been the H369 that had passed to the E of the aerodrome without calling.

Halfpenny Green RADIO provided an A/G Service and was not aware of the H369 until it passed very close to the aerodrome and was sighted by the EC135 pilot.

UKAB Note (2): The applicable UK AIP entry at ENR 1-4-10 dated 17 Dec 09, extant when the Airprox occurred, states that:

2.7.2.1

‘ ... An ATZ assumes the conditions associated with the Class of Airspace in which it is situated. As a minimum, when flying within an ATZ, the requirements of Rule 45 of the Rules of the Air Regulations 2007 must be complied with.

2.7.2.3

Pilots should be aware that in order to comply with the provisions of Rule 45 they must adopt the following procedures:

a. Before taking off or landing at an aerodrome within an ATZ or transiting through the associated airspace.....obtain information from the flight information service unit or air/ground radio station to enable the flight to be conducted with safety.

b. Radio equipped aircraft must maintain a continuous watch on the appropriate radio frequency and advise the.....flight information unit or air/ground radio station of their position and height on entering the zone and immediately prior to leaving it.

2.7.2.4

Failure to establish two-way radio communications with the.....flight information unit or air/ground radio station during their notified hours of operation must not be taken as an indication that the ATZ is inactive. In that event, except where the aircraft is in a state of emergency or is being operated in accordance with radio failure procedures, pilots should remain clear of the ATZ.’

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Although the H369 pilot reports that he encountered the EC135 some 3nm E of Wolverhampton aerodrome, the radar recording shows that the CPA occurred 0.7nm ESE with both ac well inside the Wolverhampton ATZ. The Board perceived that the H369 pilot had probably not persisted with his calls to Halfpenny Green RADIO to establish two-way RT contact because he believed that his track was further to the E and clear of the ATZ. Importantly, the RT transcript shows that the H369 pilot had not established two-way RT contact with either the Halfpenny Green FISO or the A/G Operator before 1510:58 when the H369 had entered the ATZ. The A/G operator was clearly unaware of the presence of the H369 at this point. The Board accepted that the A/G operator could only relay information to the EC135 pilot about other traffic that he was aware of and, without the RT call from the H369 pilot, the A/G operator would not have been expecting to see any other traffic crossing through the cct area. It was feasible that the Halfpenny Green RT receivers had not picked up the H369 pilot's call at range. Nevertheless, without a reply, pilots must not enter the ATZ and the H369 pilot should not have flown through it before he had obtained information about their traffic from Halfpenny Green RADIO to enable the flight to be conducted with safety.

The EC135's TCAS had reportedly shown traffic to the N, but without a height read-out from the H369 it did not provide the whole picture and the EC135 pilot was thus unaware of the developing conflict before his alert observer saw the H369 helicopter closing on them from their 3 o'clock. Members agreed that the EC135 pilot could do little else when he first spotted the H369 himself, as it turned to pass astern of his helicopter, so maintaining his course was the wisest option. Fortunately, the H369 pilot was aware of another ac in the area whilst listening out on the Halfpenny Green frequency and had seen the EC135 from a range of about 2nm he reports, probably just as he crossed the ATZ boundary. The Board concurred with ATSI's view that the subsequent call "*we're visual with the helicopter*" was from the H369 pilot after he had turned to pass astern, with 0.2nm separation the radar recording shows. Taking all these factors into consideration the Board concluded the Cause of this Airprox was that the Hughes 369 pilot did not comply with Rule 45 of the Rules of the Air and flew into conflict with the EC135. Nevertheless, the H369 pilot had seen the EC135 and had turned to pass clear behind it which, the Board agreed unanimously, had removed any Risk of a collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The H369 pilot did not comply with Rule 45 of the Rules of the Air and flew into conflict with the EC135.

Degree of Risk: C.

AIRPROX REPORT No 2011008

Date/Time: 29 Jan 2011 1204Z (Saturday)

Position: 5211N 00007W
(Gransden Lodge - elev
254ft)

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

Type: ASK21 Glider PA28RT

Operator: Civ Trg Civ Pte

Alt/FL: 800ft 1600ft
(QFE) (QNH)

Weather: VMC CLBC VMC CLBC

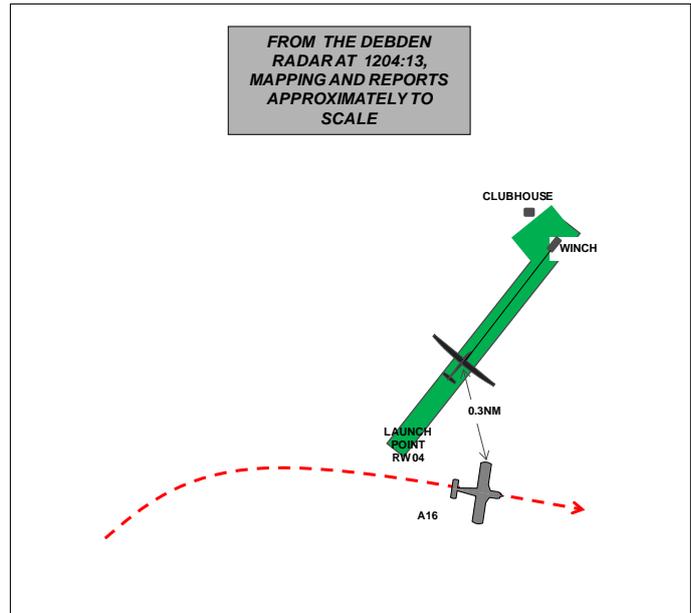
Visibility: >15km >7km

Reported Separation:

0ft V/250m H 500ft V/500m H

Recorded Separation:

Est 550ft V/0.3nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE SCHLEICHER ASK21 PILOT (K21) (the Deputy CFI) reports flying as HP on a training flight heading 040° at 70kt on a winch launch and in communication with Gransden Lodge Radio; FLARM was fitted and serviceable. He was informed after the flight by the Duty Instructor that he had been involved in Airprox but he did not see the other ac as it passed behind his glider; the other ac's engine was not heard due to increased noise during the winch launch. Although he did not see the ac, from other information he assessed the risk as being Medium.

THE WINCH DRIVER reported that he was conducting a winch-launch of a K21 glider on RW04 at Gransden Lodge. While the glider was in the main part of the climb passing about 800ft, he caught sight of a single-engine 'T' tail light ac crossing the RW in a SE'ly direction. From his line of view the ac appeared to be relatively close to the height of the glider, but it had passed over the glider before he had an opportunity to discontinue the launch. He continued with the launch but was sufficiently concerned to raise the issue with the launch marshal and discuss the incident; the launch marshal confirmed that he had also seen the light ac but thought that that its flightpath was taking it behind the launching glider.

THE ONCOMING DUTY INSTRUCTOR reported that he was about to start duty and at 1204 was watching a winch launch in progress on RW04, when a light single-engined ac overflew the RW, passing behind the launching glider from his point of view. It was below cloudbase, which he estimated to be about 1500ft, and was on SE'ly track. He called the winch driver and launch marshal on the ground radio and all agreed that the separation had been uncomfortably close. He guessed that the ac might have been talking to Cambridge TWR so he telephoned them within 15min, but they could not help identify it.

THE PA28T PILOT reports flying a white ac with a multi-coloured stripe on a VFR private flight, with a passenger, inbound to Cambridge. He was heading 095° at 130kt and 1600ft (QNH) in receipt of a BS from Cambridge APP, squawking with Modes C and S (elementary) but TCAS was not fitted.

The incident occurred on a cruise leg from DTY to a point SW of Cambridge where he had planned to pass to the S of Gransden. The conditions were generally overcast at about 1800ft with the reported visibility being 7000m and sub-zero temperatures and they were flying below the cloudbase. In a few local areas along that leg, the lower cloudbase forced them to descend briefly to about 1400ft in places; although he had an IMC rating he did not climb through the cloud due to the risk of icing.

He was aware of the gliding sites in the vicinity and was concentrating on lookout but in spite of this, the first sighting of the reporting (low-wing) white glider was in 10 o'clock position at about 500m range but below their level. The glider was in sight for about 5sec before passing out of sight below their port wing and it appeared to be flying straight and level after it was sighted.

He assessed that the glider would pass below and behind them and, since there was no further or developing risk, he assessed the risk of collision as being low.

ATSI reports that the Airprox occurred at 1204:06, in Class G airspace in the close vicinity of Gransden Lodge Gliding Site, situated 10nm SW of Cambridge Airport.

The PA28, was operating on a VFR flight from Bristol to Cambridge Airport and was in receipt of a BS from Cambridge APR. The glider was being winch launched from RW04 at Gransden Lodge Gliding site.

Cambridge APP was providing an Approach Procedural Control Service, without the aid of surveillance radar.

Gransden Lodge is shown on the Aeronautical Information Charts and is notified in the UK AIP as a Glider Launching Site, active from sunrise to sunset, with a vertical limit of 3000ft agl (altitude 3250ft). Cambridge MATS Part 2, Section 1, Page 29, paragraph 10.4 Gliding sites, states:

'Gliding takes place at Gransden Lodge 10nm SW of Cambridge. Gransden shall be considered always active although details are usually faxed to ATC when gliding events are scheduled.'

The ATSU indicated that Gransden Lodge normally notify Cambridge regarding any unusual activity or event. No additional gliding activity information was promulgated by AIS NOTAM.

The Cambridge METAR was:

EGSC 291150Z 02007KT 7000 OVC016 01/M03 Q1023=

At 1201:00, the PA28 called Cambridge APP reporting inbound from Bristol VFR, estimating at 1209, requesting joining instructions and information about parachuting in the area. APP advised the PA28, that the only known parachuting was at Chatteris, N of Cambridge, asked the pilot to report at a range of 5nm from Cambridge, and passed the QNH of 1023 and the RW as 05; this was acknowledged correctly. No information was passed regarding possible gliding activity at Gransden Lodge.

At 1201:00, the radar recording showed the PA28, 6.2nm to the SW of Gransden Lodge, squawking 7000, with Mode C showing an alt of 1700ft. Also shown was a possible glider contact, manoeuvring in the PA28's half past ten position at a range of 1.7nm.

At 1202:05, APP asked the PA28 pilot to confirm that a BS was required, together with a request for the aircraft alt; the pilot requested a TS and reported at an alt of 1600ft. APP agreed to provide either a BS or PS because the radar was not available so a BS was agreed at 1202:20. (It was noted that the UK AIP page AD-2EGSC-1-5 (16 Dec 10) promulgates the Radar hours of operation

as (winter) 0900 – 1800 and then by arrangement). The ATSU has indicated that radar services are provided to planned traffic on a tactical basis within the promulgated hours.

At 1204:02, the radar recording showed the PA28 tracking E, close to the S boundary of Gransden Lodge airfield. At 1204:13, the recording showed a primary contact appear 0.1nm NE of Gransden Lodge, consistent with a departure from RW04; at that point the PA28 was 0.4nm to the SE of Gransden Lodge with the 2 ac 0.3nm apart and diverging.

At 1207:00, the PA28 pilot reported 5nm from Cambridge airport and requested a straight in approach for RW05, which was approved and the ac was transferred to TWR.

The PA28 was in receipt of a BS from Cambridge APP; the Manual of Air Traffic Services, Part 1, 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.’

CAA ATSI recommends that Cambridge ATSU review the Cambridge UK AIP entry, regarding the promulgated arrangements for the provision of radar services.

UKAB Note (1): The London QNH (and Cambridge) was 1023mb and the PA28 was indicating level at A016 at the CPA; that being the case it was at about 1350ft agl. If the glider was at 800ft, as reported, the vertical separation would have been 550ft. From the viewpoints of both the winch driver and the Duty Instructor (both about 1nm to the N of the PA28) this would have appeared substantially less.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, radar recordings, reports from the winch driver and the Duty Instructor.

It was explained that, although this incident was not strictly in accordance with normal reporting procedures in that the glider pilot did not witness it, since there was sufficient other reliable information, somewhat unusually including a good radar recording, and apparently lessons to be identified, it was decided to allow the incident to be investigated as an Airprox. In these circumstances it was reiterated that the key is ‘sufficient reliable information’ and gliding clubs should submit as much as possible allowing the UKAB Secretariat to view it and select the most relevant for consideration by the Board.

The Board was informed that Gransden Lodge is a busy glider site in a congested area and, being predominantly grass, is difficult to acquire visually; further it is very close to Little Gransden, Bourne and numerous other light ac strips, further restricting routeing options.

It was also pointed out that gliding supervisory staff have restricted options and little time to react when spotting an unknown ac approaching their site at a relatively low height and while in the initial stages of a winch launch sequence; further, just after getting airborne gliders climb very quickly and, as evident in this incident, their pilots have a restricted field of view allowing them to react only to ac ahead of them and above the nose. Winch drivers too have a restricted field of view (albeit in the opposite direction) but have to concentrate largely on the launching glider to achieve a safe launch and maintain speed control.

Based mainly on the radar recording, it seemed to Members that the PA28 pilot, although reportedly aware of local airfields, attempted unwisely to ‘thread the needle’ between Little Gransden and

Gransden Lodge, bringing him into close proximity to both. In this case, the lowered cloudbase had restricted both the maximum glider launch height and, due to potential icing, the height that the PA28 could fly, resulting in the latter being at about the maximum winch launch height as he passed very close to the Southern boundary of the airfield; that, Members agreed unanimously, was too close for comfort. Although the precise geometry of the incident differed when viewed from different points and regrettably there was no report from the Launch Marshal who was by a significant margin closest to the PA28's track, it was accepted by Members that the PA28 had tracked along, or just outside, the airfield boundary at about 1600ft amsl as the glider was at about 800ft agl (1050ft amsl) resulting in about 550ft vertical and 0.3nm (500m) horizontal separation (as reported by the PA28 pilot and confirmed by the radar recording). Although Members agreed that the track selected by the PA28 pilot had been unwise, it was unanimously accepted that there had been no risk of collision as the PA28 pilot had seen the glider throughout.

The Board noted the ATSI comment regarding the provision of radar services by Cambridge, but did not consider it to have played a significant part in the incident.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The PA28 flew close enough to a notified and active Glider Launch Site to cause concern.

Degree of Risk: C.

AIRPROX REPORT No 2011011

Date/Time: 12 Feb 2011 1232Z (Saturday)

Position: 5541N 00406W
(Strathaven - elev 847ft)

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

Type: Pegasus Quantum AS355
Microlight

Operator: Civ Trg Civ Comm

Alt/FL: 1000ft 1800ft
(QFE) (QNH NR)

Weather: VMC CLBC VMC

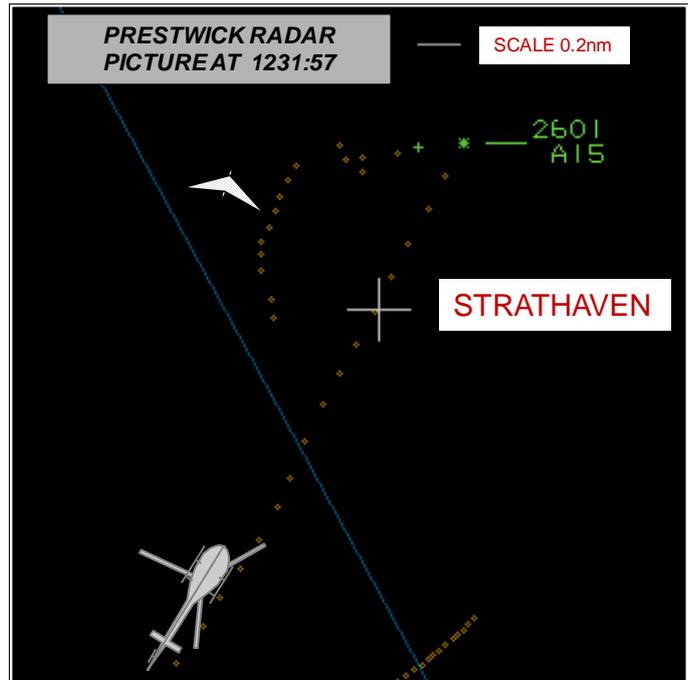
Visibility: 30nm 10km

Reported Separation:

200ft V/150m H NR

Recorded Separation:

Est 200ft (See ATSI report) V /0.2nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE PEGASUS QUANTUM MICROLIGHT PILOT reports flying an instructional flight from Strathaven unlicensed airfield in a flexwing microlight, listening out on Safety Common. They were heading 090° at 50kt and 1000ft agl in the mid downwind position for RW27 (RH cct) and carrying out downwind checks, when a maroon helicopter appeared in his 3 o'clock about 200ft lower so he kept helicopter visual and continued to extend the downwind leg. The helicopter passed ahead through his 12 o'clock from R to L, about 200ft below. He assessed the risk as being medium and reported the incident to Glasgow ATC after landing and also to the helicopter airfield.

THE OPERATOR commented that ac, particularly helicopters, fly through the cct at least once a month. The airfield is 847ft amsl, just outside the Glasgow CTR, and they feel they are vulnerable to ac following Glasgow's standard instruction to remain clear of CAS not above 2000ft on the Glasgow QNH. Their circuit is at 1000ft agl which equates to 1847ft on the Glasgow QNH.

They are a busy microlight school with 3 instructors training on two three-axis and two weight-shift microlights. Not being licensed, they have no ATZ and so their chart symbol is just a small circle. This may become a problem at other airfields since light ac training is now permitted from unlicensed strips.

He spoke to the helicopter pilot who told him he that he would notify all company pilots of the location through his chief pilot.

THE AS355 TWIN SQUIRREL PILOT reports flying a burgundy coloured helicopter with all lights on, squawking as directed with Mode C in receipt of a BS from Glasgow APR while inbound to Cumbernauld under VFR. He was informed by TWR on landing that he had been involved in an Airprox but did not see any other ac in the position notified. At the time he had been heading 020° at 100kt and flying at an alt of about 1800ft.

THE Glasgow APR Controller provided a report but all aspects are covered in the ATSI report below.

ATSI reports that an Airprox in Class G airspace between a Pegasus Quantum Microlight (M'light) and an AS355 was reported by the M'light pilot in the vicinity of Strathaven at a height of 1000ft agl.

The M'light was operating in the vicinity of the grass strips at Strathaven from where it had departed, was maintaining a listening watch on 'Safetycom', but was not in receipt of an ATS. The AS355 had departed from a private site near Penrith and was in receipt of a BS from Glasgow APR while operating under VFR inbound to Cumbernauld 16nm ENE of Glasgow Airport. Glasgow ATC was unaware of the Airprox at the time and filed a unit report with ATSI in retrospect, when they were notified of the incident. ATSI had access to the pilots' reports, the RT and radar recordings.

The Glasgow METAR was:

EGPF 121220Z 08004KT 9000 FEW007 BKN014 OVC019 06/05 Q1007=

The UK AIP ENR 1-1-5-9 states:

'Those Microlight Flying Sites where flying is known to take place are listed at ENR 5.5 and are regarded as aerodromes. Sites are listed primarily as hazards to other airspace users...'; Strathaven is notified as a Microlight site (ENR 5.5) and is annotated on CAA VFR Charts both 1:500,000 and 1:250,000. The circuit height is not promulgated in the AIP or on the VFR charts.

The AIS VFR Route Brief from Carlisle to Cumbernauld, (12 Feb 11 1030-1430Z, VFR FL000 to FL050) did not notify Strathaven activity. NOTAMs are published in accordance with ICAO standards, are intended to cover information of a temporary nature/short term duration and can include information concerning the presence of hazards to air navigation.

At 1228:50 Glasgow APP established contact with the AS355 and instructed it to squawk 2601. At 1229:30 the ac was identified and a BS was agreed, "*c/s you are identified about one seven miles south south east of Glasgow it's a Basic Service report if you wish to climb above altitude two thousand feet V F R the Q N H one zero zero seven*"; the pilot read this back correctly. At the time the ac was tracking in a NE'ly direction, at an alt of 1600ft VFR, about 5nm SW of Strathaven.

Under a BS controllers will provide information useful for the safe and efficient conduct of flight. This may include general airspace activity information but the avoidance of traffic is solely the responsibility of pilots. Glasgow ATC reported that the unit's radar does not always show activity at Strathaven, which is 16.4nm to their SE and has an elevation of 847ft. Strathaven is 2.3nm outside the SE corner of the Glasgow CTR (Class D airspace, surface to altitude 6000ft). The preferred radar source for Glasgow APR is their Watchman primary and Glasgow SSR but Kincardine and Lowther Hill are also available when required; it is not known which source the controller was using at the time of the incident.

There is no requirement for Strathaven to inform Glasgow ATC when they are active and it is standard practice that Glasgow does not provide information on Strathaven activity.

The base of CAS above Strathaven is 4500ft amsl (Scottish TMA Class D), while just N, and for the remainder of the route to Cumbernauld, the base is 2500ft (Glasgow CTA Class E).

The M'light reported operating in the cct at Strathaven which has two unlicensed grass strips: 05/23 and 09/27; the direction of cct is to the north. The M'light pilot reported being mid-downwind RW27 at the time of the incident and that the circuit height at Strathaven is 1000ft agl.

At 1230:16 the radar recording (Prestwick Multi Radar Tracking) shows a primary only contact appear 0.9nm SW of Strathaven and the AS355 2.1nm SW of it. By 1231:16 the primary contact had passed W abeam Strathaven by about 0.4nm and the AS355 was 1nm S of it at 1300ft alt. The AS355 passed overhead Strathaven at an alt of 1500ft at 1231:37 and the primary contact had turned onto an E'ly track approximately 0.7nm N of Strathaven. At 1231:57, the AS355, on a NE'ly

track, passed through the primary contact's 12 o'clock at a range of 0.2nm, from right to left, at an alt of 1500ft. The M'light pilot reported that the AS355 passed 200ft below him but the AS355 pilot was unaware of the presence of the M'Light. The primary contact observed on the Prestwick MRT was such that its characteristics indicated it to be the reporting M'light i.e. the track flown and the position of the AS355 relative to the primary contact. Since the cct alt at Strathaven is 1847ft alt and the AS355 flew overhead at an alt of 1500ft (recorded) this substantiates the M'Light pilot's report that the AS355 flew about 200ft below.

Both ac were flying in uncontrolled airspace where responsibility for collision avoidance lies with the pilots. Glasgow APR had no information to suggest there was any activity at Strathaven, was not required to provide such information and the radar equipment at Glasgow is not reliable in detecting activity in that area.

