

ASSESSMENT SUMMARY SHEET FOR UKAB MEETING ON 16 NOV 2011

| Total | Risk A | Risk B | Risk C | Risk D | Risk E |
|-------|--------|--------|--------|--------|--------|
| 21 | 5 | 7 | 9 | 0 | 0 |

| No | Reporting | Reported | Airspace | Cause | Risk |
|---------|-----------------------|----------------------|-------------------|---|------|
| 2011053 | DHC-8 (CAT) | A22 Microlight (CIV) | D (Belfast CTR) | Microlight (1) pilot did not follow the amended clearance and flew into conflict with the DHC-8 on final approach. | C |
| 2011060 | AS355 (CIV) | R22 (CIV) | G (Kemble ATZ) | In the absence of TI, effectively non-sightings by the pilots of both ac. | A |
| 2011072 | BE200 King Air (MIL) | Cessna C525 (CIV) | G | The C525's flight path caused the SAC SE Rad controller concern. | C |
| 2011073 | Nimbus 3 Glider (CIV) | BE90 (CIV) | G | Probably a non-sighting by the BE90 pilot and effectively a non-sighting by the Nimbus pilot. | B |
| 2011076 | Luscombe 8A (CIV) | C172 (CIV) | G | A non-sighting by the C172 pilot and effectively a non-sighting by the Luscombe pilot. | A |
| 2011077 | EC135 (CIV) | C172 (CIV) | G | A conflict in Class G airspace resolved by the C172 pilot. | B |
| 2011078 | VC10 (MIL) | Tornado GR4 (MIL) | G | A conflict in Class G airspace resolved by both crews. | C |
| 2011079 | Tutor (MIL) | R44 (CIV) | G | A non-sighting by the R44 pilot and a late sighting by the Tutor instructor. | B |
| 2011080 | EC135 T2 (CIV) | Bell 206B (CIV) | G | A conflict in Class G airspace resolved by the EC135 pilot. | C |
| 2011081 | C152 (CIV) | DA40 (CIV) | G (Shoreham ATZ) | The DA40 pilot did not follow the Shoreham joining procedure and descended into conflict with the C152, which he did not see. | B |
| 2011082 | EC225 (CIV) | TL2000 (CIV) | D (Newcastle CTR) | A conflict resulting from a misunderstanding by the EC225 pilot about the rules for VFR traffic in Class D airspace. | C |

| | | | | | |
|---------|------------------------------------|------------------------------------|----------------------------|---|---|
| 2011086 | Squirrel (A) (MIL) | Squirrel (B) (MIL) | G | Squirrel (B) crew flew close enough to cause Squirrel (A) crew concern. | C |
| 2011087 | Bell 206 JetRanger (A) (CIV) | Bell 206 JetRanger (B) (CIV) | G | Bell 206 JetRanger (B) pilot flew close enough to cause Bell 206 JetRanger (A) pilot concern. | C |
| 2011092 | Puma (MIL) | C42 Ikarus (CIV) | G (Benson MATZ) | A conflict in Class G airspace on the final approach to RW 01. | C |
| 2011093 | PA31 (CIV) | PA24 (CIV) | G (Goodwood ATZ) | The PA31 pilot did not integrate safely into the cct pattern. | A |
| 2011096 | Vigilant MG (MIL) | Europa (CIV) | G | Late sightings by both pilots. | B |
| 2011098 | Viking Glider (MIL) | AW139 (CIV) | G | A conflict in the vicinity of a promulgated and active glider launching site resolved by the Viking pilot. | C |
| 2011101 | Grob Astir (CIV) | Untraced Microlight (NK) | G | Probably a non-sighting by the untraced M/Light pilot and late sighting by the Grob Astir pilot. | A |
| 2011102 | Vigilant (MIL) | C172 (CIV) | G (Newtownar ds ATZ) | The C172 pilot flew into conflict with the Vigilant on final approach. | A |
| 2011115 | Vigilant (MIL) | Bell 206 JetRanger (CIV) | G (Topcliffe ATZ) | The Bell 206 JetRanger pilot entered the ATZ and flew into conflict with the Vigilant, which he might not have seen at its closest point. | B |
| 2011128 | C152 (CIV) | PA23 (CIV) | G (Stapleford ATZ) | The PA23 pilot did not conform to the cct pattern being formed by the C152 and flew into conflict with it on the base leg/final turn. | B |

AIRPROX REPORT No 2011053

Date/Time: 6 June 2011 1046Z

Position: 5441N 00549W
(Belfast City 5nm final
RW22 - elev 15ft)

Airspace: Belfast City CTR (*Class: G*)

Reporting Ac Reported Ac

Type: DHC-8 A22 Microlight

Operator: CAT Civ Pte

Alt/FL: 1500ft 800ft
(QNH 1006mb) (QFE NK)

Weather: NK CLBC VMC CLBC

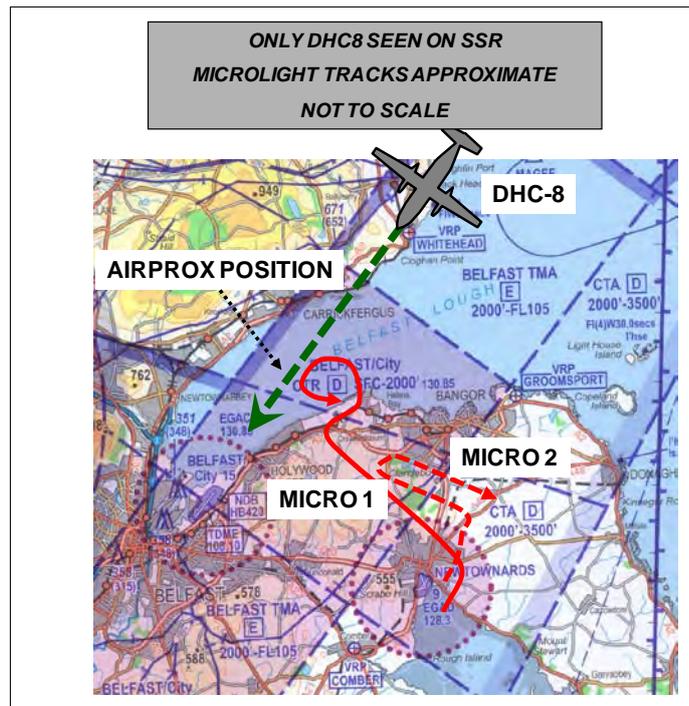
Visibility: 30km 20km

Reported Separation:

0ft V/0.5nm H 0ft V/1.5nm

Recorded Separation:

NR V/0.5nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE DHC-8 PILOT reports that while heading 220° at 160kt, descending through 1500ft alt under IFR and Radar Control, on the final approach to Belfast City Airport, an Airprox occurred against a small red coloured microlight that was believed to have infringed CAS. While establishing on to the ILS RW22 a series of confused RT transmissions were heard between 2 microlights and Belfast Radar; one microlight initially stated he was O/H TRN (Turnberry, Ayrshire, Scotland), and after checking this the radar controller told the first microlight to contact Scottish Information for a service.

The microlight queried this and it became clear very quickly that he had just departed Newtownards [6.5nm ESE Belfast City] and had routed generally N putting it in possible confliction with them. The controller realised this and told the microlight to leave CAS immediately and to turn E. This did not seem to be understood by the microlight pilot and confusion ensued. The crew was looking out for the traffic as his position appeared to be a possible threat. A small red high-winged ac was seen at an estimated range of ½-1nm in their 9 o'clock position flying towards them at the same level. The captain (PF) monitored the ac whilst continuing the approach because avoiding action was seen to be taken by the microlight and it was seen to pass behind them removing any risk of collision.

A decision was made to delay the setting of 'Flap 35' because the microlight would pass close behind them and would be subject to wake turbulence; 'Flap 35' was subsequently selected, the approach remained stable, and a safe landing followed.

THE A22 MICROLIGHT PILOT (Micro 1) reports that he filed a VFR Flight Plan on-line at Newtownards for 2xac (himself and another microlight Micro 2) routeing Newtownards - Fair Head – Turnberry -Rossall Field (Near Lancaster). It was agreed Micro 2 would depart first and would contact Belfast to request transit clearance.

Their ac had SSR and elementary Mode S and strobes fitted.

Once airborne the pilot in Micro 2 requested a transit clearance for the 2 microlights and requested Belfast to activate their flight plan that had been filed with Swanwick. Belfast City ATC requested their ultimate destination and Micro 2 pilot replied, 'Rossall Field, Lancashire'. ATC then requested

clarification and they again replied 'Rossall Field, Lancashire then onward to Otherton airfield, Staffordshire'. ATC Belfast City then asked, "why are you requesting clearance through Belfast airspace if you are heading for Staffordshire" and they explained at length that both ac were routing N to coast-out of Northern Ireland at Fair Head and route via Mull of Kintyre then Turnberry before turning S for initial landing site at Rossall Field.

Belfast ATC then attempted to route the other microlight across Belfast Loch via VRP-Whitehead, the microlight reported that he was unfamiliar with the area and they followed an RT exchange to identify various reporting points [VRPs] on the map.

Belfast City ATC was concerned he had incoming traffic and requested that they expedite their crossing of Belfast Loch but Micro 2 pilot replied that his max speed is 80kt and he was eventually routed via VRP-Whitehead to VRP-Larne.

At no time had ATC requested identification or the location of the second ac in the stream included in the initial transit clearance request (Micro 1). He (the second and the reported ac) was about 1nm behind Micro 2 at take-off and decided to slow down to 60kt and initiate a LH rectangular holding pattern at VRP-Groomsport [the boundary of CAS 9.5nm ENE of the Airport and 5nm SE of the CL for RW22] pending clarification of his transit clearance.

His ac was equipped with a standard GPS and a NATS Aware GPS and was at all times cognisant of his position and was visual with the inbound traffic over 1.5nm away – the visibility being excellent. Belfast City ATC requested the other microlight (Micro 2) to turn E but there was no reply so ATC again requested the [other] ac to turn E and Micro 2 pilot reported that both his GPS and compass indicated that he was already heading E.

It was at that point that he suspected that ATC were looking at him [Micro 1] on their radar but were addressing the other microlight [2] who had already routed across the zone to the N.

He, the reported pilot, then stated on the RT *"Micro 2 C/S.... South East of your zone I suspect it is this aircraft you can see on your screen and not Micro 1 C/S...."*

ATC Belfast City responded with "Micro 1 C/S.... turn immediately East" which he did, although at the time of instruction he was already turning W in the aforementioned LH rectangular holding pattern.

Belfast City ATC then issued a unique squawk code for the transponder and asked why the reported pilot had not turned immediately E when requested – the reality was that the first 2 requests were given to the wrong ac, after ac verification ATC confusion was confirmed.

He felt that he fully had complied with ATC directions and can only reiterate that at all times he was cognisant of position and visual with the inbound ac but considered it expedient just to apologise to ATC on the RT rather than have a debate on the RT.

It was subsequently explained to ATC that the reported pilot was the second microlight (Micro 1) of the original transit clearance request and that the other ac (Micro 2) was designated for RT with Belfast City, but since no recognition of his ac or verification of his position was requested by ATC, he had not followed the leading Microlight (Micro 2) across the zone and had remained clear to the SE but ATC responded by stating that they would be filing an Airprox.

He then routed E – N – W to rejoin the original lead ac N of VRP-Larne, reporting going en-route when requested.

He assessed the risk as being none.

ATSI reports that the Airprox occurred at 1045:50, 4nm NE of Belfast City Airport and within the Belfast City Control Zone, Class D airspace between a DHC-8-Q400 (DHC-8) inbound IFR and an A22 Foxbat Microlight (Micro 1) that was one of two Microlight ac (Micro 1 & Micro 2) believed to have visited Newtownards Airfield as part of the airfield's 50th anniversary celebration 'Fly in' held between 3rd and 5th June 2011.

The microlight pilots planned to route from Newtownards to Fair Head, situated on the N coast of Northern Ireland, across the Irish Sea via the Mull of Kintyre and Turnberry, then S to Rossall Field, which lies to the S of Morecambe Bay. Belfast City ATSU provided details of the guidance given to pilots by Newtownards Airfield, which stated:

'North – route Larne towards Whitehead VRP to cross Belfast Lough to remain East of Groomsport VRP. Transit clearance may be given at 1500ft alt or below due to inbound ILS traffic for RW22 at Belfast City. Ensure RT contact is established with Belfast City Approach 130.850 before reaching Larne.'

'All aircraft are recommended to contact Belfast Approach 130.850, if there are several aircraft in close formation nominate one aircraft to do the RT with all the relevant details.'

Newtownards is situated 6.5nm ESE of Belfast City and a direct track to Fair Head would cross the RW22 final approach at a range of 5.25nm.

CAA ATSI had access to RTF recordings together with controller and pilot written reports. Radar recordings were available from the Belfast City 10cm radar and the NATS (BEL) 23cm radar. None of the radar sources initially showed any primary or SSR return for either microlight during the period of the Airprox. The Belfast City Radar recordings did not show any primary returns of the microlights due to an incorrect configuration of the recording equipment during installation.

As a result of a local investigation by the radar and display manufacturers, the radar recording showing the primary radar returns was retrieved in early October and became available to CAA ATSI. This report has been updated to reflect the radar analysis of the data available.

METAR EGAC 061020Z 25008KT 200V290 9999 FEW024 SCT037 12/05 Q1006=

Belfast City ATSU reported that the duty instructor at Newtownards spoke to one of the microlight pilots prior to their departure, stressing the requirement to contact Belfast City ATC, with two suggested routeing options:

via Groomsport (6.5nm north-northeast of Newtownards) to Whitehead or
via the Belfast City overhead.

At 1037:14, the inbound DHC-8 was transferred to Belfast City Radar and the pilot reported descending to FL100 on heading 205° with information 'Hotel'. The Belfast controller instructed the DHC-8 to descend to an alt of 6000ft on QNH 1006. The DHC-8 was turned onto a heading of 300° and advised to expect vectoring for ILS RW22, number 3 in traffic with no delay; it was then instructed to stop the turn on a heading of 290°.

The Micro 1 pilot's report indicated that, 'It is agreed that Micro 2 departs first and will operate the R/T with Belfast to request transit clearance'.

At 1039:01, Micro 2 called, "*Belfast Micro 2 C/S*". The Belfast controller asked Micro 2 to standby and gave the DHC-8 further descent to 4000ft. Micro 2 pilot was then asked to pass message and advised, "*Micro 2 C/S is a flight of two microlights erm we're coasting out at er Fairherly erm Fair Head request transit through your zone please*"; the controller asked Micro 2 to report destination and the pilot replied, "*Destination is Turnberry er sorry we're coasting in at Turnberry our final destination*".

is erm Marn Farm". The controller asked Micro 2 to standby and transmitted to two other ac establishing on the ILS for RW22.

At 1039:01, the radar recording shows the inbound DHC-8, 22.9nm NE of Belfast City, passing FL083 in the descent and also shows two primary contacts, 2nm apart to the E and SE respectively of Newtownards airfield.

[Note: From the data available, ATSI believed that Micro 2 was the lead ac and was the more N'ly contact].

At 1040:42 the controller asked Micro 2, "*Micro 2 C/S sorry just confirm you're coasting in at Turnberry*" and the Micro 2 pilot reported, "*Yeah we're coasting in at Turnberry final destination is Rossall Farm sorry and er we have erm a flightplan would you be able to activate that please*". The controller responded, "*Micro 2 C/S I'm wh – can you give me a precise location on your destination not fam familiar with that*"; Micro 2 pilot asked the controller to standby.

At 1040:31, the controller instructed the DHC-8, "*DHC-8 C/S descend to altitude two thousand feet when established on the localiser descend on the glidepath*"; this was acknowledged by the pilot. The radar recording shows the DHC-8, 19.5nm NE of the airfield, with the two primary contacts, 7.5nm E of the airfield tracking NW and 2nm apart.

At 1040:47, the Micro 2 pilot confirmed the final destination as Rossall Field a private field 15nm NE of Blackpool. The controller replied, "*Micro 2 C/S if your coasting in at Turnberry and heading to Blackpool you shouldn't really be speaking to me if you contact er freecall Scottish Information on one one niner decimal eight seven five or you can contact Prestwick Approach one two niner decimal four five*"; the pilot replied, "*Thank you I'd just though we'd erm er we'd give you you a call er transitting your zone to Fair point*".

At 1040:59, radar recording shows Micro 2 fade from radar at a position 2nm E of Micro 1 which is observed to continue tracking NW.

At 1042:20 the controller asked Micro 2, "*er just confirm you are at Turnberry going to Blackpool and wish to transit the Belfast City Zone*" and the Micro 2 pilot responded, "*er sorry erm I've erm I'll say again I've departed Newtownards and we are coasting out at erm Fair Head and er and request a transit of your zone.*"

At 1042:23, radar recording shows a primary contact (Micro 1) has entered the Belfast City CTR CAS at a position 2nm NNW of Newtownards and 5nm E of Belfast City.

The controller issued a zone transit clearance, "*(Micro 2)C/S cleared to transit not above two thousand feet VFR QNH one zero zero six and is that you about two miles north of er Newtownards*". Micro 2 pilot confirmed the position and the controller requested a readback of the clearance which the pilot gave as, "*not above er two thousand feet one zero zero six*". At 1043:07, the controller asked Micro 2 pilot if he was familiar with Bangor [on the S coastline of Belfast Lough]; the pilot confirmed "Yes" and the controller responded, "*Micro 2 C/S route to hold there is inbound traffic for RW two two remain well east of final approach*" and the pilot replied, "*Routeing Bangor er remain well east thank you Micro 2 C/S*".

At 1044:00, Micro 1 pilot called Belfast Radar and the controller replied, "*Last station calling standby*". The controller then transmitted to Micro 2, "*Micro 2 C/S I think I have you just east of the field by about three miles I need you to turn eastbound please your heading straight to the final approach*" and the pilot replied with his callsign. Shortly after the controller again transmitted to Micro 2, "*Micro 2 C/S I need you to turn immediately eastbound.*" The Micro 2 pilot responded, "*er to the east Micro 2 C/S*".

At 1044:10, the radar recording shows a primary contact, 4nm ENE of the airfield tracking WNW (Micro 1).

At 1044:30, the controller advised the DHC-8 pilot, *“and DH8 C/S traffic information are two microlights believed to be just east of final approach at three miles ?????turning eastbound not above two thousand feet VFR”*; this was acknowledged by the pilot.

At 1044:45, the radar recording shows the DHC-8 , 6.5nm from touchdown passing 2000ft, with Micro 1 in its half past eleven position at a range of 3.7nm crossing from L to R. The DHC-8 was then transferred to TWR.

MATS Part 1, Section 2, Page 1, states that for IFR and VFR flights within Class D controlled airspace:

Aircraft requirements: ATC clearance before entry. Comply with ATC instructions.

Minimum Service by ATC unit: Pass traffic information to IFR flights on VFR flights and give traffic avoidance advice if requested.

The DHC-8 pilot did not report the microlights in sight and did not request avoiding action and the controller transferred the ac to TWR before the conflict was resolved.

At 1044:50, the controller advised, *“Micro 2 C/S I need you to turn eastbound you’re showing nor-believed to be showing northbound now”* but the pilot reported a compass and GPS heading of E. Three sec later the radar recording shows Micro 1, 3.3nm NE of the airfield, making a right turn onto N and Micro 2 reappears, 4.8nm ENE of the airfield tracking E, which correlates with the pilot’s earlier call indicating a compass and GPS heading of E.

At 1045:16, Micro 1 transmitted, *“Belfast City Micro 1 C/S I think that’s us you have ????? northbound”*. The controller responded, *“Micro 1 C/S pass your message and er can you leave controlled airspace please eastbound”*. The pilot replied, *“We’ve just left Newtownards and wish to coast down to Fair Head and request transit transit across your airspace please”*. The controller transmitted, *“Micro 1 C/S you’re believed to be heading towards the final approach can you turn eastbound immediately”*. Radar recording shows Micro 1 tracking northeast 2nm S of the DHC-8 .

At 1045:30, radar recording shows Micro 1 turning left onto a NW track, towards the DHC-8 .

At 1045:50, radar recording shows the two ac passing abeam. The DHC-8 is on a 4nm final indicating an alt of 1300ft, with Micro 1 in the DHC-8’s 9 o’clock position at a range of 0.5nm. As the DHC-8 passes abeam, Micro 1 makes a L turn.

The report from the DHC-8 pilot indicated that the Micro 1 seemed to be taking avoiding action, passing behind. The DHC-8 pilot decided to delay the 35° flap setting in order to reduce the wake turbulence.

At 1046:25, the controller transmitted, *“Micro 1 C/S route eastbound immediately QNH one zero zero six”* and the Micro 1 pilot replied, *“Eastbound one zero zero six thank you”*. The controller did not specify a direction of turn and radar recording shows Micro 1 turn L onto an E’ly track. (Micro 2 was shown 3nm N of Newtownards continuing to track E.)

In the subsequent transmissions the pilot of Micro 1 confirmed that the two ac had departed Newtownards together and thought that Micro 2 was obtaining the clearance for both ac. When the controller asked why, when Micro 2 was asked to leave the zone Ebound, Micro 1 had continued Nbound, Micro 1 pilot apologised and said that he had become disorientated.

At 1049:59, the Belfast City radar recording shows Micro 1, 8.25nm ENE of Belfast City airport tracking E.

At 1051:39, the NATS (BEL) radar source shows a 7000 squawk appear, on a bearing 082° from Belfast at a range of 9.6nm. This correlates with the track and bearing of the primary return shown on the Belfast City radar; Mode S identified the ac callsign as that of Micro 1.

At 1052:08, the NATS (BEL) radar recording shows the SSR code of Micro 1 change to 4250 (a code allocated by Belfast City). The ac is observed to cross the coast and then turn to track N over the Irish Sea. The SSR code did not appear on the Belfast City radar recording.

The initial call from the microlight formation was not in the approved format and caused confusion and misunderstanding; CAP413, Chapter 3, Page 8, states:

'When instructed by the ATS Unit to 'Pass Your Message', the reply should contain the following information, whenever possible in the order specified:

Aircraft Callsign / Type
Departure Point and Destination
Present Position
Level
Additional details / Intention (e.g. Flight Rules, Next route point)

Micro 2 pilot called coasting out at Fair Head requesting transit through the zone. The pilot then confirmed destination as Turnberry and apologised stating that they were coasting in at Turnberry with final destination as Marn Farm.

After the initial misunderstanding, the controller issued a clearance to transit the zone and the pilot of Micro 2 confirmed his position was 2nm N of Newtownards Airfield. CAA ATSI considered that the controller, mistakenly believed that the single primary contact showing at the time the clearance was issued, represented the flight of two microlights operating in formation. The UK AIP page (4 Jun 09) ENR 1-1-4-11, states:

Civilian Formation Flights - ATC Procedures General

ATC will consider formations to be a single unit for separation purposes provided that: The formation elements are contained within 1nm laterally and longitudinally, and at the same level. Within Class F and G Airspace and subject to ATC approval, these limits may be increased to 3 nm and/or up to 1000ft vertically.