The Glasgow weather was reported as overcast at 1900ft, which might have prevented the AS355 from climbing to a higher alt; in addition it was about to route underneath the Glasgow CTA, just N of Strathaven. Further, Glasgow APR had also requested that the AS355 report an alt of above 2000ft was required.

The location of Strathaven is such that any VFR traffic routeing to Cumbernauld, outside CAS from S of the Glasgow CTR, will pass close to the site. The AS355 flew over the Microlight site, which is notified in the UK AIP and annotated on CAA VFR charts; however, it is not known by what means the AS355 pilot was navigating. Pre-flight briefing information would not have notified the pilot of any activity at Strathaven.

The AIRPROX occurred when the AS355 flew overhead Strathaven, below the cct height.

The encounter happened due to several factors:

The Cloud-base precluded the AS355 (VFR) from climbing higher.

The location of Strathaven in relation to the Glasgow CTR and Glasgow CTA means that traffic routeing around and beneath controlled airspace respectively will likely pass close to Strathaven.

Whilst Strathaven is notified in the UK AIP as a microlight site (and depicted on standard navigational maps), there is no notification of the circuit height used at the aerodrome.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Members were briefed in detail on the location of Strathaven and the specifics of the site and surrounding controlled airspace; it was also noted that it is a grass airfield that is difficult to acquire visually. A controller Member familiar with the area also informed Members that despite the new Kincardine radar and the excellent coverage on the Prestwick composite recording shown above, due to the terrain and an extensive local windfarm, radar coverage at Glasgow can be poor in the locality. He also informed the Board that although there is a LoA between Strathaven and Glasgow ATC regarding gliding activity, as far as he is aware no such equivalent is in place regarding microlight operations; in any case since Strathaven is published in the AIP he thought that an ATC warning to VFR traffic that the airfield is active was probably not warranted.

The Board agreed that the helicopter pilot had probably not been aware of the existence of Strathaven, as it was most unlikely that a professional pilot would have overflown it deliberately. Members observed that there are differing standards of commercially available paper and electronic VFR charts; it is not known whether Strathaven is marked on any charts other than those produced

by the NATS on behalf of the CAA on which it is clearly marked. The DAP Advisor informed the Board that they are soon transferring to an electronic AIP which should ensure commonality among chart producers.

Notwithstanding the aspects above, it was clear that the AS355 pilot had overflowed Strathaven and flown through the downwind leg of the cct at cct height, albeit both unbeknown to him. The Board noted that the pilot had undertaken to disseminate information regarding Strathaven activity to his company thus reducing the likelihood of a recurrence.

Although the helicopter pilot did not see the microlight, its pilot saw the former throughout and this Members agreed had prevented any risk of a collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The AS355 pilot flew through a notified and active Microlight Site and into conflict with the Pegasus Quantum, which he did not see.

Degree of Risk: C.

radar service of any kind. Moreover, he was concerned that in accordance with the Rules of the Air, having maintained his course and altitude to allow the Grob pilot to manoeuvre around his PA31, the Grob pilot then took no avoidance to remain clear.

His ac is coloured white and grey and the HISLs were on.

He would recommend all ac operating within range of a LARS unit to operate at least one radio on that frequency. Also, even in VFR conditions, it would be preferable to have a radar service to provide a higher degree of safety and give pilots and controllers better information.

THE COTTESMORE LARS CONTROLLER (ZONE) reports that the weather was good - CAVOK - and traffic had been light, mainly Tutors from Wyton and several transits under a BS. The PA31 pilot free-called after he had departed East Midlands for a transit to Norwich. The pilot called ZONE about 12nm W of Cottesmore, heading E at 5000ft (999mb). After identification, the flight was placed under a TS, with a reduced service due to poor radar performance. The pilot then asked to climb to an altitude of 5500ft BARNSELY RPS (991mb) routeing direct to Norwich. Whilst outside the old MATZ boundaries, TI was called to the PA31 pilot about a Tutor ac displaying an 'agreed airspace' squawk, that was in the radar overhead and which appeared to be carrying out GH at a similar level. As the PA31 approached the radar overhead a further reduction to the service was issued in accordance with SOPs. The controller gave the PA31 pilot an update as the ac closed to a range of about 3nm and he monitored their profile. Additionally, he briefed the PA31 pilot that the Tutor might possibly be performing aerobatics in this area, which he knew from his own local knowledge is often the case. Both ac were now close in the radar overhead and he was unable to give further updates. However, at this stage the PA31 pilot requested an update which he was unable to provide as the Tutor was now displayed only as an SSR contact and the position would have been inaccurate. The PA31 pilot acknowledged that transmission and may have taken avoiding action on the Tutor. Later, the Tutor pilot called the unit on another frequency and declared the Airprox; the PA31 pilot was informed about the Airprox report on RT when he was about 12nm E of Cottesmore, before the ac was handed over to Marham LARS.

UKAB Note (1): Cottesmore aerodrome is open, and hence the MATZ instituted, on very limited occasions when advised by NOTAM or Supplement.

HQ 1GP BM SM reports that this Airprox occurred in the Cottesmore overhead, between a Tutor operating VFR and the PA31 routeing to Norwich, in receipt of a TS from Cottesmore ZONE.

At 1034:30 the PA31 was identified at 5000ft and placed under a TS that was reduced due to poor radar performance. This was immediately followed by ZONE providing accurate TI to the PA31 about the Tutor, which was acknowledged and a climb to 5500ft requested. At 1035:06, ZONE updated the TI on the Tutor to the PA31 pilot stating, "*traffic 12 o'clock, 3 miles (radar replay shows 4.5nm lateral separation), crossing left to right, southbound, indicating 4 hundred feet below*" adding, "*that traffic Tutor possible aerobatics.*" Neither of these transmissions were acknowledged by the PA31; however, the pilot states in his report that they were updated about the ac on their left. At 1035:23, ZONE updated the TI on the Tutor again to the PA31 crew stating that the Tutor was displayed "*...secondary only now 12 o'clock 3 miles manoeuvring.*" This was followed shortly after by ZONE stating a further reduction in the TS from, "*ahead as you approach (the) radar overhead.*"

The PA31 pilot's written report states that they 'saw the (Tutor) at approx 1-2nm...we maintained course and heading as we had right of way being on the right of them, watching the other aircraft I deemed it not to be taking avoiding action...so took avoiding action to descend and turn right.' At 1036:20, the PA31 pilot began to request a further update to the TI, but then reported visual with the Tutor. At this point the Tutor was E of the PA31, with both ac indicating 6000ft Mode C and 0.7nm lateral separation evident. The CPA occurred shortly after 1036:26, as the Tutor QFI executed a R turn to pass to port of the PA31, the Tutor indicating 6100ft and the PA31 6000ft.

[UKAB Note (2): The ac passed port-to-port, in between sweeps, with vertical separation of 100ft Mode C evident before and after the 'merge', the Grob Tutor passing above the PA31.]

The ZONE controller mentioned in his report the lack of primary surveillance radar (PSR) data due to the location of the ac in the Cottesmore overhead and the possibility that the position report derived from SSR would have been inaccurate. Although the update rate of the SSR is lower than that of the PSR, it is unlikely to have been an issue in this occurrence, especially given the relatively low altitude.

ZONE provided accurate and timely TI that enabled the PA31 pilot to visually acquire the Tutor in what the PA31 pilot considered enough time to monitor and assess the situation prior to taking avoiding action.

HQ AIR (TRG) comments that the Tutor pilot was operating in Class G airspace without an ATS. The sortie being flown involved intensive in-cockpit communication, in which case orders permit operation on a common quiet frequency. The crews of both ac were able to detect and avoid each other but estimates of the margin by which this was achieved vary. The Tutor pilot's assessment of height difference accords closely with the Mode C readouts, allowing for some inherent errors. The PA31 pilot's height assessment, coupled with his report that the Tutor passed behind him, suggests that he may have lost sight of the Tutor in the latter stages and may not have seen his avoiding action.

The Rules of the Air in such a scenario, where one pilot may not be visual with the other, are of limited use. Indeed, if the pilot with right of way does not see any avoidance action being taken by the other ac, or at least a wing waggle to acknowledge their presence, it would still be prudent to take action, as the PA31 pilot did in this case. Furthermore, the situation was close to being a 'head-on' in which case both pilots are obliged to avoid, to the right if possible, as both did in this case. Pilots operating under a TS should also be prepared to take pre-emptive avoiding action on identified conflicting traffic before an Airprox situation develops.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

It was apparent that the PA31 crew had wisely obtained a TS from ZONE to supplement their lookout, but it was not apparent why they were flying at an altitude of 5500ft RPS when it might have been preferable to transit, VFR, at the recommended quadrantal flight level. The Board recognised that the Controller had provided the PA31 crew with accurate TI, which was updated to reflect that the Grob was drawing R into their 12 o'clock. The controller also used his experience to advise that the Tutor could be manoeuvring hard and without warning – "...possible aerobatics". This flow of information ensured that the PA31 crew obtained visual contact on the Grob Tutor about 1-2nm away in their 10-11 o'clock and slightly above them the PA31 pilot reports. The Board commended the controller for his good service and sound judgement that had contributed significantly to the PA31 crew's SA. A controller Member familiar with Cottesmore advised that their SSR is sourced from Cranwell and whilst the Airprox did occur close to the Cottesmore ASR 'overhead', at these altitudes the SSR should have been displayed fully to the controller, whereas primary data from their ASR would be more limited at the centre of his display and a good reason for not operating in their overhead.

When the PA31 crew first saw the Grob, the PA31 pilot had stressed that it seemed to him that the relative geometry required the pilot of the other ac to give way in accordance with the Rules of the Air. Subsequently, however, it was apparent from the radar recording that the Grob Tutor had turned onto a more nearly head-on aspect as the two ac closed on one another. Members noted the PA31 crew 'stood-on' in anticipation of the Grob crew turning away or climbing to remain clear of his ac, but when it became apparent that they were not doing so, the PA31 pilot elected to turn R and descend away from the Grob. Plainly 'the Rules' can only work if pilots have spotted the other ac in good time

to react appropriately and at that stage the PA31 was unseen by the Grob crew. The radar recording reflected a slight turn away to starboard by the PA31, but the ac's Mode C did not indicate the reported descent. Pilot Members opined that, while it is a matter of judgement at the time, it would have been better if the PA31 crew had made a more positive alteration at an earlier stage, thereby allowing a greater margin and preventing the two ac from flying into close quarters. The Board was briefed that a supplementary telephone discussion between the PA31 P-I-C and UKAB Staff had elicited that it was the co-pilot that was watching the Grob. However, this might have been difficult 'cross-cockpit' from the RH seat and he might have lost sight of the Grob at a critical moment as the recorded radar data shows it was certainly not 800ft above them when they passed port-to-port and just 100ft above.

Without the benefit of any ATS to assist their lookout, the Grob crew was not aware of the PA31 until it was spotted by the QFI during their R turn through W, prior to spinning. Some Members perceived that this was a late sighting by the Grob crew as the PA31 should have been visible to them beforehand, inside the turn, when they turned R WSW'ly. However, in a further discussion between the Grob Tutor pilot and UKAB Staff it was revealed that the PA31, which is coloured white and grey but had the strobes 'on', had been very difficult to spot against the cloudscape. As it was the Grob QFI took control and broke R at the same time as he saw the PA31 also turning to the R. Both pilots followed 'the Rules' in this respect, and the Board concluded that the Grob crew might have seen the PA31 as early as they could in the conditions that pertained, leading the Members to agree unanimously that this Airprox had been the result of a conflict in Class G airspace resolved by the pilots of both ac.

Controller Members suggested that if it did not inhibit the execution of the instructional sortie, it would have been beneficial if the Tutor crew had called Cottesmore ZONE whilst operating in their aerodrome overhead. Furthermore, in advance of the forthcoming TAS embodiment to the Grob Tutor fleet, a TS could have given them early warning of the approach the PA31. Nevertheless, both pilots saw each other's ac in time and the action taken was effective. Whilst the subsequent separation was certainly less than ideal, the crew of the faster twin had sighted the Tutor and could have taken more robust action in the vertical plane if need be to manoeuvre further away from the slower Tutor. Therefore, in the Board's view, both pilots' actions had averted any Risk of a collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G airspace resolved by the pilots of both aircraft.

Degree of Risk: C.

AIRPROX REPORT No 2011013

Date/Time: 9 Feb 2011 1113Z

Position: 5101N 00238W
(Yeovilton RW09 - elev 75ft)

Airspace: MATZ/ATZ (Class: G)

Reporting Ac Reported Ac

Type: Lynx Mk8 Hawk T Mk1

Operator: HQ Navy HQ Navy

Alt/FL: 10ft 100ft↓
QFE (1003mb) QFE (1003mb)

Weather: VMC NR VMC CLOC

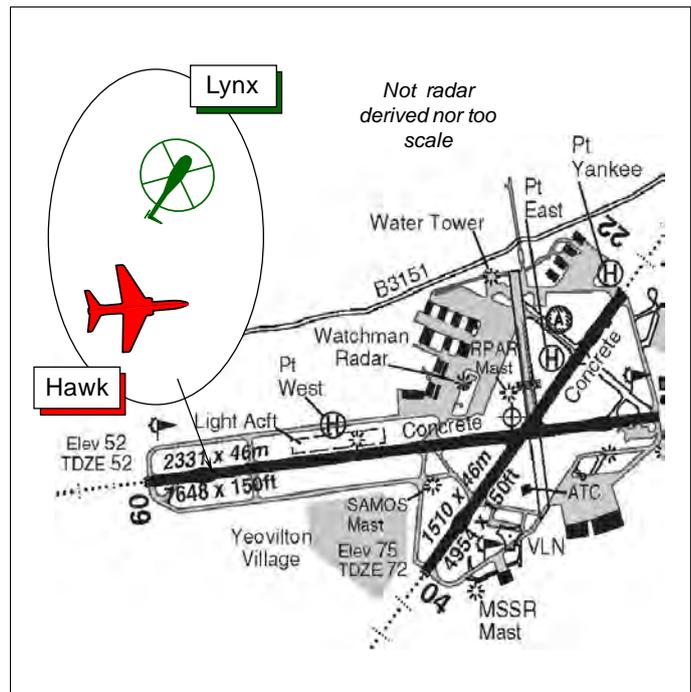
Visibility: 10km 15km

Reported Separation:

>50m Nil V/30m H

Recorded Separation:

Not recorded



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE AGUSTA WESTLAND LYNX Mk8 HELICOPTER PILOT reports he was returning to Yeovilton from Culdrose and had completed a PAR to RW09 at Yeovilton in VMC. At DH he was transferred from TALKDOWN to the TOWER frequency, the clearance to land was reiterated with the instruction to continue along RW09 to exit at RW04 for Yankee dispersal. After reading back these instructions, TOWER then requested him to vacate RW09, to the L across the grass, because of a Hawk turning Final to Land. He repeated back TOWER's instructions and turned L at 15kt hoversaxing towards the northern parallel taxiway at a height of 10ft QFE (1003mb), about 200m beyond the threshold of RW09. During the L turn his observer, occupying the LH Seat, informed him the Hawk was directly over the RW09 threshold. He expeditiously vacated the runway as the Hawk landed and passed >50m astern from L – R with a 'medium' Risk of a collision. He reported the Airprox to the Duty Air Traffic Control Officer (DATCO) by telephone after landing.

His helicopter has a grey colour-scheme; the landing lamp (directed forward) and the red anti-collision light situated on the tail were switched on.

THE BAe HAWK T Mk1 PILOT reports he was the Captain and PF at the completion of a local training sortie from Yeovilton.

Whilst flying in the visual cct to RW09 he became aware of a Lynx helicopter flying a PAR to the runway in use. As he flew downwind he saw the Lynx from a range of 3nm approaching the runway threshold. His 'Final gear down' call resulted in a 'continue' from TOWER. Whilst descending wings level at about 150ft QFE, the Lynx crew called 'vacated' on the RT and he was given clearance to land by TOWER whilst he was still above 100ft QFE. The Lynx helicopter was well clear of the runway to the Northside 'on the deck' and he landed normally heading 090° at 120kt. At no point was there a Risk of collision. He estimated the minimum horizontal separation as 30m as he passed astern of the helicopter.

His ac has a black colour-scheme; the 2 HISLs and the nose light were on. The assigned squawk was selected with Mode C; neither TCAS nor Mode S are fitted.

THE REAR SEAT HAWK PASSENGER (a Harrier QWI) reports he saw the Lynx on short finals to RW09 as the Hawk Captain flew downwind. The Hawk Captain configured the ac for landing and commenced the finals turn for RW09. As the Hawk Captain rolled out on the RW heading, the Lynx was vacating the runway. With a height of 100ft indicated on the Hawk's altimeter the Lynx had vacated the runway and Yeovil ATC issued the Hawk Captain clearance to Land. Their Hawk touched down and decelerated as the Lynx remained hovering clear of RW09, over the grass to the N of the RW. The Lynx was clearly visible throughout their final approach and landing; at no time was there a Risk of collision.

THE HAWK PILOT'S UNIT commented that having debriefed the Hawk Captain at length they were content that no risk of collision existed & there was no breach of local orders. However there was a perception from the Lynx crew that this could have been the case and they were, therefore, right to highlight their concerns.

THE YEOVILTON ATC LOCAL EXAMINING OFFICER (LEO) reports that the Weather State Colour Code (CC) was WHITE and the Forecast CC WHITE [Vis >5km; Cloud SCT > 1500ft QFE].

On this occasion there was a trainee in the ADC position (TOWER) and also a trainee on DIRECTOR, so 2 controllers were afforded higher levels of traffic and more challenging controlling. There were 2 Hawk ac in the visual cct to RW09 and the Lynx was conducting a PAR to the duty runway – RW09. The subject Hawk pilot called Downwind and was advised using standard ATC liaison and RT phraseology that the Lynx on PAR was ahead for the runway. At 1111:49, the Lynx crew called TOWER from TALKDOWN and were told to vacate L along RW04/22 for Y dispersal, which by 1112:04 had been read-back. At 1112:07 the Hawk pilot called Final, whereupon the Lynx crew was asked at 1112:09 by TOWER if they could vacate the runway onto the grass for the Hawk behind. The Lynx crew agreed, read-back the instruction by 1112:16; the Hawk pilot was told to Continue. At 1112:36, Hawk pilot was given a clearance for the runway and immediately after the read-back by the Hawk pilot, the Lynx crew was instructed to continue with GROUND.

The trainee TOWER controller and his instructor report that they both visually confirmed that the Lynx was clear of the landing area, prior to issuing the clearance to the Hawk pilot. The Lynx crew did not report runway vacated on the RT; however, immediately after the Hawk pilot was given his clearance to land, the Lynx was transferred to GROUND for his air taxi to dispersal.

Clearances to use landing areas are not given by controllers until after a visual check of the landing area has been conducted, regardless of whether an ac has called runway vacated or not, as this call is only ever used as a back up to a visual observation by the controller from the VCR. The DATCO also had full SA and was also content that the Lynx had vacated the landing area.

JSP550 at R307.125.6 states that:

‘..aircraft shall move clear of the landing area as soon as it is safe to do so.’

Yeovilton Aviation Orders (YAvOs) at 0213.6 states that a FW pilot will initiate his own ‘go around’ by 100ft if he is not in receipt of a clearance from ATC. Thus we can deduce that when the clearance was issued by TOWER at 1103:53, the Hawk should have been higher than 100ft. Additionally, JSP 552 at 310.160 requires that the Runway Caravan Controller fire a red very cartridge (refusing an ac permission to land) if he believes that there is a definite risk of collision or if the path of the oncoming ac is obstructed. No red very cartridge was fired, therefore the caravan controller also deemed there to be no risk of collision or obstruction on the runway.

Although given a positive clearance by ATC, one must assume that the Hawk pilot would not have chosen to continue his approach if the Lynx was still on the runway and a Risk of collision existed.

The Lynx pilot's ASIMS report states that his helicopter was taxiing. An aircraft taxiing from the runway is defined by ICAO as:

'upon exiting the landing runway and terminates upon arrival at the gate, ramp, apron, or parking area, when the aircraft ceases to move under its own power.'

By this definition, if the Lynx was indeed taxiing as stated, then he had exited the landing runway and consequently the landing area was fit for use by the Hawk.

There was no breach of YAVOs and no breach of ATC procedures. The Hawk had been given a positive clearance to use the landing RW surface, which it seems the Lynx captain had not heard. The Hawk pilot was visual with the Lynx at all times, as he was No2 to the Lynx landing ahead. Additionally the Lynx crew was told on their landing clearance that there were 2 Hawks in the cct, so would have been aware that they were entering a busy traffic environment.

THE DEPUTY SENIOR AIR TRAFFIC CONTROL OFFICER YEOVILTON comments that he was a witness to the event in the VCR and therefore tasked another Local Examining Officer to investigate the Airprox. He fully supported the actions of the ATC personnel on watch at the time, who acted in accordance with YAVOs and the relevant regulations.

HQ NAVY COMMAND comments that the thorough investigation indicates that in this instance there was no Risk of collision and that no breach of regulations occurred. The Lynx captain reported that the Hawk was directly over the threshold whilst the Lynx was still occupying the runway; however, it would appear that the Hawk was in line with the runway, on a 'continue' from ATC and still above 100ft awaiting the runway to be vacated by the Lynx. ATC issued the Hawk with a clearance to land after they had visually assessed the runway to be clear. All parties were fully aware of the other aircraft's position and intentions in the minutes preceding the reported incident, with the Hawk pilot positioning his ac to take account of the Lynx ahead. The perception of the Lynx Captain was that they had been the subject of a Flight Safety occurrence, and are therefore fully supported in their decision to submit a report.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, a recording of the relevant RT frequency and reports from the appropriate ATC Unit and operating authority.

The Board agreed that if the Lynx Captain was at all concerned at the proximity of another ac in flight then he was not only duty bound to initiate an Airprox report, but was wise to do so. From the Lynx crew's perspective, they had complied promptly with TOWER's request to vacate RW09RHC onto the grass in order to expedite matters, but were concerned that they were still in close proximity to the runway when the Hawk, which they thought too close, was given a clearance to land. The Board noted that the estimate of the minimum horizontal separation given by the Lynx crew at 50m was more than the Hawk pilot's reported 30m. However, the Lynx crew would have lost sight of the Hawk as it passed from the observer's field of view to port, behind the tail and into the pilot's view to starboard as it landed. Conversely, the Hawk pilot had the helicopter in full view throughout. Moreover, the ATC Unit report from the LEO assured the Board that TOWER, who had full view of the runway surface, had checked that the Lynx was clear of RW09RHC before the Hawk pilot was given his clearance to Land. It was evident that the Hawk pilot was also content that the Lynx was clear of the runway when he received this landing clearance for the HQ Air pilot Member was in no doubt that the Hawk pilot would have executed a 'go-around' and not attempted to land if the helicopter had not been a safe distance from the runway surface he was about to land on. The Board also noted that the runway caravan controller appeared to have been content that the runway was clear because he did not intervene to send the Hawk around. However, the Board's discussion then centred on the parameters for a helicopter to be sufficiently clear of the runway to allow the jet to land with complete safety. The Board was briefed that civilian practice requires that an ac must have passed the holding/marshalling point for the RW in use for an ac to be considered to have vacated the RW. However, a helicopter's ability to hover taxi across an aerodrome unconstrained by fixed taxiways made this point somewhat open to interpretation. There was no equivalent military

regulation that applied in this instance, a point noted by the MAA Advisor, which required aerodrome controllers to use their judgement to exercise safe control over traffic within the manoeuvring area. This aerodrome is a well established mixed traffic environment with ATC well versed in accommodating fixed and rotary wing traffic. It was plain to the Members that both the Lynx crew and the Hawk pilot were complying with the instructions issued by TOWER, who were endeavouring to exercise expeditious but safe and orderly control over aerodrome traffic. Whilst it was not feasible to determine independently the geometry or the minimum separation that applied here, it seemed that the Lynx crew's report was based on their reasonably held belief that the Hawk was closer on final than it might have actually been. But it seemed to the Members that the Lynx crew's perspective, looking virtually straight-up the approach, had probably given a misleading perception of the Hawk's distance from touchdown when the clearance was issued. The Board was content that ATC had established that the Lynx was clear of RW09RHC when the Hawk pilot's landing clearance was issued. Therefore, the Members were unanimous in their agreement that this Airprox had resulted because of a perceived conflict by the Lynx crew. Moreover, the Board also concluded that established procedures had been followed, normal safety standards had been applied and had not been compromised in any way.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A perceived conflict by the Lynx crew.

Degree of Risk: E.

AIRPROX REPORT No 2011014

Date/Time: 24 Feb 2011 1100Z

Position: 5413N 00143W (8nm SW by W of Leeming - elev 132ft)

Airspace: Vale of York AIAA (Class: G)

Reporting Ac Reported Ac

Type: Lynx AH Mk7 Grob Tutor TMk1

Operator: HQ JHC HQ Air (Trg)

Alt/FL: 2200ft 2000ft
RPS (1014mb) RPS (1013mb)

Weather: VMC Sleet VMC CLBL

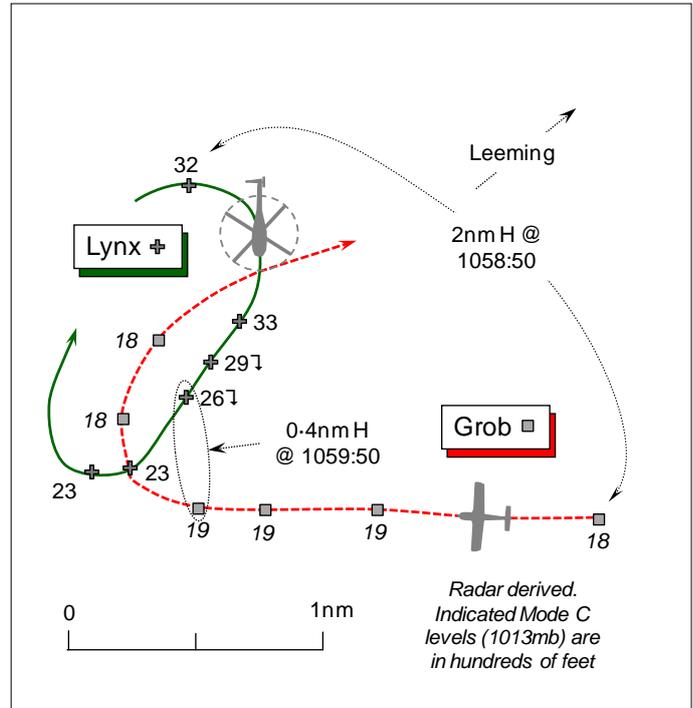
Visibility: 20km 10km

Reported Separation:

500ft V/Nil H 400-500ft V/100m

Recorded Separation:

~500ft V



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE WESTLAND LYNX AH Mk 7 PILOT, a maintenance test pilot, reports he was the ac commander and PNF occupying the LH seat whilst conducting a dual airtest; the ac's crew consisted of just the 2 pilots. The workload in the cockpit was fairly high during the airtest as the PNF monitors instruments/limitations, whilst the PF concentrates on accurate speeds, NR control and rates of application of power. The airtest, involving a series of autorotations, was carried out in VMC whilst in receipt of a BS from Leeming ZONE on 127.750MHz about 2nm SW of Masham, which is situated 1nm SW of the Leeming MATZ boundary. A squawk of A0401 was selected with Mode C; enhanced Mode S is fitted but TCAS is not.

The same area had been used for the preceding 10min of the air test and, after carrying out the HASEL checks, the Lynx crew entered autorotation from 3000ft RPS (1014mb), heading SW at 80kt, intending to commence recovery from the autorotation at an altitude of 2000ft. Whilst looking out passing about 2200ft, he spotted a small white fixed-wing ac on the port side about 200m and 500ft below their helicopter that flew directly beneath them with less than 500ft clearance. Upon sighting the other ac – the Grob Tutor flying straight and level - the PF was instructed to overshoot from the autorotation and a climb was initiated to avoid the Tutor, which passed directly beneath his Lynx and then appeared on the starboard side, maintaining its heading he thought. Minimum vertical separation was less than 500ft and the Risk assessed as 'high'; an Airprox was reported to Leeming ZONE on the RT.

His helicopter has a grey and green camouflage scheme but the HISLs were on and the navlights on 'bright'.

THE GROB TUTOR T Mk1 PILOT reports that he was flying an Air Experience Flight (AEF) sortie, VFR, under a TS from Leeming APPROACH (APP) when traffic was reported to him whilst performing aerobatics. About 2min later, after completing the aerobatic manoeuvres, a visual recovery to Leeming was initiated with a gentle descent at 130kt, turning R onto a NE'y heading in VMC, some 2000ft above cloud in between layers. About 1nm S of Masham, passing 030° in the R turn, descending through 4000ft RPS (1013mb) he thought, a camouflaged Lynx helicopter was seen heading W about 200m ahead and above his aeroplane crossing from R – L in level flight. He

passed about 400-500ft under the Lynx and about 100m slightly in front of it. No avoiding action was considered necessary and he assessed the Risk as 'low'.

A squawk of A4322 was selected with Modes C and S on. His aeroplane has a white colour-scheme and the HISL was on.

THE LEEMING ZONE CONTROLLER (ZONE) reports he was mentor to a trainee controller and they 'plugged-in' at about 1030 for a very quiet session, operating SSR only, because the Watchman ASR was unserviceable. The Aerodrome Availability/Weather State Colour Code was BLU.

Shortly after commencing the session, they received 2 pre-notes from Dishforth; one relating to a VFR transit to Carlisle and the subject Lynx departing for an airtest; both flights were issued the standard squawk of A0401 for a BS. The subject Lynx climbed out for the airtest, was placed under a BS and issued the BARNSELY RPS (1014mb), whereupon the crew informed them they would be operating up to 3000ft. The next call was when the Lynx pilot reported an Airprox, stating that a white ac had passed underneath them, possibly a Tutor. At the time no relevant contacts were showing on radar, although subsequently a squawk assigned to Leeming APP was observed about 2nm E and 2000ft below the Lynx tracking towards the aerodrome. The Lynx crew was informed about this ac, now well to the E and 2000ft below the helicopter, and advised that ATC was operating SSR only. The Lynx crew estimated that the reported ac had passed well within 500ft whilst they were at 3000ft RPS (1014 mb).

The Lynx crew then broadcast they were carrying out a series of autorotations and asked to be advised of any ac which came within 2-3nm of them. ZONE asked the Lynx crew if they wished to upgrade their ATS from the extant BS, but they declined, "as it would get a bit cluttered up on that". The Lynx crew retained their BS on 127.750MHz before initiating a VFR recovery back to Dishforth.

The Supervisor was advised of the Airprox and they were relieved from the ZONE position shortly afterwards. A phone call to the Lynx pilot at Dishforth ascertained he was happy with the ATS provided, was not apportioning blame, but would refer to his QHTI with a view to submitting an Airprox report. He estimated the minimum vertical separation was 500ft.

THE LEEMING APPROACH CONTROLLER (APP) reports that the Grob Tutor departed VFR to the SW, was identified and placed under a reduced TS as Leeming was operating with SSR only. Shortly afterwards TI was provided on traffic 5nm S tracking NW 1000ft below believed to be the Lynx. This TI was updated as the Tutor flew closer to the helicopter - at 3nm SW tracking SW manoeuvring 2000ft below and climbing - with another update on the Lynx when it was NW 2nm indicating 3300ft (1013mb).

THE LEEMING ATC SUPERVISOR (SUP) reports the unit was operating under a light workload with 2 flights on frequency. The only controllers providing an ATS were operating in the APP and ZONE positions, which were both manned by controllers under training screened by members of the Unit Standards Team. Although the Lynx pilot stated over the RT that he wished to file an Airprox, after landing he spoke with the pilot on the telephone who admitted that he did not inform ZONE that he would be conducting autorotation manoeuvres. It was explained that this information would have been of value to the ZONE controller when he was placed under a BS. Moreover, although operating SSR only, if the Lynx pilot had requested a TS, ZONE may have been able to pass TI on the Tutor before it became a potential hazard. He advised the Lynx pilot that he had also spoken to the Tutor pilot who admitted that he had been passed TI about the Lynx, with which he was visual and took his own separation by flying underneath. The Lynx pilot then advised that he would speak to his Duty Instructor. It was late afternoon when the Lynx pilot rang to inform him that he would be filing an Airprox.

HQ 1GP BM SM reports that this Airprox occurred 8nm SW of Leeming between a Tutor on an AEF sortie conducting aerobatics in receipt of a TS from Leeming APP, and a Lynx on an air-test from Dishforth operating VFR in receipt of a BS from Leeming ZONE.

Leeming were operating SSR only at the time of the occurrence, with both APP and ZONE manned by trainees and under a light workload.

The Lynx pilot reports that as part of the airtest there was a high cockpit workload with the PNF 'heads-in' monitoring instruments and limitations, while the PF was concentrating on maintaining accurate speeds, NR control and rates of power application. Moreover, the Lynx unit RQHI reports that these factors in addition to the restricted view from the Lynx cockpit, contributed to the Lynx crew's difficulty in visually acquiring the Tutor.

At 1048:01, the Lynx was identified by ZONE and placed under a BS, which was acknowledged "...Basic Service 1-0-1-4 and we'll be operating up to 3 thousand feet on that". The Tutor was identified by APP shortly afterward and placed under a TS, reduced as Leeming were operating SSR only.

At 1048:48, [10min before the Airprox occurred] APP passed TI on the Lynx to the Tutor pilot stating, "traffic south, 5 miles, tracking north-west, 1000ft below, believed to be a Lynx." This was updated at 1051:36 as, "traffic south-west, 3 miles, tracking south-west, 2000ft below climbing." This was updated again at 1058:57 stating, "traffic north-west, 2 miles, indicating 3300ft one-zero-one-three." The radar replay indicates 1.6nm lateral separation, with the Lynx in a R turn indicating 3300ft Mode C (1013mb) and the Tutor tracking W'ly indicating 1800ft Mode C (1013mb).

At 1059:18 the Lynx rolled out of the right-turn to track south-west, at which point 0.9nm lateral separation exists. At 1059:33 the Lynx has commenced a 2000ft/min descent, with 0.6nm lateral separation extant. At 1059:48 the Tutor appears to have made a relatively rapid manoeuvre to the NW, reducing the lateral separation between it and the Lynx to 0.2nm, with the Lynx now descending through 2400ft.

The ZONE controller states in their report that "at the time (of the Airprox) no relevant contacts were showing on radar, although subsequently a Leeming APP squawk was seen approximately 2 miles east of the Lynx", which was after the CPA. This is substantiated by ZONE's comments at 1100:08 in reply to the Lynx's Airprox report stating, "we did lose SSR on that aircraft, it's just popped up now (on the radar replay the Tutor is 0.6nm NE of the Lynx)." However, given that APP was able to update TI to the Tutor at 1058:57, when 1.6nm separation existed, it is clear that the SSR label was visible at this point.

The Tutor pilot reports that their first sighting of the Lynx occurs at the point where around 200m lateral separation existed with the helicopter above, with the Lynx pilot reporting the same first sighting distance. Given that the Tutor pilot assessed minimum separation as 100m and 4-500ft, it is likely that the pilots became visual with each other immediately prior to the CPA.

[UKAB Note (2): The Grob Tutor passed beneath the Lynx, in between sweeps, moments after 1059:50, with 700ft separation evident on Mode C before the 'merge' and 500ft afterwards as the Grob turns away to the NE.]

In terms of ATSOCAS provision to the Tutor, APP provided timely and accurate TI to the Tutor that should have enabled the pilot to visually acquire the Lynx and to take appropriate action. In this case, the Tutor pilot seems to have spotted the Lynx relatively late, at approximately the same point as the Lynx PNF spotted the Tutor and commanded the overshoot.

At the last confirmed point that the Tutor's SSR label was visible to ZONE and APP, given the relative altitudes of the aircraft, there was nothing to suggest to ZONE that a definite risk of collision existed between the Lynx and Tutor. Therefore, in keeping with the terms of a BS there was no requirement for them to pass a warning to the Lynx pilot on the Tutor.

Throughout the incident sequence the Tutor appears to have maintained its altitude, albeit that for a short period it indicates 1900ft. However, the Lynx began a descent which brought it into conflict

with the Tutor at the point when only 0.6nm lateral separation existed. It is likely, given the Lynx pilot's statement over cockpit workload and the RQHI's report on reduced visibility from the cockpit, that these factors precluded the Lynx crew from visually acquiring the Tutor prior to commencing their descent.

In this instance, the ATM related safety barriers worked appropriately in that the pilot in receipt of the TS received timely and accurate TI to allow them to visually acquire the conflicting ac. However, the Tutor pilot was unable to sight the Lynx until relatively late. That said, the Tutor pilot felt that no avoiding action was required having spotted the Lynx, which was at or about the point when the Lynx PNF sighted the Tutor.

THE WESTLAND LYNX Mk 7 PILOT'S UNIT comments that the restricted view from the Lynx cockpit coupled with the requirement for the LHS ac commander to have his 'eyes-in' in order to record the details of the airtest, coupled with the difficulty in visually identifying another aircraft when looking down from above resulted in this Airprox. Action has been taken at local level requiring a rear-seat crew to be carried on all airtests in order to assist with lookout.

HQ JHC comments that the avoiding action taken by the Lynx crew was effective but it is clear that this potential conflict could have been prevented if each pilot had spotted the other ac earlier. It would appear that the Tutor pilot would have been forced to take action if the Lynx crew had not spotted him first, however the Tutor had in fact seen the Lynx and decided that there was no conflict. In hindsight, the most sensible course of action would have been for the Lynx pilot to upgrade the air traffic service, knowing that he was particularly busy in the cockpit, despite the potential for a more cluttered frequency – he could subsequently decide to downgrade the service if necessary. The action of the Lynx pilot's unit requiring an extra rear-crewmember to be carried on all airtests to assist with lookout is commended. It is also recommended that the unit pilots are reminded that requesting an upgrade in traffic service is usually a sensible precaution during periods of high cockpit workload.

HQ AIR (TRG) comments that the Tutor was operating under a TS in compliance with 22 (Trg) Gp Orders. It is unfortunate that the pilot chose to operate quite so close to the Lynx's reported position but it is not known what his airspace or weather considerations were. In mitigation, the TI received would have indicated that the Lynx was tracking N or NE and he may have reasonably assumed that his WSW track would keep him clear. As it was, in the minute preceding the CPA, there was no TI as the Lynx turned into conflict. HQ Air agrees that the sighting probably occurred just before CPA, probably as the Tutor pilot commenced a turn to the right, with the Lynx approaching from above just forward of the wing. The ongoing fleet embodiment of a Traffic Alerting System to the Tutor should reduce the likelihood of a recurrence.

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.

The HQ AAC pilot Member briefed the Board that a Lynx airtest is a very intensive sortie, especially during autorotation manoeuvres, demanding the fullest concentration of the pilots who must be very careful indeed not to overspeed the rotor. Consequently, the Lynx pilots' attention here would have been closely focussed within the cockpit during the 'auto', in line with the reporting pilot's account, with a potentially adverse impact on lookout. It was plain that the Lynx pilots had not spotted the Grob Tutor as they turned about at the northern extremity of their racetrack, and were unaware of its presence below them, just over 0.6nm away when they initiated the descent the radar recording revealed. Furthermore, the Lynx crew had not mentioned to the controller that they would be conducting autorotation manoeuvres on the RT, merely *"..operating up to 3000 feet.."*. The AAC pilot Member suggested that a call to ATC on the landline beforehand to brief the Supervisor and explain in more detail the sortie content might have been advantageous. Moreover, he concurred

with the Command's view that a TS would have been beneficial to supplement the Lynx crew's lookout and assist them with their responsibilities to 'see and avoid' other traffic. Under the BS they had requested there was no compunction on ZONE to track the helicopter or provide any form of TI unless they had asked for an upgrade to their ATS. Controller members agreed that a TS would have given the Lynx crew much better SA; if the additional RT transmissions associated with a TS were a distraction, the Lynx crew could have opted for this service for the limited duration of their auto rotation manoeuvres. It was disappointing that the crew had not given ZONE more insight into what they were doing. As it was, the Lynx P-I-C eventually spotted the Grob below him during the 'auto', in time to ensure that robust avoiding action could be initiated by the PF and vertical separation maintained as their tracks crossed.

Conversely, the Grob pilot had obtained a TS from APP and had been given TI three times about the Lynx, the last transmission advising that was it 2nm away to the NW and over 1000ft above him. Whilst APP would not have known the Lynx was about to descend, this TI was ultimately misleading. It lacked the important detail of the helicopter's course; moreover, the Lynx subsequently turned R about into conflict. Understandably, the Grob pilot might not have been at all concerned by another ac flying 1000ft clear above, but the TI gave no indication whatsoever of the helicopter's projected flightpath and did not 'paint the whole picture'. Members were adamant that updated TI was warranted when the Lynx headed toward the Tutor and the geometry of the situation changed so significantly. Whilst the radar recording did not replicate exactly what was displayed to the Leeming controllers at the time, it seemed that both ac were in solid radar coverage and had both been displayed to APP only 1min before the CPA when the last transmission of TI was given. Indeed, if either ac had faded from coverage that should have been of concern to APP and might have presaged a warning. A civilian controller Member was also concerned that the two controllers, operating in close proximity from the same ACR and both with trainees, were not liaising more closely about their traffic. The two positions were working only one flight each when the Airprox occurred and the Member perceived that a more proactive stance by the controllers involved might have averted this Airprox.

The Grob Tutor pilot was evidently not concerned when he saw the Lynx crossing ahead, as by that time the Lynx crew had already levelled off clear above him. No avoiding action was therefore warranted on his part. The Board concluded, therefore, that this Airprox had resulted from a conflict in the Vale of York AIAA, resolved by the Lynx crew. While debating the inherent Risk one Member opined that the dynamic nature of the encounter, coupled with the late sighting, followed by the robust avoiding action taken by the Lynx crew as they overshot from the autorotation had compromised the safety of these two ac. However, the overwhelming view of the Members was that the Lynx crew's prompt action on sighting the Tutor had ensured that over 500ft of vertical separation was preserved after they had established level flight, which the Board concluded had effectively removed the Risk of a collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Conflict in the Vale of York AIAA resolved by the Lynx crew.

Degree of Risk: C

AIRPROX REPORT No 2011017

Date/Time: 8 Mar 2011 1636Z

Position: 5246N 00013E (15nm
NW of Marham)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: Typhoon Grob Tutor TMk1

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

Alt/FL: 6000ft 5000ft
RPS (1007mb) RPS (1007mb)

Weather: VMC CLAH VMC CLAH

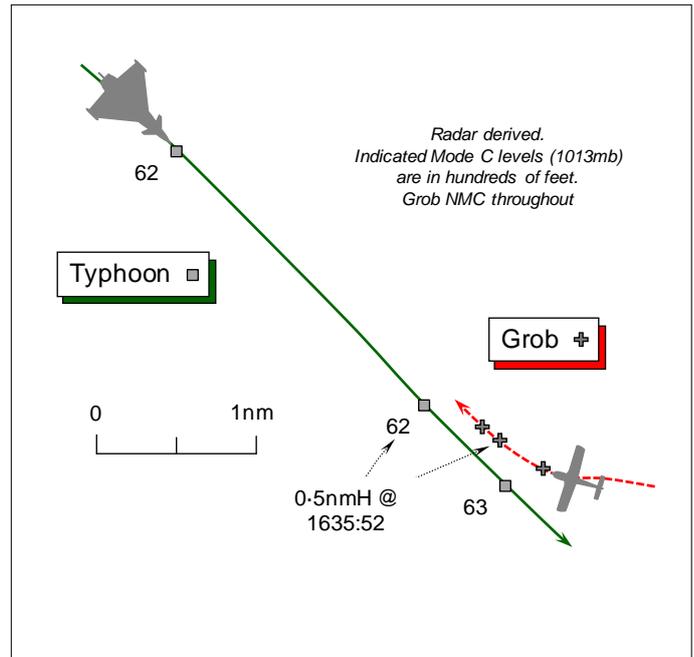
Visibility: 5km 20km

Reported Separation:

500-1000ftV/200m 500ft V/1000yd H

Recorded Separation:

0.2nm H [~370m]



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE EUROFIGHTER TYPHOON PILOT reports that he had departed on a VFR training flight from Coningsby to Marham for a Practice Diversion (PD) and was receiving a TS from Coningsby APP. The assigned squawk of A1771 was selected with Mode C; neither TCAS nor Mode S is fitted.