The formation, although operating outside the parameters above, has NSF approval.

The formation leader is responsible for ensuring safe separation between ac comprising the formation.

In making initial contact with the ATC unit, the formation leader shall clearly state the number of ac in the formation.

Where a flight plan is required, the identification of the formation leader and the number of ac in the formation must be shown.

All ATC instructions and clearances will be addressed to the leader.

The contact displayed on radar was in fact Micro 1 and ATSI estimated that Micro 2 was 2nm further to the E (not showing on radar). Micro 1 pilot's written report indicated that the ac was equipped with SSR; however, neither ac displayed an SSR code.

The ATC clearance to transit controlled airspace did not specify a routeing but the controller subsequently instructed Micro 2 to hold at Bangor with information about the ILS traffic. Micro 2 acknowledged this instruction and reported '*routeing Bangor to remain well east*'. The controller had

an expectation that both ac would route to hold at Bangor. MATS Part1, Section 3, Chapter 4, Page 1, Paragraph 3.3 states:

'Routeing instructions may be issued which will reduce or eliminate points of conflict with other flights, such as final approach tracks and circuit areas, with a consequent reduction in the workload associated with passing extensive traffic information. VRPs may be established to assist in the definition of frequently utilised routes and the avoidance of instrument approach and departure tracks. Where controllers require VFR ac to hold at a specific point pending further clearance, this is to be explicitly stated to the pilot.'

The Micro 1 pilot's report indicated that the two Microlights were not in close formation, but that Micro 1 pilot had expected Micro 2 to obtain the transit clearance on behalf of both ac. The pilot's report states: 'It was subsequently explained to ATC that Micro 1 was the second microlight ac of the original transit clearance and that Micro 2 was designated for R/T with Belfast City, but with no recognition or verification of position sought from ATC, Micro 1 did not follow Micro 2 across the zone and had remained in the southeast area'.

The controller passed TI to the DHC-8 pilot, in the belief that the two microlights were 3nm E of the approach and turning onto an E'ly track. At that point the DHC-8 was transferred to the TWR. However the primary contact was not following the controller's instruction to turn E and continued N. CAA ATSI considered that it would have been appropriate for the controller to have retained the DHC-8 on frequency until the conflict was resolved and also in the event that avoiding action was considered necessary or was requested by the DHC-8 pilot.

Micro 1 attempted to contact ATC but the controller was not aware of the significance of the callsign, instructing the ac to standby. It was only when Micro 1 pilot identified himself as the conflicting ac and Micro 2 reappeared on the radar tracking E, that the controller recognised the situation and instructed Micro 1 to turn immediately onto E.

At 1051:39, Micro 1 was identified using Mode S SSR at a position that correlated with the last recorded position of the primary radar return of the aircraft involved in the Airprox (Micro 1). The SSR label appeared on the NATS (BEL) radar after the incident.

The microlight pilots did not follow the guidance specified in the UK AIP, or provided by Newtownards, for formation flights. Micro 2 pilot's initial call indicated a 'flight of two microlights', however, Micro 1 pilot's written report indicated that he had not followed Micro 2 in formation. The two ac were not operating in formation and Micro 1 entered the zone separately, without a clearance, and into conflict with the DHC-8 on the ILS.

The following were considered to be contributory factors:

The microlight pilots did not follow the routeing guidance provided by Newtownards and ATC did not specify a routeing in the transit clearance. However, Micro 2 was asked to hold at Bangor and the controller had an expectation that both ac would comply.

The pilot of Micro 2 did not update ATC that he was no longer in formation with Micro 1.

It is considered that, the controller mistakenly believed that the single primary contact seen on radar 2nm N of Newtownards was Micro 2, and the formation of two microlights. This proved to be incorrect.

It is considered that, the controller's early transfer of the DHC-8 to the TWR frequency, before the conflict had been resolved, precluded any form of avoiding action being given by radar controller or requested by the DHC-8 pilot. (The pilot could have requested such action from the TWR.)

The non-standard format of the RT phraseology used by the microlight pilots, delayed the issue of a clearance and led to a misunderstanding about their current position, i.e. coasting out on the

northern coast of Ireland, or coasting in at the Scottish coast, when in fact they had just departed Newtownards.

Recommendations:

CAA ATSI recommends that the Belfast City ATSU review procedures and phraseology for the transit of formation VFR ac, with a view to obtaining the full details of the ac concerned, with specific mention of the routeing and term 'formation' as part of the clearance provided.

CAA ATSI recommends that the ATSU include this scenario in their unusual emergency (TRUCE) training programme, with elements covering, ac not identified, not displayed on radar, lost ac, tactical and avoiding action considerations.

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 photographs and recordings, reports from the air traffic controller involved and reports from the appropriate ATC authority.

Members were informed that the terminology Microlight (Micro) 1 and Micro 2 did not reflect their positions in the flight; it was clear that Micro 2 was, in effect, the flight leader as he got airborne first and it was always intended that he should conduct the RT on behalf of both ac. There was apparently no intention that the ac should fly as a close formation as such, rather that Micro 1 would follow Micro 2. That said, Micro 2's description of the aircraft as a "flight of 2" may have lead the controller to believe that the ac were in a much closer trail than was the case and his misunderstanding would have been more difficult to resolve due to the intermittent radar returns from the microlights in the absence of request to squawk. Furthermore, the Microlights did not remain within 1nm of each other (as required by the UK AIP – see Part A), and therefore did not meet the requirements of a formation (this was exacerbated by Micro 1 slowing down to 60kt).

The Board was also informed by the Secretariat that both ac could be described as being red (as per the DHC-8 pilot's report).

Although in some ways a straightforward encounter with little risk attached, the Board found it difficult to analyse with any degree of certainty, due to apparently conflicting and incomplete information. The radar photograph timed at 1045:42 (circulated to Members) showed clearly that one of the two Microlights entered the CTR and flew to point just off the coast, ½nm E of the final approach to RW22, just as the DHC-8 on the ILS was passing; that being the case Members agreed that there was no risk of collision.

It was much less clear which Microlight was involved and whether or not that specific ac had been cleared to enter the CTR.

Although a confirmatory report from Newtownards was not available, the Board accepted that Micro 2 got airborne first and its pilot had intended to inform Belfast of the position of both ac, their intentions and request a clearance to fly through the CTR. It was clear (from the transcript) that the flight had intended to transit the CTR despite the advisory routeing (outside the CTR) given by the 'fly-in' organisers. Members agreed, however, that despite any other factors such as 'shortest sea transit' it is wise not to fly close to the boundaries of CAS or through the final approach track of busy airfields as this can (as this case demonstrated) present controllers with difficult and challenging scenarios.

When conducting unusual or unfamiliar flights it is essential that pilots inform ATC clearly and unambiguously of their ac identity, position and intentions - 'who are you, where are you and what you want to do' otherwise the controller will not be aware of this essential information, will not therefore be in a position to assist/clear you and might formulate an incorrect picture. In this case, although Micro 2 clearly stated that they were a "flight of two" and requested "transit through your

zone please” the other essential information i.e. position and intentions was missing, so the controller did not have the ‘big picture’ and became (unnecessarily) preoccupied with determining the missing bits of information by a prolonged series of (incomplete) questions and answers in a very busy period. Despite the call of “flight of two” the clearance passed by the controller (at 1042:50 on the transcript) appeared to be for one ac only (Micro 2 CS) and did not specify a routeing. When it became apparent to the Controller that this (open ended) clearance might lead to the (unidentified) Micro 2 conflicting with the inbound traffic, he changed it at 1043:20 to “route to Bangor” which is on the E edge of the CTR, rather than Groomsport VRP which is in a similar position but outside the CTR. This was in effect an amendment to the original clearance and although not given strictly in accordance with MATS Pt 1 Sect 1 Chapter 4 Para 7, its intention was understood and read back by Micro 2 pilot and it appeared to Members that he complied with it fully. In mitigation, the controller’s primary responsibility at the time was to sequence the inbound traffic; he discharged this responsibility and Members considered that he had been too busy to give the Microlight flight as much attention as he would have liked. Further, it was suggested that the Controller had tried to make the incomplete information he had fit his mistaken mental air picture.

While Micro 2 held to the S of Bangor, Micro 1 had apparently misunderstood the original clearance as being for the both members of the flight, had either not heard or assimilated the amendment to the clearance, and proceeded to enter the CTR (radar photograph at 1042:23) and flown on the intended track towards the coast and the final approach; however, on seeing the inbound ac he had orbited just to the E of the approach before departing to the E as instructed by ATC.

Although observing the (formation) flight planning had been less than ideal, Members considered that this incident had resulted primarily from poor RT in a busy situation, mainly by Micro (2) pilot. Had he been clear about the composition of the flight, their location and intentions Members thought that the Controller would have been much better placed to either integrate them with his traffic plan or suggest a precise routeing to keep them clear of the inbounds.

It was noted that the Microlights had correctly filed a flight plan but Controller Members thought it unlikely that the controller involved would have seen it and, in the absence of a telephone call to ATC to discuss the Microlights’ intentions, he would not have had any pre-warning of them.

Pilot Members agreed that the DHC-8 pilot had received good TI leading to him seeing the Microlight. He had displayed good awareness of the situation and, although prepared to do so, had decided that a go-around was not required as the Microlight, although in an undesirable position, was not in conflict and even if it did not change track, would pass well behind.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Microlight (1) pilot did not follow the amended clearance and flew into conflict with the DHC-8 on the final approach.

Degree of Risk: C.

AIRPROX REPORT No 2011060

Date/Time: 23 Jun 2011 1208Z

Position: 5140N 00206W
(1nm W of Kemble - elev
433ft)

Airspace: Kemble ATZ (Class: G)

Reporting Ac Reported Ac

Type: AS355 R22

Operator: Civ Comm Civ Pte

Alt/FL: 700ft 800ft
(N/K) QNH (1014mb)

Weather: VMC CLBC VMC CLBC

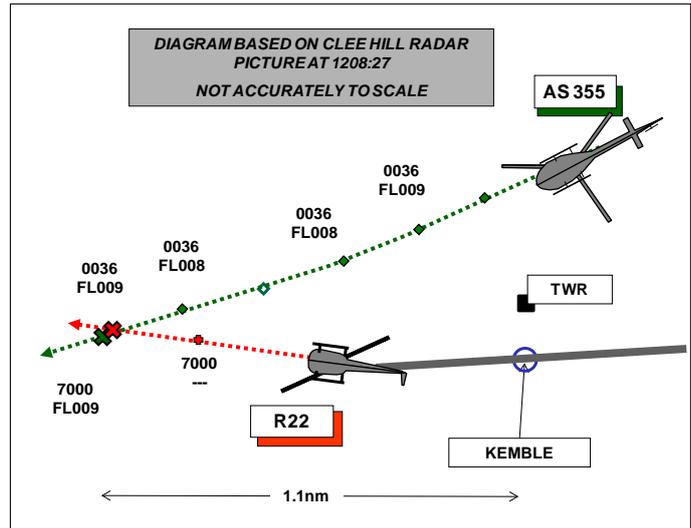
Visibility: >10km 999

Reported Separation:

30ft V/0ft H 80ft V/100ft H

Recorded Separation:

0 V/ <0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE AS355 PILOT reports that he was flying a pipeline inspection flight in a burgundy coloured helicopter, squawking 0036 (pipeline inspections) with Modes C and S and in receipt of a FIS from Kemble TWR; PCAS was carried but did not indicate any traffic. They were on a pipeline survey and had finished one pipeline at South Cerney and were heading 270° at 120kt, at 700ft on QFE 1001mb, [the QNH was 1016mb] positioning to the start the next inspection. He had called Kemble for transit through the cct 1.5nm to the N and maintained contact with ATC, passing his intention to ATC to transit to the N across the extended centre line of the RW crossing it at 3nm.

He was aware that there was a Robinson R22 leaving the cct and that the other cct traffic was aware of their position.

The first sighting of the conflicting ac was when the observer, seated in the front LHS, saw the conflicting traffic in their 9 o'clock below their ac and passing beneath; he shouted 'climb'. The pilot saw the ac's rotor blades in the chin bubble by his feet on the R of the ac and last saw the conflicting ac at 5 o'clock about 150ft away a split second later. He climbed the ac immediately the traffic was called by the observer. The other ac was approaching from below and behind them, in their blind spot and they would have been in theirs.

He informed Kemble TWR of the Airprox and assessed the risk as being high.

THE R22 PILOT reports flying a private flight from Kemble in a white ac with lights on, at the time in contact with Kemble ATC and squawking 7000 with Mode C. He was cleared for take-off from RW26 (grass) and, while in the climb at about 800ft (QNH) heading 260° at 60kt and 1nm W of the airfield, they were overflown by a dark coloured (possibly black or blue) AS350 or AS355. The ac was not sighted during the taxi or take-off from RW26 (grass). From the radio traffic the airfield appeared to be busy, however, no TI was passed by ATC nor were any calls heard from the other ac approaching or overflying the airfield.

The first sighting of the other ac was when it had already overflown them, as it was flying in a SW'ly direction.

He was not able to take any avoiding action as the other ac had already passed him and he assessed the risk as being high.

Although not required to do so, he opined that it would have been good practice for ATC to pass TI about an ac overflying the airfield at 1000ft. It also would have been good practice by the pilot of the over flying ac to make an 'over head the field call'.

He believes this incident brings into question why the other ac was allowed to overfly the airfield at such a low height which would bring it into possible conflict with other traffic and why the pilot elected to do so.

ATSI reports that the Airprox occurred at 1208:26, within the Kemble ATZ, which consists of a circle, radius 2nm, centred on RW08/26 and extending to 2000ft aal (436ft).

The Airprox was reported by the pilot of an Aerospatiale AS355 helicopter operating on a pipeline patrol and squawking 0036 and the other ac was a Robinson R22 helicopter departing from Kemble for a VFR flight to Blackbushe.

A FISO service is provided at Kemble. The FISO reported traffic levels as moderate with RW26 (hard and grass) in use.

ATSI had access to RTF and radar recordings and reports from both pilots. The FISO initially thought that the Airprox had occurred to the W and outside the Kemble ATZ.

The weather for Lyneham was:

METAR EGDL 231150Z 23010KT 9999 VCSH SCT028 BKN050 12/10 Q1016 BLU NOSIG=

At 1158:35, the R22 helicopter called for engine start for a flight to Blackbushe, departing to the SW and the FISO approved the start, "*(R22)C/S start approved Runway two six lefthand circuit the QNH one zero one six.*"

At 1202:04 the R22 reported ready for departure, requesting a departure direct to the SW.

One sec later at 1204:05 the AS355 established two way communication with Kemble and advised, "*afternoon sir (AS355)C/S a twin squirrel two onboard out of Dunkeswell for Halfpenny Green we at er South Cerney a thousand feet on one zero one five er looking route through overhead if we can er westbound*"; South Cerney is 4.5nm E of Kemble.

(Dunkeswell is 64nm SW of Kemble and Halfpenny Green is 51nm N of Kemble.)

The AS355 pilot was passed the QFE 1001mb and reported at a height of 600ft. The FISO replied, "*(AS355)C/S roger have one aircraft turning downwind one aircraft in the two six lefthand circuit report entering the zone*" and the pilot responded, "*Copy the traffic and wilco (AS355)C/S*".

An ac operating at Babdown Farm, situated 5nm SW of Kemble, was passed TI, "*C/S...one helicopter to transit south to north six hundred feet Kemble QFE*". The FISO could not recall why this had been passed but added that he had not heard the AS355 report at South Cerney, but remembers being aware that the AS355 was routeing through the ATZ on a W'ly track. The FISO indicated that pipeline helicopters frequently operate in the area but the route through the airfield was unusual.

At 1206:27, the R22 pilot was asked to report lined up RW26-grass.

At 1206:48, the AS355 reported, "*(AS355)C/S approaching the ATZ boundary to the er northnortheast and our present track should er take us through the extended centreline about a mile*

out to the west” and the FISO replied, “(AS355)C/S roger that’s copied report west abeam” and the pilot acknowledged.

The FISO reported that the AS355 was not in sight, but he believed it to be about 2nm NNE and would pass NW of the airfield before crossing the extended centreline of RW26. He added that the R22 had requested a direct route to the SW and he thought that the two helicopters would be on diverging tracks.

At 1207:03, the FISO advised the R22, “*Helicopter (R22)C/S take off and depart your discretion surface wind two nine zero degrees eight knots*” and the R22 pilot replied, “*and depart my discretion helicopter (R22)C/S*”.

The radar recording shows the AS355 to be 1.3nm NE of the ARP at 1207:10 tracking W and indicating FL008 (converting to 476ft on QFE 1001 with 1mb equal to 27ft); at 1207:53 it is 0.5nm NW of the ARP tracking SW.

At 1207:20 a Bulldog ac reported lining up RW26-hard and the FISO responded, “(Bulldog)C/S..*the helicopter ahead is departing to the southwest with that in mind take off at your discretion surface wind two nine zero degrees eight knots*”.

The Kemble Tower FISO control desk faces S. The FISO reported that he had not sighted the AS355 and was talking to and observing other ac manoeuvring on the airfield; he thought that it might have passed close to the overhead and been above the roofline. The FISO indicated that he had only visually acquired the AS355 as it approached a position NW abeam the RW08 ‘numbers’. The R22 was not in sight at that point and he thought that it had departed to the SW.

At 1208:02, the Bulldog was still on the RW and the FISO advised, “(Bulldog)C/S *just caution one erm twin squirrel in the overhead north side to depart to the southwest*”, the pilot acknowledged and elected to hold for a second.

At 1208:29, the radar recording shows the AS355, 1.2nm W of the ARP and the AS355 was then indicating FL009 (576ft on QFE 1001mb); the R22 was not showing on radar at that point. [Note: this is the position of the Airprox but the diagram above shows the preceding radar sweep].

At 1208:41 the radar recording shows the AS355, 1.5nm W of the ARP indicating FL010 (676ft on QFE 1001mb), with the R22 tracking WNW, in the AS355’s half past four position at a range of 0.2nm; the two ac have crossed and are then diverging.

At interview the FISO indicated that he had lost sight of the R22 which must have routed WNW rather than directly to the SW.

1209:20 the AS355 pilot called Kemble and asked if the R22 had them in sight; there was no immediate response so the AS355 pilot added, “*er Kemble er (AS355)C/S I think we’ll er need to report that as an Airprox er we’ll give you a call later on but it was a white R twenty two out of the field*”; this was acknowledged by the FISO.

At 1211:05 the AS355 pilot reported clear to the W and changing to the en-route frequency, but asked if the R22 was on frequency. The FISO asked the R22 pilot if the AS355 had been sighted on departure and he replied, “*er when he crossed over top of us we did er (R22)C/S*.”

The FISO recognised that TI should have been passed and would have aided the situational awareness of both pilots. He was asked if he had considered asking the AS355 to route N of the ATZ but he indicated that he was only able to pass TI and suggesting a routing did not guarantee a pilot’s compliance.

It is not clear why another ac was passed TI about the helicopter routeing S to N at 600ft; it is considered that the FISO may initially have misunderstood the route from Dunkeswell to Halfpenny Green.

When the AS355 reported approaching the NNE boundary, the FISO thought the AS355 was about 2nm NNE. He indicated that he was aware of the intended route, W through the ATZ and across the RW26 extended centreline at 1nm so the pilot was asked to report W abeam. The FISO thought that the AS355 would transit NW abeam the airfield and the R22 would depart directly to the SW with diverging tracks.

The R22 pilot had requested a route direct to the SW and this may have caused the FISO to believe that it would lift and immediately take up a SW'ly track.

It is considered that the intended track of the AS355, crossing 1nm W of the airfield, had the potential to bring the two helicopters into close proximity and would have justified the passing of updated TI.

The AS355 pilot was advised about the cct traffic but not the departures. He could have heard the R22's departure calls, but it is not clear why the pilot did not acquire visual contact.

The FISO did not pass TI to either the AS355 or R22 helicopters that would have aided the pilots' SA and assisted them in obtaining an early visual sighting of each other. The Manual of Flight Information Services, CAP410 Part B, Chapter 1, Page 1, Paragraph 2.1, states:

'The FISO has the following specific responsibilities:

issuing information to ac flying in the aerodrome traffic zone to assist the pilots in preventing collisions.'

Both ac were operating within the ATZ and were in receipt of a service from the FISO. CAP774, Chapter 1, Page1, Paragraph 2, states:

'Within Class F and G airspace, regardless of the service being provided, pilots are ultimately responsible for collision avoidance and terrain clearance, and they should consider service provision to be constrained by the unpredictable nature of this environment. The Class F and G airspace environment is typified by the following:

It is not mandatory for a pilot to be in receipt of an ATS; this generates an unknown traffic environment;

Controller/FISO workload cannot be predicted;

Pilots may make sudden manoeuvres, even when in receipt of an ATS.'

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board considered the parts played by the two pilots and the FISO in turn.

Members agreed that the AS355 pilot should have planned to, and given, the busy aerodrome at Kemble a wider berth; since he was in transit between two pipeline inspections, doing so would not have adversely affected his flight profile. Notwithstanding that the FISO did not provide him with TI regarding the R22 taking off, the AS355 pilot should have been alert to the possibility ac departing the visual circuit area. Further, even if he did not avoid the aerodrome completely, Members considered that flying through the departure lane at about the same height as ac in it, to be ill

advised as it can, and in this case did, lead to unnecessarily close encounters. Although the R22 was well below him, Members thought that the AS355 pilot should have manoeuvred his ac to make the RW visible.

The R22 pilot was also not passed TI regarding the AS355 and was not aware of its presence until the ac came in close proximity less than 1min after he took off. Although the pilot was aware that the circuit was busy, he did not (perhaps could not) see the AS355 which approached from his 5 o'clock and well above.

Both pilots however, had made the appropriate RT calls on the same frequency and despite that TI was not passed to either, Members thought that both should have been aware of the presence and location of each other from the (background) RT traffic.

The FISO, Members thought, had not fully appreciated the intended routeing of the AS355 which in any case had been slightly closer to the airfield than he initially stated. Although technically accurate, the AS355's first transmission to the FISO could have given a better description of his intended routeing from his location reported as South Cerney. The FISO, it seemed, had anticipated that it would be far enough away from the airfield and the departure lane not to pose a problem. Further he had apparently anticipated the R44 would turn immediately onto a SW track rather than going straight ahead then slightly right to clear the cct then turn SW (in accordance with the noise abatement departure procedures published in Pooleys Flight Guide). It was clear to Members that, although both pilots were operating in the visual circuit area under the 'see and avoid' principle, had TI been passed to either or both, that might have prompted them to be aware of, and specifically look for, the opposing ac; Members agreed that this had been part of the cause of the incident.

In actuality however, neither pilot saw the opposing ac in time to take any avoidance. Further, although the actual CPA was between sweeps, the radar recording verified that the separation was very small; that being the case, Members agreed unanimously that there had been an actual risk of collision.