After levelling at 6000ft BARNSELY RPS (1007mb) some 500ft above haze in VMC, steady heading 140° at 400kt, a contact was called at 12 o'clock - 10nm. Unable to gain radar contact on the reported traffic he requested an update from ATC who responded the other ac was '12 o'clock - 3nm, no height information'. Believing it would be safer to check his sensor and look out rather than turning belly-up to an ac closing at high speed from ahead, he split his scan initially from the radar display to outside the cockpit, then focused just outside in an attempt to gain 'tally' and avoid a possible collision. He was unable to detect the reported traffic until out of his peripheral vision he saw a white flash passing his ac to port. He estimated that the other ac – a low-wing single piston-engine propeller-driven light ac coloured white with a blue stripe down the fuselage - passed about 200m away down his port side and some 500-1000ft below him with a 'medium' Risk of collision.

The Sun was low but 30-40° W of the reported ac's 'angle of arrival'. More significant was that he was flying just above the haze layer and he believes the light aircraft was in it. On seeing the other ac – the Grob Tutor - he waggled his wings although the Grob had now passed abeam but received no response. Advising APP that he might wish to report an Airprox, he asked for his position to be noted - 5247N 00012E - and continued with his sortie without further incident.

THE GROB TUTOR TMK1 PILOT reports that he was flying a dual training sortie in VMC and listening out on the Sector E frequency of 279.725MHz; he was not in receipt of an ATS. A squawk of A2641 was selected with Mode C; elementary Mode S is fitted, TCAS is not.

While in transit in a NW'ly direction between 5000 and 5500ft BARNSELY RPS, heading 300° in the vicinity of Holbeach, he saw a Typhoon ac in his 1 – 1:30 position at a range of about 2nm, some 500ft above his transit altitude. He had time to make a conscious decision that no avoiding action was necessary. The Typhoon was crossing from R – L flying straight and level and passed through his 12 o'clock at range of about 1000yd and 500 feet above his aeroplane, the pilot rocking its wings to show that he had seen him. He assessed the Risk as 'low'.

Weather conditions were such that visibility was excellent above a haze layer which extended from the surface to 3500ft. His aeroplane as a white/blue colour-scheme and the HISLs and landing lamp were on.

THE CONINGSBY APPROACH CONTROLLER (APP) reports that with no inbound traffic and one transit on VHF, APP was band-boxed with DEPs and LARS. He received a prenote from GND for a Typhoon flying from Coningsby to Marham for a PD at 6000ft; the Typhoon was released and the VHF traffic handed over. Following the Typhoon pilot's initial call the ac was identified and the flight placed under a TS, 'reduced' due to radar clutter and the pilot requested to report level at 6000ft BARNSELY RPS (1007mb). As the Typhoon closed to within 30nm of Marham he commenced the handover, observing an A2641 squawk in the Typhoon's 12 o'clock at 10nm, opposite direction, indicating 1000ft below so he called the traffic. The Marham controller confirmed he heard the TI and they completed the handover. The other traffic was then only 4nm away from the Typhoon and he informed the SUP that he would keep the Typhoon on his frequency until it was clear of the other ac. The Typhoon pilot then called for an update of the traffic and so he reported it at 12 o'clock - 3nm - opposite direction - no height information, as the other ac's squawk was no longer displayed on either the Scampton or Cranwell SSR feeds. As the Typhoon passed the other ac he was asked by the Typhoon pilot to update the position again; he informed him that he was now clear of the traffic and the pilot requested him to note the position and time as he may be filing an Airprox.

THE CONINGSBY ATC SUPERVISOR (SUP) witnessed the event and provided a report which corroborated that of APP, confirming that the traffic intensity was low and that the Unit was fully serviceable. As the Typhoon pilot was not visual with the conflictor, APP elected to keep the Typhoon on frequency until it was clear of the confliction. The Typhoon pilot called the possible Airprox as he overflew the contact.

He added that the A2641 squawk is the ATC Cranwell conspicuity code for Cranwell and Barkston Heath traffic entering, exiting or operating below the Cranwell Agreed Airspace. This in conjunction with the pilot's description of the aircraft led him to believe the reported ac was a Grob Tutor operating out of either Cranwell or Barkston Heath.

HQ 1GP BM SM reports that this Airprox occurred between a Tutor operating VFR transiting NW'ly between 5-5500ft in the vicinity of Holbeach and a Typhoon transiting to Marham for a PD in receipt of a TS from Coningsby APP.

The Typhoon pilot reports 5000m visibility flying 500ft above a layer of haze, whilst the Tutor pilot reports excellent visibility above a layer of haze which extended from the surface to 3500ft. Moreover, the Typhoon pilot reports that 'the sun was low and at an angle of 30-40 degrees right of the contact aircraft's angle of arrival. This reduced visibility.'

As APP handed the Typhoon over to Marham they noticed the Tutor and at 1634:32 passed accurate TI stating, "*Traffic 12 o'clock, 10 miles manoeuvring, indicating 2 thousand f...err correction 1 thousand feet below.*" At this point the Tutor was approximately 12.1nm SE of the Typhoon indicating 4800ft, with the Typhoon indicating 6300ft Mode C. The Typhoon pilot stated that he attempted to acquire the Tutor visually and by using radar to no avail, prompting him to request an update of TI.

At 1634:51, the SSR return for the Tutor disappears from the radar replay, which accords with the statement made by APP that the SSR label 'was no longer displaying on either the Scampton or Cranwell SSR feeds.' Coningsby ATC has access to both these SSR sources and sets up alternate consoles within the ACR to display each SSR feed.

At 1635:07 the handover between Coningsby was complete and at 1635:29, the Typhoon requested an update of the TI which APP passed as, "*traffic is now at 12 o'clock, 3 miles, opposite direction, no height information* [the radar replay shows 4.1nm separation]." The Typhoon pilot states in his report

that after this update he 'believed it would be safer to check my sensor and look out rather than turning belly-up to an aircraft closing at high speed in a zone broadly considered to be 12 o'clock.'

The Tutor pilot reports seeing the Typhoon 'in approximately the 1 to 1.30 position at a range of approximately 2 miles, some 500ft above'. He had time to make a conscious decision that no avoiding action was necessary.' The Typhoon pilot reports that his first sighting of the Tutor was in his peripheral vision as the ac passed 200m laterally down the port side, between 500-1000 feet below his ac.

[UKAB Note (1): The CPA occurs as the two ac pass port to port, on broadly reciprocal tracks, with a track displacement in between sweeps of about 0.2nm just after 1635:52.]

In this instance, the ATM related safety barriers worked appropriately in that the pilot in receipt of the TS received timely and accurate TI to allow him to visually acquire the conflicting ac or to take appropriate action if he was unable to do so. In this case, having received TI the Typhoon pilot decided to maintain his track in order to try to visually acquire the Tutor; however, his scan was affected by the weather conditions, the relative position of the Tutor and, arguably, the size and colour scheme of the Tutor. The Tutor pilot with the haze below them had the 'easier' scanning task which enabled the crew to visually acquire the Typhoon and to decide that no avoiding action was required.

HQ AIR (OPS) comments that aircraft operating VFR in Class G will occasionally become proximate. The Typhoon pilot could have adjusted his heading early to maximise separation rather than relying on the expectation that he would definitely get visual.

HQ AIR (TRG) comments that the Tutor pilot reports sighting the Typhoon is good time and being content that he had been sighted and avoided by the Typhoon pilot. However, it appears that the sighting was too late to have effected avoiding action had it been necessary. By contrast, the Tutor would have retained some ability to carry out any such avoiding action. Whilst reporting that no avoiding action was necessary, it appears from the radar trace that from the reported sighting at 2nm, a turn to the right was initiated that prevented a direct overflight by the Typhoon, reducing the risk further.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Typhoon pilot had received prompt and accurate TI from Coningsby APP under the TS, which had ultimately enabled him to sight the Grob Tutor, albeit a fleeting glimpse as it passed 200m away some 500-1000ft below his ac he reported. The Board agreed that the controller had provided a good level of TI here and had conscientiously elected to retain the flight on his frequency during the period that these two ac were at close quarters, which was wise. As it was, the Typhoon pilot was unable to detect the Tutor on radar and was thus entirely reliant on TI from APP and visual sighting to avoid the other ac. Given the difficulties inherent in visually acquiring small light ac, Members agreed that positive action at an earlier stage would have been preferable. The HQ Air fast jet pilot Member reiterated the Command's view that it might have been wiser if the Typhoon pilot had just jinked 10-15° to the R to ensure that he passed clear rather than relying on visual sighting alone and other pilot Members concurred.

Although the Typhoon pilot reports that at 6000ft RPS he was flying just above a layer of haze, it is often difficult to determine the limits of a haze layer and it would seem he was further above it than he might have thought. The Grob pilot, flying at a maximum of 5500ft RPS, reported he was flying in VMC with 20km visibility; he had sighted the larger Typhoon from a range of 2nm and was not

concerned as he was 500ft below it and did not consider that any avoiding action was warranted whilst he watched it cross about 1000yd (0.5nm) ahead. This was supported by the radar recording, although it seemed that the Grob had indeed turned to the R as the ac closed, which did affect the overall geometry of the encounter. It was unfortunate that the Grob's SSR was lost just before the encounter and it was not clear why this was so because it had been clearly displayed just moments beforehand when the TI was issued at 10nm. In the absence of the Grob's Mode C data it was not possible to verify the vertical separation independently. Nevertheless, both pilots reported it to be not less than 500ft, which was considered to be a safe margin. The Board concluded, therefore, that this Airprox had been the result of a sighting of the Grob Tutor by the Typhoon pilot, but with 500ft vertical separation clear below there was no Risk of a collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Sighting Report.

Degree of Risk: C.

AIRPROX REPORT No 2011018

Date/Time: 9 Mar 2011 1256Z

Position: 5111N 00141W (2½nm
NE of Boscombe Down
A/D- elev 407ft)

Airspace: Boscombe MATZ (*Class: G*)

Reporting Ac Reported Ac

Type: Alpha Jet Merlin

Operator: MoD FTR HQ JHC

Alt/FL: 800ft 300ft
QFE (1002mb) agl

Weather: VMC NR VMC CLBC

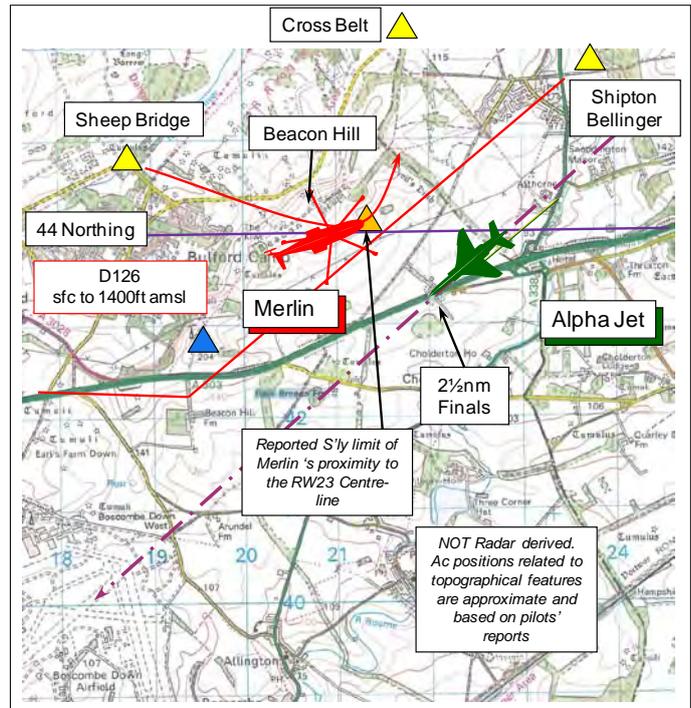
Visibility: 10km 8km

Reported Separation:

200ft V/800ft H 400ft V/700m H

Recorded Separation:

Not recorded



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE DASSAULT-DORNIER ALPHA JET PILOT reports he was the ac commander occupying the rear seat of the ac whilst conducting an instrument flying training sortie with a student test pilot in the front seat. During the period of the Airprox, the student was the PF on a simulated single-engine SRA to RW23 at Boscombe Down using standby instruments and he was monitoring his student's instrument flying during the approach with occasional visual lookout searches.

From about 3nm from touchdown his student levelled the ac at 800ft QFE (1002mb) just above the MDH [770ft], whilst continuing in level flight towards the missed approach point [MAPt at 2nm from touchdown]. TALKDOWN was providing a TS during the approach and at about 2½nm from touchdown, whilst heading 238° at 140kt, they received an alert from the TALKDOWN controller of Salisbury Plain Range traffic in the Range [D126] to their R. He searched in that direction but saw nothing; about 5sec later he searched again and then saw a Merlin helicopter at a range of about 800ft in what appeared to be a hard L turn, climbing slightly, just aft of their right wing. Simultaneously there was a call from TALKDOWN that there was range traffic that had passed Beacon Hill and was closing towards them; Beacon Hill is a significant feature 1nm N of the centreline and just inside the range area. By the time he saw the Merlin the actual risk of collision had passed as the helicopter was aft of their 3-9 o'clock line and its pilot appeared to be taking evasive action. He estimated that the Merlin passed 800ft horizontally down their starboard side and 200ft vertically below them. Because of their poor manoeuvrability in the approach configuration, the late alert, the late visual sighting and the proximity of the other ac, he assessed the Risk of collision as 'high'.

THE AGUSTA WESTLAND MERLIN HC3 PILOT reports that he was flying a VFR training sortie returning to Benson and in RT contact with Salisbury OPS [an A/G Stn] on 122.75MHz. The white upper and lower strobes, together with the two landing lights were all on. A squawk of A7002 [Danger Areas General] was selected with Mode C. TCAS is not fitted.

His routing from D123 to Andover was via Sheep Bridge, Cross Belt and Shipton Bellinger at 300ft agl flying at 90kt and after passing Sheep Bridge he routed through D126 around the edge of Bulford Range (BDA), which was active. While in a port turn for Cross Belt [NW of Shipton Bellinger] the crew saw an Alpha Jet, on approach to Boscombe Down, 400ft vertically above his ac and assessed

by the crew to be 'offset' 700m laterally. The most S'ly position of his turn was at OS Grid SU 2130 4400, his flight path remaining to the N of the electricity transmission line running ENE-WSW. At Cross Belt they called Boscombe ZONE for further clearance, when the crew was informed that they had exited previously D126, which was noted, however, it was not believed to be correct.

THE BOSCOMBE DOWN TALKDOWN CONTROLLER (TALKDOWN) reports that whilst controlling an Alpha Jet on an SRA to RW23 at Boscombe Down an ac contact – the Merlin – appeared, initially within the confines of D126. This was as the Alpha Jet was approaching, he thought, the 3½nm point on the SRA with more than 1.5nm lateral separation. The Merlin within D126 was called to the Alpha Jet, and as SSR Mode C information was available the indicated level was also passed; at that point the helicopter was indicating between 200-300ft below the Alpha Jet. As the SRA continued the Merlin flew closer to the southern edge of D126 and briefly indicated outside the range. As the Alpha Jet approached Beacon Hill 1-1.5 miles from the runway [centre-line] the Merlin helicopter was shown on the radar display within 0.5nm laterally and 200ft vertically. At that point the TOWER controller came through on the radar clearance line with an additional warning about the Merlin infringing the approach path, which was immediately passed to the Alpha Jet.

HQ 1GP BM SM reports that this Airprox occurred between an Alpha-Jet on a simulated single-engine SRA, in receipt of a TS from Boscombe Down TALKDOWN, and the Merlin HC3 routing VFR through EGD126. The Airprox is not shown on recorded radar, consequently, the investigation has relied upon the reports raised by the aircrew, TALKDOWN and the RT tape transcript.

The point stated by the Merlin crew as their most southerly position during the turn at SU 2130 4400, lies about 0.6nm NW of the centre-line for Boscombe's RW23 [at 2½nm Finals]. The south-eastern edge of EGD126 parallels the RW23 centre-line within 5nm of Boscombe aerodrome and lies approximately ½nm N of the RW23 centre-line.

Analysis of the TALKDOWN RT transcript shows that the Alpha Jet remained L of the RW23 centre-line until approximately the 3½nm point and thereafter remained on the centre-line. However, an SRA is a non-precision approach and the ac could have been displaced from the exact RW centre-line, potentially placing it closer to [or further away from] the Merlin.

The TALKDOWN controller states that the Merlin appeared within the confines of D126 as the Alpha Jet was approaching the 3½nm point on the SRA with more than 1.5nm lateral separation. It is more likely the Merlin was around 2nm NE of RW23 threshold. TALKDOWN states that they provided TI to the Alpha Jet approaching the 3½nm point; however, this is not the case and TALKDOWN is referring to the TI that they provided later at 1256:22, "*Traffic right 1 o'clock half mile crossing right left indicating below on the range*". It is reasonable to suggest, given the timing of the 3nm range check given by TALKDOWN [at 1256:06, "*3 miles 9 hundred feet approaching minimum descent height*"], followed by the "*at minimum descent height*" call at 1256:18 and the 2nm call at 1256:36] that the passing this TI occurred at about the 2½nm point, which accords with the Alpha Jet pilot's report.

This inability to accurately recall timelines whilst accurately recalling events is a typical HF issue and is not a concern. However, TALKDOWN goes on to state that 'as the SRA continued the ac within D126 moved closer to the southern edge and indicated briefly outside.'

The DE SPTA Standing Orders for Training Part 4 Management of Salisbury Plain Airspace state that the low level routes within EGD126 pass well to the N of Bulford Camp and are to be followed.

The Alpha Jet pilot states that having received the TI he initially saw nothing but 5 seconds later he 'searched again and saw a Merlin ac in what appeared to be a climbing hard left turn just behind the right wing'. This would have been co-incident with the warning from TWR, re-broadcast by TALKDOWN at 1256:32, '*caution rotary in the undershoot short final, just short of Beacon Hill*'. Whilst it is impossible to determine the exact location of the CPA, given that the position accords with the TI passed by TALKDOWN and the report of the Alpha Jet on the timing of the TI, it is reasonable to suggest that the CPA was at about 2½nm Final to RW23.

Notwithstanding that the Merlin appears to have been off the low-flying route and that the Alpha Jet crew sighted the Merlin late, the timeliness of the TI passed to the Alpha Jet by TALKDOWN requires examination. Given the terrain in that location and the low altitude of the Merlin, there will be a degree of clutter on the SRA display and the Merlin will not have painted until relatively late. Yet it is clear from the detail in TALKDOWN's narrative that they spotted the conflict in a timely manner with around 1.5nm lateral separation. The fact that the provision of TI did not occur until around 29sec later at 1256:22, suggests that TALKDOWN deliberately delayed passing TI until the Merlin posed a definite threat as it approached the boundary of EGD126 and appeared likely to exit the range. Further investigation with Boscombe Down has shown that when utilising the PAR, TI will always be passed in accordance with JSP552; however, the coverage of the PAR within 5nm is restricted and traffic operating in the southern segment of EGD126 rarely paints on the PAR display. The wider field of view afforded by the SRA display will have enabled TALKDOWN to observe the Merlin earlier. Furthermore, rotary ac are routinely seen operating within the southern section of D126 and it is arguably this knowledge that caused the delay between TALKDOWN identifying the Merlin and passing TI to the Alpha Jet crew, in an attempt to avoid passing nugatory TI.

SATCO Boscombe Down is reviewing local procedures pertaining to the provision of TI to ac executing instrument approaches.

UKAB Note (1): The Mil AIP at AD 2 - EGDM - 1 - 18 – Radar Procedures – includes a note for RW23 that:

‘Due to underlying low-level hel routes and obstacle clearance, immediate descent from FAF to MDA [MDH] prohibited. Notional 3° GS mandatory.’

HQ JHC comments that if the Merlin's most southerly position was the stated Grid, and his flight path remained to the north of the electricity transmission line running ENE-WSW, this would not have brought it into conflict with the RW23 extended centreline until reaching a point to the E of Shipton Bellinger (where the electricity lines crosses the extended centreline). It may be the case that as a 'large' helicopter (in comparison to perhaps a Lynx), the Merlin appeared to be closer to the Alpha Jet than it actually was (800ft assessed by the Alpha Jet pilot vs 700m by the Merlin crew). The Grid position given has been assessed by HQ 1 GP BM SM as 0.6nm from the extended centreline at 2¹/₂nm, which is slightly less than the 'offset' 700m reported by the Merlin pilot. The Alpha Jet pilot did not see the Merlin until it was aft of their 3-9 o'clock line, therefore it is puzzling that the assessed risk of collision was 'high'. However, the late visual sighting caused the Alpha Jet pilot to be concerned about the proximity of the other ac. Having spoken to the reporting Merlin pilot, he is clear that he was on an approved route which did take him close to the extended RW23 centreline, but at no time did he get closer than the Grid as stated on the report. The route from Sheep Bridge to Cross Belt skirts around the impact area for the Bulford Range (BDA) and routes aircraft close to the electricity transmission wires running ENE-WSW. If it is assessed that the Merlin was too close to the extended centreline of RW23, the route (around the Bulford impact area between Sheep Bridge and Cross Belt) should be changed and/or the aircraft should be required to be on a Boscombe Down frequency for coordination purposes. This Airprox may have been prevented by the earlier passing of TI to the Alpha Jet, despite the expectation that the Merlin would not encroach the extended RW23 centreline.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, a transcript of the relevant TALKDOWN RT frequency, a report from the air traffic controller involved and reports from the appropriate ATC and operating authorities.

It was evident from the Merlin pilot's account that he had strayed S of the established SPTA Low Level Route, whilst skirting BDA between Sheep Bridge and Cross Belt and had been in the turn to regain the route just inside the range boundary at Grid SU 2130 4400 when the Airprox occurred. The Board was briefed that the co-ordinates for the Low Level Route turning points are specified in

SPTA Orders. Aircraft are required to follow, and remain within 300m of, the road around BDA joining the co-ordinates. These routes had been agreed between SPTA and Boscombe Down and were designed to allow VFR rotary-wing transits in/out of SPTA, whilst causing least disruption to aerodrome traffic and keeping helicopters away from the FAT to RW23. The HQ AAC Member, who was well-versed in air operations on SPTA, opined that the Merlin crew seem to have overshot the route somewhat, but added that it is not easy to distinguish on SPTA maps the exact track to be followed. The HQ 1Gp Advisor was of the view that the helicopter might have been further S than the Merlin pilot had reported, given the location specified in the TI passed to the Alpha Jet crew by TALKDOWN. TOWER was also clearly concerned at the appearance of the Merlin above the ridge line of Beacon Hill, hence the warning to TALKDOWN, who controller Members perceived would have issued a warning as soon as the Merlin was at the limits of D126 marked on the radar video map. The Merlin pilot reports remaining N of the electricity transmission line and that he was flying at the correct transit height of 300ft agl, some 400ft below the Alpha Jet when it was spotted on Final, which was in general accord with the Alpha Jet pilot's reported height just above the MDH. Without recorded radar data illustrating the encounter it was not feasible to be definitive about the actual geometry that obtained here and it was possible to fly outside the Danger Area boundary and still remain N of the power lines further toward Shipton Bellinger. However, the Merlin pilot's given position was consistent with the Alpha Jet pilot's account when he spotted the helicopter in the turn, just drawing aft of the starboard wing as they passed through 2½nm from touchdown 'on centre-line'. Members concurred that the Merlin as a large helicopter might have appeared closer than it was, but the significant difference between the Alpha Jet pilot's estimate of separation at 800ft/243m and that of the Merlin pilot at 700m could not be resolved independently without radar data. However, the helicopter pilot's manoeuvre was to regain the route towards Cross Belt and not the evasive action that the Alpha Jet pilot perceived at the time. It seemed that this was an unintentional excursion from the route by the Merlin crew that had been spotted by ATC at the critical moment and the overall procedure seemed to be generally sound. Following an extensive debate the Board agreed unanimously that this Airprox had resulted because the Merlin crew flew close enough to cause the Alpha Jet crew concern.

Turning to the inherent Risk, the Alpha Jet crew had received a warning of the presence of the Merlin and had spotted it as it was turning away to the L, behind the starboard wing, away from their ac and probably at about the closest point. It was evident that the Merlin pilot intended to remain N of the electricity transmission line, at low-level, until he crossed beneath the FAT/notional 3° glidepath in the vicinity of Shipton Bellinger. This, coupled with the sighting of the Alpha Jet by the Merlin crew convinced the Board that no Risk of a collision had existed in the circumstances reported here.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Merlin crew flew close enough to cause the Alpha Jet crew concern.

Degree of Risk: C.

AIRPROX REPORT No 2011019

Date/Time: 15 Mar 2011 1151Z

Position: 5146N 00156W
(2nm N Cirencester)

Airspace: Lon FIR (Class: G)

Reporting Ac Reported Ac

Type: Merlin DA42

Operator: HQ JHC Civ Comm

Alt/FL: 3000ft 4000ft
(QFE 1003mb) (1013mb)

Weather: VMC CLAC VMC

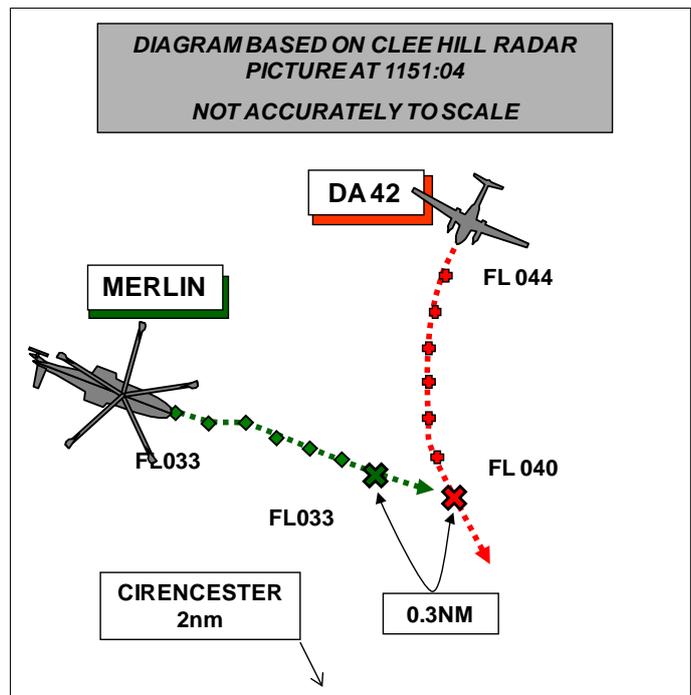
Visibility: 10km NR

Reported Separation:

300ft V/500m H NR

Recorded Separation:

700ft V/0.3nm (540m) H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE MERLIN PILOT reports flying a green helicopter with all lights switched on, squawking with Mode C, but TCAS was not fitted. They were heading 110° at 120kt above cloud, in receipt of a TS from Brize Norton APP and were being given radar vectors for an ILS approach, when an ac was seen manoeuvring to the S in the vicinity of Kemble aerodrome. Shortly after, while in a high workload situation preparing for the approach, a white twin-engine, high-tail ac, believed to be a DA42, was then seen high in their 11 o'clock passing from left to right in front of them; the DA42 was assessed to be about 300ft above and separated 500m laterally and they considered it to be a late spot by the LHS pilot. They received no information from Brize APP about the ac until they pointed it out to the controller.

He assessed the risk to be high and reported the incident to Brize APP on the frequency in use.

THE DA42 PILOT reports that he was made aware of the Airprox by Brize Radar after he had returned to Lyneham. He was told that a Merlin at 3000ft reported having an Airprox with him but he informed Brize that in that area he was never lower than 4000ft [FL40] so it must have been another ac.

At the time he was cruising at 120kt in good weather, heading 145° squawking with Modes C & S, changing between ATC units. At no point did he receive a traffic warning from the ac Traffic Warning System [TCAS 1] nor did he see any traffic. He was asked to call NATS, which he did and he was told that the highest the Merlin reached was 3300ft and the lowest he went was 3900ft.

HQ 1GP SM BM reports that this Airprox occurred between a Merlin HC3 inbound to Brize Norton for an ILS and in receipt of a TS from Brize APP and a DA42 operating VFR to the W of the Brize CTR.

The Merlin was identified and placed under a TS, reduced as Brize were operating SSR only. The Brize Norton SSR update rate is 8RPM, which equates to one sweep every 7.5sec.

At 1149:23, the DA42 was approximately 5.6nm E of the Merlin, descending through 6000ft in a LH turn, with the Merlin maintaining 3300ft (SSR Mode C), which it does throughout the period. At some point after 1149:26, APP commenced a handover of the control position to another controller. The

handover was not recorded on the desktide recording, nor has it been possible to determine what information the incoming controller received. The first APP controller was a trainee being screened by an experienced controller, whilst the second controller was fully validated in the position.

JSP 552 110.115.1 states, *'when handing-over a control position to another controller the off-going controller is to brief his relief on the state of all surveillance and instrument aids; serviceability state of communication equipment; the traffic situation and any other relevant information'*.

At 1149:55 the DA42 rolled out of the left turn tracking W and then re-commenced the left turn at 1150:04, bringing it into conflict with the Merlin.

At 1150:55 it is clear that the handover of control position was complete since the voice recording showed a different voice as APP was liaising with TWR. It has not been possible to determine for how long this controller had assumed responsibility for the control position. At that point, the DA42 was 0.5nm E of the Merlin [at 3300ft] indicating 4100ft. The CPA occurred 1151:04 as the DA42 passed through the Merlin's 12 o'clock at 0.3nm and indicating 700ft above.

At no stage did APP pass TI to the Merlin on the DA42. The Supervisor stated that APP's workload was Med to Low and the Unit's workload High to Med; that said, in the lead-up to the incident, the trainee APP controller was involved in liaison with several agencies and would have been monitoring DIR's busy radar training cct in order to sequence their own traffic.

Notwithstanding the 'see and avoid' responsibilities of both pilots when operating in Class G airspace, while in receipt of a TS the Merlin should have been passed TI on the DA42. Even with the slower update rate of the SSR compared with the primary radar, the DA42 was in conflict for 51sec prior to the CPA descending to 4000ft and was 'there to be seen' by APP. From the subsequent actions of the second APP controller it is clear that he accepted the control position with the Merlin in conflict and the lack of action by both APP controllers suggests that the situation was not questioned.

Although this was primarily a sighting issue, the lack of TI from APP to the Merlin crew, caused by poor handover procedures between the APP controllers, was probably a contributory factor.

SATCO Brize Norton has reviewed the console position handover procedures at the Unit; he is content that this was an isolated incident and that controllers routinely operate in accordance with JSP 552 110.115.1.

HQ JHC comments that it is recognised that TI should have been passed to the Merlin pilot, but it remains the pilot's responsibility to 'see and avoid' whilst in receipt of a TS. In this case, the pilot considered it a 'late spot' and did not take avoiding action but assessed the risk of collision to be high.

While probably not a contributory factor in this case, it is noted that the reporting pilot stated that he was receiving a TS, whilst HQ 1GP BM SM stated that he was being provided a reduced TS due to Brize operating SSR only. It is assumed that both parties understood what service was being provided. However, when a pilot accepts a 'reduced TS, SSR only', it is assumed that he understands the implication that he will only receive TI on aircraft fitted with a serviceable transponder that is switched on. To reiterate this important difference, JHC HQ will publish a reminder to aircrew, highlighting what the term 'SSR only' actually means.

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.

As noted above, the HQ JHC Member informed the Board that there was a perception in the HQ that some pilots do not fully understand the significance of 'SSR Only' when applied to a TS and accordingly they had commenced an education programme; she suggested that this lack of understanding might not be confined to helicopter pilots.

Members noted that the Merlin had right of way, but it was suggested that since it was well below the DA42, its pilot (as inferred in his report) may not have considered there to be any conflict; in any case he was not aware of the incident and received no TCAS warnings. This incident was another case where the 'see and avoid' principle had not worked as the pilot with the onus to avoid did not see the opposing ac.

Members were unanimous in their opinion that, had TI been passed to the Merlin crew about the DA42, the crew would not have considered the incident to be an Airprox, even allowing for the DA42 being between frequencies and not receiving any warning about the former. That being the case, due to the significant separation extant, Members agreed that there had been no risk of collision. Members also agreed that, since the Merlin crew were operating under a TS, they should have been warned about the DA42.

The Board noted the HQ 1 GP BM SM report and the explanation for the TI not being passed by Brize ATC during the handover of the APP position and accepted that this had been a 'one off' occurrence caused by a misunderstanding, albeit one that should have been evident had the handover procedures stipulated in JSP552 been fully complied with.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: In the absence of TI, the Merlin crew was concerned by the proximity of the DA42.

Degree of Risk: C.

AIRPROX REPORT No 2011020

Date/Time: 14 Mar 2011 1630Z

Position: 5117N 00130W (4nm N Andover)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: Evektor EV97 F15Ex2
Eurostar

Operator: Civ Pte Foreign Mil

Alt/FL: 2000ft NR
(QNH 1016mb) (QNH)

Weather: VMC HZBC VMC HAZE

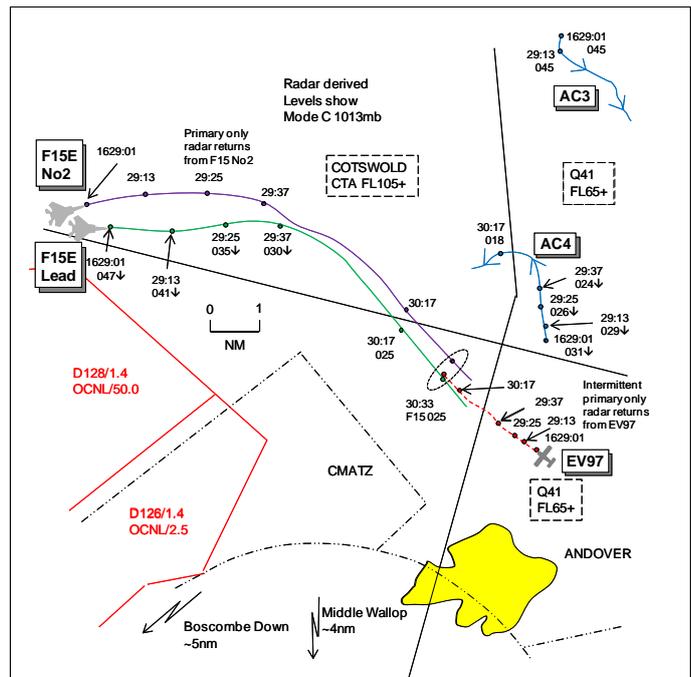
Visibility: 10km 8km

Reported Separation:

50ft V/25m H 50-100ft V
/300m H

Recorded Separation:

0.1nm/0.3nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE EVEKTOR EV97 EUROSTAR PILOT reports enroute from Goodwood to Clench Common VFR and listening out on Safety Common frequency 135.475MHz; no transponder was fitted. The visibility was 10km flying 1000ft below cloud in VMC and the ac was coloured silver/blue; no lighting was fitted. Heading 310° at 85kt and 2000ft QNH 1016mb he was surprised to see 2 small jet fighters 1nm ahead on a reciprocal course heading towards him before they passed either side of and above his ac, estimating 50ft vertical separation and 25m horizontal. At the time he felt that maintaining his heading was the best course of action. He did not feel he was in danger at the time but once the ac had passed he felt very shocked indeed. He assessed the risk as medium.

THE F15E LEAD PILOT reports, 5 weeks post incident, enroute to Boscombe Down for a Practice Diversion and under a TS from Boscombe LARS on 256.5MHz, squawking an assigned code with Mode C. The visibility was 8km in haze in VMC and the ac were coloured dark grey with anti-collision, nav and strobe lights switched on. They were flying clockwise around the SPTA in level flight when ATC gave them a traffic call on a light ac flying in the opposite direction closing within 5nm. Heading 170° at 300kt he initiated full radar track (~6nm) and IR pod track (~4nm) on the traffic and gained visual contact no later than 2nm away. His wingman, previously on the E flank manoeuvred W on to his opposite side so as to avoid the traffic, a low wing single engine ac coloured white, which passed 300m down their LHS about 50-100ft above. He did not perceive a conflict at the time, acknowledging the traffic and informing Boscombe that the formation was visual with the traffic. Limited manoeuvring room was available owing to their close proximity of the EGD124/125/126 complex and he had elected to maintain the Boscombe assigned altitude. He did not report any danger and no further comments were made to/from Boscombe ATC regarding the matter and he assessed the risk as medium.

THE BOSCOMBE DOWN LARS CONTROLLER reports he was working a pair of F15s from the Swindon Corridor, N of SPTA and then through the MATZ NE to SW. They descended to overfly Boscombe Down before he handed them over to Yeovilton. No mention of an Airprox was made.

HQ 1GP BM SM reports that the Airprox occurred between an EV97 Eurostar operating VFR and a pair of F15E Strike Eagles on a NAVEX towards Boscombe Down and Yeovilton, in receipt of an ATS from Boscombe Zone. Whilst the F15 pilot stated in Part 1 of his Airprox report that he was in receipt of a DS, in the narrative he stated that he was in receipt of a TS which is borne out by the tape transcript.

[UKAB Note (1): The F15 flight contacted Boscombe ZONE at 1625:29 approximately 7nm SSW of Lyneham tracking 220°, squawking Boscombe code 2651 and levelling at FL100. ZONE confirmed the flight was identified under a TS and then requested their intentions. It was established that the flight wanted to turn onto 090° to remain N of SPTA and then route clockwise around SPTA to pass O/H Boscombe Down towards Yeovilton. One minute later the F15 flight requested descent to the lowest level available and was cleared to FL50 initially before, at 1627:59, being cleared 2000ft QFE 999mb.]

At 1629:11 ZONE passed TI to the F15 flight on un-related traffic, AC3, to the ENE, *“(F15 c/s) traffic left eleven o’clock, six miles, crossing left right, indicating FL45”* (radar replay shows approximately 9nm lateral separation). ZONE then issued the F15 flight with a R turn onto 110° before at 1629:26, ZONE passed further TI on other un-related traffic, AC4, *“(F15 c/s) traffic east 3 miles, tracking north, indicating 2500ft”* (radar replay shows approximately 5nm lateral separation). Both of these pieces of TI are acknowledged by the F15s and at 1629:38 they declare, *“(F15 c/s) we got radar traffic.”* However, at this point what is believed to be the EV97 is approximately 6nm SE of the F15s manoeuvring. No SSR return is observed throughout the radar replay from the EV97. Moreover, ZONE does not provide TI that can be correlated to the position of the EV97 relative to the F15 flight.

Boscombe reported that the PSR and SSR were fully serviceable at the time of the occurrence.

ZONE then instructs the F15 flight to turn R onto heading 140°, which was not acknowledged. Over 30sec later at 1630:19 the F15s reported, *“140 (F15 c/s) is visual with radar traffic confirm you want us at 140”* which ZONE acknowledges. The F15 pilot’s written report stated that they had radar lock at around 6nm, targeting pod acquisition at around 4nm and visual at around 2nm. Given the content of the F15 crew’s report, that the radar contact relating to the second piece of TI was approximately 2nm NE of the F15s and that the EV97 is approximately 1.7nm in their 12 o’clock, it is clear that the F15s had locked onto and then sighted the EV97.

Although ZONE did not provide TI to the F15s on the EV97, the F15 crew’s interpretation of TI on AC4 allowed them to obtain sensor and then visual acquisition of the EV97 and to avoid it by a margin that they deemed appropriate.

From an ATM perspective, the issue to be addressed is the lack of TI on the EV97 to the F15s. Given that ZONE passed TI on the other traffic that was relevant to the F15s an HF related cognitive failure or a deliberate decision not to pass TI can be discounted; therefore, it appears reasonable to argue that the EV97 either did not paint on the surveillance display due to the ac’s size, construction or presenting aspect to the radar aerial, or was obscured by radar clutter. However, it has been impossible to determine exactly what occurred.

UKAB Note (2): The diagram was created using a combination of the Clee Hill, Heathrow 10cm and Pease Pottage radars. The EV97 is seen as an intermittent primary only radar return but exhibiting severe track jitter throughout and F15E No2 is showing as a primary only return displaced echelon port to the Lead ac. The radar recording shows the Airprox occurs at 1630:33, the EV97 appearing to pass between the 2xF15Es, the closest being F15E Lead on its LHS by 0.1nm with F15E No2 0.3nm on its R.

HQ 3AF comments that it appears that in complying with Boscombe ZONE’s instructions, particularly the R turn to 140°, the formation was brought into conflict with the EV97 which, it is reasonably suggested above, was probably not painting on ZONE’s display. Fortunately, the formation lead obtained radar contact on the EV97 in time to see and avoid.

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 from the appropriate ATC and operating authorities.

Members were mindful of the disparate descriptions of the event from the reports submitted by both crews. The EV97 pilot had seen the F15Es pass either side of his ac whilst the lead F15E crew had reported that both of their ac had passed the ac they sighted on their L. The radar recording does not show the F15Es changing formation positions, the No2 always remaining in echelon port with the lead ac, and the EV97 probably passing between the formation. This geometry was thought to be the most likely, even taking into account the severe track jitter exhibited by the primary only return that is believed to be the EV97. The F15E pilot's report was submitted some 5 weeks after the Airprox which could have clouded his recollections of the scenario to some degree. Some Members questioned whether the ac that the F15E flight had acquired on radar and IR pod and then visually might have been AC4 as it was TI on this ac that preceded the F15E crew's call of 'radar contact'. The Board also noted that the range reported by the F15E crews for commencing radar tracking (6nm) was consistent with both the EV97 and AC4. However, AC4 had passed nearly 2nm away and 800ft below the F15E pair; both the F15E crew and EV97 pilot reported a much closer encounter. Pilot Members wondered whether the F15E's onboard equipment is capable of acquiring a very small ac of the EV97's size flying at 85kt head-on and presenting a very small target aspect. A military pilot Member opined that the F15E ac had a modern on-board radar system capable of detecting and tracking targets over a broad speed range and a large area around the ac; he believed the combination of radar and IR sensors had enabled the F15 crews to detect and then visually acquire the EV97. Members agreed that it would have been prudent for the EV97 pilot to have called Boscombe Down for a service as this would have given ZONE the 'heads-up' of the ac's presence; in the event ZONE did not see the EV97 on radar as he had vectored the F15Es towards the Boscombe O/H but unfortunately had placed the ac in conflict. One Member thought that perhaps the F15E lead pilot queried the heading assigned because he was concerned that he was heading towards the EV97 which he had just seen ahead. In his assessment of the 'miss distance', the EV97 pilot believed that the F15Es were small jet ac, which would create the impression that the ac were a lot closer than they actually were. Notwithstanding his underestimation of the 'miss distance', it was the proximity of the F15Es which caused the EV97 pilot concern and was the cause of the Airprox.

Turning to risk, one pilot Member expressed concern that, from the information available, he was not convinced that the F15E crews had seen the EV97 and that the ac had passed uncomfortably close with no action being taken by either crew such that a definite risk of collision had existed. This view was not shared by the other Members who believed that, on the balance of probability, the F15E crews had seen the EV97 in good time and were content with the separation but may have misjudged it due to the small size of the ac. Although the EV97 pilot had limited options for avoiding the 2 F15Es, he had elected to continue level and on track and watched them pass either side. These sightings by both crews were enough to persuade the Board that any risk of collision had been effectively removed.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The F15E crews flew close enough to cause the EV97 pilot concern.

Degree of Risk: C.