RT C: ASSESSMENT OF CAUSE AND RISK

Cause: In the absence of TI, effectively non-sightings by the pilots of both ac.

Degree of Risk: A.

AIRPROX REPORT No 2011072

Date/Time: 8 Jul 2011 0921Z

Position: 5259N 00104W (8nm E of ROBIN)

Airspace: London FIR (Class: G)

Reporter: SAC (Prestwick) SE RADAR

1st Ac BE200 King Air 2nd Ac Cessna C525

Operator: HQ Air (Trg) Civ Exec

Alt/FL: ↑FL120 ↓FL140

Weather: VMC NR VMC NR

Visibility: NR 30nm

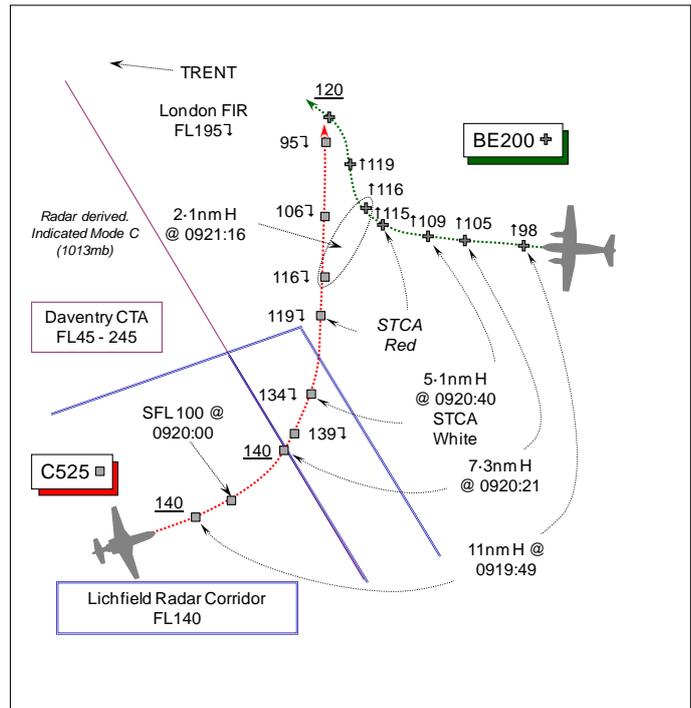
Reported Separation:

1000ft V/½nm H 4nm H

Recorded Separation:

Nil V @ 2.1nm H

0.3nm Min H @ 2900ft V



CONTROLLER REPORTED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE SAC (PRESTWICK) SE RADAR CONTROLLER (SE RAD) reports LJAO requested use of the Lichfield Radar Corridor (LRC) for a C525 eastbound at FL140, which was granted. The C525 was close to exiting the LRC when the BE200 King Air crew free-called on the Sector frequency requesting an airways join at TRENT at FL120. The CAS joining clearance was issued and the flight offered a TS, which the pilot accepted. As the C525 left the LRC he noticed it turn N toward the BE200 with FL100 displayed on Mode S as the crew's selected flight level (SFL). He passed TI to the BE200 crew and observed the C525 commence a descent. Updated TI was passed to the BE200 crew before upgrading the radar service to a DS as he believed that there was a real risk of collision between the 2 ac without avoiding action being proffered. The pilot accepted his avoiding action instruction and vertical separation was restored shortly afterwards, although deconfliction minima were not achieved. However, he felt that it was his responsibility to provide avoiding action otherwise he believes that only providence would have prevented the ac from missing each other.

THE SAC (PRESTWICK) SE PLANNER (SE PLAN) reports the C525 had been cleared through the LRC eastbound at FL140 when the BE200 crew checked in on frequency to join CAS E of TRENT at FL120. The C525 was observed leaving the LRC and turning northbound, pointing at the BE200, both ac outside CAS. The C525's Mode S SFL displayed FL100, which put it in conflict with the BE200 15nm away. At this point SE RAD passed TI. He called LJAO CENTRAL TACTICAL (CEN TAC) but there was no reply for 5-6 seconds. At the same time an incoming call was received from an outside line. Thinking that the call might be from the controller working the C525, the call to LJAO CEN TAC was ended and the incoming call answered, which turned out to be another LJAO controller asking for a joining clearance on a different ac, who was told to call back later. A call was made again to LJAO CENTRAL using the 'Priority' function. When the landline call was answered the ac were about 5nm apart with STCA flashing white and the C525 already at a similar level to the BE200. The LJAO controller stated that the pilot of the C525 had visual contact with the BE200 and was descending through its level. SE RAD upgraded the BE200's ATS to a DS and avoiding action was given with a R turn. STCA flashed red; he believed the separation was 2nm and 100ft at the closest point. The confliction was resolved when the C525 descended to FL80 clear of the BE200.

THE BE200 KING AIR PILOT, a QFI, reports he had departed from Cranwell under IFR on an instructional sortie to join CAS on track TRENT, calling Scottish CONTROL on 134.425MHz to obtain his airways joining clearance. After gaining his CAS clearance, he thought flying level at his assigned joining level of FL120 [but actually still climbing] in VMC approaching a position 25nm E of TRENT heading 275° at 240kt, Scottish advised him that there was another ac descending out of the LRC – the C525 - that was potentially on a collision course. Shortly thereafter, the Scottish controller advised that the C525 was still on a conflicting course descending to FL100. The controller then upgraded the TS to a DS and issued an avoiding action R turn instruction onto 360° to avoid the other ac, which was first displayed on TCAS bearing 240° at a range of 5nm, 2000ft above their level. As he started the turn in compliance with avoiding action instructions TCAS enunciated a TA. The C525 was not in sight, but his TCAS now indicated that the other ac was in their 7 o'clock about half a mile away and 1000ft above his level but still descending. This was the only TCAS warning he received. Once clear of the traffic the controller turned him back towards TRENT and advised that the C525 crew had reported being visual with his BE200 and elected to continue their descent remaining clear. The Scottish controller asked if he wished to file an Airprox, but he declined on the basis that the C525 crew was visual with his BE200 and had avoided visually. Moreover, he had only received a TCAS TA and no RA was enunciated. The Scottish controller stated on the RT that he would not file as he had been content but subsequently, he heard that the controller had reported an Airprox. He assessed the Risk as 'low'. The assigned squawk was selected with Modes C & S on; the HISLs were on.

He opined that this is the third occurrence of this nature that has happened to him in the last few years whilst en-route from Cranwell to join CAS at TRENT. The main factor, in his opinion, was that traffic exiting the LRC had been given a clearance to descend despite there being conflicting traffic, inbound to join CAS flying steady and level beneath. If the ac leaving CAS was held above the joining traffic until the conflict was past then these situations would not occur.

THE CESSNA CITATION 525 PILOT (C525) reports he was in transit from Guernsey to Doncaster and had routed through the LRC under a RCS from London MILITARY on 128.70MHz. A squawk of A6402 was selected with Mode C; enhanced Mode S and TCAS is fitted.

Exiting CAS at the eastern end of the LRC he was 'cleared' by the controller direct to Doncaster and 'cleared' to descend from FL140 to FL100. Near the NE corner of the LRC turning L through 080° to 350° at 320kt he became aware of traffic 15nm away, initially from his TCAS before he saw it visually. As there was no chance of losing visual contact on the low-wing twin – the BE200 – he increased his rate of descent to pass with the best possible margin - he estimated with 4nm horizontal separation. No TAs were enunciated by TCAS. Had he not been visual, he would have stopped descent at FL130 to let the other aircraft pass. As there was no risk of collision he did not bother the London MILITARY controller with the details.

THE LJAO CENTRAL SECTOR TACTICAL CONTROLLER (CEN TAC) reports that the C525 was transiting the LRC at FL140 inbound to Doncaster. It was deemed unnecessary to allocate the track to LJAO NE and it was prenoted direct with Doncaster for a visual recovery. When asked, the C525 pilot advised that he would require a TS on leaving CAS and requested descent. The flight was descended initially to FL100, 2nm before the end of the LRC and a TS applied thereafter. The C525 crew then asked for a direct track to Doncaster, which was approved. Subsequently, she called traffic at a range of 5nm crossing R - L indicating FL108. The conflicting traffic – the BE200 - indicated that it had a Mode S SFL of FL120. The C525 pilot initially asked for updates on the traffic but then called visual with the climbing BE200 as soon as TI had been passed. Reaffirming that he was visual with the traffic the C525 pilot requested further descent and as the C525's Mode C was indicating below the climbing traffic she issued further descent to FL80. Instructing the C525 pilot to select the allocated Doncaster squawk the flight was told to switch to Doncaster ATC.

BM SAFETY MANAGEMENT reports that this Airprox occurred between the C525 operating VFR in VMC in receipt of a TS from the LJAO CEN TAC controller and the BE200 operating IFR in VMC in receipt of an ATS from SAC (Prestwick) SE RAD.

The BE200 departed Cranwell to join CAS on-track TRENT at FL120. At 0919:24, the BE200 crew selected their assigned GAT SSR code, also displaying Mode S information. The ac's Mode C indicated FL92 climbing; Mode S displayed a SFL of FL120.

[UKAB Note (1): At 0917:17, the C525 crew advised, "*And er we can take own navigation to the centre fix [at Doncaster] when you er can permit us*", to which CEN TAC responded, "*roger standby*". With 3½nm to run to the boundary of Class A CAS (the promulgated LRC boundary is not co-incident with the eastern edge of the Daventry CTA and extends 2nm into Class G), at 0919:44, the C525 crew was instructed by CEN TAC to, "*..descend flight level 1 hundred*", which was read-back by the C525 crew. At this point, the BE200 was 11.8nm NE of the C525 climbing through FL97. Moments later at 0919:54 the C525 crew advised, "*..just in the left turn now for senny????*" [probably for Doncaster], to which CEN TAC replied 4sec later at 0919:58, "[C525 C/S] *roger and clear of controlled airspace Traffic Service*", which was acknowledged. The C525 did not exit Class A CAS until 0920:21.]

At the point that CEN TAC gave tacit approval for the L turn, the BE200 was climbing through FL99, 10.3nm NE of the C525, maintaining FL140. The C525's Mode S SFL indicated a change to FL100 at 0920:00. CEN TAC passed accurate TI to the C525 crew on the BE200 at 0920:41, stating, "*traffic 12 o'clock 5 miles crossing right to left..indicating flight level 1-0-8 climbing.*" The C525 pilot replied on RT that they were visual with the BE200 just after 0920:48 adding in his written report that 'in the turn to the north, I became aware of the traffic initially on TCAS, then visually'. Whilst descending through FL129 at 0920:54, the C525 pilot requested further descent, which was granted to FL80 and acknowledged by the C525 pilot, who re-iterated that they were visual with the BE200.

Co-incident with the activation of a high severity red alert by STCA at 0921:06, the turn taken by the BE200 crew in response to the deconfliction advice from SAC SE RAD is evident on the radar recording.

Cap 774 Ch 3 Para 6 states:

'Whether traffic information has been passed or not, a pilot is expected to discharge his collision avoidance responsibility without assistance from the controller. If after receiving traffic information, a pilot requires deconfliction advice, an upgrade to Deconfliction Service shall be requested.'

After discussing the incident with the BE200 pilot the LJAO SUPERVISOR reports that the pilot stated that they were VMC but that the turn issued by SE RAD put them in a '*belly-up profile*' to the C525 '*significantly reducing their ability to see it.*'

At the point when the instruction to descend to FL100 was passed by CEN TAC to the C525 crew, the BE200 and C525 were on diverging flight paths. However, the L turn towards Doncaster introduced the confliction between the BE200 and C525. Based upon LJAO's investigation, CEN TAC either did not assimilate the C525's course to Doncaster or did not appreciate where the ac would route in relation to the BE200. That said, CEN TAC passed accurate and timely TI to the C525 crew who reported visual with the BE200. Moreover, it is clear from the C525 pilot's report that they were visual with the BE200 early enough for them to discharge their collision avoidance responsibilities. Whilst the decision by CEN TAC to permit the C525 to route own navigation was arguably not 'good practice', it was not a causal factor in this Airprox.

Based upon extrapolation of the respective ac's tracks before SE RAD issued the BE200's avoiding action turn and without the potential intervention of TCAS, the CPA would have been at 0921:34, with horizontal separation of about 0.1nm and vertical separation of 1100ft existing. The C525 pilot states

that they increased their ROD to 'pass with the best possible margin,' the extrapolation suggests that, the addition of horizontal deconfliction by the C525 pilot might have been appropriate.

We would conclude that this Airprox occurred as a result of the difference in perception between SE RAD, who believed that a collision risk was evident; whereas the C525 pilot believed that he had provided adequate separation against the BE200.

ATSI reports that at 0904, LJAO Central contacted the SAC SE Sector (SE PLAN) to request co-ordination for the C525 (squawking A6402) to cross the LRC eastbound at FL140. Co-ordination was agreed at FL140. At the time, the C525 was passing W of Gloucester, heading N at FL190.

The SAC MATS Part 2, Page SEa-43 describes the LRC:

'The Lichfield Radar Corridor is 12nm wide and the centreline based on the Coningsby (CGY) TACAN 252 radial. The primary crossing level is FL140 with FL150 reserved as an alternate/additional tactical level. The corridor is established to permit LJAO controllers to vector aircraft through the Daventry CTA in the vicinity of PEDIG. LJAO is the only military unit authorised to use the Radar Corridor'.

The BE200 crew established communication with SE RAD at 0918:27. At the time, the C525 was within the LRC at FL140, passing N of East Midlands Airport, 22nm WSW of the BE200. The pilot of the BE200 was instructed to squawk A6020, "*when you're finished with your previous agency*" and reported climbing to FL120 requesting to join airways at TRENT. The controller replied, "*you are clear to join controlled airspace on direct track for TRENT maintaining Flight Level 1-2-0 and you can expect a Traffic Service...*". The pilot read back the level and ATS correctly. When the BE200 was passed TI shortly afterwards (not concerning the C525), the pilot confirmed he was good VMC.

At 0920, as the C525 was approaching the eastern edge of the LRC, SE RAD passed TI about it to the BE200, "*there's also military traffic currently in your 10 o'clock range 10 miles left to right its 2 thousand feet above you're cleared level*". As soon as the pilot acknowledged the information, the controller responded, "*that traffic now showing descending down to Flight Level 1 Hundred it's fast moving 10 o'clock range 8 miles left to right it looks like you're on a constant bearing*". The radar recording shows the C525 still maintaining FL140 but its Mode S SFL was indicating FL100. At 0920:37, the controller transmitted to the BE200, "*Yeah [C/S] to avoid that traffic now I suggest you take avoiding action turn..right onto a radar heading of..3-3-0 degrees*". The pilot responded, "*Right 3-3*". The radar photograph shows that both ac are in Class G airspace. The BE200 is tracking W, passing FL107. The C525 is 6nm SW of the BE200, passing FL138 and turning L towards the N and the BE200. This TI was updated at 0920:49, "*Yeah [C/S] traffic 9 o'clock range 5 miles left to right still indicating drif- descending down to Flight Level 1 Hundred*". The pilot reported in the turn.

During this period, SE PLAN, realising the developing situation, telephoned LJAO CENTRAL to establish their intentions with the C525. Whilst waiting for CENTRAL to answer this call, the outside line rang. Thinking this might be from LJAO CENTRAL, he answered the incoming call. However, as this was from another LJAO position, the call was ended. SE PLAN then telephoned LJAO CENTRAL using the Priority function. By the time he was able to discuss the situation with the appropriate LJAO controller, the subject ac were about 5nm apart. It was established that the C525 was visual with the BE200.

Realising that the subject ac were still closing in conflict and not yet being aware that the C525 was visual with his traffic, SE RAD decided to change the type of ATS provided to the BE200 crew. The following transmission was made at 0920:59, "*[BE200 C/S] just upgraded to a..deconfliction service I'm not going to be able to completely deconflict you but climb now if you can expedite your climb up to Flight Level 1-2-0 turn right onto radar heading 0-1-0 degrees with avoiding action turn*". The pilot read back the message. The radar recording, timed at 0921:00, reveals that the horizontal distance between the two ac had reduced to 3.5nm. They were on conflicting flight paths, with the C525 descending through FL126 and the BE200 climbing through FL112. The distance between the subject ac continued to decrease. The C525 remained on a northerly track whilst the BE200 made

its R turn. At a range of 2.5nm the BE200 was climbing through FL115 and the C525 descending through FL119 [STCA triggered high severity red, at 2.1nm the levels of the two ac crossed, both ac indicating FL116]. Vertical separation then increased with the C525, subsequently, passing 0.3nm behind the BE200, with vertical separation of 2900ft indicated.

Not only was the BE200 being provided with a TS by SE RAD but also it is understood LJAO CEN TAC was providing the C525 with the same service after it had left CAS. A TS is defined in MATS Part 1, Section 1, Chapter 11:

‘A Traffic Service is a surveillance based ATS, where in addition to the provisions of a Basic Service, the controller provides specific surveillance derived traffic information to assist the pilot in avoiding other traffic. Controllers may provide headings and/or levels for the purposes of positioning and/or sequencing; however, the controller is not required to achieve deconfliction minima, and the avoidance of other traffic is ultimately the pilot’s responsibility. The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information. Traffic is normally considered to be relevant when, in the judgement of the controller, the conflicting aircraft’s observed flight profile indicates that it will pass within 3 NM and, where level information is available, 3000 ft of the aircraft in receipt of the Traffic Service. However, controllers may also use their judgement to decide on occasions when such traffic is not relevant, e.g. passing behind or within the parameters but diverging. Controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5 NM, in order to give the pilot sufficient time to meet his collision avoidance responsibilities and to allow for an update in traffic information if considered necessary. Distances displayed on ATS surveillance systems can be at variance to the actual distances between aircraft due to the limitations in accuracy of surveillance systems. Furthermore, some aircraft may not be displayed at all by ATS surveillance systems. Whether traffic information has been passed or not, a pilot is expected to discharge his collision avoidance responsibility without assistance from the controller. If after receiving traffic information, a pilot requires deconfliction advice, an upgrade to Deconfliction Service shall be requested. The controller shall make all reasonable endeavours to accommodate this request as soon as practicable and provide deconfliction advice at the earliest opportunity. When providing headings/levels for the purpose of positioning and/or sequencing or as navigational assistance, the controller should take into account traffic in the immediate vicinity, so that a risk of collision is not knowingly introduced by the instructions passed. However, the controller is not required to achieve defined deconfliction minima’.

On this occasion SAC SE RAD, initially, recommended a turn to the BE200 pilot that would route it away from the C525. However, realising that the two aircraft were on quickly conflicting tracks he took positive action and changed the ATS provided to a DS, albeit that the pilot had not requested any change.

‘A DS is a surveillance based ATS where, in addition to the provisions of a Basic Service, the controller provides specific surveillance derived traffic information and issues headings and/or levels aimed at achieving planned deconfliction minima, or for positioning and/or sequencing. However, the avoidance of other traffic is ultimately the pilot’s responsibility. A controller shall provide traffic information, accompanied with a heading and/or level aimed at achieving a planned deconfliction minima against all observed aircraft in Class F/G airspace. The deconfliction minima against uncoordinated traffic are:

- 5 NM laterally (subject to surveillance capability and CAA approval); or
- 3000 ft vertically and, unless the SSR code indicates that the Mode C data has been verified, the surveillance returns, however presented, should not merge. (Note: Mode C can be assumed to have been verified if it is associated with a deemed validated Mode A code.)’

The SE RAD controller decided that the best way to resolve what he believed would be a very close encounter between the subject ac, was to change the ATS being provided from a TS to a DS. He then issued an avoiding action turn to the BE200, together with an expeditious climb rate. Although this did route the BE200 away from the C525 and prevented their radar returns from merging, it reduced the possibility of the BE200 crew observing the other traffic. SE RAD was unaware that the C525 crew had sighted the BE200 until after he had issued the avoiding action instructions; had he been aware beforehand, he would have continued to provide a TS.

HQ AIR (TRG) comments that whilst this was a relatively benign incident, it could have been prevented only by increased coordination between the respective ATSU's. The TI provided enabled the crews to acquire each other on TCAS and visually in order to deconflict safely in Class G airspace.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

It was plain that the SE RAD controller believed that he should proffer avoiding action to the BE200 when he spotted the C525 had turned L onto a new course and descended towards the BE200 joining CAS, resulting in a potential conflict outside the boundary of his Sector in Class G airspace. This was an uncommon occurrence insofar as the reporting SE RAD controller had proactively upgraded the radar service afforded the BE200 crew to a DS. Whilst some might say that this was 'overcontrol', SE RAD acted with the best of intentions and the BE200 crew had accepted it. Members stressed that they would not discourage controllers from providing avoiding action if it was the most appropriate way to resolve a close quarters situation. Members also noted that the controller prioritised sensibly by issuing the avoiding action before declaring the change of service. Moreover, in addition to his attempts to effect some horizontal separation between the ac, the controller had provided a good flow of TI which, coupled with the ac's TCAS, kept the BE200 crew closely apprised of the geometry of the situation. Whilst the point had been made that the subsequent avoiding action turn placed the BE200 crew 'belly-up' to the C525, a civilian area controller Member believed there was no scope to turn the BE200 the opposite way and that SE RAD's appreciation of the geometry of the situation had been correct. The Board commended the controller for his initiative and conscientious application of the ATS provided to the BE200 crew. However, the controller was plainly unaware at the time that after exiting Class A CAS the C525 pilot had acquired the BE200 visually at range and was taking his own VFR separation.

This Airprox illustrated the benefits of the displayed Mode S SFL, which had significantly improved SE RAD's SA. This Mode S SFL was also available to CEN TAC from the BE200's SSR and it would have been evident to the LJAO controller that the ac was climbing up to FL120, with an obvious potential for a conflict to develop when the C525 exited the LRC and descended through the BE200's level. Members considered that CEN TAC could have been more proactive and a level-off at FL130 until clear of the BE200 co-ordinated with SE PLAN, as suggested by the BE200 pilot, would have prevented this Airprox. Liaison with SAC SE Sector about the C525's descent beforehand would also have allayed SE RAD's concerns here, for it was evident from the ATSI report that if he had been aware that the C525 PIC was taking his own separation on the BE200, then SEC RAD would not have proffered the avoiding action turn and would have continued to provide a TS. However, it was not until SE PLAN called CEN TAC that this was ascertained, which led some Members to suggest that this Airprox was the result of a controller perceived conflict.