AIRPROX REPORT No 2011022

Date/Time: 28 Mar 2011 1229Z

Position: 5152N 00058W (1nm
NW WCO)

Airspace: LFIR (Class: G)

Reporting Ac Reporting Ac

Type: BE24 DA40

Operator: Civ Trg Civ Trg

Alt/FL: 2000ft 3000ft
(QNH 1017mb) (QNH 1017mb)

Weather: VMC HAZE VMC CLBC

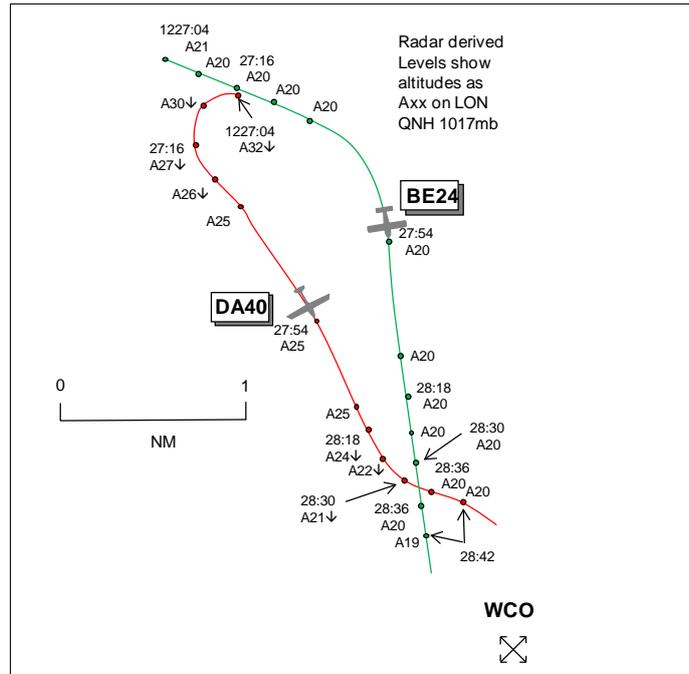
Visibility: 4000m 7km

Reported Separation:

30ft V/0m H 0ft V/5m H

Recorded Separation:

<100ft V/Nil H



BOTH PILOTS FILED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE BE24 PILOT reports flying a dual CPL Training Exercise from Wycombe, VFR and in receipt of a BS from Farnborough N on 132.8MHz, squawking 5034 with Mode C. The visibility was 4000m in haze and the ac was coloured white/red with anti-collision, nav and landing lights all switched on. They had been tracking inbound to WCO when 15D from CPT. When inbound on 350° QDR heading 170° at 120kt and level at 2000ft QNH 1017mb nothing was seen approaching the beacon and as they passed over it, he thought, he showed the student how they know they had station passage. They both became aware of a loud noise and saw a blue/white DA40 about 10m away before it passed above and slightly behind them, estimating vertical separation at 30ft. He pushed the elevator control fully down for avoiding action, his student stated seeing the other ac's tyre creep marks. He made an Airprox call to Farnborough N and soon after they heard the DA40 flight also report an Airprox. He assessed the risk as high, believing that both ac had been in the other's blind spot.

THE DA40 PILOT reports carrying out a dual training GH sortie from Elstree, VFR and in receipt of a BS from Farnborough N on 132.8MHz, squawking 5034, he thought [actually 5036], with Modes S and C. The visibility was 7km flying 1000ft below cloud in VMC and the ac was coloured white with nav and strobe lights switched on. At the time of the Airprox they were about 5nm N of WCO NDB, heading W to E at 115kt and level at 3000ft, he thought, QNH 1017mb. The other ac, a BE24, was first seen in their 7 o'clock as it passed 5m behind them on a S'yly heading at the same level and they maintained their heading and kept visual with it until no further risk was posed. The BE24 pilot first reported the Airprox whilst airborne followed by themselves. He assessed the risk of collision as high.

THE FARNBOROUGH LARS CONTROLLER reports working as the LARS N and E controller banded under moderate traffic conditions that did not require the frequencies to be split. At approx 1229Z the BE24 pilot reported on frequency that he wished to report an Airprox on a DA40 ac in his close vicinity. The controller acknowledged the request, noted that the flight was receiving a BS and asked the pilot to make the report on landing. The BE24 then returned to Wycombe Air

Park. Shortly after the DA40 pilot, under a BS, informed him that he would also be filing an Airprox which the controller acknowledged. At all times both flights were under a BS with the relevant QNH.

ATSI reports that the Airprox occurred at 1228:36 (UTC), in Class G airspace in the vicinity of the WCO NDB.

The Diamond Star DA40 was operating on a local VFR flight from Elstree, conducting a GH exercise and was in receipt of a BS from Farnborough LARS.

The Beech Musketeer (BE24) was operating on a local VFR flight from Wycombe Air Park, conducting a CPL training exercise and in receipt of a BS from Farnborough LARS.

The Farnborough Radar controller was operating LARS N and E in a combined (bandboxed) mode. Traffic levels were reported as moderate with a number of other flights on frequency.

The weather at Farnborough and Luton were provided:

METAR EGLF 281220Z VRB04KT 7000 BKN043 14/05 Q1017=

METAR EGGW 281220Z VRB03KT 8000 BKN032 12/04 Q1016=

The BE24 flight was already on frequency and in receipt of a BS from Farnborough, with an allocated squawk 5034 when, at 1207:32, the DA40 flight made an initial call to Farnborough, but satisfactory 2-way communication was not established until 1208:48. The DA40 pilot reported, *“(DA40 c/s) we are a D A forty just out of Elstree er just passing overhead Bovington now two thousand three hundred feet on a Q N H one zero one five two P O B intentions er just gonna do some er general handling in the Westcott region between er er three thousand feet er to er one thousand feet request a Basic Service.”* The Farnborough controller agreed a BS, allocated a squawk of 5036 and passed the London QNH 1017mb. This was acknowledged correctly by the DA40 pilot. (It was noted that the DA40 pilot’s written report erroneously indicated the squawk as 5034.) At 1214:10 the DA40 pilot reported climbing to 3000ft.

At 1227:04 the radar recording shows 3 ac operating in close proximity in the vicinity of Westcott, with the SSR labels overlapping and garbling. An expanded radar picture showed the BE24 indicating altitude 2100ft on a SE’ly track. The DA40 was indicating altitude 3200ft in a L turn, passing through a W’ly track. The third ac was tracking N indicating altitude 3000ft.

At 1227:16 the radar recording shows both ac established on a SE’ly track with the DA40 positioned 0.4nm to the SW of the BE24. The BE24 was indicating altitude 2000ft and the DA40 was indicating altitude 2700ft in a descent.

About 1min later at 1228:18 the radar recording shows the BE24 had turned R onto a S’ly track, indicating altitude 2000ft and converging with the DA40, which was tracking SE and indicating altitude 2400ft in the descent. The DA40 was ahead and in the BE24’s 2 o’clock position at a range of 0.3nm.

By 1228:30 the radar recording shows the 2 ac converging on steady tracks with the BE24 indicating altitude 2000ft and the DA40 indicating altitude 2100ft. The DA40 was slightly ahead and in the BE24 aircraft’s 2 o’clock position at a range of 0.1nm.

[UKAB Note (1): The CPA occurs before the next sweep which at 1228:36 shows the ac having crossed, the BE24 at 2000ft 0.1nm SW of the DA40 which is indicating 2000ft. It is estimated that the ac crossed with no horizontal separation and <100ft vertical separation.]

At 1228:42, the radar recording shows that the 2 ac tracks diverging, with the DA40 indicating altitude 1900ft and the BE24 indicating altitude 2000ft.

At 1229:02, the BE24 pilot called Farnborough and reported the Airprox, *“Farnborough Radar er erm just in the Westcott area this time just er like to file an Airprox against er er D A Forty.....over*

flew us by about thirty feet erm from the west to the east we're flying erm north to south." The controller acknowledged the call and requested the pilot file the report on the ground at his destination. The pilot agreed and then reported leaving the frequency and squawking 7000.

Following these RT exchanges at 1229:52, the DA40 pilot also reported the Airprox, *"..listened to the last transmission yeah like to also er file an Airprox er just er passed us from behind by about thirty feet we're now heading er northbound and er two thousand feet Q N H one zero one seven."*

The DA40 and BE24 flights were both in receipt of a BS from Farnborough LARS. The Farnborough radar controller's workload was considered to be moderate. The radar labels of the 3 ac manoeuvring in the WCO area were shown to be overlapping and garbling. CAP 774, UK Flight Information Services, Chapter 2, Paragraph 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.'

Paragraph 5, states:

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

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

It was clear to Members that this had been a very serious Airprox. Undoubtedly the visibility had played a part in the proceedings; however, within this Class G airspace, the pilots were responsible for maintaining their own separation from each other through see and avoid. It was not clear whether the BE24 student was under an IF Hood with the instructor responsible for the lookout as well as monitoring the student's actions whilst tracking towards the WCO NDB on instruments, or whether the crew were sharing the lookout responsibility. However, they were alerted to the DA40's presence only when it was heard before seeing it as it passed 30ft above and then behind, effectively a non-sighting and a part cause of the Airprox. The DA40 instructor also only saw the BE24 as it passed 5m behind in his 7 o'clock at the same level, another effective non-sighting and other part cause. The radar recording showed that there had been ample opportunity for both pilots to see each other's ac prior to the CPA but this had not occurred. Initially both ac were head-on about 1.5min before CPA with the DA40 1200ft above and turning L to the SE. The DA40 was always ahead of, and displaced to the SW of, the BE24 as it converged from its R descending. Although this geometry made it more difficult for the DA40 pilot, the BE24 was there to be seen even before he turned L just before the Airprox. Members considered that, if it was available, a TS would have been a more appropriate level of service, to assist the pilots in building better SA of the surrounding traffic. Members noted that Farnborough controller did not issue a traffic warning. The controller was working 2 sectors bandboxed with moderate traffic levels so it may have been that the controller did

not see the impending confliction while scanning a large area of responsibility or because of the overlapping labels in the busy WCO area.

Turning to the risk, with effectively non-sightings by both pilots and the ac passing by luck - the avoiding action taken by the BE24 pilot was considered to have been too late to affect the outcome - the Board were left in no doubt that there had been an actual risk of collision during this Airprox.

PART C: ASSESSMENT OF CAUSE AND RISK

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

Degree of Risk: A.

AIRPROX REPORT No 2011023

Date/Time: 28 Mar 2011 1410Z

Position: 5136N 00114W
(1nm S Didcot)

Airspace: Oxford AIAA (Class: G)

Reporting Ac Reported Ac

Type: Merlin Untraced Glider

Operator: HQ JHC NK

Alt/FL: 1900ft NK
(QFE 1009mb)

Weather: VMC CLBC NK

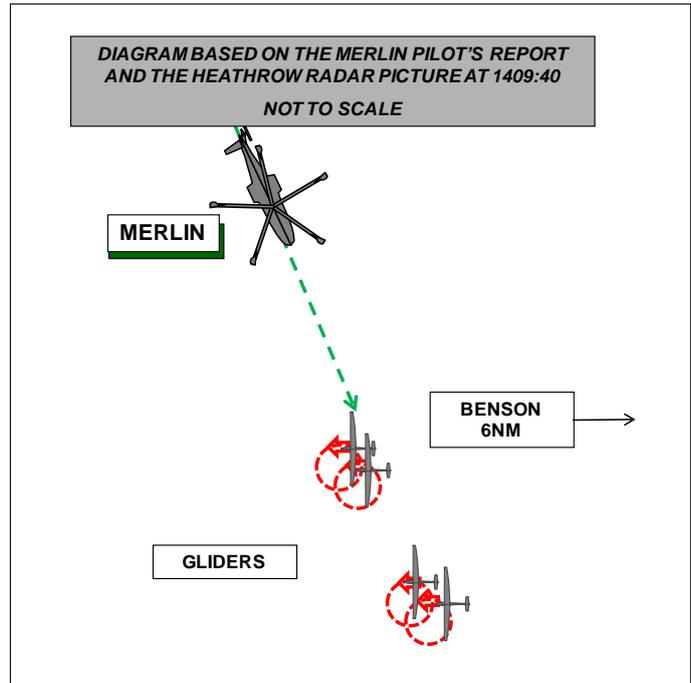
Visibility: 8km NK

Reported Separation:

0ft V/50m H NK

Recorded Separation:

NK



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE MERLIN PILOT reports flying a green ac with all lights switched on, recovering to Benson in slightly hazy conditions, but flying out of sun, in receipt of a TS from Benson APP. While under radar vectors, heading 170° at 120kt, about 1nm S of Didcot the crew identified a glider due W, slightly above them about 400m away; they immediately informed Benson APP which was operating with SSR only. Thirty sec after first identifying this glider another was seen passing down the LH side, descending through their height (1900ft) in a LH turn to the N, within about 50m of their ac; the glider was seen to depart to the N. They did not take any avoiding action as the glider had descended through their height and was turning away from them.

The HP reported an Airprox to Benson on the frequency in use at approx 1410Z and the sortie continued with the ac recovering to Benson without further incident. He assessed the risk as being high.

Despite extensive procedural tracing, the glider pilot could not be located.

UKAB Note (1): The Benson APP controller provided a report but, for brevity, it has not been included as it is essentially the same as the HQ 1GP BM SM report below.

HQ 1GP BM SM reports that this Airprox occurred between a Merlin HC3 in receipt of a TS from Benson APP, reduced due to operating SSR only and an untraced glider.

Since Benson was operating SSR-only due to planned maintenance on the Watchman radar, it was not possible for ATC to have acted as a safety barrier to this occurrence, given that the glider was non-transponding. That said, the reduction of service to SSR-only was not passed until after the Merlin pilot had informed APP of his sighting the first glider mentioned in his report; 21sec after this that the pilot declares the Airprox with the second glider.

The operation of non-transponding ac combined with operating SSR-only leaves one final safety barrier; namely 'see and avoid'. However, this final barrier is prejudiced when the visual acquisition task is made more difficult by reduced visibility and the small size and white colour scheme of the target ac.

UKAB Note (2): The recording of the Heathrow 10cm radar shows the Merlin throughout tracking 170°, squawking with Modes C and elementary Mode S, initially at an alt of 3000ft. The ac is tracking towards two intermittent primary only contacts manoeuvring in its 12-1230 position. At 1409:40 the helicopter commences a slow descent just as both the primary contact disappear from radar in its 1230 position at about 1.5 and 2nm respectively (there are another 2 gliders at a distance of 4nm in the 12 o'clock). The Merlin passed through the approximate position that the closest glider last painted at 1409:59 at an alt of 2600ft. The primary only contact reappears at 1nm W of the Merlin's track at 1410:37. There are other gliders in the area.

HQ JHC comments that It is not possible to ascertain when, and indeed if, the conflicting glider saw the Merlin, but in either case, a reported separation of 50m is clearly very concerning, whether verified by radar recording or not.

From the HQ 1GP BM SM comment, it appears that the Merlin was unaware that the TS being provided was reduced until after he had reported the sighting of a glider in reasonably close proximity. The absence of primary radar was probably a factor in this incident. It is also clear that the final safety barrier - as identified by HQ1GP BM SM – was see and avoid but in the event, the Merlin saw the glider too late to take any avoiding action.

HQ JHC considers that a mid-air collision with a glider or light coloured small ac is a very significant risk- this was the second Airprox in that area in the space of a month. This is a particularly problematic area in terms of gliding activity and Benson instrument traffic - which is subject to both geographical and airspace constraints and the necessity to maintain aircrew currency and competency in instrument flying and approaches. These issues were brought sharply into focus last year, during NOTAMed gliding competitions and/or when the radar service being provided by Benson was derived from SSR-only information since the Watchman radar had a long-term unserviceability.

This Airprox indicates that the local gliding community may not be fully cognisant of the flying operations at RAF Benson – it could be considered unwise for a glider pilot to choose to operate in that particular piece of airspace if the pilot understood that a Puma or Merlin ac was very likely to be operating there, whilst knowing that the glider itself is difficult to see. It appears that the risk acceptance differs between the gliding community and other aviators.

It is widely recognised that the small size and white colour scheme of gliders (and other small light ac) makes visual acquisition extremely difficult, whilst glider construction also means that they are difficult to see on radar. In the short term, JHC ac operating in the RAF Benson area are encouraged to try to obtain a primary radar-derived TS when this is practical. In the medium term, JHC HQ supports the initiative by RAF Benson that this specific problematic airspace be mandated as 'transponder-equipped ac only' which would enable all ac to be seen on both primary and secondary radar whether they are radar-reflective or not.

In addition to efforts to improve the airspace issue, JHC HQ requests that the UK Airprox Board recommends the fitting of transponders to all gliders and similarly small, light coloured general aviation ac, in order to reduce both the frequency of Airproxes and the likelihood of an actual collision (there have been 9 assessed Airproxes involving gliders and military RW ac in the last 3 years). Further, JHC HQ requests that the UK Airprox Board undertake to educate the glider community on the risk of mid-air collision in the vicinity of military aerodromes.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

[Some of the discussion in this incident also applies to 2011028.]

The HQ JHC Member reported that it was concerning that the Merlin pilot was not informed that they were operating under a reduced TS, due to the primary radar being on maintenance, until after he had reported the presence of the first glider to APP; had he known, he would have been aware that information on gliders would not have been forthcoming from ATC.

A military Advisor, familiar with both fast-jet and gliding operations opined that there was a widespread lack of understanding of gliding operations among both military aircrew and ATC staff; he urged closer co-operation to foster mutual understanding. He went on to say that the MoD is trying to provide liaison staff at major gliding competitions so that up-to-the-minute information about movements/routes can be relayed to military airspace users. Noting the HQ JHC comment regarding the high military traffic levels around Didcot, a gliding Member stated that it was *'the busiest area in Britain'* for gliding traffic due to precisely the same airspace constraints that funnel both N/S traffic and E/W traffic through the area; the power station is a particular focus as it often provided good thermals.

There was genuine concern from both military and gliding Members that despite a previous mid-air collision in the area, little had been done to integrate or separate the traffic (on the day of the mid-air collision there had been in excess of 100 gliders transiting the area). Unlike other areas where there were more obvious solutions: not all traffic in the area is radio equipped, but for ac that are fitted with radios and for those pilots with RT licences, Benson is not necessarily the obvious station to call (Farnborough/Brize Norton being the LARS providers); many gliders from several often distant airfields N, S, E and W of the area transit through the area and, finally but importantly, Benson instrument patterns are also constrained by the airspace and RW direction.

A military controller Member reminded the Board that, notwithstanding that the Watchman primary radar was unavailable on this occasion, gliders are very difficult for controllers to 'see' and react to as they are often 'invisible' on ATC radars; he suggested that more effort be put into inexpensive technological solutions. A gliding Member suggested that such a solution already exists, namely FLARM, which is widely used by gliders. In his opinion FLARM was a more practical solution for gliders' traffic awareness and collision avoidance than Modes C and S transponders. It was agreed, however, that neither the CAA nor the MoD are likely to pursue this course unless it is more widely acceptable and used universally, preferring the (currently) ICAO agreed Mode C/S solution.

Notwithstanding the difficulty of seeing gliders on primary radar, the Board also queried the necessity for conducting maintenance on the primary radar during hours of the day when gliding activity was likely to occur. Members agreed that maintenance should schedule for hours when there were likely to be the fewest number of aircraft without transponders airborne.

The DAP Advisor informed the Meeting that there is an established procedure for proposing and agreeing airspace changes and, as far as he was aware, no application had been made for a TMZ (Transponder Mandatory Zone) in the Benson area; he went on to say that should HQ JHC make such an application it would be handled in the normal manner with all interested parties being consulted. That being the case, the Board noted the HQ JHC recommendation but could neither support nor reject it and advised an application through the correct channels.

Regarding the proposed recommendation regarding the mandatory fitment of transponders to gliders and GA aircraft, the Board noted that in this incident, since Benson were operating 'SSR only', had the glider been squawking, Benson would have been able to pass TI to the Merlin crew allowing them to take avoidance. However, it was pointed out that the Board had made a similar recommendation following an Airprox between a glider and a Tornado (Airprox 2005 186): 'The CAA should continue to promote with renewed urgency the production of a lightweight transponder and, when available, consider mandating its carriage and use in gliders'. This recommendation was agreed but the consultation process did not result in legislation but increased the areas where they are mandatory, albeit with only small changes in Class G airspace. Although some Members were in agreement with the JHC recommendation, others were not and, since this aspect had been recently reviewed by the CAA, the Board could not support the recommendation. [UKAB Note (3): The Board was more or less equally divided regarding mandatory use of transponders].

The JHC Member stated that, in view of their concern over the degree of risk they perceive of a mid-air-collision between one of their ac and a glider or light ac, HQ JHC is looking at all measures to mitigate this risk; they are, however, anxious that the GA/Gliding community should co-operate in ensuring that the airspace is available for safe and flexible use by all operators.

The Board was concerned that a (at least one) glider had flown so close to a large helicopter and apparently chosen not to make a report. Members agreed unanimously that it was inconceivable that the glider pilot neither saw nor heard the Merlin (it was seen to discontinue thermalling and depart to the N). A Member noted the great advances made in the reporting culture among professional aviators and opined that, on the evidence of this incident, the benefits of such a culture do not appear to have been realised by glider pilots. The Gliding Member undertook to discuss the topic with the BGA officers.

Several different causes were considered but, since there was no report from the glider pilot giving his perspective, Members were forced to conclude, somewhat unsatisfactorily, that the incident had been a conflict in Class G airspace. Regarding the degree of risk, since the Merlin pilot did not see the glider until it was too late to initiate any meaningful avoidance, and in the absence of a report from the glider pilot, it was agreed unanimously that there had been an erosion of normal safety margins.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G Airspace between the Merlin and an untraced glider.

Degree of Risk: B.

AIRPROX REPORT No 2011028

Date/Time: 7 Apr 2011 1409Z

Position: 5116N 00105W
(5nm W Odiham - elev
405ft)

Airspace: Odiham MATZ (Class: G)

Type: Chinook Untraced Glider

Operator: HQ JHC N/K

Alt/FL: 1600ft NK
(QFE 1013mb)

Weather: VMC CAVOK NK

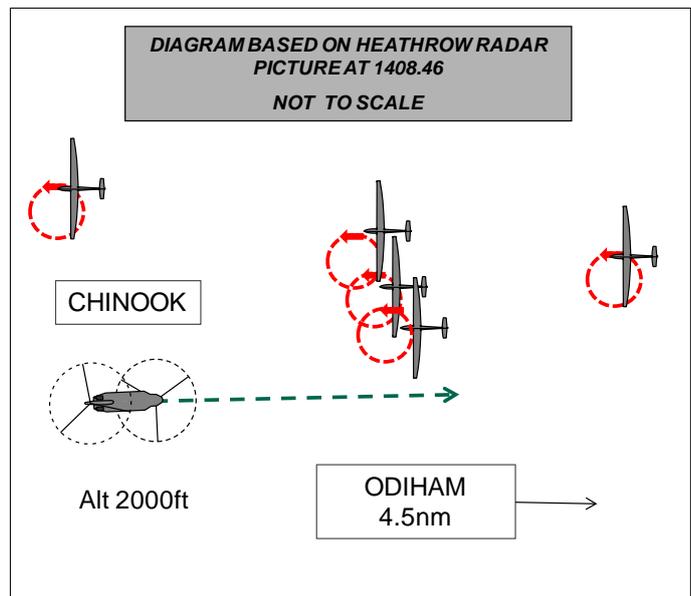
Visibility: 20km NK

Reported Separation:

0ft V/150m H NK

Recorded Separation:

NR



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE CHINOOK PILOT reports flying a green helicopter on an SRA recovery to Odiham under a TS, in good weather conditions, squawking as directed with Mode C and S with no CWS fitted. While under radar vectoring heading 085°, out of sun, at 120kt, just prior to descent ATC called traffic in their 11 o'clock with no height and then cleared them to descend on the glideslope. On looking in the 11 o'clock the traffic was identified an estimated 300m away, and although it was much closer than acceptable, it was not an actual collision risk. The LH seat pilot then saw another object in their 9 o'clock, slightly higher than them and about 150m away, which transpired to be a white glider banking to the R away from their ac. This was perceived to pose a high collision risk as they had descended through the alt of the glider and he reported the incident to ATC on the frequency in use.