The LJAO RT transcript confirmed that CEN TAC had not approved the C525 pilot's earlier request to take up his own navigation for Doncaster under the RCS that pertained, although the BM Safety Management report had suggested the controller might not have appreciated the C525 pilot's route would take it close to the BE200 before the jet flew into close quarters. Members noted that it was after the C525 pilot's unilateral declaration that he was, *“..just in the left turn now..”* that CEN TAC

was slightly premature in placing the C525 under a TS, for the radar recording revealed that the ac had not crossed the lateral boundary of the Daventry CTA into Class G airspace. Some Board Members considered that the controller's response could be taken as tacit approval of the pilot's request to continue under his own navigation as suggested within the BM Safety Management report. However, whilst this was not good practice, the Board concluded it was not fundamental to the Cause. Following this turn, which placed the C525 directly in conflict with the BE200, CEN TAC passed accurate and timely TI to the C525 crew who almost immediately reported visual contact with the BE200. However, it was also clear that the crew did not commence their descent from FL140 until after they had exited the CTA. Having cleared CAS and with the BE200 in sight, the C525 pilot elected to descend rapidly beneath it. It was this descent to a level beneath the BE200, directly in conflict with the latter, which had been the catalyst to SE RAD's concerns and reaction. This was not meant to imply criticism of the C525 pilot and CAT pilot Members stressed that the C525 pilot was acting legitimately in taking his own visual separation against the BE200 in Class G airspace, where he afforded considerable vertical separation. This led the Board to conclude that this Airprox had resulted because the C525's flight path caused the SAC SE RAD controller concern.

Turning to the inherent Risk, it was plain that the BE200 pilot had complied with SE RAD's R turn instructions and had identified the C525 on his TCAS. Thus cognisant of the 'threat' he monitored the C525's descent as he turned, but the TA he received placed the C525 1000ft above his ac at 7 o'clock still descending. Although the two ac were only 2.1nm apart when the C525 pilot descended through the level of the climbing BE200, 2900ft of vertical separation was achieved at the closest point as the C525 crossed 0.3nm astern clear below the BE200. Moreover, the BE200 crew received good TI from SE RAD and their TCAS had not enunciated an RA. Furthermore, since the encounter occurred in Class G airspace where 'see and avoid' prevails and the C525 pilot was visual with the BE200 throughout, some Members considered that normal standards had been maintained and the Airprox should be classified as an 'E' – reportable but, following analysis, so benign as to be considered a non-event. However, other Members considered that there were sufficient unusual and non-standard factors for the event to be assessed as a 'genuine' Airprox, albeit that no risk of collision existed. A vote was required and, by the narrowest of margins, the latter view prevailed.

Post Meeting Note: During the Board's assessment of this Airprox, the promulgated dimensions and rationale for the extensions of the Lichfield Radar Corridor into Class G airspace, in line with all other RCs, was discussed. After further discussion between DAP and BM Safety Management outwith the meeting, it was concluded that further review of this topic was warranted.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The C525's flight path caused the SAC SE RAD controller concern.

Degree of Risk: C.

AIRPROX REPORT No 2011073

Date/Time: 10 Jul 2011 1515Z (Sunday)

Position: 5155N 00111W
(3nm WNW Bicester)

Airspace: Oxford AIAA (Class: G)

Reporting Ac Reported Ac

Type: Nimbus 3 Glider BE90

Operator: Civ Pte Civ Pte

Alt/FL: 2500ft NR
QNH (1011mb)

Weather: VMC CLBC NR

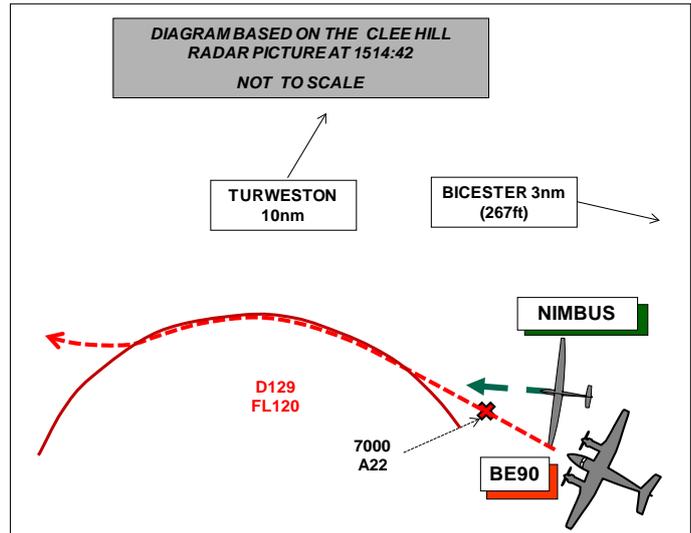
Visibility: 20nm NR

Reported Separation:

0ft V/50-100ft H 200ft V/1.5nm H

Recorded Separation:

NR



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE NIMBUS 3 GLIDER PILOT reports soaring in a white glider while listening out on a gliding frequency. While he was just to the N of D129, heading 270° at 55kt, a BE90 flying over the W edge of Bicester Town, overtook him very close to his L wing at the same height. [2nm SW of the centre of Bicester Glider Launch Site]. He first saw the BE90, which was brown with 'cheat' lines, 50-100ft away just behind his L wing tip and overtaking him, but it had passed before he had time to react.

He assessed the risk as being Medium and reported the incident to the CFI on landing.

The glider pilot believes that the BE90 pilot showed a lack of judgement in flying at speed over a town very close to two gliding clubs, on a Sunday afternoon in summer.

THE BE90 PILOT report was submitted almost 4 months after the event following several prompts by the Secretariat. He was flying a private VFR flight to Turweston in a white ac with red and black stripes, squawking with Modes C and S and TCAS was fitted. He recalls seeing a white glider about 1.5nm away and made a gentle turn to the L to avoid it. He considers that the event was not an Airprox suggesting that the glider pilot had been startled by his ac.

ATSI reports that the Airprox was reported by the pilot of a Nimbus Glider who was not in receipt of an ATC service.

Although the radar recordings show no returns corresponding to an ac at the position and time of the reported incident, at 1513 a contact is seen displaying A7000 at alt 2300ft, approximately 6nm SE of Upper Heyford. The ac routed W along the N boundary of D129 (South of Upper Heyford) and then departed the area to the W. The ac continued its flight until appearing to manoeuvre for a landing at Turweston aerodrome at 1523.

UKAB Note 1: The recording of the Clee Hill radar showed a contact believed to be the BE90 as stated in the ATSI report above, tracking along the N edge of D129 at an alt of 2200ft, passing close to the reported incident position at 1514:42. An intermittent primary only contact can be seen in the area of the reported incident but it disappears just after 1514:23. The track of the BE90 (indicating A22, heading 290°) passed very close to the last seen position of the contact at 1514:35.

UKAB Note (2): The BE90 that landed at Turweston is predominantly white with 2 dark coloured 'cheat' lines.

UKAB Note (3): Bicester is promulgated as a Glider Launch Site, HJ, (winch/ground tow and tug/motor glider) up to 3000ft aal site elev 267ft.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Members were satisfied that the BE90 identified was the one involved in the Airprox despite the significantly differing pilots' estimates of the separation.

The Board was disappointed that it took the BE90 pilot almost 4 months to submit a report as, due to the time elapsed, it most likely reduced its accuracy significantly and thereby probably the overall accuracy of the investigation.

Members also noted that the incident occurred in an area that is severely limited by local airspace constraints, is busy, particularly with gliders, and presents a choke point to ac transiting N to S or vice versa at lower levels. Although Members considered it wise to avoid the area they understood that in some circumstances this is not possible. If it is necessary to fly through the area, it is prudent to moderate ones airspeed to provide more time to see and avoid other traffic. When reviewing the pilots' reports, Members noted that the glider pilot reported that the BE90, which he described accurately, was very close and appeared from behind his left wingtip as it overtook him. Although the BE90 pilot reported that he saw a glider, Members agreed that it was most likely not the reporting ac, but another Weston or Bicester launched ac in the area. In good weather which is conducive to soaring with white cumulus cloud, gliders are notoriously difficult to see, particularly when viewed head or tail on (the glider pilot reported heading 270°); however pilots should anticipate them and avoid areas such as this where they are known to congregate. Although the BE90 had TCAS fitted, the glider was not SSR equipped and would not have been displayed. A Member familiar with Bicester/Weston on the Green operations informed that the Board that the latter is very busy, particularly at weekends, with mixed parachuting/gliding and some other GA movements, and it is commonplace for parachutists and more likely their dropping ac to operate right up to the extremities of the Danger Area; that being the case it is wise for ac not operating therein to give it a wide berth.

It was noted that although under the RoA, although the glider had right of way, the principle only works if pilots see (in time to avoid) the opposing ac; in this case neither did. Some Members thought that the glider pilot could have done more to improve his lookout in 'blind' areas particularly when on a straight and level glide.

Although the separation could not be determined accurately, since neither pilot saw the opposing ac in time to initiate any avoidance, Members agreed that in this incident, safety had not been assured.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Probably a non-sighting by the BE90 pilot and effectively a non-sighting by the Nimbus pilot.

Degree of Risk: B.

AIRPROX REPORT No 2011076

Date/Time: 10 Jul 2011 11075Z (Sunday)

Position: 5055N 00046W
(3nm N Goodwood)

Airspace: Lon FIR (Class: G)

Reporting Ac Reported Ac

Type: Luscombe 8A Cessna 172

Operator: Civ Pte Civ Pte

Alt/FL: 2000ft 1600ft↓
QNH (1018mb) QFE

Weather: VMC CAVOK VMC NR

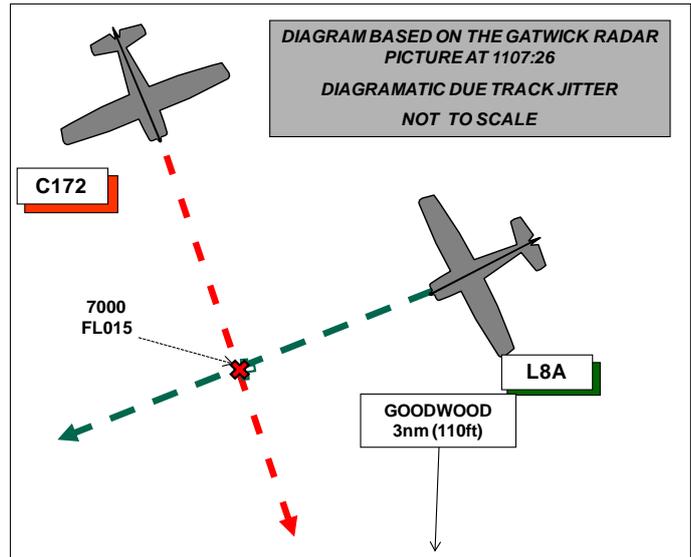
Visibility: 35km >10km

Reported Separation:

100ft V/200m H NR

Recorded Separation:

NR V/0 H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE LUSCOMBE 8A PILOT reports flying a pleasure flight, from a farm near Horsham to Sandown, I.O.W. in a white ac with a belly strobe switched on, in receipt of a BS from Farnborough radar (West) but no transponder was fitted. He was tracking about 250° at 90kt from Billingshurst and when he was between Cocking & Singleton (North East of Goodwood horse racing track) at 2000ft QNH, he looked to his right, through RH door window and saw an ac less than 200m away and slightly lower. He pulled back on the control stick but probably did not achieve much more separation before the ac crossed. The other ac which he thought might have been a white C152/172 with a dark blue stripe, continued on its track of about 160°. He thought that the ac might be Goodwood based and he did not see it until very late, as he it came from his rear RH quarter. He reported the incident to Farnborough after landing and assessed the risk as being high.

He remarked that he is conscious of the importance of a good lookout and will continue to look for methods of improving his scan.

THE CESSNA 172 PILOT reports flying on a private flight from Denham to Goodwood in a white ac with blue stripes, squawking 7000 with Modes C and S. The flight was flown at about 2000ft on the London QNH and after leaving Denham ATC he transferred to Farnborough and was given a BS and routed just to the SW of the Farnborough overhead, direct to Goodwood; Farnborough terminated the service when they were about 12nm from Goodwood and he transferred to Goodwood ATC. As their cct traffic was light he requested to join R Base for RW24. At the time of the reported Airprox he was conducting a gentle descent heading 160° to position as advised. Both he and his passenger, who is also a PPL holder, were keeping a careful lookout for possible cct traffic, and listening to the local ATC for reports of other ac but neither of them saw the Luscombe ac which reported the Airprox (or any other ac) so he could not assess the risk. Their ac is of the high wing type, so visibility upwards, particularly when in a descent, is difficult. They did not hear the Luscombe report the incident on the Goodwood ATC frequency and were only aware of the incident when contacted by RAC.

ATSI reports that the radar recordings used for the investigation of the Airprox were sourced from the Gatwick radar head, which is not supplied to Farnborough.

The C172 established communication with Farnborough LARS (West) at 1042 on transfer from Farnborough LARS (North), the pilot reporting 10nm from WOD and he was instructed to squawk 0432 and place on a BS. The ac continued to route via WOD and overhead Farnborough Airport, towards its destination, Goodwood aerodrome.

At 1102:28, the Luscombe L8A (L8) contacted the Farnborough (West) frequency. The pilot's attempt to establish communication was broken, so he was requested to pass the message again. Consequently at 1103:00, the pilot reported, "*heading for Sandown out of Slinfold Wellcross Farm [near Horsham] two thousand feet one zero one eight QNH no transponder Basic Service*" and the controller confirmed the provision of a BS. The radar photograph shows the C172 tracking S at 2200ft and a primary radar return tracking SW, believed to be the L8, is 7.3nm to its SE. No further RTF transmissions were made to, or received from, either ac until 1104:30, when the C172 was instructed to, "*squawk seven thousand freecall Goodwood...*" At that time the C172 was at 2100ft, 9.2nm from Goodwood, with the primary return 5.1nm SE of it.

The radar recordings show the subject ac continuing on conflicting tracks, coming into close proximity at 1107:26.

[UKAB Note (1): Although the primary return believed to be the L8 shows severe track jitter, they coincide at 1107.26.]

The West Controller reported that the returns from the L8 were intermittent and at the time of the Airprox it was not showing on the radar display. No transmissions were made to the L8 until 1115, when the pilot was asked to report his position but no response was received.

Although the C172 pilot did not request a BS or read back the service as required on the West frequency, the service was probably a continuation of the service being provided on the North frequency and the pilot confirmed in his report that he was aware that he was receiving a BS.

The MATS Part 1, Section 1, Chapter 11, Pages 4/5, defines a BS:

'A Basic Service is an ATS provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. Basic Service relies on the pilot avoiding other traffic, unaided by controllers. It is essential that a pilot receiving this service remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight. Controllers may allocate SSR codes to ac in receipt of a Basic Service. The issuance of such a code does not constitute the provision of a surveillance service.'

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 authorities.

The Board noted that this incident took place in Class G airspace where 'see and avoid' is the principal method of collision avoidance; in this case the two pilots had an equal and shared responsibility to avoid each other but under the RoA the Luscombe, having the C172 on its right, should have given way to it; this however, is dependant on the pilots seeing each other's ac and in this case neither did so in time to take any effective avoidance.

When trying to analyse the conspicuity aspects of the incident, Members noted that both ac had been flying at similar speeds, closing on a line of constant bearing and with little or no relative

movement, making them difficult for their respective pilots to detect or, it was proposed they had possibly been in each other's blind areas. A GA Member reminded pilots of the importance of manoeuvring their ac and/or moving their head to minimise 'blind' areas particularly when flying through congested areas. He also reminded that flying at unusual alts can reduce the probability of ac conflicting at the same height; 2000ft for instance is well used but few pilots elect to fly at, for instance, 1750ft, which in this case could have increased the vertical separation.

While noting that the incident took place after both ac had left the Farnborough frequency, Members observed that, although both pilots had requested an ATS, apparently neither had requested a TS despite flying through a very congested area.

Since neither pilot saw the opposing ac in time to take any effective avoidance, most Members agreed that in this incident there had been an actual risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A non-sighting by the C172 pilot and effectively a non-sighting by the Luscombe 8A pilot.

Degree of Risk: A.

AIRPROX REPORT No 2011077

Date/Time: 13 Jul 2011 1446Z

Position: 5013N 00525W (1¼nm SW of Godrevy Point)

Airspace: London FIR (Class: G)

Reporting Ac **Reported Ac**

Type: EC135 C172

Operator: Civ Comm Civ Trg

Alt/FL: 1200ft 1000-1200ft
RPS (1018mb) (1022mb)

Weather: VMC CLBC VMC NR

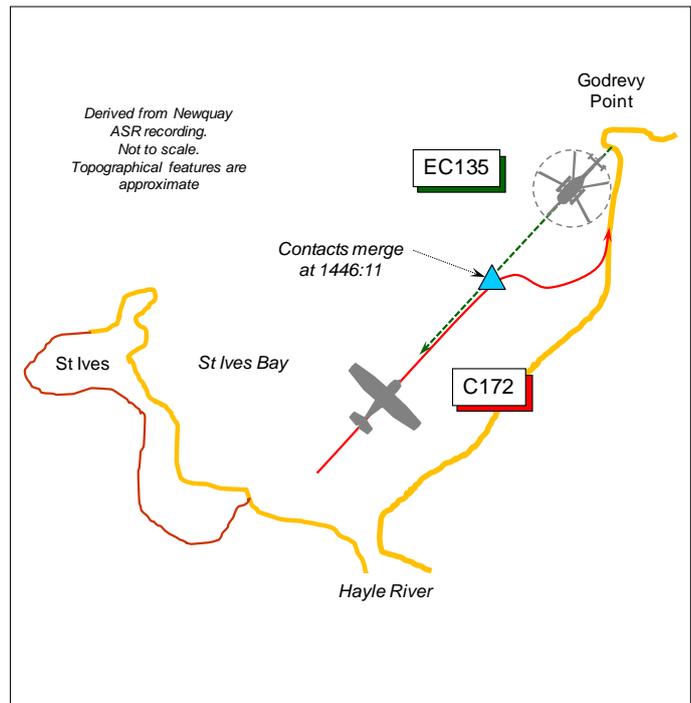
Visibility: 10km >10k

Reported Separation:

Nil V/50m H 0-50ft V

Recorded Separation:

100ft V/contacts merged



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE EUROCOPTER EC135 HELICOPTER PILOT reports that he was in transit to Penzance, VFR and in receipt of a BS from Culdrose APP; a squawk of A0020 was selected with Modes C and S on. The helicopter is coloured yellow and red; the white HISLs and two landing lights were all on.

Flying level at 1200ft SCILLIES RPS (1018mb), about 060° LND VOR 11nm heading 220° at 125kt he encountered a small light ac. Flying into the sun, 200ft below the cloud base in VMC, the white C172 climbed from low level and appeared from out of his 10-11 o'clock blind spot with the sun behind it, which made it impossible for him to see it. The white C172 was seen in his 11 o'clock 100m away flying in a right hand banking turn at the same level before it passed down the port side 50m away with a 'high' Risk of collision. He was unaware that the C172 was in the vicinity until the very last moment when it was too late to take any avoiding action.

He immediately told Culdrose APP that he had just had an Airprox with a light fixed-wing ac flying in the opposite direction; they informed him initially that they had not seen anything on radar but then picked up a 7000 squawk in his 6 o'clock position. The light ac was white in colour and was flying just below the cloud base.

The EC135 pilot also included his two Paramedic's accounts within his report:

EC135 PARAMEDIC (A) was sitting in the LH P2 seat and had turned to speak to his colleague in the back seat; as he turned forwards he saw a white ac banking away at the same level in their 10-11 o'clock position. This aeroplane was extremely close, he estimated about 50-100 meters away – probably at the closer end of that scale – but banked sufficiently to pass down their port side.

EC135 PARAMEDIC (B) was in the rear seat facing aft. His first sight of the C172 was through the port side window, where he saw the complete C172 'filling' the side window of the helicopter. He believes they were about 50 metres apart at this point. He was unaware of his pilot taking any avoiding action.

THE C172 PILOT reports he was operating VFR, in receipt of a BS from Lands End TOWER on 120-250Mhz; a squawk of A7000 was selected with Mode C. Flying at 1000-1200ft (1022mb) some

500ft below and 2nm clear of cloud, the flight was a typical instruction flight following a common route taken for trial lessons along the southern coast from Land's End aerodrome to Penzance, cutting across land to St Ives Bay before following the N Cornish coast to Pendeen before re-joining at Lands End. There was a much higher level of GA traffic in the area than usual due to a microlight and gyrocopter fly-in to the Isles of Scilly; therefore he emphasized to his student the need to maintain a good lookout. His route took him E of St Ives for only a short period, therefore, given the amount of traffic in the local area receiving a BS from Lands End, he elected to remain in radio contact with Lands End TOWER throughout the flight. In the vicinity of St Ives Bay heading 060° at 85kt a small rotary-winged ac that appeared to be a gyrocopter was seen about 1nm ahead on a converging heading in level flight on a course of about 240°. He considered it a collision risk and avoiding action was initiated into a banked turn to the R using 30° AOB onto a heading of about 150°, with a slight climb. The other traffic did not change its course as he turned away. There was no subsequent sighting of the ac. He considered that the other ac was seen and avoiding action taken soon enough to ensure that an Airprox did not occur.

THE CULDROSE APPROACH CONTROLLER (CU APP) reports that the EC135 helicopter pilot called APP on 134.050MHz abeam Godrevy Bay requesting a BS at 1000ft SCILLIES RPS (1018mb) en-route to Penzance. A BS was given with a request to report visual with the HLS and to advise when switching frequency. A few minutes later the EC135 helicopter pilot reported an Airprox with a light civilian ac in the vicinity of Hayle Bay. Nothing was seen on radar; however, upon rotating the EC135's SSR data block, a primary contact was observed in the helicopter's 6 o'clock at a range of ½nm tracking NE, which very shortly afterwards displayed a A7000 squawk climbing slowly through 1000ft unverified Mode C. Observing the ac's course using a combination of the A7000 squawk and the ac's primary radar response, the ac – the C172 - was tracked to Lands End aerodrome. When the C172 was shown joining overhead, he telephoned Lands End aerodrome to inform them of the Airprox. Subsequently, upon talking to the C172 pilot via landline, he confirmed he had been in Hayle Bay but had not seen the EC135 helicopter. The C172 pilot did not contact Culdrose ATC at any point during the flight. His workload was assessed as 'medium-low'.

UKAB Note (1): Manager ATS Newquay International Airport helpfully provided a copy of the Newquay ASR recording covering the period of this Airprox. However, the large displayed range makes it difficult to determine accurately the minimum horizontal separation that pertained. The EC135, identified from its A0020 squawk is shown departing Godrevy Point into St Ives Bay on a steady SW'ly track indicating a level cruise at an altitude of 1300-1400ft Mode C. Meanwhile an ac squawking A7000 is shown tracking NE'ly within St Ives Bay about ½ -1nm offshore broadly in conformity with the route described by the C172 pilot. At 1445:44, the C172 indicates an altitude of 1500ft Mode C, 100ft above the EC135, in the latter's 12 o'clock at a range of 1½nm. The two ac close directly, head-on to one another; at 1446:01 the EC135 indicates 1300ft Mode C with the C172 at 12 o'clock – 0.5nm. Both ac maintain their course as the contacts merge at 1446:11 and pass marginally port-to-port as reported, the C172 indicating 1400ft ALT, some 100ft above the EC135 indicating 1300ft ALT. The C172 appears to turn R toward the shoreline onto a SE'ly heading, in conformity with the reported avoiding action R turn, before regaining the line of the coast 1nm S of Godrevy Point; the EC135 maintains its course and indicated altitude as they draw aft of one another. Subsequently, the EC135 coasts in SE of St Ives and the C172 turns about from Godrevy Point.

ATSI reports that the Airprox occurred within Class G airspace, the EC135 squawking A0020, operating VFR on a flight from Newquay to Penzance heliport. The C172 pilot was operating VFR, squawking A7000, on a local instructional flight from Lands End Airport and in receipt of a BS from TOWER.

The Lands End TOWER RTF recordings did not have a time injection element.

The Culdrose 1450 METAR: 21004KT 9999 –SHRA SCT010 SCT018 BKN030 16/13 Q1021 GRN TEMPO 7000 – SHRA SCT012 BKN020TCU GRN=.

The C172 departed from RW25 at Lands End airport, routing E VFR at 2000ft. A broken transmission, "...to Penzance," was made and the TOWER controller believed the C172 had transferred to Penzance RADIO. This information was passed to two other ac in the area. The C172 pilot's written report indicated that he had remained on the Lands End frequency due to the amount of traffic in the area.

The C172 contacted Lands End TOWER and joined on a right base-leg for RW25. After the C172 landed TOWER asked the pilot, "[C172 C/S] *have you been operating Hayle Bay*" and the pilot responded "*Affirm.*" The controller asked, "*er roger did you see the [EC135 C/S]*" The C172 pilot responded, "*Negative [C172 C/S]*".

The C172 departed Lands End airport in receipt of a BS and was believed to have changed to Penzance RADIO. The Lands End TOWER controller was not aware of the Airprox or, of the EC135 helicopter. CAP 774, UK Flight Information Services, Chapter 2, Page 1. Paragraphs 1 & 5, State:

'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.'

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

The Airprox occurred when the two ac operating VFR in Class G airspace and in receipt of a BS, flew into conflict. Under a BS there is no obligation placed upon the controller to provide traffic information. However, if a controller considers that a definite risk of collision exists, a warning may be issued to the pilot.

HQ NAVY COMMAND is content that had the controller seen the conflicting ac a warning would have been passed to the EC135 pilot. Given the weather conditions on the day and the reported numbers of GA traffic it may have been prudent for the C172 to have contacted Culdrose for a LARS. Whilst this may not have prevented the Airprox from occurring (if he had still requested a BS for instance) both pilots operating on the same frequency may have increased either pilot's SA.

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.

These two flights were operating legitimately in Class G airspace and in this situation both pilots were equally responsible under the Rules of the Air for sighting and avoiding other ac. To assist with this aim, the C172 pilot had elected to remain in RT contact with Lands End TOWER whilst following his route around the coast because of the higher than normal level of GA traffic in the area that he perceived would call TOWER. However, helicopter pilot Members familiar with this locale perceived that an ATS from Culdrose might have given him a better understanding of traffic operating in St Ives Bay, which is a popular location for helicopter check test flights from Culdrose. Members suggested

that obtaining a radar service from Culdrose would generally be more beneficial than staying with Lands End TOWER. Nevertheless, whilst operating under a BS with CU APP, as the EC135 pilot was here, Members emphasised that there is no compunction on the controller to identify the flight, track it or provide TI. Plainly, if pilots wish to receive comprehensive TI about other traffic then in the first instance they should request a TS from a radar equipped ATSU and fly at an altitude commensurate with the ATSU being able to see proximate traffic. However, here the CU ASR had not detected the presence of the C172, probably due to the shielding effect of the terrain and the ac's low altitude. Unfortunately, therefore, the CU APP controller was unaware that a definite risk of collision existed and was powerless to intervene even with a basic warning to the EC135 pilot. Moreover, the EC135 pilot's lookout was hampered by the bright sunlight and he states it was impossible to see the C172 because of the sun behind it until the very last moment when it was too late to take any avoiding action. The C172 pilot lookout was not so encumbered by the sun and without any assistance from ATC he had spotted an ac, which he perceived at the time to be a gyrocopter, converging in level flight about 1nm ahead. Small helicopters, at a head-on aspect and with no crossing motion to draw attention to them can be difficult to spot but pilot Members agreed, while he had probably first seen the helicopter at less than 1nm, the C172 pilot saw it in reasonable time to initiate avoiding action into a 30° AOB bank R turn. Therefore, the Board agreed that this Airprox was the result of a conflict in Class G airspace resolved by the C172 pilot. The EC135 pilot reports the C172 passed down the port side 50m away at the same level, the distance also suggested by his paramedic colleagues. The Members concluded unanimously that although the C172 pilot had taken robust avoiding action, at these distances with the EC135 pilot unsuspected beforehand, the safety of the ac involved had indeed been compromised.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G airspace resolved by the C172 pilot.

Degree of Risk: B.

AIRPROX REPORT No 2011078

Date/Time: 12 Jul 2011 2148Z NIGHT

Position: 5230N 00001W (9nm
NNE of Wyton)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: VC10 Tornado GR4

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

Alt/FL: FL100 FL100
SAS SAS

Weather: VMC CLOC VMC CLAC

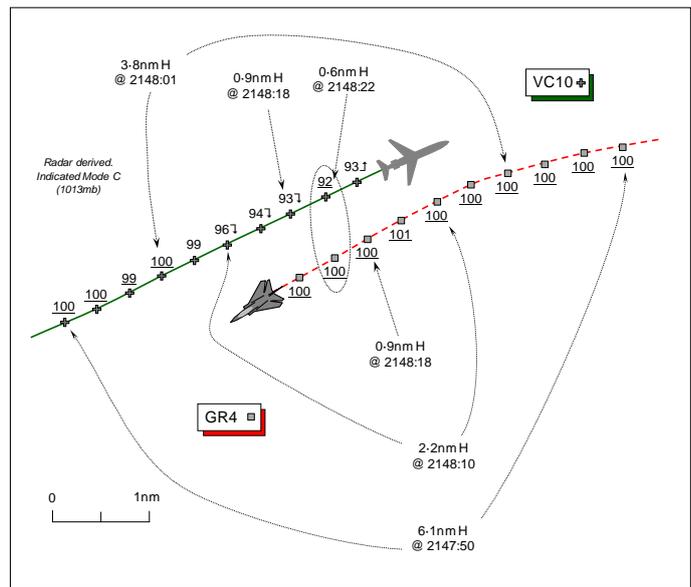
Visibility: 30km 40km

Reported Separation:

2nm H 2nm H

Recorded Separation:

800ft @ 0.6nm Min H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE VC10 PILOT reports the flight was tasked to one of the southern North Sea Air-to-Air Refuelling Areas (AARA 8) for high priority pre-deployment night training for a fast-jet squadron. The HISLs, nav lights and other standard ac lighting were all on. The assigned squawk was selected with Modes C and S on; TCAS is fitted.

Because of reports of poor weather over the North Sea, the crew had elected to maintain FL100 after exiting the DAVENTRY Radar Corridor (RC) for the transit towards AARA8, in order to check the weather at that level before trying any other level for suitable weather. Following their IFR FPL, after exiting the Daventry RC under a TS from London MILITARY on UHF they were given 'own nav for Area 8'. To circumnavigate the Wash Danger Areas they elected to maintain an easterly heading for a short while. After no more than a couple of minutes heading 068° at 300kt a contact appeared on TCAS at an estimated range of 3-5nm at their level. Simultaneously, TCAS enunciated a TA and within a couple of seconds or so, London MILITARY warned of a contact in their 1 o'clock, describing it as displaying 'no height information'. They immediately initiated a L turn but, during the roll-in, a DESCEND RA was received; at the same time London MILITARY confirmed the other ac was at the same level. The RA was followed, descending from FL100 to FL94; London MILITARY was informed and the unidentified ac, which was not seen visually, passed down their starboard side at an estimated distance of 2-3nm (from TCAS range discussions within the crew after the event.) Following the RA, a return to FL100 was instigated and the rest of the sortie passed without further incident. He assessed the Risk as 'high' and elaborated that it had been a quiet cockpit environment, with good visibility at night and a quiet ATC frequency. Apparently there was no squawk received from the other ac until a very late stage. An Airprox was reported to London MILITARY on 252.875MHz.

THE TORNADO GR4 PILOT (TORNADO A) reports that no hazard was perceived at the time. He was heading 257° at 300kt at the appropriate quadrantal of FL100, in VMC, he thought under a TS from Marham APPROACH, but actually still working London MILITARY. He was positioning the ac in preparation for a practice show of force that was to be carried out on a northerly heading from a rapid descent in the vicinity of Chatteris. Shortly before descending, ATC reported opposite direction traffic at FL100 just right of the nose. The pilot became visual with the traffic, displaying a large white floodlight and red strobes, at a range of 7nm and adjusted his heading by turning 10° slightly L onto 247° to increase the separation. The other ac passed 2nm to starboard with a 'low' Risk of collision.

Shortly after the CPA, he turned his ac through 180° in order to acquire the line of attack for the show of force. A rapid descent was carried out, switching enroute from London MILITARY to the LFS frequency. At the time, the TI on the other ac was considered to have come a little late, but not sufficient to warrant reporting action. [No TI was issued before the Airprox.] The Tornado's lighting was red upper and lower strobes, with navigation lights set to bright and conspicuity flash mode.

THE LATCC (MIL) LJAO EAST SECTOR CONTROLLER (LJAO EAST) reports that the VC10 had left the DAVENTRY RC and the crew was under their own navigation to AARA 8. Initially the formation of Tornado GR4s was also under her control executing general handling NE of Marham. When overhead Marham the GR4 formation reported they were splitting; one ac would remain with LJAO to go to Waddington for a pre booked PD and then to AARA8, the other switching to Marham. She believed that she only had one Tornado on frequency but this turned out not to be the case as Tornado (A) had also remained on the frequency. Tornado (A) then free called requesting GH, which was when she realised there had been a mix up. The non-squawking traffic – Tornado (A) - was then called to the VC10 crew at 12 o'clock - 5 miles - no height information, she then gave Tornado (A) a squawk. Once this was issued an SSR code of A3652 initially appeared from Tornado (A) at FL100; she re-called Tornado (A) to the VC10 at 12 o'clock - 3nm - same level. The VC10 pilot replied that he was descending in response to a TCAS RA; as he did this the A3652 changed to the LJAO assigned squawk. Tornado (A) then called visual with the VC10. Tornado (A) was subsequently identified and placed under a TS.

BM SAFETY MANAGEMENT reports that this Airprox occurred at 2148UTC, between a VC10 operating IFR in VMC receiving a TS from LJAO EAST and a Tornado GR4 - Tornado (A) - operating in VMC.

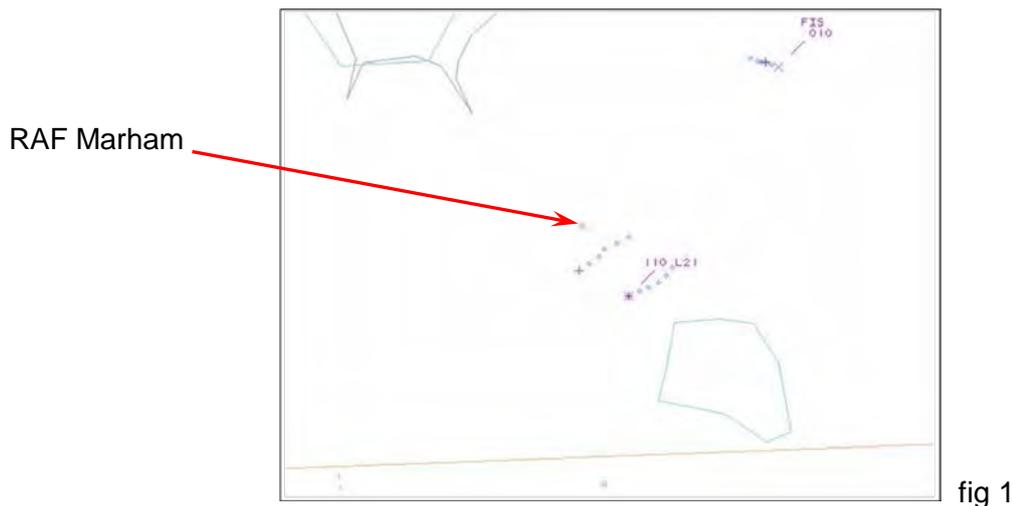
The LJAO EAST controller was operating a band-boxed position covering the LATCC (Mil) Area of Responsibility and had recently commenced her shift. Prior to the incident, the controller had been on leave for a week and was working the second night shift of a shift cycle, consisting of 2 mornings, 2 afternoons and 2 nights. At the time of the Airprox, LJAO EAST was operating on two different frequencies with a pair of Tornado GR4s (Tornado (A) and Tornado (B) - the original formation leader) conducting general handling (GH) in East Anglia on one frequency, with the VC10 en-route to AARA8, via the DAVENTRY RC, on the other. LJAO EAST transmitted simultaneously on both frequencies from 2144:07; however, they were not cross-coupled.

At 2143:25, the crew of Tornado (B) stated that the formation element of the sortie "*is complete. [C/S Tornado (B)] is stripping to the south, will free call Marham and [C/S Tornado (A)] is [garbled] will free call [LJAO EAST].*" LJAO EAST acknowledged this and amended the Electronic Flt Strip (EFS) to reflect that there was only one ac in the formation under control. LJAO EAST then asked the crew of Tornado (A) to confirm their intentions. Initially the crew of Tornado (A) stated that they planned to RV with the VC10 in AARA8, but then changed this to state that they planned to conduct a pre-booked practice diversion (PD) at Waddington, prior to routing to AARA8. LJAO EAST acknowledged this and requested Tornado (A) to report steady and level. The crew of Tornado (A) replied at 2144:12 that they were, "*steady 2-4-0 at flight level 1-1-0 [sic]*", which was also the heading and indicated Mode C level of Tornado (B). LJAO EAST did not formally identify, nor agree a type of ATS with the crew of Tornado (A).

At 2143:41 a primary surveillance radar contact (PSR) with no supporting SSR (Tornado (A)) appears on the radar recording, just as Tornado (B) turned L to track S, with the PSR-only contact maintaining the formation's previous southwesterly track. At 2144:18, with 3.2nm lateral separation, Tornado (B) turned south-westerly, slowly converging on Tornado (A).

At 2144:42 LJAO EAST passed TI to what they believed to be Tornado (A), stating, "*traffic believed to be your number 1 west 1 mile tracking southwest no height information.*" Given this TI and subsequent events, LJAO EAST believed that Tornado (A) was the south-easterly of the two ac and the ac that had retained the SSR Mode 3A. In reality, as depicted in fig 1 below, Tornado (A) was

the north-westerly PSR-only contact S of Marham, whilst Tornado (B) was the combined (SSR & PSR) contact SE of Marham. The TI issued was acknowledged by the crew of Tornado (A).



At 2145:23, LJAO EAST made a landline call to Waddington to ask for the latest weather and confirm that they could accept Tornado (A) for a PD. This call became protracted with Waddington stating that they could not accept Tornado (A) and finished at 2146:54.

At 2145:35, the crew of Tornado (B) stated that they, *“would like to eh take a handover to Mildenhall for a pre-booked PD for radar to ILS.”* LJAO EAST acknowledged this call and at 2145:47 asked the crew of Tornado (B) to confirm their position, who replied that they were, *“south-west of Marham by approximately 11 track miles.”* This position information was acknowledged by LJAO EAST; however, Tornado (B) was actually 6.2nm SW of Marham with Tornado (A) 8.5nm SW of Marham. The controller’s surveillance display was on a high range setting, thus reducing the angular distance between Tornado (A) and Tornado (B) on the radar display; consequently, this position information could not have been used to positively identify either ac.

At 2146:34, LJAO EAST informed the crew of Tornado (A) that Waddington could not accept them for a PD. The crew of Tornado (A) replied that they would descend to low-level for 3min, before routing to AARA8. At 2147:20, prior to descending to low-level and with 12.5nm lateral separation between Tornado (A) and the VC10, the crew of Tornado (A) requested a, *“squawk and a traffic service.”* LJAO EAST responded by instructing Tornado (A) to, *“maintain squawk of 6061”* which was the SSR Mode 3A code allocated to Tornado (B). The crew of Tornado (A) then replied that they were, *“currently squawking standby.”* Immediately, LJAO EAST instructed Tornado (B) to *“squawk ident”* and for Tornado (A) to *“squawk 6062.”*

At 2147:50, LJAO EAST passed TI to the VC10 on Tornado (A), stating, *“traffic right one o’clock, three miles (the radar recording shows 6.1nm), opposite direction, no height information.”* The VC10 crew replied that they were *“coming left”*; LJAO EAST updated the TI at 2147:59 stating, *“that traffic’s now indicating same level.”* This update coincides with a displayed SSR code of A3652, previously issued by Marham ATC to the crew of Tornado (A) and Mode C becoming visible on the radar recording coincident with the PSR contact. At this point, 4nm lateral separation existed, with both Tornado (A) and the VC10 indicating FL100. Following their statement at 2144:12 that they were level FL110, the crew of Tornado (A) did not report descending to FL100.

At 2148:04, with 3nm lateral separation extant the VC10’s L turn becomes evident on the radar recording, the crew stating that they’re, *“responding to TCAS, descending”* with the descent already visible indicating FL98. At 2148:10, LJAO EAST updated the TI on Tornado (A) to the VC10 crew. A L turn by Tornado (A) becomes evident on the radar recording at 2148:12. Although the report from the pilot of Tornado (A) states that they first sighted the VC10 at approximately 7nm (equating to about 2147:43), it also states that on becoming visual with the VC10, the pilot, *“adjusted heading slightly left.”* At 2148:18, the crew of Tornado (A) reported visual with the VC10, with the former crew

reporting minimum separation as about 2nm and a negligible perceived risk to flight safety; the crew of Tornado (A) did not receive TI from LJAO EAST on the VC10. The CPA is shown at 2148:22, with 0-6nm lateral separation and 800ft vertically.

Based upon the crews' reports and the radar recording, it appears that both the crew of Tornado (A) and that of the VC10 over-estimated the range at which they first detected each other's ac and the minimum separation. Consequently, this Airprox resulted from the risk of 2 ac operating in Class G airspace and the relatively late sighting of each other's ac, potentially aggravated by the fact that the event occurred at night. However, the VC10 crew had a reasonable expectation that LJAO EAST would provide TI to assist them in discharging their collision avoidance responsibilities. The fact that TI was passed relatively late to the VC10 crew is a contributory factor in this occurrence and is rooted in the mis-identification of Tornado (A).

Whilst technically Tornado (A) was not identified and placed under an ATS, it is reasonable to argue that LJAO EAST believed that Tornado (A) was under a service, albeit that they were applying the service to Tornado (B). It was not until 2147:30 when Tornado (A) stated that they were, "*squawking standby*" that LJAO EAST realised the true identity of Tornado (A). This error originated from LJAO EAST's reaction to the initial split between Tornado (A) and Tornado (B). LJAO EAST did not acknowledge Tornado (B)'s statement that they would free call Marham and a response from the controller at that point might have prompted the crew of Tornado (B) to mention that they would be remaining on the LJAO frequency. Furthermore, it appears that LJAO EAST assumed that Tornado (A) was squawking the formation's assigned SSR code and did not appreciate the fact that the formation leader would squawk. Finally, LJAO EAST did not assimilate that the crew of Tornado (B) had not free called Marham when they called at 2145:31 requesting a handover to Mildenhall, thus missing the opportunity to update the controller's situational awareness (SA). The distraction caused by the protracted landline conversation with Waddington during this time may have interfered with LJAO EAST's ability to update their SA. Although the controller has made no mention of any factors that may have affected their performance, given the nature of the errors, one possible explanation is grounded in the controller's psychophysiological state, specifically, the controller's levels of alertness and fatigue.

The TI to the VC10 crew on Tornado (A) at 2147:50, was passed at a late stage; however, given the relative positions of the two ac at the start of the exchange of RT at 2147:20 and the length of that exchange, it appears reasonable to argue that LJAO EAST passed TI to the VC10 crew as early as possible. Moreover, once LJAO EAST had identified Tornado (A), there was little opportunity for the controller to pass TI to Tornado (A) about the VC10, affording priority to the provision of TI to the VC10.

HQ AIR (OPS) comments that mix-ups like this occasionally occur. It seems that the controller's confusion was not detected by the Tornado crew in this case, and an inaccurate position report from them reinforced the controller's incorrect air picture. The controller nevertheless correctly prioritised the TI to the VC10 when she realised there was a potential for conflict. The Tornado crew's incorrect assessment of the range from the VC10 should serve as a reminder to all that at night it is impossible to visually judge distances effectively and avoidance should be verified by other 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 video recordings, a report from the air traffic controller involved and reports from the appropriate ATC and operating authorities.

Although the BM Safety Management report points out that the controller had just commenced the last night watch of the cycle, military controller Members contended that fatigue should not have been a factor here. On a different topic, the military Area controller Member explained that the controller had not cross-coupled the two frequencies in use. Therefore, although each crew could have heard the controller's RT transmissions on both frequencies, they would not have been able to

hear the other crew's reply. Hence the aircrews' SA could not have been assisted from hearing the RT transmissions.

It was evident to the Members that this Airprox had its origins in the formation split when the formation leader – Tornado (B) – called and advised he was free-calling Marham, but subsequently remained with LJAO EAST. With hindsight it was plain that it was Tornado (B) that was squawking throughout the formation's GH, although when the split occurred the controller had misidentified the ac and perceived it was Tornado (A) that was squawking. Fast-jet pilot Members were critical of the execution of this formation split which was not conducted in good order; formation leaders should make clear to ATC the disposition of the ac and remain in those positions until ATC have had the opportunity to assimilate the information. LJAO EAST could have taken a more positive stance here and ensured that the formation elements squawked appropriately when service was terminated on Tornado (B). Confusion would not have arisen if Tornado (B) had been instructed to select the general-purpose conspicuity squawk when the formation split-up and proceeded about their independent tasks. Military procedures in the UK MIL AIP (ENR 1-6-9) stipulate that crews operating at or above FL100 'must' select a conspicuity squawk such as A7000 with Mode C 'at all times', unless flying in CAS, when under an ATS an individual code has been allocated or when circumstances require the use of another special-purpose code. Thus good practice would suggest that Tornado (B) should have been instructed by LJAO EAST to squawk A7000 when the crew advised free-calling Marham, or the crew could have selected the conspicuity code without a further prompt. Moreover, it was plain that when LJAO EAST asked the crew of Tornado (A) for their level it was the same as the level (and heading) indicated by Tornado (B) - FL110. Tornado (A) had been flying independently for nearly 4min before the crew prompted LJAO EAST and asked for a squawk. The ac should not have been flying at this level without transponding Modes A and C, so an opportunity was lost here to forestall this close encounter. Fortunately, this omission was rectified just before the Tornado (A) and the VC10 flew into close quarters. Wisely, LJAO EAST's first action after issuing a squawk to Tornado (A) was to pass TI to the VC10 crew under the TS, although the Tornado's Mode C was not evident to the controller at that stage, hence the omission of height information; it was only secs later that FL100 was shown for the first time - the start of the first diagram coinciding with this point. The VC10 crew's reaction to this TI was to initiate a L turn but by that stage the ac's TCAS had detected the Mode C data from Tornado (A) as soon as it was switched on and computed the DESCEND RA, which they complied with. Without the benefit of TI from LJAO EAST or TCAS in the other cockpit, the pilot of Tornado (A) had sighted the VC10 at a range of 7nm and had turned slightly L to increase the horizontal separation. Whilst these turns were uncoordinated they were complimentary to one another and increased the horizontal separation slightly as the VC10 also descended 800ft below the level of Tornado (A). The Board concluded, therefore, that this Airprox had resulted from a conflict in Class G airspace resolved by both crews. Notwithstanding both crews' estimates that the horizontal separation was 2nm, the radar recording shows that it was significantly less at 0.6nm. Even at this short range the VC10 crew had not seen the Tornado visually. However, the crew would have been focused on their TCAS RA demands and the visibility from the VC10's flight-deck was not as good as that from the Tornado, whose crew had the VC10 in sight throughout. This led the Members to agree, unanimously, that no Risk of a collision had existed in the circumstances conscientiously reported here.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G airspace resolved by both crews.