The glider was seen late and only after the call about the other ac from ATC; they were in a period of high workload with the HP 'heads in' on instruments while the NHP had just completed pre-landing checks and set up the approach aid (GPS) requiring further time 'heads in'.

UKAB Note (1): Despite extensive procedural tracing action the glider pilot could not initially be identified. However after a further approach the following e-mail was received:

'On Thursday the 7th of April I took a launch from Lasham airfield in my LS8 glider (reg given) with the intention of flying a task to the North. The weather didn't turn out as predicted and I was finding it difficult to stay airborne locally to Lasham so I abandoned the original task and decided to stay local to the airfield. The visibility on this day varied from 5n to 6km looking into sun and 10km looking down sun. About an hour into the flight when I was just south of Basingstoke and slowly climbing in a thermal I spotted a Chinook helicopter about 2 to 3 miles away approaching my location from the west. After another two turns I became obvious that he had not seen me so I straightened up and headed North. I would estimate the separation between us was 500 to 600ft. If I had carried on circling my estimation was that he would have passed 200ft below me. I was fully aware of his position at all times and I chose to move away because I suspected that he was flying a simulated instrument approach and there would only be one set of eyes looking out'.

The pilot did not say if there were any other gliders in the area as shown on the radar, nor if he was the closest glider to the Chinook. Further 'just S of Basingstoke', his reported position is about 6nm on the C/L for RW09 and about 1½ nm W of the reported incident position; it is therefore thought unlikely that he was the reported glider.

The TD Controller reported that he was training a UT controller on SRA when the Chinook was handed over from APP. Communication was established at 7.5nm final, about half a mile south of the CL. Conflicting traffic was seen at a range of 5 and a half miles final and half a mile N of the CL. The Chinook was converging with the CL while the glider continued to manoeuvre in the Chinook's 11 o'clock at about 2nm. Following the initial handover of the Chinook he instructed the UT controller to call the glider to the Chinook; the pilot acknowledged the traffic and continued as instructed. A few moments later, the pilot stated his intention to file an Airprox against the glider, later explaining that he thought the glider pilot was operating in an inappropriate area and displaying poor airmanship to the detriment of flight safety.

HQ 1GP BM SM reports that this Airprox occurred 4.5nm W of Odiham between a Chinook conducting an SRA in receipt of a TS from Odiham TD and an untraced glider.

Lasham airfield is a notified glider site approximately 4.5nm SW of Odiham, which has a mandatory military avoidance of 2nm radius up to 3000ft agl. The UK Mil LFHB contains a further warning that "intensive gliding activity takes place within 5nm of Lasham." The diagram below shows the local area.



The Chinook free-called Odiham APP at 1402:08 while 8nm WSW of Odiham, was identified and was placed on TS, reduced by APP, stating, "reduced traffic information, you are entering an area of high traffic density with Lasham gliders."

Although the Chinook requested a PAR for RW09, this was not available as the PAR was on maintenance; an SRA was offered and accepted.

At 1407:24 APP transferred control of the Chinook to Talkdown (TD), with comms being established at 1407:35 when the Chinook was 7nm out. TD was manned by a trainee and an experienced instructor. From 1407:35 until 1408:08 there was an almost continuous RT exchange between TD and the Chinook.

At 1408:16, TD passed TI to the Chinook stating, “*traffic north-east, 1 mile, manoeuvring, no height information, possibly gliders*” and almost immediately, the pilot responded that they were visual with the traffic. At that point on the radar replay one primary-only contact can be seen 1nm NE of the Chinook, with 2 further intermittent primary contacts 1.5nm to the NE.

The radar replay shows that the CPA probably occurs at about 1408:37. At 1408:39, the next sweep of the radar after the CPA, there are 4 primary-only contacts almost directly N of the Chinook, the closest of which is just to the NW. Although the minimum separation cannot be measured, it is likely to accord with the Chinook pilot’s report. Based upon the Chinook pilot’s sighting report and their position on radar, the gliders were on, or just N of, the extended CL at about the same height as the Chinook within the instrument pattern.

The TD instructor reported that he instructed the U/T controller to call the glider to the Chinook; it is assumed that this prompt occurred between 1408:08 and the passing of TI at 1408:16. Given the RT exchange between TD and the Chinook in the 43sec after the initial call, 1408:08 would have been the first opportunity to pass TI. Moreover, the TD instructor correctly assessed that there was sufficient time to prompt TD to pass TI, before the delay became unacceptable. It is considered that that TI was passed by TD in a timely manner and enabled the crew to visually acquire at least one of the gliders operating in that area, 14sec before the CPA.

The operation of the gliders in such a constrained piece of airspace causes both technical and human problems. The lack of SSR in gliders and the ac construction makes them almost invisible to surveillance radars and it is impossible to identify the number of gliders operating in the area, thereby making it impossible for ATC to pass anything more informative than generic TI. Furthermore, there is a risk for the aircrew that, given the difficulty in visually acquiring gliders, once they have sighted one glider, the human eye will focus on that for a short period and exclude other objects, thereby reducing the time available to visually acquire any other targets.

Notwithstanding that the gliders were operating within Class G airspace, their position close to the RW approach path of a busy airfield at about the same alt as the glidepath is not considered good airmanship.

This Airprox involved a late sighting of the gliders by the Chinook crew at a time of high cockpit workload. A contributory factor was that the gliders chose to operate, inside the MATZ, close to the Odiham instrument pattern.

BM SM Spt recommends that Odiham continue to engage with the local flying community to develop awareness of their operations.

UKAB NOTE (2): The recording of the Heathrow radar shows the Chinook throughout as described by in the HQ 1 GP BM SM report. There are multiple primary only intermittent contacts, presumed to be gliders, manoeuvring just to the N of the Odiham RW09 C/L.

HQ JHC comments that the comments by HQ 1 GP BM SM are fully supported. The poor airmanship displayed by the glider pilots who chose to operate on the extended centreline of a busy airfield at around the same altitude as the glide path, undoubtedly made an Airprox much more likely to happen. The lack of SSR in gliders has been highlighted, alongside the glider’s construction, as making them difficult to see on surveillance radars and by the human eye (especially when scanning for several ac at once).

HQ JHC considers that a mid-air collision with a glider or light coloured small ac is a very significant risk. This Airprox indicates that the local gliding community is probably not fully cognisant of the flying operations at RAF Odiham and/or that the risk acceptance differs between the gliding community and other aviators.

It further supports the requests in HQ JHC comments on Airprox 2011023 - that the UK Airprox Board recommends the fitting of transponders to all gliders and similarly, light coloured small ac in order to reduce the frequency of Airproxs and the likelihood of an actual collision between a military RW ac and a glider, and that the UK Airprox Board undertakes to educate the gliding community on the risk of mid air collision in the vicinity of military aerodromes.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Members agreed that soaring close to the instrument approach path to the active RW of a busy military airfield is, at best, ill-advised.

The gliding Member was surprised that there was not a closer liaison between Odiham and Lasham and better communication between Odiham ATC and Lasham. There were several plausible suggestions one of which was that Lasham gliders operating inside the MATZ or close to the instrument pattern, should listen out on a nominated (VHF) frequency on which Odiham ATC could broadcast the presence of instrument traffic as soon as they become aware of an ac inbound; this would allow gliders temporarily to remain clear of the area. The HQ 1 GP BM SM Advisor stated that there was liaison between Odiham and Lasham, but others suggested that this might not be at the level required to agree integration procedures.

Several civilian Members expressed surprise that a military ac on a SRA (or GCA) should operate in receipt of a TS as they considered that pilots on instrument approaches should be in receipt of a higher level of service; they acknowledged, however, that military instrument approaches are usually flown in Class G rather than Class D airspace, which is generally the case at civilian airfields with similar traffic densities. In any case, this incident where there were gliders soaring close to the RW C/L provides a good example of why a DS can be inappropriate as the ac would be vectored round the 'unknowns' and never achieve the aim of conducting a radar approach; that being the case, a TS was the only feasible option.

The HQ JHC recommendation regarding compulsory fitment of transponders was not supported by the Board; the reasoning was discussed previously on Airprox 2011023 and is outlined in that report.

The reluctance of glider pilots to submit reports was again a factor in assessing this Airprox. The Board was grateful for the glider pilot's report at UKAB Note (1), but agreed that, since this pilot was slightly further out from Odiham, it was likely that he was not the one who came closest to the Chinook. Members did not believe that the reported pilot could have come so close to a Chinook without becoming aware of it at some stage. However, in the absence of a report from the glider pilot, it was impossible to determine whether and/or when he saw the Chinook and whether and/or when he took avoiding action. Therefore the Board reluctantly concluded that the incident had been a conflict on the Odiham approach. In assessing the risk, the Board noted that the Chinook crew saw that the glider was 150m distant and turning away from them and therefore agreed that on balance, there had likely been no risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict on the instrument approach to Odiham.

Degree of Risk: C.

AIRPROX REPORT No 2011029

Date/Time: 6 Apr 2011 1340Z

Position: 5102N 00154W (9nm SW of Boscombe Down - elev 407ft)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: Gazelle Grob Tutor T Mk1

Operator: MoD FTR HQ Air (Trg)

Alt/FL: 5000ft -
QFE (1011mb) QNH

Weather: VMC Sky Clear VMC CLAH

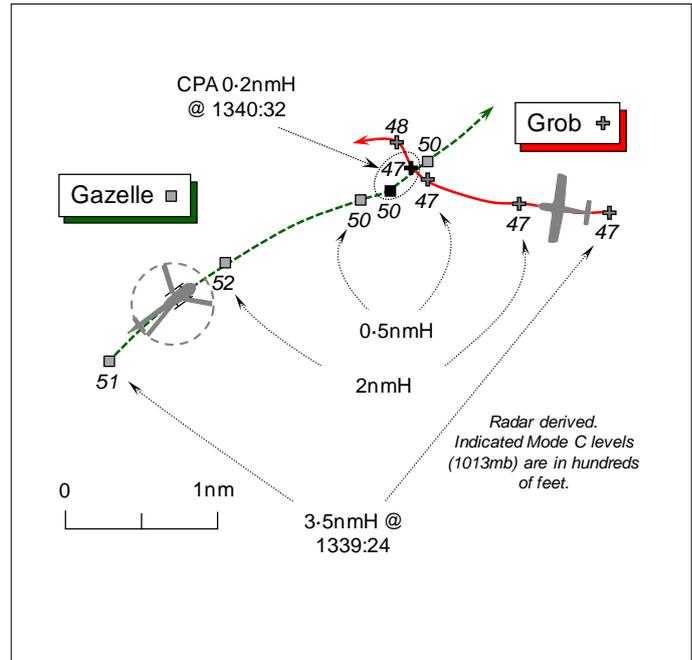
Visibility: 50km 10km

Reported Separation:

Nil V/200m H NK

Recorded Separation:

300ft V/0.2nm H (~370m)



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE WESTLAND GAZELLE HT MK3 HELICOPTER PILOT reports he was conducting advanced training, VFR to the S and SW of Salisbury under a TS from Boscombe APPROACH (APP), demonstrating a flight test technique. A squawk of A2612 was selected with Modes C and S on; TCAS is not fitted. His helicopter has a white colour-scheme; the white HISLs were on.

Before the Airprox occurred traffic had been previously called by APP out to the E, which had been identified about 5min earlier operating at very low level (about 1000ft) with no confliction. Flying level at 5000ft Boscombe QFE (1011mb) heading 090° at 80kt, APP called two contacts, believed to be to the N of his ac. One was identified going away as no confliction - the other was not identified [seen]. Subsequently, on looking up from the cockpit instruments both pilots saw a white fixed-wing light ac in a banked R turn at 12 o'clock, 300-400m away and slightly below his helicopter. Minimum horizontal separation was 200m as the other ac – the Grob Tutor – resumed its course; he took no avoiding action as the Tutor had already turned away by the time they saw it. He then made a call to APP to state that he was visual with another ac now passing astern, but did not recall having been told about it. The Risk was assessed as 'high' and he added frankly, both student and instructor were looking heads-in at the time of the Airprox.

THE GROB TUTOR T MK1 PILOT reports he had departed from Middle Wallop for a local elementary training sortie, his third of four sorties of the day with a total brakes-off to brakes-on time of 5hr 50min. He does not recall the specific weather conditions although they would have been suitable for the exercise he was teaching, which was Straight and Level 1 & 2 with perhaps 1min of manoeuvring.

During the period that the Airprox occurred he would have been flying between 3000-6000ft amsl whilst operating between the SAM VOR radials of 270° to 300°, from 10nm to 30nm range. Boscombe ZONE was providing a 'listening watch' on 256.500MHz and a squawk of A2612 was selected with Mode C on; Mode S is fitted but TCAS is not.

He does not recall experiencing any event suggesting an Airprox had occurred and his normal practice on seeing another ac is to turn to avoid it or, if appropriate, increase the separation distance.

Whilst they occasionally see other non-Middle Wallop ac in the local training area, he did not recall seeing any other ac on this particular day that had caused him any safety concern.

His aeroplane is coloured white with a blue stripe and all the ac's lighting was on.

THE BOSCOMBE DOWN APPROACH CONTROLLER (APP) reports the Gazelle helicopter was under his control throughout this sortie. The helicopter was operating out to 15nm SW of Boscombe Down at an altitude of 5000ft. At the same time, there were a number of Middle Wallop ac operating in the same area, mostly indicating below FL40 Mode C. There were, however, two ac indicating at about the same level as the Gazelle; one contact manoeuvring 2nm away to the NE and the second, was about 4nm E tracking W. Both of these ac were called to the Gazelle pilot, who reported visual with both ac. As the Gazelle pilot had called visual with the traffic, no further TI was offered. A short time later, the Gazelle pilot reported that an ac had passed close by at the same level. This was identified as the E'y of the two contacts that had earlier been called to the Gazelle crew.

THE BOSCOMBE DOWN ZONE CONTROLLER did not submit a report.

HQ 1GP BM SM reports that this Airprox occurred between a Gazelle HT Mk3 conducting flight test training in receipt of a TS from Boscombe APP and a Tutor T Mk1 operating under a 'listening watch' from Boscombe ZONE.

'Listening Watch' has been introduced for Middle Wallop based Tutor ac to facilitate coordination when required against Boscombe Down ac operating under IFR. There is no form of flight following or any undertaking to provide an ATS inherent in this 'listening watch', the Tutor crews simply 'check-in' on the ZONE frequency and are acknowledged.

At 1338:47, APP passed TI to the Gazelle crew on other unrelated traffic to the NE of the Gazelle, "...traffic north east 3 miles manoeuvring believed to be fixed wing flight level 4-5", which was acknowledged with "...looking". This was updated at 1339:12, "...unknown contact north north east 2 miles South West", with which the Gazelle pilot reported visual 3 sec later.

At 1339:25, APP passed TI to the Gazelle crew on the subject Tutor stating, "*further traffic, east-north-east, 4 miles, west bound, flight level 4-7.*" Following this transmission at 1339:29, the Gazelle pilot replied that they were, "*visual with traffic.*" When the TI was issued the LATCC (Mil) radar recording shows that the Tutor was 3.5nm ENE of the Gazelle indicating 4700ft Mode C (1013mb), with the Gazelle indicating 5100ft Mode C. [UKAB Note (1): The CPA occurred at 1340:32 with the Tutor turning R through the Gazelle's 12 o'clock at a range of 0.2nm and below it with vertical separation of 300ft Mode C evident.] At 1340:47, the Gazelle pilot stated on the APP frequency, "*gone behind her.*"

From an ATM perspective, although the Gazelle pilot reports that they could not recall being informed of the Tutor, it is clear that APP did pass accurate TI about the Tutor. Moreover, the Gazelle pilot immediately reported visual with, "*visual with traffic.*" However, at that time (1339:29) the ac that had been the subject of the previous TI passed at 1338:47, and updated at 1339:12, was approximately 1.2nm N also indicating 4700ft Mode C. Given the amount of background traffic and the similarity of the positions of the aircraft involved, the Gazelle crew may have missed APP stating "*further traffic*" and thought that the TI related to the ac that he had previously called visual with. This hypothesis is consistent with the Gazelle pilot's belief that he had not been passed TI on the subject Tutor and their late sighting of it. Nevertheless, from APP's perspective, the controller passed timely and accurate TI to the Gazelle crew in accordance with CAP774, to which they replied that they were visual.

UKAB Note (2): This Airprox occurred at the base and just below the Boscombe Advisory Radio Area (ARA) promulgated in the UK AIP at ENR 5-2 which gives the lateral co-ordinates of the Area within Class G airspace and the vertical limits of FL50 – FL195. It is noted in Remarks that:

'Considerable test flight activity. Test flight activity often requires the pilots to fly profiles which limit their ability to manoeuvre their aircraft in compliance with the Rules of the Air. Such flights will receive a radar service from Boscombe Down or the Swanwick Military Special Tasks Cell.'

HQ AIR (TRG) comments that the Tutor complied with extant Group Air Staff Orders (GASOs) regarding the requirement or otherwise to operate under a TS. The Tutor pilot was also operating clear of the ARA on this occasion but is not required to. However, following this incident, a local review of procedures, initiated by No1 EFTS, is under way. Unfortunately, segregation of test flights is not always practical and operating under a TS is the next best option. However, this incident highlights that even with perfect TI the system can break down if crews misinterpret the TI given or choose not to take their own separation based upon it. Collision avoidance in this case relied on the 'see and avoid' principle, the flaws of which were exposed here. The ongoing embodiment of a Traffic Alerting System on the Tutor will add a further layer of mitigation and should avoid the concentrating effect of any potential alternative geographical airspace limitations.

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, a report from the APP controller involved and reports from the appropriate ATC and operating authorities.

The Gazelle crew had wisely sought to supplement their lookout with a TS whilst engaged in their intensive instructional sortie and it was evident that APP was conscientiously providing a good level of TI to assist the crew's SA. The HQ 1Gp report coupled with the RT transcript and radar recording confirm that the Gazelle crew had indeed been passed comprehensive TI by APP about the subject Grob Tutor when it was 3-5nm away, before they subsequently sighted it 300-400m away and slightly below their helicopter, believing they had not been told about it. As the Gazelle pilot had reported just 4 sec after APP's transmission, "*visual with traffic*", it was understandable that such a reply would have assured the controller that the subject Grob had been seen and that the Gazelle crew would maintain their own separation, making any further update superfluous. Controller Members recognised that all the essential elements of TI were included in APP's transmission, and the Board agreed with HQ 1Gp BM SM's contention that the Gazelle pilot had probably missed or not assimilated correctly the "*further traffic..*", perceiving that the TI related to the ac previously seen. This was most unfortunate but such mistakes can happen occasionally in a busy traffic scenario and which are virtually impossible to guard against. Notwithstanding any assistance from ATC, in Class G airspace it is the pilots' responsibility to see and avoid other traffic; the Board agreed that part of the Cause here was a late sighting by the Gazelle crew.

All involved were undoubtedly doing their best to complete their specific instructional/training assignments as efficiently as possible and there was a fine balance to be struck between achieving the primary training goals of the sortie with the provision of a compatible ATS to enhance the pilots' SA. However, the Board was somewhat surprised that the Grob Tutor pilot had not similarly availed himself of a TS. In the Board's view a 'Listening Watch' contributed nothing to the pilot's SA and Members were surprised that a BS was not being requested at a minimum, or preferably a TS. The Board welcomed the review initiated by No1 EFTS; the HQ Air Trg Member briefed the Members that the Army Flying Grading organisation was seeking an increase in controller manpower with a view to Middle Wallop ATC providing a TS to such flights as the norm.

As it was the Grob Tutor pilot reports that he had not seen the Gazelle at all, or if he did, had discounted it as a factor. It was feasible that the R turn evinced by the radar recording might have been an avoiding action turn but this was conjecture. The Board could assess the Airprox only on the basis of the reports provided and Members concluded that this was a non-sighting by the Tutor pilot. The Board determined, therefore, that this Airprox had resulted from a non-sighting by the Tutor pilot and a late sighting by the Gazelle crew. The radar recording shows that 300ft of vertical separation existed at the closest point of 0.2nm as the Tutor crossed ahead and probably when the

Gazelle pilot had spotted the Tutor. Furthermore, the Gazelle pilot had realised that the Tutor was turning away from his helicopter at the CPA and his ac was passing clear astern so no avoiding action was necessary. This convinced the Members that in these circumstances there was no Risk of a collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A non-sighting by the Tutor pilot and a late sighting by the Gazelle crew.

Degree of Risk: C.