Degree of Risk: C.

AIRPROX REPORT No 2011079

Date/Time: 12 Jul 2011 1551Z

Position: 5231N 00045W
(12nm WSW Wittering)

Airspace: Lon FIR (Class: G)

Reporting Ac Reported Ac

Type: Tutor R44 Helicopter

Operator: HQ Air (Trg) Civ Pte

Alt/FL: 1600ft NR
QFE (1009mb)

Weather: VMC NR VMC

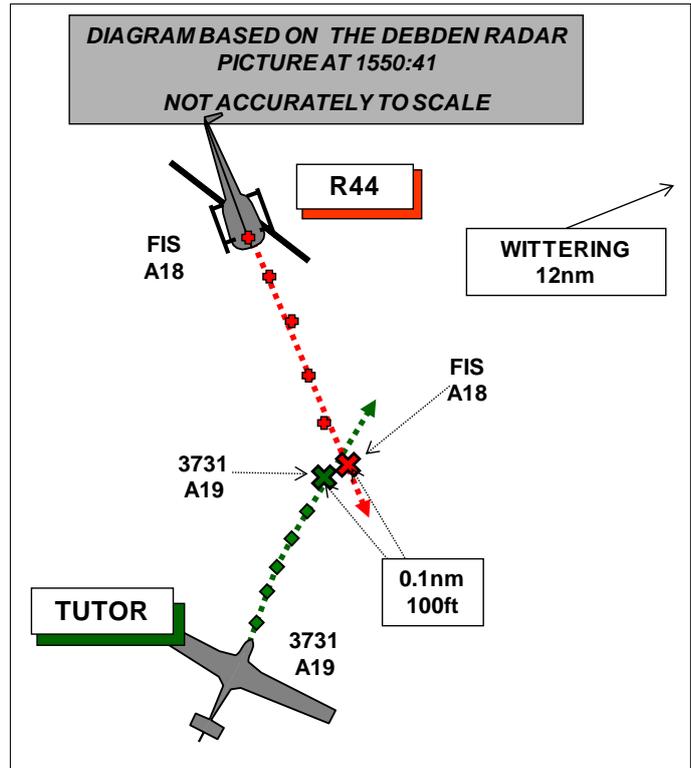
Visibility: 35km NR

Reported Separation:

100ft V/ NR H NR

Recorded Separation:

100ft V/ 0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE TUTOR PILOT reports that the Airprox occurred during a mixed profile pre Final Handling Test (FHT) sortie in a white ac with all external lights switched on. The student had successfully carried out a simulated Low-Level Abort and during the climb to above MSA he had obtained a TS from Wittering APP. At 3000ft on the RPS, heading N, squawking 3731 with Mode C, Wittering QFE (1009) was set and ATC instructed them to descend to 1600ft QFE. The radar headings kept them clear of Corby en-route for a PAR for Wittering RW08; ATC also provided regular TI which was all acknowledged. At 1600ft the pre-landing checks were completed and they were on a heading of 060° at 100kt, about 12nm WSW of Wittering (to the S of Eyebrook Reservoir) when ATC gave urgent TI on an unidentified ac, at a similar alt tracking SE, 2nm N of their position. Since the student was under an IF hood, he (the Instructor) took control in case evasive action was required. The Tutor's TAS indicated a target to the right of their track 100ft lower in white symbology. Bearing in mind recent history of the unreliability of TAS in azimuth, he carried out a full lookout scan which was impeded by the broad canopy structure, the student's helmet and the IF hood. ATC made further Traffic calls to the effect that targets were merging. Seconds later TAS changed to yellow symbology and announced "Traffic, Right, Low, 1 o'clock less than 1 mile". He caught a glimpse of a yellow helicopter 250m away, moving left to right, slightly lower and just appearing from behind the left-hand canopy arch so he immediately pulled up and rolled slightly to the left of the threat (the flaps were at take-off and the G meter indicated 2G post event). The helicopter was identified as a Robinson R44 and it did not appear to take any evasive action.

ATC were informed and an airborne Airprox filed with an event time of 1650L given. He assessed the risk as being very high.

He commented:

The poor view is well documented (by AAIB/RAF SI) and deficiencies in Tutor Canopy design (wide canopy arches) with added restrictions to right hand side caused by side by side seating, helmets and in this case student I/F visor were contributory factors as was Tutor visibility to others (White

aircraft against Light Grey/white background); a Cranfield University report into Grob ac paint schemes detailed visibility issues. The R44 was working in the London FIR and took no avoiding action as it appears that the pilot did not see the Tutor throughout the incident.

The Tutor TAS, although indicating threats, gives false lateral positions on the display and aural alerts gave the wrong direction despite the ac being straight and level.

The workload was reasonably low, the student had completed Pre-Landing Checks and no other ac were on frequency.

Despite degraded radar performance, TI updates were given by ATC and were accurate; however, had the Tutor been kept higher (2500 to 3000ft) until closer to the MATZ, the Airprox may have been avoided.

THE R44 HELICOPTER PILOT reports that he was flying a yellow helicopter with Nav and anti-collision lights switched on, on a private VFR/VMC flight from Sherburn to Elstree, in receipt of a BS from London Info and squawking 1177 with Mode C, but TCAS was not fitted. He was not aware of an incident but London Info did ask him during the flight whether he could see a Tutor ac in their vicinity and he remembered telling them that he could see only one fixed wing in about 2/3nm away in front of him in their 12-1 o'clock turning but not conflicting.

UKAB Note (1): The Wittering METAR was:

METAR EGXT 121550Z 04016KT 9999 FEW025 BKN060 17/11 Q1018 BLU NOSIG

BM SAFETY MANAGEMENT reports that this AIRPROX occurred between a Tutor on a mixed profile pre-FHT sortie, operating VFR in VMC in receipt of a TS from Wittering APP, and a R44 operating VFR in receipt of a BS from London Information.

The Tutor was operated by a QFI and a student, with the student as HP and under an IF hood. The pilot free-called APP at 1542:35 simulating a low-level abort and requesting a PD to Wittering. The Tutor was identified and, as requested, placed under a TS. At 1544:53, the ac was descended to 1600ft on the Wittering QFE of 1009Mb and, at 1546:04, turned right onto 020°.

The radar replay commences at 1546:48, at which point 12.5nm lateral separation existed between the Tutor and the R44, with both ac on a constant relative bearing, and indicating 1900ft and 1800ft respectively. Based upon the assumed closing speed, about 13.5nm lateral separation would have existed at the point that the turn onto 020° was issued.

At 1548:41 APP passed TI to the Tutor on the R44 stating, "*traffic north, five miles tracking south-east, indicating similar level*" (the radar replay shows 6.4nm), which was acknowledged by the pilot.

The TI was updated at 1549:45 as, "*previously reported traffic left eleven o'clock, two miles crossing left right, indicating similar altitude*" (the radar replay shows 3.1nm) and again at 1550:33 as, "*previously reported traffic twelve o'clock, half a mile, left right, indicating similar level*". The Tutor pilot reported visual with the R44 at 1550:44, immediately after the final TI.

The pilot's report of being visual with the R44 is broadly coincident with the CPA, with the radar replay showing the R44 to be slightly right of the Tutor's twelve o'clock, with 0.1nm lateral and 100ft vertical separation.

Following a landline conversation between Wittering ATC and London Info, the R44 pilot was asked whether he had seen a Tutor aircraft in the vicinity. Given the incident sequence, the R44 pilot's reply that they "could see one fixed wing in front...at about twelve to one o'clock, turning but not conflicting at about two or three miles" suggests that they did not see the Tutor involved.

Throughout the incident sequence, although the TAS was later found to be serviceable, the system appeared to display the conflicting R44 as right of the Tutor's track.

From an ATM perspective, Wittering APP provided a good level of TI that should have enabled the Tutor crew to acquire the R44 visually early enough to discharge their responsibilities for collision avoidance.

Following this Airprox, the Wittering ATC personnel involved felt that they were in some way responsible for the confliction incident in that they might have vectored the Tutor into confliction; however, based upon the dynamic situation and the lateral separation existing between the Tutor and the R44 at the time that APP issued the heading of 020°, BM SM is content that APP was not responsible.

Notwithstanding that, in accordance with the RoA the Tutor had right of way over the R44, it appears that although the aircrew were passed timely, accurate and relevant TI, they did not acquire the conflicting ac until late and did not take timely avoidance, to resolve the confliction; that said, some confusion may have arisen from the apparently contradictory TAS indications.

APP provided a timely and appropriate level of TI yet the Tutor was unable to visually acquire the R44 until late due to a number of cockpit environment related issues. Further, the pilot did not manoeuvre their ac based upon the TI in order to attempt to simplify their visual acquisition task or increase separation.

ATSI reports that the R44 established communication with London Info (FIS) at 1526. The flight was routing VFR from Sherburn to Elstree and the pilot requested a BS. The Swanwick AC MATS Part 2 states that:

'Pilots in receipt of a continuous Basic ATSOCAS from FIS are requested to select FIS SSR code 1177. When it is established that a pilot will receive a continuous Basic ATSOCAS from FIS, the FISO shall inform pilots: "*Aircraft Callsign*), *squawk 1177 with Mode C, Basic Service*".

This phraseology was used on this occasion.

While it was on the FIS frequency an Airprox was filed by a Tutor pilot. As the FISO was not in contact with the other ac, he would have been unable to issue any TI about the flight. In any case, under a BS the avoidance of other traffic is solely the pilot's responsibility.

At 1556, the FISO asked the R44 pilot if he had seen a Tutor about 12nm ago in the Cottesmore/Wittering area. He responded that he had seen a single fixed wing ac going around in circles but he was not sure of the type; he added that it was about 1500/2000ft.

No further comments were made on the frequency about the incident.

UKAB Note (2). The recording of the Debden radar shows the incident clearly as depicted on the diagram above.

HQ AIR (TRG) comments that the Tutor pilot could have turned before becoming visual to deconflict from the called traffic. However, there is potential for confusion in this regard because the crew were flying on vectors from ATC but under a TS they need to take their own avoiding action, or upgrade to a DS, if they need to discharge their collision avoidance responsibility. The chain of events in this case is entirely consistent, with converging TI followed by a TAS alert. This should not have come as a surprise, nor should it have been a surprise that the TAS indication was inaccurate in azimuth. Indeed, the pilot would have been visually scanning the area where the TI was being called and the final lookout scan would sensibly have been biased in that direction. Despite being in the right under the Rules of the Air, avoiding action was required by the Tutor because the R44 pilot clearly did not see it so he could not have given way. The effectiveness of the TAS is commented on correctly by the Tutor pilot and is a published limitation with the installation on the Tutor; this is emphasised in

training hence the response of completing a full lookout scan. The effect of the IF hood on the instructor's lookout scan is also noted and the design of these devices is under review by 1 EFTS. Instructors should be prepared to take control early, or provide turn instructions to their students, to ensure they are able to maintain a robust lookout and to visually acquire contacts on problematic bearings.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Members noted the Wittering APP passed accurate and timely TI to the Tutor pilot on several occasions but he did not act on it by turning his ac and breaking the conflict. In common with other airborne collision avoidance systems, the unreliability of the Tutor TAS in azimuth is a well-known and taught system limitation and there should have been little doubt in the instructor's mind that the TI was the more accurate of the two conflicting pieces of information (at least in azimuth). Despite that they were conducting a PD to Wittering under a TS, had the instructor taken control, broken off the approach and turned away for a short time the confliction would have been broken and, in the view of pilot Members, with little interruption to the instructional aims of the flight; alternatively, had he asked for a DS on receipt of the first TI the same outcome would have resulted. Pilot Members opined that under such circumstances with a trainee pilot under an IF hood in Class G airspace, the prime responsibility of an instructor is lookout and he must not allow other factors to limit this.

Despite that the ac had been on a line of constant bearing with the light-coloured Tutor above the helicopter and probably blending in with background of summer cumulous cloud, the R44 pilot had an equal responsibility to see and avoid it. Further, the R44 had the Tutor on his right and should have given way to it; however, he could not do so because he did not see it. Although not necessarily a factor in this incident, the ANO RoA advice to 'stand on' if they have right of way, as this incident demonstrates well, this is not a fail-safe course of action as it is dependent on the other pilot seeing your ac, which is often not the case. Members advise that avoidance is initiated on first seeing that a conflict exists and not left to the 'last minute'.

The R44 pilot did not see the Tutor and, although the Tutor pilot did initiate effective avoidance, the Board agreed that this had been at such a late stage that the safety of both ac had been compromised.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A non-sighting by the R44 pilot and a late sighting by the Tutor instructor.

Degree of Risk: B.

AIRPROX REPORT No 2011080

Date/Time: 15 Jul 2011 1830Z

Position: 5117N 00117E (Ash -
4½nm SW of Manston)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: EC135 T2 Bell 206B

Operator: Civ Comm Civ Comm

Alt/FL: 1000ft 1000ft
RPS amsl

Weather: VMC CAVOK VMC Haze

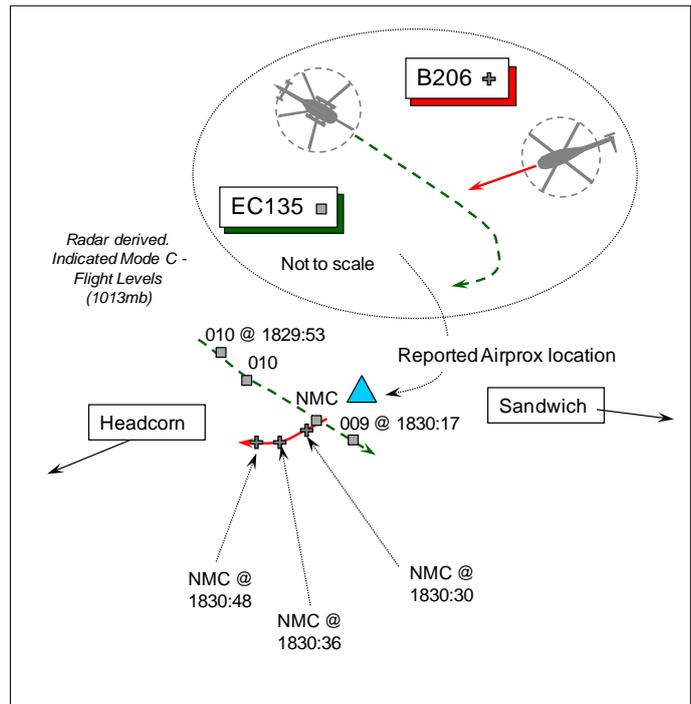
Visibility: 20km 5km

Reported Separation:

20ft V/400m H Not seen

Recorded Separation:

Not recorded



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE EUROCOPTER EC135 T2 HELICOPTER PILOT reports he was operating VFR under a BS from Manston on 132.45MHz and also in contact with Sandwich RADIO, established for the temporary HLS at Sandwich for the British Open Golf Championships. A squawk of A0046 was selected with Mode C; Mode S and TCAS are fitted but the latter was noted as 'faulty'.

Over Ash village on a direct track from Whitstable to the Southern tip of Sandwich village, heading 120°, level at 1000ft Chatham RPS, and 130kt he observed a contact out to port in their 10 o'clock position after it had lifted out of Sandwich about 3nm away. The helicopter contact remained on a constant bearing and both he and his observer were monitoring it – a red and white Bell 206 JetRanger - for signs of the pilot having sighted their EC135 to starboard in his 1 o'clock. He expected the B206 pilot to turn at any moment, given the B206 pilot's obligation to take avoiding action to go behind his EC135 if seen, which he opined, given his helicopter's size, blue and yellow colour-scheme, lights and position in the other pilot's field of view, at most 50ft above the B206's altitude, should not have been difficult. Whilst working two frequencies, he was unsure which frequency the B206 pilot was using, or his callsign, as there appeared to be two ac talking to Sandwich RADIO, which he had expected to be busy. As the B206 closed to a range of about 400-500m, it appeared that the pilot had not seen his EC135 so he elected to take his own avoiding action by turning to the R and diving ahead of the B206. Minimum separation was about 20ft vertically and 400m horizontally and after he crossed ahead of the B206, he turned back towards it. Now off its port quarter, they used his helicopter's camera to view the B206's registration - which was given. He assessed the Risk as 'high'. He stated that he called Sandwich RADIO to ask if they knew the B206's registration, but they were only aware of company callsigns. Nav lights, strobes & white HISLs were on.

THE BELL 206B JETRANGER HELICOPTER PILOT (B206) reports he had departed the HLS at Sandwich golf course VFR, bound for a private HLS to the S of Headcorn. Flying level at an altitude of 1000ft in VMC at 90kt 'in CAVOK weather', he believed this was his 8th or 10th flight of the day, to and from the same two locations, which he flew at the same altitude in the same two directions all day. Throughout he was under a BS from Manston APP on 132.450MHz or in communication with Sandwich RADIO; a Manston squawk was selected, Mode C was 'off'. On this particular flight he was westbound into bright sunlight with all the ac's lights switched on – the in-flight visibility was

quoted as '5km in haze with moments of glare'. Although he did hear the pilot ask for details of his callsign and another helicopter was known to be in the vicinity, he did not see the EC135 helicopter flown by the reporting pilot is unable to provide any more information about the Airprox. TCAS is not fitted. His helicopter has an orange and white livery; the HISLs were on.

UKAB Note (1): This Airprox is not shown on the LAC radar recording. The EC135, identified from its Mode S ac identity, is shown intermittently from 1829:53 approaching the reported Airprox location some 4½nm SW of Manston Aerodrome on a steady SE'ly course indicating level at 1000ft (1013mb). No significant deviation in the EC135's course is evident before the ac's Mode C indicates a descent through 900ft (1013mb) and then 800ft before fading from coverage, but perhaps indicative of the EC135 pilots reported avoiding action descent. The B206 is not shown until later when an A4250 squawk is displayed with NMC immediately to the SW of the reported Airprox location following a track similar to that reported by the B206 pilot toward Lashenden/Headcorn. A turn to the R is subsequently evident before the contact fades; NMC is displayed throughout this period. The SSR code A4250 is assigned to Manston and noted in the UK SSR Code Assignment Plan as an unvalidated and unverified code for conspicuity.

ATSI reports that Approval of an 'Air Ground Communication Service RTF Aeronautical Radio Station' had been agreed, by the CAA, relative to 'The Open Golf Championship' at Sandwich Helipad in Kent. This was valid from the 10th to the 18th July 2011. The site included a Final Approach and Take-Off area (FATO) aligned 11/29, with dimensions 250mx30m, at 12ft amsl.

General information regarding an A/G Service is stated in CAP413 (Radiotelephony Manual) Chapter 4 Page 32:

'An AGCS (Air/Ground Communications Service) radio station operator is not necessarily able to view any part of the aerodrome or surrounding airspace. Traffic information provided by an AGCS radio station operator is therefore based primarily on reports made by other pilots. Information provided by an AGCS radio station operator may be used to assist a pilot in making decisions, however, the safe conduct of the flight remains the pilot's responsibility'.

The Sandwich Air/Ground operation was not recorded. Consequently, no information is available from the allocated frequency. The Airprox was reported to have occurred at Ash, some 3nm away from the Sandwich site. The site operator, coincidentally the A/G operator at the time, made the following comments:

'The B206 had departed from Sandwich on a positioning flight back to a private landing site at Wingham (about 7nm W of Sandwich). The first he knew of this was when the EC135 pilot asked for details of B206, which he said he would pass by phone when he was back on the ground. The EC135 was operating from a Command Centre HLS in the local school and not from the Sandwich site. Normally the EC135 pilot called for traffic information when getting airborne, but he did not recall that the pilot did so on this occasion nor that he had noted it down; however it is possible that the EC135 pilot did call to operate along the coast in a southerly direction towards Deal and well away from the Sandwich circuit; the crew did normally listen out on their No2 box for traffic information and he is surprised that they did not pick up on this. He was not aware that the EC135 was in the position that it was as, had he known it was in the general area, he would have passed it to the B206 pilot as traffic information, who by this time had cleared the Sandwich circuit and had switched to his en-route frequency, either Manston or Lydd'.

The Manston Controller was performing both TOWER and APPROACH duties. The EC135 pilot contacted Manston at 1823. (Unfortunately some of the transmissions from the helicopter broke up on the RT recording.) The EC135 pilot reported routeing from Boreham, near Chelmsford, and approaching Whitstable from the W for Sandwich (Whitstable is 12nm W of Manston). The EC135 pilot requested a BS, which was agreed by the controller and he requested the pilot to report approaching Sandwich. He informed the EC135 pilot that there was a frequency for the Sandwich helicopter golf site. The EC135 pilot commented that he would be routeing S of the helicopter site.

At 1826:56, the EC135 pilot was asked to contact Sandwich on 121.75MHz on his number 2 box; the pilot acknowledged the request.

Just less than 1 minute later the pilot of the B206 contacted Manston, using its issued helicopter callsign for the golf event. The pilot reported having lifted from Sandwich en route to Wingham. He was requested to report visual with the landing site. The controller then issued TI about the EC135, which was approaching the Sandwich area, last reported at 1000ft, W of Sandwich. (There is no recording of the EC135 pilot's reported altitude, possibly it occurred during the break-up of the frequency during its initial call.) The B206 pilot reported looking. The controller then passed TI the EC135 about the B206, which had just lifted from Sandwich en route to Wingham. No response was received from the EC135 pilot.

At 1830:36, the B206 pilot reported letting down. Two minutes later the EC135 pilot reported letting down at Sandwich. Shortly afterwards he asked, using the ac's registration, if a particular helicopter - the subject B206 - was on frequency. The controller commented that he only had the callsigns of the helicopters and not their registrations. No further comments were made on the frequency about the Airprox.

UKAB Note (2): NOTAM H3197/11 was issued for the event at Sandwich, promulgating intense helicopter activity within a radius of 2nm centred on 5117N 00122E, from the surface to 1500ft amsl, from sunrise to sunset during the period 11 to 18 Jul.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, RT and radar video recordings, reports from the A/G Operator and reports from the appropriate ATC authority.

The ATSI report shows that the Manston controller had issued TI about the EC135 to the B206 pilot, who advised he was looking for the other helicopter thereby confirming that the B206 was definitely aware that the EC135 was in the vicinity. Whilst it was unclear if the EC135 pilot had received the TI about the B206, because there was no reply to the controller's transmission recorded, with the advantage of looking down sun in CAVOK conditions he was able to spot the B206 3nm away and recognise the potential for a conflict.

Both the EC135 pilot and his observer monitored the B206 closely as the ac converged, expecting the B206 pilot to turn away at any moment as he was required to do under the 'Rules of the Air'. However, 'the Rules' can only work if the pilot who is required to 'give way' sees the conflicting ac, and the B206 pilot, flying westbound into bright sunlight did not see the EC135 helicopter to his R at all. In other circumstances Members suggested that obtaining a radar service from a suitably equipped ATSU could have helped the B206 pilot to fulfil his responsibilities to 'see and avoid' other ac, although here the Manston controller was providing a procedural APPROACH service combined with TOWER without access to radar it would seem. The EC135 pilot watched the B206 as both helicopters closed to a range of about 400-500m, realised that the B206 pilot had not seen his EC135 and wisely elected to take his own early and positive avoiding action, thereby safely resolving the conflict. This convinced the Members that the Cause of this Airprox was a conflict in Class G airspace resolved by the EC135 pilot.

Early avoiding action by the EC135 pilot ensured minimum horizontal separation of 400m was maintained as he crossed ahead of the B206 and turned onto the latter's port quarter. Although the Airprox was not shown on radar recordings and the reported separation could not be confirmed, there was no reason to doubt the veracity of the EC135 pilot's report. Whereas the EC135 pilot assessed the Risk as 'high', presumably this is his assessment of what might have occurred had no avoiding action been taken. As it was, 400m horizontal separation was preserved at the closest point and visual contact with the B206 was maintained throughout. Therefore, the Members agreed unanimously that there was no Risk of a collision in the circumstances conscientiously reported here.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G airspace resolved by the EC135 pilot.

Degree of Risk: C.

AIRPROX REPORT No 2011081

Date/Time: 3 Jul 2011 1303Z (Sunday)

Position: 5050N 00020W
(Shoreham - elev 7ft)

Airspace: ATZ (Class: G)

Reporting Ac Reported Ac

Type: C152 DA40

Operator: Civ Trg Civ Trg

Alt/FL: 1100ft 1100ft
(QFE 1018mb) (QFE 1018mb)

Weather: VMC CLBC VMC NR

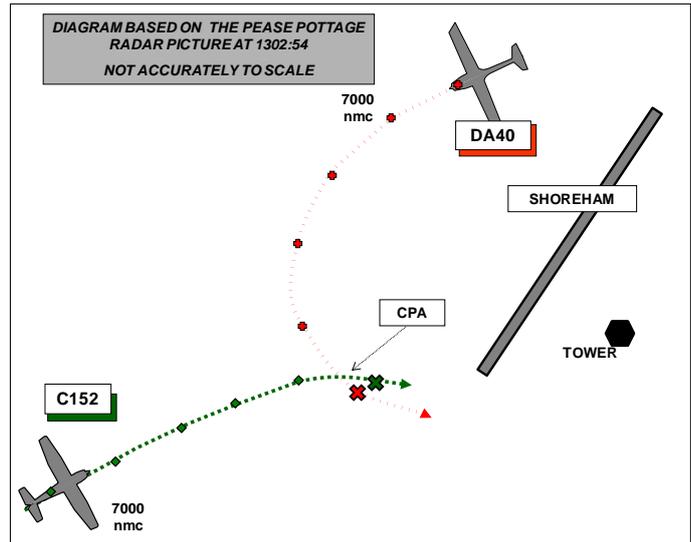
Visibility: >10km 10km

Reported Separation:

200ft V/60m H NR

Recorded Separation:

NR V/ est 0 H (between sweeps)



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE C152 PILOT reports flying a VFR dual training flight with the student as HP in a white ac with the anti-collision light switched on, at the time in receipt of a BS from Shoreham APP, squawking 7000 but Mode C was not fitted. They were heading 110° at 90kt to join the cct for RW20 (L hand) having been instructed to join crosswind at cct height. When approaching crosswind (0.3 DME) he noticed an ac 100m away, turning towards them and descending from the overhead; its pilot then called 'descending dead side' and ATC replied that they should not have descended because they were told to report overhead. (The ac had not been cleared to descend). The ac then appeared in a position some 200ft vertically and at a similar distance horizontally, in his 10 o'clock position so the instructor took control and initiated immediate avoiding action by diving, as the other pilot had clearly not seen them.

He reported the incident to ATC by telephone after landing, assessing the risk as being high.

THE DA40 PILOT reports flying a VFR training flight Shoreham and return via the Manston overhead with passenger, in a white ac with all external lights switched on. At the time they were in contact with Shoreham APP and squawking.

During their arrival at 90kt he contacted Shoreham APP about 5nm to the E of Brighton Marina at 2000ft and requested a standard overhead join for RW20 LH and he was instructed to continue inbound and report overhead.

Once overhead the airfield he tried to contact Shoreham APP to report overhead but the radio was busy at the time and he could not get through to them so he decided to continue and descended on the dead side, after checking that there were no conflicting ac. This is standard procedure for Shoreham Airport [he thought – see AIP extract below] where he had conducted the first half of his PPL, from which he recalled that ATC would normally clear ac for a standard overhead join.

About half way through the descent, he managed to get a call through informing APP that he had commenced a descent on the dead side and the controller acknowledged his call and did not issue any further instructions (as far as he can recall).

About 20sec, when he had levelled at 1100ft QFE another ac made a call saying that he had nearly 'landed on his head'. He then saw the ac off to his LH side, stopped his descent and made a turn away from the other ac to increase separation whilst maintaining a good look out.

He also offered to make a RH orbit but Shoreham APP declined. He subsequently ended up having to do a go-around as he could not increase the horizontal separation sufficiently for a safe landing.

The controller then came back on the radio, whilst he was on cross-wind, saying that he should be careful when descending in a low wing ac when other high wing ac in the cct. Although he agrees and he is always careful when descending, he was not informed of the other ac at any point during his contact with Shoreham. He also feels that this comment would have been better saved for when he was on the ground as at this point, he still had to fly the ac and it may have concerned his 'first trip passenger'; nevertheless, he expressed his apologies over the radio and informed Shoreham APP that he had tried to call 'overhead' but could not get through.

He conducted a safe landing and taxied back then informed the operations desk as to what happened and they subsequently received a call from Shoreham TWR informing that the other pilot may file an Airprox report.

Since the event, he has had a thorough briefing from a company instructor on the standard overhead join at Shoreham and what to do if he cannot get his call in to ensure that this will not happen again.

He apologised for the delay in his report caused by his being out of the country engaged on other work.

ATSI reports that the Airprox occurred at 1302:53, 0.6nm SW of the Shoreham ARP, in the Class G airspace of the Shoreham ATZ, which consists of a circle, radius 2nm, centred on RW02/20 and extending to 2000ft aal (7ft).

The Airprox was reported by the pilot of a C152; the other ac was a DA40. Both ac were operating on local VFR flights from Shoreham Airport.

The Shoreham controller was operating a combined Aerodrome and Approach control position, without the aid of surveillance equipment, RW20 was in use with a LH traffic pattern. The workload was assessed as medium and the controller reported being comfortable with traffic levels.

The UK AIP page AD 2-EGKA-1-7 (29 Jul 10), paragraph 6, states:

- c) Circuit heights are 1100ft aal for all runways.
- d) Variable ccts at discretion of ATC.
- e) Unless otherwise instructed ac joining the cct will overfly the aerodrome maintaining 2000ft aal, until instructed to descend to cct height on the inactive (dead) side of the runway in use and join the cct by crossing the upwind end. Pilots should note that there would frequently be helicopters operating both 'liveside' and 'deadside' in the ATZ up to 600ft.

ATSI had access to radar recordings, provided by NATS Swanwick and written reports from both pilots.

METAR EGKA 031250Z 22011KT 9999 FEW048 19/12 Q1018=

Two other ac had been given joining instructions; an AA5 was joining the deadside from the N and a Cessna was inbound from the E to join overhead at 2000ft

At 1254:45, the DA40 called Shoreham Approach, "(DA40)c/s is a Diamond Star D A forty inbound currently five miles to we- to the east of Brighton Marina at two thousand feet information Hotel received on a Q N H of one zero one eight request a standard overhead join runway two zero

lefthand”, the controller replied, “(DA40)c/s report overhead at two thousand feet two others joining” and the pilot acknowledged, “Report overhead at two thousand and two others (DA40)c/s”.

The C152 pilot called Shoreham APP at 1256:44 reporting, “(C152)c/s just passed *er Littlehampton er sixteen hundred Hotel one zero one eight* requesting crosswind join” and was instructed, “(C152)c/s crosswind join approved at cct height report N abeam Worthing pier look out for an A A five joining *er from the northwest to the deadside and two others joining*”, the C152 pilot replied, “Traffic’s copied Worthing pier and *er expect crosswind cct height (C152)c/s*”. [Note: cct height is 1100ft]. The controller stated that Worthing Pier is a point where updated TI would normally be passed to traffic joining crosswind.

The other Cessna reported overhead at 1257:22 and was instructed to descend deadside and report crosswind.

The controller passed TI to the C152 at 1258:31, “(C152)c/s lookout for an A A five approaching from the deadside” and the pilot replied, “*er thats copied I’ve still got about 6 miles to run*”.

The AA5 inbound from the N, reported approaching the deadside and the controller instructed the pilot to keep a good lookout for the Cessna descending deadside. Subsequently the Cessna turned onto a wide crosswind and the AA5 pilot requested a short cct to position ahead, which was approved.

It was noted that the C152 did not call N abeam Worthing Pier and the DA40 pilot did not call overhead at 2000ft.

The radar recording shows the DA40 on the deadside in a L turn towards the crosswind leg with the C152 also approaching crosswind at 1302:48; neither ac is displaying Mode C and the distance between the two ac as they converge is 0.3nm.

At 1302:50 the DA40 reported, “(DA40)c/s been descending on the deadside approaching crosswind” the controller replied, “(DA40)c/s thank you report turning downwind” and almost immediately at 1303:00 the C152 pilot reported, “(C152)c/s ????? (DA40)c/s nose is literally on my head.”

The controller stated that visual contact with the two ac was acquired just as they made the RT calls and when the CPA occurred.

The radar recording shows the tracks of the two ac crossed at 1302:55 and at 1302:57 shows the two ac diverging with a horizontal separation of 0.1nm and increasing with the C152 inside the DA40 on the crosswind leg.

The controller asked the DA40 pilot, “(DA40)c/s do you have the Cessna on your L” and the pilot responded, “Affirm would you like me to make a right hand orbit”, the controller advised, “No - just position number two” and this was acknowledged by the pilot. The controller did not consider at that point, that there was any need for the DA40 to make a RH orbit.

The controller then advised the DA40 of the requirement to call before descending particularly in low wing ac, as ac below might not be seen. The pilot responded that he had been trying to get through on the radio.

The controller was asked if the pilot of the DA40, who had requested a standard overhead join, might have considered that descent into the cct was approved but he indicated that Shoreham had specific, promulgated procedures for overhead joins that required a pilot to maintain 2000ft until instructed to descend to cct height on the dead side. The controller believed that the DA40 pilot had been instructed to report overhead at 2000ft and being a locally based pilot, should have been familiar with Shoreham procedures.

When the DA40 called for a standard overhead join, the pilot was instructed to 'report' overhead at 2000ft and passed TI, '2 others joining'.

The C152 called when passing Littlehampton and was instructed to join crosswind at cct height and to 'report' N abeam Worthing pier, which is the point where the controller would normally pass updated TI to ac joining crosswind. However, the C152 was initially given TI on the other ac joining, 'lookout for an AA5 joining from the NW and 2 others joining'.

The C152 pilot did not report N abeam at Worthing Pier and the DA40 pilot did not report overhead at 2000ft. Both of these calls would have updated the SA of the controller and allowed the update of TI. The RT loading was high and this might have contributed to the pilots' missed calls; however, these calls were considered to be an important trigger for the integration of traffic into the cct allowing the update of position and TI.

Both pilot's had been given general TI on the cct situation and were operating VFR on the 'See and Avoid' principle.

The Airprox occurred when the DA40 did not report overhead, as instructed by ATC, and descended on the dead side without approval.

The C152 did not report N abeam Worthing Pier, as instructed by ATC, and this is considered to be a contributory factor.

Both ac had been passed general TI on the number of ac joining the cct and in good flight conditions, with visibility greater than 10km, the respective pilots were responsible for positioning into the cct VFR using the 'see and avoid' principle.

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 controller involved and reports from the appropriate ATC authority.

The Board noted the Shoreham procedures as promulgated in the UKAIP and summarised in the ATSI report above.

It was clear to Members that the DA40 pilot was instructed to report overhead, that the Shoreham joining procedure in the UKAIP states that ac should 'maintain 2000ft aal until instructed to descend' and that he did not comply with this. Members were however, divided regarding the correct course of action when pilots are, as in this case, in the awkward situation where they are unable to communicate with ATC due to continuous RT traffic; most however, agreed that ac should hold (in the overhead at 2000ft) but not descend until a break in the transmissions allows a request to be approved. This opinion was endorsed by the CAA Flight Ops Advisor.

It was unclear to Members whether the missed position report at Worthing Pier by the C152 pilot had any substantial impact on the incident; it was agreed however, that it would have allowed the controller to formulate a more accurate air picture.

Both ac were operating in the 'see and avoid' area of the (join or) visual circuit and although the DA40 pilot did not see the C152 until after the CPA, the latter pilot saw the former just in time to take effective avoiding action. Members agreed however, that the lateness of this avoidance had been such that the safety of both ac had been compromised.

The Board also agreed that it is invariably poor RT discipline to comment on or criticise pilot's actions on the radio. It is always better to debrief and learn from any incidents later on the ground in a calm and reasoned manner.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The DA40 pilot did not follow the Shoreham joining procedure and descended into conflict with the C152, which he did not see.

Degree of Risk: B.

AIRPROX REPORT No 2011082

Date/Time: 14 Jul 2011 1709Z

Position: 5501N 00141W (1nm S
Newcastle - elev 266ft)

Airspace: ATZ/CTR (Class: D)

Reporting Ac Reported Ac

Type: EC225 TL2000

Operator: Civ Comm Civ Pte

Alt/FL: 2500ft 2200ft
QNH QNH

Weather: VMC CLBC VMC CLNC

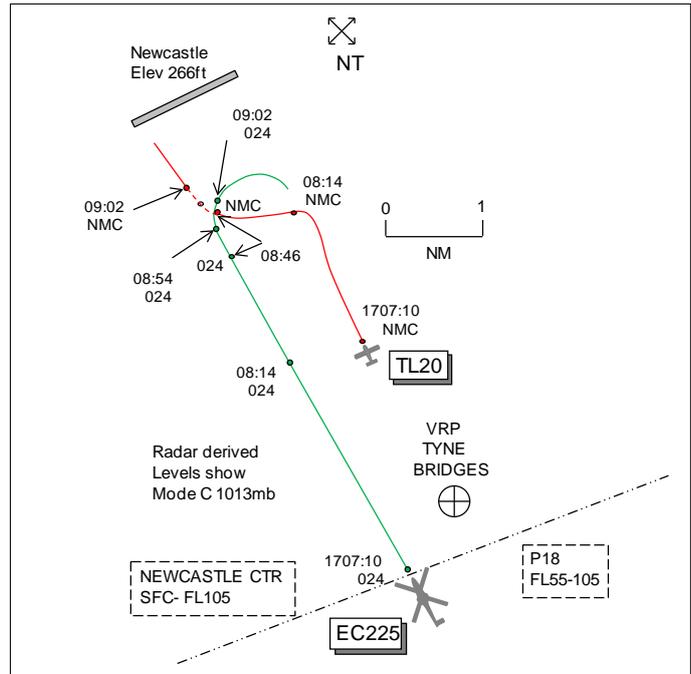
Visibility: >10km 50km

Reported Separation:

200ft V/300m H 100ft V/
0.5-0.75nm H

Recorded Separation:

0.3nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE EC225 PILOT reports en-route to Aberdeen, VFR and in receipt of a RCS from Newcastle Approach on 124.375MHz squawking an assigned code with Modes S and C; TCAS was not fitted. The visibility was >10km flying 5000ft below cloud in VMC and the helicopter was green/yellow in colour; no lighting was mentioned. The helicopter was on a ferry flight from France with 2 pilots and 2 engineers on board. The crew had started work at 0745 UK local time and had accumulated 7hr flight time at the time of the Airprox so they were approaching fatigue. As the EC225 is certified for single pilot VFR the co-pilot had moved to the cabin for a rest and his seat was occupied by one of the engineers. Initially they were under a TS from Newcastle at 2500ft QNH before requesting transit of the Class D CTR. Initially their clearance limit was the 'Bridges' VRP but prior to arrival at this point the controller issued transit clearance via the RW07 threshold at 2500ft. On entering CAS the controller advised "RCS" which he acknowledged. He set the 07 threshold into the FMS and routed towards that point. Around this time he became aware of a light ac that had similarly requested to cross Class D and the flight was given a similar routeing i.e. cross O/H threshold 07. He couldn't remember if ATC specifically gave him TI, he thought they did, but only to the extent that there was another ac routeing to the same point. This other flight was a "not above 2500ft" clearance and he heard its pilot state he was at 2300ft. He was not aware of its inbound or outbound track but he was comfortable that with good VMC and in receipt of a RCS he was being looked after and didn't have too much to worry about. He couldn't see the other ac and it soon became apparent why, when ATC restated to the other pilot that the crossing point was the 07 threshold then shortly after informed the other pilot that his ac was heading for the wrong threshold (25). The other pilot apologised and said he would route to the correct threshold. Alarm bells started ringing and he asked ATC for climb to 3000ft but this was refused and he was instructed to remain at 2500ft. The frequency was very quiet and he was not aware of any other traffic on frequency though he didn't have the 'big picture'. Heading 340° at 155kt he then saw the other ac visually in his 2 o'clock. Being a small light ac it was probably by then only a little over 1nm away, that being realistically the maximum distance a light ac can be seen even in good conditions. Its relative bearing was changing so he was not overly worried but was keeping a continuous watch on it. He would have preferred to change heading to increase separation but since he was only about 0.5nm from the threshold to do so would mean he would not comply with his clearance. He determined the other ac's heading was roughly 90° to his and somewhere around this time ATC offered that he could make 1 orbit to the R if needed. Since

there seemed at this time no risk of getting uncomfortably close and by making an orbit he would have lost sight of the traffic he declined. What happened next, with hindsight, was predictable. On reaching his 12 o'clock about 500m ahead the other ac banked sharply to the R (probably 45°) and was suddenly in his 12 o'clock a few hundred metres ahead and 200ft below on the same heading. At his cruising speed he was going much faster than the other ac and closing rapidly. He took evasive action by banking 30° to the R and made an orbit and having done so he could not see the other ac so he continued to O/H the 07 threshold, as instructed, and then on track SAB. He spotted the other ac a minute or two later as it was diverging to the E and his helicopter was rapidly overhauling it again. He did not say anything on the radio but after landing spoke to the Watch Manager (WM) at Newcastle. The WM had been seated along the controller at the time and did not think much of the situation. The WM promised to look again at the tapes to see if anything could have been done differently. After he thought about it over the intervening weekend he elected to file an Airprox. It occurred to him that he didn't actually know what a RCS was. He scoured the ANO, AIP, CAA website but did not find an answer. He spoke to the Aberdeen WM who told him that under a RCS the pilot must follow ATC instructions. For IFR traffic the controller must ensure adequate separation from other traffic, he thought, but for VFR there is no such requirement. He believed that if the service does consist of ATC telling you what to do, whilst taking no responsibility for collision avoidance, it was a fundamentally flawed service with a deceptive name. As he normally flew IFR he was lulled into a false sense of security, feeling that he must continue 'on the tramline' under a RCS with a specified altitude and route resulting in late action when the crisis developed. If he had received a straightforward VFR clearance such as he receives at Aberdeen, perhaps 'not below' and to a region of airspace rather than routing to a specific point at a specific altitude, he would have behaved differently. At Aberdeen he only hears 'RCS' when IFR. Although the other ac had routed initially towards the wrong threshold, had its pilot flown the route correctly from the start, they would have flown in close proximity earlier. He believed it was not best practice for a controller to instruct 2 flights to route to the same point at similar altitudes and expected arrival times, with a big speed differential whilst watching the scenario unfold on radar and declining a change of level request. The primary reason for filing this report was to question whether the RCS terminology was appropriate for something that seems only to be a constraint for pilots but is in no obvious way a service for them. It seemed to give ATC power without responsibility.

THE TL2000 PILOT reports en-route to Eshott, VFR and in receipt of a BS from Newcastle Approach on 124.375MHz, squawking an assigned code with Mode C. The visibility was 50km in VMC and the ac was coloured white/blue with strobe lights switched on. He was transiting the Newcastle CTR from S to N at 100kt and had received clearance from Approach to transit CAS VFR not above 2500ft. A further instruction was later given to cross the RW07 threshold but, in error, he headed towards the RW25 threshold. About 0.5nm S of the RW Approach reminded him the clearance was for RW07 threshold. He was aware, from a previous radio call, that a helicopter astern was also cleared to transit on the same route. He banked hard L and as he rolled out of the turn on heading 250° he saw the helicopter in his 10 o'clock range 2.5nm very slightly above. He monitored the helicopter's progress whilst he routed his ac to the RW07 threshold. As he commenced his R turn to parallel the helicopter's track at the 07 threshold, it was 0.5-0.75nm on his L about 100ft above. When level after the turn Approach asked if he had the helicopter in sight and he replied "affirm he is in my 7 o'clock". As he passed over Morpeth disused aerodrome [6nm NNW Newcastle], he noted the helicopter was in his 9 o'clock range 3nm on a slightly divergent course. He assessed the risk of collision as none.

THE NEWCASTLE APPROACH CONTROLLER reports that at 1657 the TL2000 (TL20) pilot called for a N'bound transit through Newcastle CAS and the flight was cleared to transit not above 2500ft and route via the RW07 threshold. At 1701 the EC225 flight, which was 5nm S of the TL20 on a similar track, called for transit and was given the same instruction to transit via the RW07 threshold. At 1706 the TL20 pilot was asked again to route via the 07 threshold as the ac's track appeared to be for the 25 threshold. The pilot apologised and turned L for the correct routing. He then passed TI to the EC225 flight on the TL20 and the crew reported that they had the ac in sight. The EC225 crew then requested a climb to 3000ft but as there was traffic being vectored downwind LH descending to 3500ft this was refused and the crew was given the option of an orbit for spacing as required; the

crew refused this stating the spacing was OK. TI was passed to the TL20 flight on the EC225 and the pilot also had this helicopter in sight. The EC225 then made one orbit before continuing N'bound.