AIRPROX REPORT No 2011032

Date/Time: 9 Apr 2011 1514Z (Saturday)

Position: 5140N 00203W (O/H
Kemble - elev 433ft)

Airspace: ATZ (Class: G)

Reporting Ac Reported Ac

Type: Evektor EV97 Jurca Sirocco
Eurostar

Operator: Civ Trg Civ Pte

Alt/FL: 1500ft ↓ 1500ft ↓
(QFE 1014mb) (QFE 1008mb)

Weather: VMC VMC HAZE

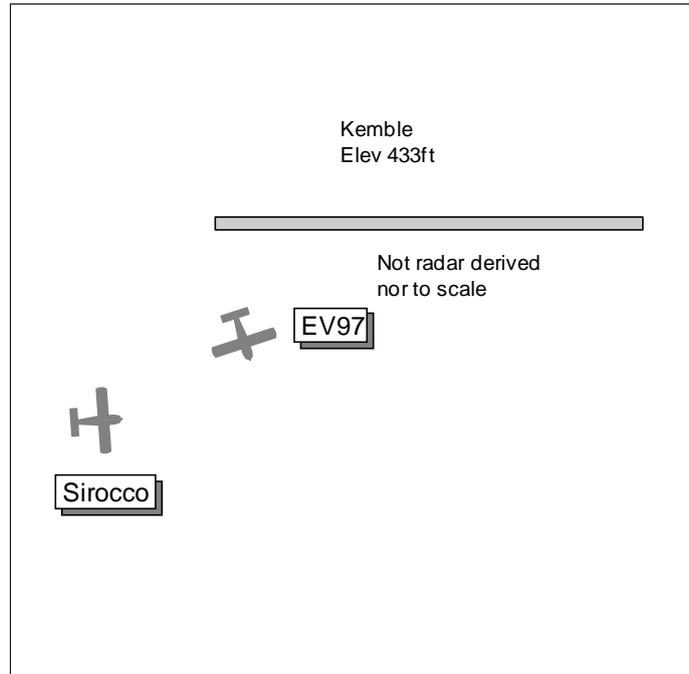
Visibility: >10km 5000m

Reported Separation:

100ft V 150-200ft V

Recorded Separation:

NR



BOTH PILOTS FILED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE EVEKTOR EV97 EUROSTAR PILOT reports flying a dual test flight with a PPL holder for revalidation of a NPPL, VFR and in communication with Kemble. The visibility was >10km in VMC. The PF joined O/H for RW08 from the W at 2000ft QFE 1014mb and at the midpoint made a gentle turn 30° R starting a descent. On realising his mistake the PF straightened out, climbed back to 2000ft and correctly turned L with the cct pattern, first over the live-side - where they encountered a Cessna inbound from the NW about 200ft higher - before then crossing the RW08 numbers as per CAA recommendation and starting a descent at 80kt. Their lookout to the W was into sun but in any event they did not see the Sirocco until it passed; it was almost certainly in a blind spot under their starboard wing. Looking up at the Cessna above to see how it was going to join they saw the Sirocco as it flashed past about 100ft below and a little behind their ac on a heading of 060°, close enough to give them a fright. At the time they were about 1500ft QFE in a gentle L turn descending deadside to cross the RW26 threshold numbers at cct height. He reported the 'Airmiss' to Tower. The Sirocco appeared to climb to 2000ft and proceeded to fly a wide LH cct outside the ATZ, for as they approached the end of the downwind leg the Sirocco was so far away he thought it was flying away. Afterwards, on reflection, both he and his student thought at the time that the Sirocco was a large ac (he commented that it looks like a Space Shuttle); perhaps this was a trick of the bright sunlight, so that his perception of the Sirocco's wide cct was a misjudgement. He thought the Sirocco pilot went straight into a large LH pattern after going through the O/H, intending to join at cct height 1000ft. He opined that he emphasised in training the importance of accurate flying in the ATZ, a FREDAH check on approach, confirmation of the QFE and joining O/H at 2000ft or in line with this and other standard procedures. Also a greater emphasis on listening out on the radio for the position of other traffic and on lookout for this and any other traffic.

THE JURCA SIROCCO PILOT reports flying solo inbound to Kemble VFR and in communication with Kemble on 118.9MHZ with transponder switched off. The visibility was 5000m in haze in VMC and the ac was coloured white/green with no lighting fitted. Whilst joining for RW08 directly from the W descending on the deadside through 1500ft QFE 1008mb heading 090° at 120kt the other ac was not seen until it crossed above his flightpath from L to R by 150-200ft with minimal horizontal separation, too late to take avoiding action. He assessed the risk as high.

THE KEMBLE FISO reports on duty in the VCR when an Airprox was reported at 1515Z by the pilot of an EV97 Eurostar against a Jurca Sirocco. Both ac were joining via the O/H for RW 08LH in good VMC conditions (+10km, FEW 040, QFE 1014 [actually 1008mb]). Aerodrome traffic levels were light with 3 ac joining, 1 outbound VFR SE'ly and 1 pending departure. The Sirocco was the third of the 3 ac to request join and was given relevant TI on cct and joining traffic. At the time the Airprox was reported the EV97 was over the RW heading S and descending crosswind towards the deadside. The Sirocco was seen to join straight down the RW (heading 080°) at a level slightly below the EV97. The Airprox was witnessed by the second FISO (on duty as VCR Assistant) who mentioned, a few moments before the Airprox was reported, that separation appeared to be compromised.

The pilot of the Sirocco was later interviewed by the Operations Manager later in the day who confirmed that he had not seen the Eurostar until after they had passed. The pilot of the EV97 confirmed that he was submitting an occurrence report to the CAA for investigation. Both pilots were reminded of the need for care to be taken whilst flying in the cct and in particular to joining at the correct heights.

ATSI reports that the Airprox was believed to have occurred at 1514, within the ATZ at Kemble Airport, which consists of a circle, radius 2nm, centred on RW08/26 and extends to 2000ft above the aerodrome elevation (436ft).

The Airprox was reported by the pilot of an EV-97 Eurostar Microlight operating on a local detail from Kemble. The second ac was a Jurca Sirocco, inbound to Kemble from Badminton.

A FISO service was provided at Kemble. Traffic levels were reported as light with RW08 in use.

CAA ATSI had access to RT recording and radar recording provided by NATS Swanwick, together with written reports from both pilots and the FISO.

Although not a requirement, Kemble do provide an RT recording facility, but on this occasion the recorder failed to record time signals. The transcription was therefore aligned to the time of the Airprox occurrence at 1514 UTC.

The FISO reported the weather conditions as good VMC (+10km FEW040). The written reports from the EV97 pilot and FISO indicate that the QFE was 1014, however the RT transcript and ATSU confirm that the QFE was 1008. The weather for Lyneham is provided;
METAR EGD L 091450Z 09010KT 9999 FEW045 BKN300 19/09 Q1023 BLU NOSIG=

At 1508:40, the EV97 pilot called Kemble Information and reported, *“(EV97)c/s returning from the west approximately four miles out for an overhead join.”* The FISO replied, *“(EV97)c/s report overhead er for runway zero eight lefthand the Q F E one zero zero eight one aircraft descending deadside one aircraft joining from the northeast.”* The EV97 pilot acknowledged, *“QFE one zero zero eight for zero eight left hand (EV97)c/s.”*

At 1509:23, the Sirocco pilot called, *“(Sirocco)c/s is returning to you from Badminton present position five miles west of the field at two thousand feet er request joining instructions over.”* The FISO replied, *“(Sirocco)c/s Runway zero eight the Q F E is one zero zero eight er circuit traffic is about to report downwind er I've got one joining from the northeast one other aircraft joining from the west.”* The Sirocco pilot responded, *“(Sirocco)c/s runway zero eight lefthand Q F E one zero zero eight.”*

At 1511:23, the EV97 pilot reported O/H.

At 1512:35, the FISO advised another flight that was climbing towards the O/H before setting course, *“.....look for traffic in the overhead descending deadside and traffic joining from the west via the overhead.”*

At 1513:39, the Sirocco pilot reported O/H and the FISO advised, “(Sirocco)c/s one aircraft low over the piano keys one aircraft established base leg.” The Sirocco pilot replied, “Roger” and the FISO added, “I’ve got one other Eurostar reported in the overhead unsighted to me.”

At 1514:00, the EV97 pilot reported the Airprox, “Er Kemble (EV97)c/s descending deadside I’d just like to report an Airmiss with the traffic going e-west to east at about fifteen hundred feet.” This was acknowledged by the FISO followed by a crossed transmission believed to be to the Sirocco, “Gol..... for zero eight.” The Sirocco pilot acknowledged the call with “Roger.”

The FISO’s written report indicated that EV97 was O/H the RW heading S and descending towards the deadside and the Sirocco was observed to join straight down the RW heading 080°.

The EV97 pilot’s written report indicated that the EV97 ac was at a height of 1500ft and the Sirocco was 100ft below.

Using the radar recording it was not possible to identify the ac concerned or the occurrence itself; however, at 1514:12, radar recording shows three contacts in the Kemble overhead. One contact is crossing the threshold area of RW08 tracking S and another contact is tracking 085° and positioned 0-5nm S of the RW.

At 1517:32 the FISO asked the EV97 pilot, “...confirm visual with the er Sirocco.” The EV97 pilot responded, “Is er that the aircraft on and extremely wide left base over.” This FISO advised, “affirm” and the EV97 pilot confirmed the Sirocco was the ac involved in the Airprox.

The FISO provided information to both flights. The Manual of Flight Information Services, CAP410 Part B, Chapter 1, Page 1, Paragraph 2.1, states:

‘The FISO has the following specific responsibilities:

- a) issuing information to aircraft flying in the aerodrome traffic zone to assist the pilots in preventing collisions.

The written reports from both pilots indicated that they each sighted the other late.

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, a report from the FISO involved and a report from the appropriate ATC authority.

With both the EV97 and Jurca Sirocco joining the cct, both crews were responsible for maintaining their own separation from other traffic through see and avoid. The EV97 pilot had reported approaching from the W to execute an O/H join and the FISO issued appropriate TI to aid their SA on other traffic, which included traffic joining from the NE, a Cessna. The Sirocco pilot had then called, also inbound from the W, and was given TI by the FISO, including that on the EV97. However, the Sirocco pilot did not declare his intentions of how he intended to integrate into the traffic pattern. After the EV97 pilot reported O/H the FISO informed departing traffic about the EV97 descending O/H and the Sirocco, which he believed was also joining via the O/H, the norm being a standard O/H join unless stated otherwise. About 1min later the Sirocco reported O/H and was told about the EV97 O/H but unsighted to the FISO. It was then that the Airprox occurred. Members sympathised with the EV97 pilot’s predicament as he would not have been expecting the Sirocco to be joining as it did and unannounced, however Members agreed that both ac were still joining the cct to fit in with other traffic already established in the visual cct pattern. The EV97 crew were looking up at the Cessna above when the Sirocco was first seen as it passed slightly behind and 100ft underneath their ac, effectively a non-sighting and a part cause of the Airprox. The Sirocco pilot elected to join directly onto the deadside descending, only seeing the EV97 as it crossed from L to R 150-200ft above, with no time to take avoiding action, which Members agreed was effectively a non-

sighting and the other part of the cause of the Airprox. It was clear that these 2 ac had passed each other by chance, neither pilot seeing each other's ac in time to affect the outcome, which led the Board to agree unanimously that an actual risk of collision had existed during this incident.

PART C: ASSESSMENT OF CAUSE AND RISK

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

Degree of Risk: A.

AIRPROX REPORT No 2011034

Date/Time: 14 Apr 2011 1453Z

Position: 5539N 00156W
(5nm SSE Berwick)

Airspace: UKDLFS (Class: G)

Reporting Ac Reported Ac

Type: Tornado GR4 Tucano

Operator: HQ AIR (Ops) HQ AIR (Trg)

Alt/FL: 260ft MSD 250ft MSD
(RPS 1011mb)

Weather: VMC CLBC VMC CLBC

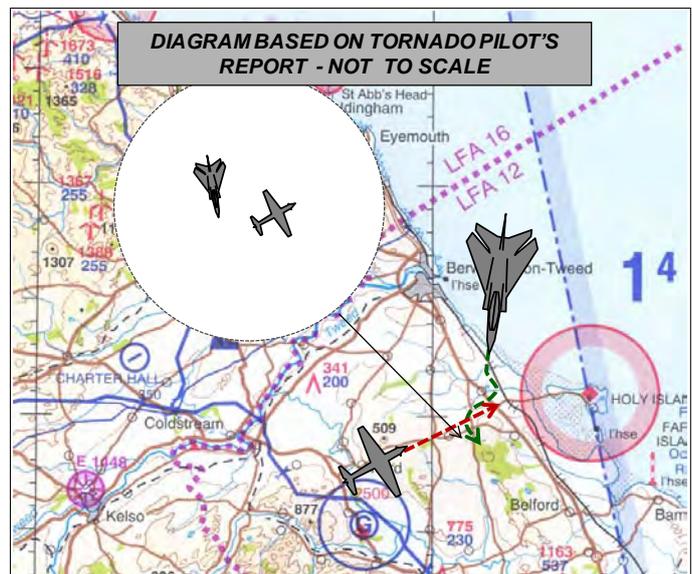
Visibility: 20km 20km

Reported Separation:

<1000ft H NK

Recorded Separation:

NR



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE TORNADO GR4 PILOT reports flying a grey ac with all lights switched on, squawking 7001 with Mode C, as No 2 of a pair of Tornado GR4 ac conducting evasion training with a Hawk. They were heading 185° at 430kt and at 360ft and following a bounce by the Hawk they were separated from the flight lead by about 5nm, when the pilot saw a small ac in 1.30 position at about one mile range and slightly high. He instinctively manoeuvred to the L but after about 15° of turn, he quickly realised the ac was tracking from R to L. A further L turn would have put the Tornado belly-up to the ac and exacerbated the chance of a collision, so he reversed to the R and descended to 260ft agl. They passed below and slightly behind the ac, which was by then clearly identifiable as a Tucano (black with yellow sunburst on wings) and he assessed that they passed within 1000ft [H] of it. The Tucano was initially in straight and level flight but just before they passed it turned R (belly-up) to them. The time from initially sighting the Tucano to passing it was 7sec.

He had been conducting an aggressive all-round look out scan due to the knowledge of the presence of a bounce ac and this would have been a slightly different scan to that conducted on a normal low level navigational cruise.

He reported the incident after landing and informed Linton on Ouse [the Tucano base] and assessed the risk as being low due to his avoidance.

THE TUCANO PILOT reports that he was flying with an instructor in a black ac with yellow wing flashes and at the time was in the immediate area of the reported incident but neither pilot was aware of another ac. They were squawking 7001 with Modes C and S and TCAS 1 was fitted.

UKAB Note (1): The incident took place about 2nm inland from the coast in low, rolling, wooded terrain and neither ac shows on the recorded radars. The Tornado mission tapes were retained and reviewed but the incident is not recorded.

HQ AIR (OPS) comments that if the geometry of the incident is as reported by the GR4 pilot, the initial 15° of turn would have put the Tucano in the 2 o'clock. With the relative speeds (430kt vs 240kt) the GR4 would have been passing well ahead of the Tucano despite the fact that it was tracking to the E. The decision to reverse the turn may therefore have reduced the separation

somewhat but provided him with greater confidence in the fact that the risk had been reduced. Without the benefit of any radar recording it is not possible to confirm the geometry precisely. However, if the GR4 pilot actually perceived the Tucano was tracking R to L, i.e. moving towards his nose even after the initial turn, it is likely that the Tucano was much closer to his nose at first sighting. In this case, the reversal of the turn was essential and a greater initial risk existed.

HQ AIR (TRG) comments that it is noted that the TCAS did not appear to highlight the conflict. This is not unknown in the low-level environment where terrain masking can reduce the effectiveness of the equipment but this incident occurred in a relatively flat area. This incident has reminded the Tucano community of the necessity of not relying on their electronic aids for spotting traffic and the need to maintain a robust visual scan. The crew made a turn shortly before the CPA and may well have been focussing their attention on acquiring a turn point or target in the lead-up to the incident. They are also likely to have been focussing more into the turn where the threat is generally considered to be higher.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac and reports from the respective ac operating authorities.

Despite there being no supporting data, the Board agreed that this had been a fairly routine encounter between two ac operating legitimately in the UKADLFS. Both ac were operating in good VMC and should have been visible to the other crew. The Tucano instructor had been instructing his student in low level flying techniques as the Tornado had been descending back to low level, initially at least, on a line of constant bearing. Members were unable to offer any explanation as to why the Tornado was not displayed on the Tucano TCAS1 as there were no obvious constraints; the Board endorsed HQ Air (Trg)'s comments regarding lookout. Members accepted the HQ Air reasoning for the Tornado reversing his direction of turn and possibly reducing the separation but, keeping the Tucano visible thereby removing any risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A non-sighting by the Tucano crew and a late sighting by the Tornado crew

Degree of Risk: C.

immediately turn R for avoidance"; both flights turned R instantly. At this time the other ac had overflown his ac above and presumably continued on course after the R turn. ATC directed him on to downwind cct procedure with 2 ac ahead which completed their ccts and landed. No ac followed his ac, he thought, as he flew downwind, base and final. After landing he reported to ATC and discussed the incident with the 'controller' and he apologised for any part he played in it. He assessed the risk as none.

THE KEMBLE FISO reports RW 08LH in use. Visibility about 8km in haze, sunny. Traffic levels were moderate. The Robin flight called and was given relevant information, with RW and cct correctly read back. He then requested a R base join and was accordingly requested to report R base. He duly did so and was requested to report final. The PA38 pilot then reported final for a touch and go, which he duly performed before a PA28 then lined up and departed. The Airport Manager, acting as assistant, then noticed an ac turning R base for RW26. He immediately requested the PA28 pilot to perform a R turn; the PA38 was not at this time visible from the tower, but its pilot made a call indicating that the other ac had passed just below him.

ATSI reports that the Airprox was reported to have occurred at 1500, within the visual cct and to the NE of Kemble Airport. The ATZ consists of a circle, radius 2nm, centred on RW08/26 and extends from SFC to 2000ft above the aerodrome elevation (436ft).

The Airprox was reported by the pilot of a PA38 in the LH cct and the other ac was an Robin HR200 inbound to Kemble from Gloucestershire.

A FISO service is provided at Kemble. RW08 was in use with LH ccts with traffic levels reported as moderate.

CAA ATSI had access to radar recording, provided by NATS Swanwick, together with written reports from pilots and the FISO. The radar recording showed a number of ac in the vicinity of Kemble squawking 7000. However it was not possible to identify the ac concerned or the occurrence itself.

Although not a requirement, Kemble do provide an RT recording facility but due to a fault, no recording was available for the period.

The weather for Lyneham is provided;
METAR EGDG 171450Z 03004KT 9999 FEW040 SCT060 17/09 Q1023 BLU NOSIG=

The FISO's written report indicated that the HR200 called for joining and was passed the relevant information with the RW in use and cct direction. After a correct readback the HR200 requested a R base join and the FISO asked the HR200 to report R base.

The HR200 pilot's written report indicated that the field was to the SW (i.e. approaching from the NE). It was not clear why the pilot requested a R base join for RW08.

The PA38 flight was in the LH cct for RW08 and reported on final for a touch and go. After the PA38 departed from the touch and go, a PA28 lined up and departed. The FISO assistant, noticed an ac turning on a R base for RW26 and this was later identified as the HR200.

The PA38 pilot indicated that, after completing the touch and go, when crosswind in a climbing L turn at a height of 600ft, the other ac (HR200) was observed passing below. The PA38 pilot advised Kemble about the other ac (HR200).

The PA38 pilot indicated that he heard Kemble FISO advise the HR200 to abort landing on RW26 as the RW in use was 08 LH.

The HR200 pilot's written report indicated that the ac was out of position, due to the avoidance of noise sensitive areas in haze and sun conditions. The HR200 pilot discussed the incident afterwards with the FISO.

The pilot of the PA38 indicated that a report was made to Kemble Tower after the flight.

No MOR report was received from the FISO; however, an internal FISO report was forwarded at a later date. The Kemble FISO manual, page 36. Paragraph 10.1, states:

‘Reporting of incidents shall be carried out in accordance with CAP 410, CAP 382 and the Air Navigation Order (ANO).’

It was noted that the current version of CAP410 dated 7 March 2002, does not align with the ANO (and reflected in CAP382). For example CAP 410, Part A, Chapter 8, Page 2, paragraph 5.4, relates to MOR reporting and states:

‘Although mandatory reporting applies only to public transport aircraft registered in the UK or operating under the jurisdiction of a UK Operator, and all turbine powered aircraft, FISOs are to report all occurrences regardless of the category or nationality of the aircraft.’

Whereas the ANO Article 226 (3) states:

‘This article applies to occurrences which endanger or which, if not corrected, would endanger an aircraft, its occupants or any other person.’

The HR200 inbound from Gloucestershire was considered to be approaching the airfield from the NE and it was not clear why, approaching from that direction, the pilot wanted to join on R base for RW08.

The pilot of the HR200 indicated that the ac was out of position, due to the avoidance of noise sensitive areas in haze and sun conditions.

ATSI RECOMMENDATION

It is recommended that CAA ATSD should review and update CAP410 to ensure the document is correctly aligned to UK legislation.

UKAB Note (1): The Clee Hill radar recording does not capture the CPA but at 1458:04 shows a 7000 squawk (possibly the HR200) approaching Kemble from the N with 3.3nm to run descending through FL016 (1870ft QNH 1022mb) which fades after the sweep at 1459:24 1.5nm NE of Kemble at FL007 (970ft QNH 1022mb). Another 7000 squawk appears 16sec later, possibly the PA38, 0.9nm E of Kemble indicating FL009 (1170ft QNH) in a L turn passing heading 040°. The PA38 continues the turn towards the downwind leg and at 1500:36 indicates FL014 when 1.1nm N of Kemble turning through heading 280°. At the same time a 7000 squawk appears, believed to be the HR200, 0.5nm SE of the PA38, tracking 030° indicating FL007 (970ft QNH) and climbing. The PA38 rolls out downwind at 1501:06 at FL013 (1570ft QNH) whilst the HR200 climbs to FL011 (1370ft QNH) and also turns L onto the downwind leg 1.7nm NNE of Kemble.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Members could not understand the HR200 pilot’s mindset. He had been informed that the RW in use was RW08 but had positioned onto R base and then final for RW26 and this had brought his ac into conflict with the departing PA38, causing the Airprox. The HR200 pilot had reported seeing the departing PA38 and 2 other ac in the cct so this should have alerted him to the fact that he was approaching the ‘wrong end’ of the RW as they were flying in the opposite direction to his cct pattern. Members agreed that there was no substitute for carrying out a standard O/H join, particularly when

visibility is reduced, which allows the pilot concerned to orientate himself with the duty RW and integrate his ac into the pattern already established by other traffic in the cct. The PA38 pilot was undoubtedly surprised when, as he was turning onto the crosswind leg climbing through 600ft, he saw the HR200 300-400m ahead before it passed 200ft below. When the FISO became aware of the HR200's position – without an RT transcript there was no corroboration of what was said or when the transmissions were made – the HR200 pilot was informed of his error and the traffic sequence was re-established. The HR200 pilot reported sighting the PA38 and estimated that it passed 500ft above his level. Members believed that from the geometry of the encounter, with the HR200 fading at 970ft QNH on R base shortly before the PA38 appears climbing through 1170ft QNH (637ft QFE), the vertical distance between the ac was more likely to be in the region of those reported by the PA38 pilot - 200ft; if the separation had been 500ft, the HR200 would have been flying very close to the ground some distance from the RW. Taking all of these elements in account the Board considered that the flightpaths flown by both pilots had led to safety being compromised during this Airprox.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Robin HR200 pilot joined for RW26 when RW08 was in use, and flew into conflict with the PA38.

Degree of Risk: B.