ATSI reports that the Airprox occurred at 1708:53 UTC, 1nm to the S of Newcastle Airport, within Class D CTR and just above the Newcastle ATZ, which extends to a height of 2000ft above aerodrome level and is bounded by a circle 2.5nm radius centred on the mid-point of RW07/25.

The EC225 was operating on a VFR flight from Norwich to Aberdeen.

The TL20 was operating on a VFR flight from Fishburn (18nm S of Newcastle) to Eshott (13nm N of Newcastle).

The Newcastle radar controller was operating as the approach radar controller. RW07 was notified as the RW in use.

CAA ATSI had access to RT and radar recordings together with written reports from the Newcastle radar controller and both pilots.

METAR EGNT 141650Z 06005KT 020V100 9999 FEW045 19/10 Q1017=

At 1657:01 the radar recording shows the TL20 and the EC225, to the SE of Newcastle airport at ranges 17.5nm and 29.3nm respectively.

The TL20 flight contacted Newcastle Radar at 1658 reporting routeing from Fishburn to Eshott at 2300ft requesting a BS and clearance through the area. The controller agreed a BS and allocated a squawk of 3750. The TL20 flight was identified and cleared to transit the Newcastle CAS VFR, to maintain VMC not above 2500ft and to report approaching the Bridges (Tyne Bridges VRP – 5.6nm SSE of the airfield). The TL20 was displaying an SSR code but without Mode C level reporting.

At 1701:13 the EC225 flight contacted Newcastle radar and was identified on transfer, squawking 3755 at an altitude of 2500ft. Due to the position and level of the EC225, a reduced TS was agreed. The pilot requested a routeing through the zone via the NT(NDB), maintaining 2500ft (The NT(NDB) is 1.2nm NE of the airfield). The controller cleared the EC225 flight to *...transit Newcastle controlled airspace VFR maintain victor mike charlie and report approaching the bridges QNH one zero one seven*". The EC225 pilot replied, *"Clear transit the zone er obviously maintain VMC erm report approaching the bridges one zero one seven (EC225 c/s)."*

The controller planned to route both ac, via the Tyne Bridges (VRP) and RW07 threshold, not above 2500ft. This would keep the ac on the W side of the airfield, clear of departures and 1000ft below the planned arrival of a B737 descending to 3500ft from the NE. The Newcastle Manual of Air Traffic Services (MATS), Part 2, Chapter 1, Section 3, Page 7, states:

'Aircraft transiting the Newcastle CTA/CTR at 2500ft QNH or below will be co-ordinated and transferred to ADC from APC. Such traffic will remain with ADC until it is clear of traffic operating under these VFR procedures.'

The radar controller coordinated with the Tower controller and it was agreed that radar would retain control of the 2 ac as they transitted the W side of the airfield.

At 1702:14 the controller passed TI to the TL20 regarding a PA38 Tomahawk, S'bound towards the Bridges at a similar level.

At 1703:13 the controller advised, *"(TL20 c/s) you're clear to transit Newcastle controlled airspace and route via the zero seven threshold."* The TL20 pilot replied, *"Clear to transit Newcastle airspace routeing via the zero seven threshold (TL20c/s)."*

At 1703:26 the controller transmitted, *“(EC225 c/s) you’re clear transit via the zero seven threshold.”* The EC225 pilot responded, *“clear transit via zero seven threshold thanks (EC225 c/s).”*

At 1705:00 the B737 (34.9nm NE of the airfield), was given descent to 5000ft on QNH 1017mb.

At 1705:14 the TL20 pilot reported, *“(TL20 c/s) er Bridges level two thousand three hundred and we’ve crossed well clear of the Tomahawk.”* The controller replied, *“(TL20 c/s) roger and report at the zero seven threshold.”* The TL20 pilot acknowledged, *“Wilco (TL20 c/s).”*

At 1707:07 the controller advised, *“(EC225 c/s) you’ve entered controlled airspace Radar Control Service report abeam the zero seven threshold.”* The pilot replied, *“er controlled airspace Radar Control Service report at er zero seven threshold (EC225 c/s).”*

At 1707:10 the radar recording shows the TL20, 3.1nm from the airfield with the EC225 crossing the CTR boundary, 5.6nm from the airfield. Both ac are tracking NW with a spacing of 2.5nm.

At 1707:30, after the a controller request, the TL20 pilot confirmed his level as 2300ft and the controller responded, *“Roger just to confirm it’s not above two thousand five hundred feet there is traffic er vectoring downwind lefthand for zero seven and just confirm you are routeing via the zero seven threshold.”* The TL20 pilot replied, *“er yes traffic is copied we’re holding two thousand three hundred feet and er we’ve got about a mile to run to the zero seven threshold (TL20 c/s).”* The controller responded, *“Just confirm that will be the zero seven threshold that’s er west abeam the field not east abeam.”* The TL20 pilot acknowledged, *“My apologies yes okay er just turning for zero seven threshold.”*

At 1708:08 the controller passed TI, *“(EC225 c/s) there is traffic to the north of you by one mile he’s also routeing via the zero seven threshold similar level”* and the pilot replied, *“er (EC225 c/s) we have him visual.”*

At 1708:14 the radar recording shows the TL20, 1.6nm SE of the airfield with the EC225, 3nm SSE of the airfield. The TL20 had been routeing mistakenly towards RW25 threshold and radar recording shows the TL20 having turned L to reposition to the W side of the airfield. This results in the 2 ac converging with the TL20 crossing the track of the EC225 from R to L; separation is 1.6nm. The EC225 is indicating FL024 (converts to 2508ft with QNH 1017mb, 1mb equal to 27ft).

At 1708:22 the EC225 pilot requested a climb to 3000ft and the controller responded, *“Negative maintain two thousand five hundred feet er if you need er further spacing one left hand orbit in your present position.”* The pilot replied, *“Yeah I think we’re just about okay thanks (EC225 c/s).”* At this point radar recording shows the B737, 16.5nm NE of the airfield passing FL106.

At 1708:40 the controller passed TI, *“(TL20 c/s) there is helicopter traffic to the south of you has you in sight similar level.”* The TL20 pilot reported the EC225 in sight and just about to cross the 07 threshold.

At 1708:46 the radar recording shows the TL20 commencing a R turn towards the 07 threshold in the EC225’s 1230 position at a range of 0.5nm crossing from R to L, the EC225 is indicating FL024 (2508ft QNH).

[UKAB Note (1): On the next radar sweep at 1708:54, the CPA, the TL20 has temporarily faded from radar but the EC225 is seen commencing a R turn to pass behind the TL20; separation is estimated to be 0.3nm.]

At 1709:00 the EC225 pilot reported, *“(EC225 c/s) making one orbit.”* The radar recording at 1709:02 shows the 2 ac diverging at a range of 0.3nm, with the EC225 starting a RH orbit. Once the EC225 completed the orbit, the 2 ac continued to transit CAS without further incident.

The written report from the EC225 pilot indicated that he was aware of a light ac that was on a similar routeing to the same point at not above 2500ft, but couldn't remember if ATC had given specific TI about the other ac's inbound or outbound track. The pilot added that, he was comfortable with the good VMC conditions and in receipt of a RCS. The pilot considered that the term RCS was misleading and indicated, *"feeling that I should continue to obey my clearance, thus taking late action only when a crisis developed rather than prevent a crisis developing in the first place"*.

The 2 ac were both transiting Class D CAS, VFR and in receipt of a RCS. The Manual of Air Traffic Services (MATS) Part 1, Section 1, Chapter 2, Page 1, Paragraph 2, Classification of Airspace states the minimum services that are to be provided in Class D are:

'Aircraft requirements:

ATC clearance required before entry. Comply with ATC instructions.

Minimum service by ATC unit:

c) Pass traffic information to VFR flights on IFR flights and other VFR flights.'

The controller planned that both ac would route via the Tyne Bridges (VRP) and then via the RW07 threshold, routeing to the W side of the airfield and clear of departures.

The spacing between the 2 ac as they approached the airport gradually reduced, due to the variation in speed, between the faster EC225 and slower TL20. The incorrect routeing by the TL20 pilot resulted in the 2 ac converging towards RW07 threshold at a similar level and at the same time.

TI was passed to the EC225 pilot when the distance between the 2 ac reduced to 1.8nm and then to the TL20 pilot once the distance reduced to 0.5nm. This TI was sufficient to enable each pilot to see and avoid. However the passing of more timely TI may have aided the situational awareness of each pilot much earlier.

The EC225 pilot requested a climb to 3000ft. It is not clear why the controller was unable to approve this request. The inbound B737 was 16.5nm NE of the airfield passing FL104. Instead the controller approved an orbit for increased spacing.

The TL20 pilot routed towards the incorrect threshold, which when corrected resulted in the TL20 turning onto a W'ly track. The 2 ac then converged and came into close proximity. The controller passed TI that enabled both pilots to become visual with each other.

Within Class D CAS, ATC has a responsibility to prevent collisions between known flights and to maintain a safe, orderly and expeditious flow of traffic. This objective is met by passing sufficient TI and instructions to assist pilots to 'see and avoid'. In Class D airspace the controller is required to pass TI to VFR flights on other VFR flights.

A contributory factor was considered to be, the late passing of TI. The controller allowed the situation to develop as the 2 ac converged towards the RW07 threshold at a similar level and into close proximity. The passing of earlier TI would have aided the situational awareness of each pilot and may have allowed a better and, more timely assessment of the traffic situation by the EC225 pilot.

The EC225 pilot expressed some concern regarding that the term 'RCS,' as misleading, as applied to VFR ac operations in CAS. This issue was addressed in CAA Safety Sense Leaflet 27, Flight In Controlled Airspace and contained the following extract with respect to VFR flight in CAS, paragraph (f) states:

'The VFR pilot may have the privilege of some collision protection, although that may well not be available even if your transponder is transmitting a designated code. Beware the terminology. You may hear the controller use the words "radar control" – although technically that terminology may be accurate, he is not actively controlling you. Apart from remaining on whatever track at whatever altitude for which you have been cleared, and listening attentively at

all times for any changes to these instructions, you have the further responsibility to avoid other traffic. Although the controller will pass information to you on the general position of other traffic, in Class D airspace he is not responsible for keeping you away from that other traffic.'

However, there is anecdotal concern that VFR pilots operating in Class D airspace are confused by the use of the term 'RCS' and the terms of service under which they are operating. This subject is currently under review by CAA ATC Phraseology Working Group together with the CAA Procedures Working Group.

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.

Members understood the challenges of flying VFR within CAS and sympathised with the EC225 pilot's predicament. The flight had been given transit clearance of Class D CAS under VFR at 2500ft and had been told that the service was a RCS - the only radar service that can be given in CAS - as the helicopter crossed the CTR boundary. The onus was on the pilot to comply with the ATC instruction; however, he also had an overriding responsibility to avoid other traffic flying under VFR. He was aware from the RT exchanges that the TL2000 was on a similar routeing and ATC had passed specific TI on the ac, which he saw. Although conscious that he had to maintain track and altitude, he wanted to alter heading to increase separation but he had to continue as cleared to the RW07 threshold. He requested climb to 3000ft but this was refused; however, he was offered an orbit for spacing, which he declined at the time. ATC then passed TI on the EC225 to the TL2000 pilot, albeit late, which he saw and was content to proceed on a W'ly track while watching the helicopter to his SW before turning to the NW to fly O/H the RW threshold. This flightpath had placed the TL2000 in a position ahead of the EC225 which left its pilot with few options; however, he executed a R turn, to avoid flying close to or overflying the light ac. A controller Member stated that the EC225 pilot also had the options of slowing down or overtaking the TL2000 on its R, the pilot only needing to advise ATC of his intentions/actions. One pilot Member expressed a view that the whole issue of RCS and the rules/responsibilities for flights within Class D airspace were overly complicated and there seemed to be a difference in application by different ATSU's. A controller Member said that there was an issue with the education of pilots to flights within CAS which was captured well within the Safety Sense leaflet 27. The general feeling was that VFR pilots only wanted a clearance to transit the CAS concerned but the RCS terminology clouded the situation in pilot's minds. The CAA SRG Strategy and Standards Advisor informed the Board that there was an ongoing review of RCS to VFR flights and it had been found that there was not 100% application of it by ATSU's. The Advisor concurred that a re-education was needed through the re-issue of the Safety Sense leaflet and through the Airspace Safety Initiative group. The Board also noted and endorsed the review being undertaken by the CAA ATC Phraseology and Procedures Working Groups. An experienced pilot Member said the aspects/responsibilities were very similar to flying within Class G airspace, with TI being provided by ATC to highlight the potential for conflict. In this incident, the EC225 pilot had seen the situation unfolding and resolved the conflict at the last minute which, Members agreed, had resulted from a misunderstanding of the rules for VFR traffic within the Newcastle Class D CTR.

Looking at the risk, some Members thought the incident had been benign such that it was a non-Airprox where all normal procedures, safety standards and parameters had pertained, a Category E incident. However this view was not shared by the majority who believed that the uncertainty in the EC225 pilot's mind combined with the subject acs' flightpaths had resulted in a confliction which needed resolution and this had been accomplished by the EC225 pilot whose actions had been effective in removing any risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict resulting from a misunderstanding by the EC225 pilot about the rules for VFR traffic in Class D airspace.

Degree of Risk: C.

AIRPROX REPORT No 2011086

Date/Time: 18 Jul 2011 1046Z

Position: 5247N 0230W (1nm
SSW of Peplow A/D)

Airspace: CMATZ/FIR (Class: G)

Reporting Ac Reported Ac

Type: Squirrel (A) Squirrel (B)

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

Alt/FL: 1200ft 1000ft
QFE (985mb) RPS (985mb)

Weather: VMC CLBC VMC Light rain

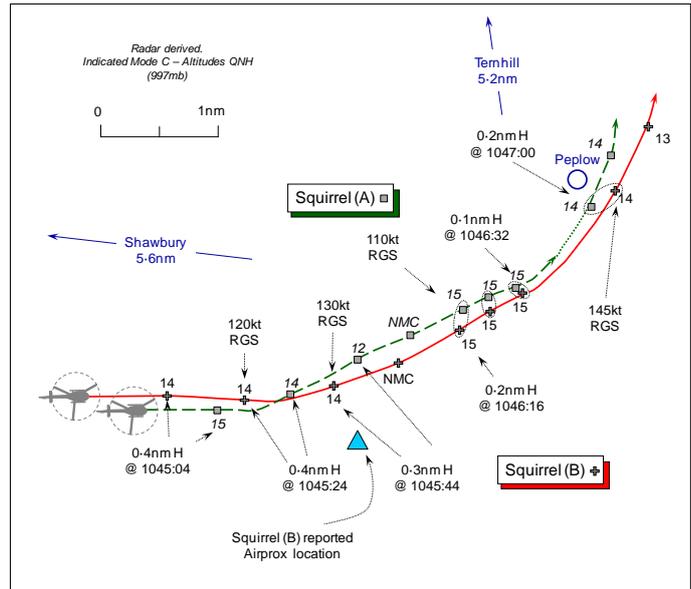
Visibility: 30km 30km

Reported Separation:

2 rotor diameters [70ft] 200ft V/300ft H

Recorded Separation:

Nil V/0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE PILOT OF EUROCOPTER SQUIRREL HT1 HELICOPTER (A), a QHI, reports that he was in transit VFR at 1200ft QFE (985mb), on an instructional sortie from Shawbury to Ternhill. As the PIC he was in the LH seat, with the student in the RH seat; they were in receipt of a BS from Ternhill TOWER on 376.400MHz. A squawk of A0221 was selected with Mode C; neither TCAS nor Mode S are fitted. The helicopter has a black fuselage with yellow engine cowlings; white upper and lower strobes, landing lamps and the nav lights were all on.

Overhead Peplow A/D heading 005° [more probably 040°] at 90kt, another Squirrel – Squirrel (B) - helicopter suddenly appeared in their 5 o'clock position at a distance equating to about 2 rotor diameters [70ft] away, in level flight at the same height but at a faster airspeed on a similar heading diverging slightly to the R. To avoid Squirrel (B), a slight L turn was commenced but the height maintained as the ac diverged with Squirrel (B) slowly descending. He assessed the Risk as 'low' but upon reaching Ternhill an Airprox was reported on the RT. Subsequently, after landing back at Shawbury, he discovered that Squirrel (B), crewed with a student QHI in the LH seat and the QHI and PIC in the RH seat, had been visual throughout, were aware of their intentions to join Ternhill and were conducting an overtaking manoeuvre.

THE PILOT OF EUROCOPTER SQUIRREL HT1 HELICOPTER (B), a QHI, was also conducting a VFR training sortie from Shawbury for a student QHI. A BS was provided by Shawbury ATC on 376.675MHz. A squawk of A0221 was selected with Mode C; neither TCAS nor Mode S are fitted.

They had departed Shawbury via the eastern gate at 1000ft BARNSELY RPS (985mb) some 800ft below SCT cloud, en-route to a civilian aerodrome at 110kt following another helicopter – Squirrel (A) – that called at the gate for Ternhill. Approaching a position 5nm E of Shawbury A/D heading 050°, they were gaining ground on Squirrel (A) because of their own faster cruising speed, so he instructed his student QHI to position to the right of Squirrel (A) as the latter would shortly be turning L for Ternhill. Squirrel (A) was also 1-200ft higher than his helicopter at about 1200ft ALT (the RPS and QFE were the same value that day). As Squirrel (A) turned L they passed behind and to the R, slightly lower than Squirrel (A), before opening on a diverging heading and at the closest point assessed the separation as 300ft laterally and 100-200ft vertically. Squirrel (A) was visible throughout and he assessed the Risk as 'low'.

BM SAFETY MANAGEMENT reports that this Airprox occurred between Squirrel (A), operating VFR conducting a Tower-to-Tower transit between Shawbury and Ternhill and Squirrel (B) operating VFR within LFA9.

The pilot of Squirrel (A) reports that they were in receipt of a BS from Ternhill TOWER, but the ADC at Ternhill does not state a type of ATS. Moreover, Ternhill is not equipped with a Hi-Brite display as the airfield is VFR-only, with no requirement to integrate IFR and VFR traffic. Anecdotally, whilst a Hi-Brite display has been requested in the past to increase the ADC's situational awareness, this has been refused on financial grounds. Consequently, the ADC is only able to provide warnings on known traffic.

At 1044:17, Squirrel (A) left Shawbury TOWER's frequency and stated their intention to contact Ternhill TOWER. At this point, Squirrel (A) was 2.2nm SE of Shawbury, tracking ENE at 1300ft Mode C (1013mb); Squirrel (B) was 0.5nm W of Squirrel (A) at 1400ft Mode C (1013mb). When routeing direct from Shawbury to Ternhill, the standing operating procedure is for crews to be transferred from TWR to TWR; they do not receive an ATS during the transit from a controller with access to a surveillance display.

At 1045:05, the crew of Squirrel (B) left Shawbury TOWER's frequency and stated their intention to contact Shawbury LOW-LEVEL, where they were provided with a BS iaw standard operating procedure on-route to Follies, a confined area used for Shawbury helicopter training, about 2nm NE of Ternhill. Although the unit has been unable to provide a definitive statement on the low-level controller's workload, from reviewing the radar replay it is possible to determine that the controller had at least 8 speaking units on frequency at the time of the Airprox, with all ac assigned an identical SSR Mode 3A code of A0221. At this point Squirrel (A) and Squirrel (B) were maintaining similar headings, with Squirrel (A) indicating 1500ftALT in Squirrel (B)'s 1 o'clock at a range of 0.4nm, the latter at 1400ftALT. The pilot of Squirrel (B) stated that as they departed eastern gate at Shawbury, they were visual with Squirrel (A) ahead of them and remained so throughout the incident sequence. The pilot of Squirrel (B), cognisant that Squirrel (A) would turn L for Ternhill, advised his student QHI to position to the R of Squirrel (A). Squirrel (B) then "*passed behind, right and lower than [Squirrel (A)] on an opening heading.*"

[UKAB Note: The combined LAC radar system 'best picture' shows the Airprox quite clearly, although the return from Squirrel (A) fades just after the 'overtake'. After departure from Shawbury both ac track due E; at 1045:04, Squirrel (A) is 0.4nm ahead in Squirrel (B)'s 12:30 position. At approximately 1045:17, Squirrel (A) commenced a L turn to take up a broadly NE'ly track. At 1045:24, Squirrel (B) commenced a wide L turn to take up an ENE'ly track, slowly diverging to that of Squirrel (A). At this point, 0.4nm lateral separation existed, with both ac indicating 1400ftALT. With a Radar Ground Speed (RGS) about 20kt faster Squirrel (B) starts to close on Squirrel (A). At 1046:16, Squirrel (B)'s track was slowly converging with that of Squirrel (A), the latter in Squirrel (B)'s 10 o'clock 0.2nm, with both ac indicating 1500ftALT. Squirrel (B) then starts to draw abeam Squirrel (A); the CPA of 0.1nm occurs at 1046:32, as Squirrel (B) overtakes (A) and starts to draw slowly ahead into the latter's 2 o'clock. Thereafter, however, Squirrel (A)'s radar return fades on the recording, whilst Squirrel (B)'s radar return continues to be displayed albeit with occasional lost returns through the latter part of the incident sequence. Both acs' tracks alter slowly L over the next 30sec. Squirrel (A) is next shown at 1047:00, just to the SE of the plotted position for Peplow A/D – Squirrel (A) pilot's reported Airprox location, indicating 1400ftALT. Squirrel (B) has now drawn ahead into Squirrel (A)'s 1 o'clock at a range of 0.2nm, diverging from Squirrel (A), and still co-altitude after completing the overtaking manoeuvre.]

From an ATM perspective, without a Hi-Brite display, Ternhill's ADC was not in a position to affect the outcome of the occurrence. Moreover, given the workload of Shawbury LOW-LEVEL and that the crew of Squirrel (B) was under a BS, it is unreasonable to expect that the controller could have affected the outcome. In the absence of a CWS fitted to the Squirrel, the sole remaining safety barrier was 'see and avoid'. Given the aircrafts' tracks, Squirrel (B) was the only crew that was in a position to 'see and avoid'; they were visual with Squirrel (A) throughout the incident sequence and overtook in accordance with the Rules of the Air.

HQ AIR (TRG) comments that the overtake manoeuvre was flown close enough to cause concern to the pilot of Squirrel (A). The radar trace does not accord with the statement that the overtake was flown on opening headings so the situational awareness of Squirrel (B) must be in doubt. This highlights the need to afford ample lateral separation when overtaking a non-cooperating aircraft, which may still manoeuvre unpredictably.

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 and reports from the appropriate ATC and operating authorities.

The Board agreed that ATC played no part in this Airprox and would have been unable to forestall it. The military helicopter pilot Member pointed out that Squirrel (B) was flown by a QHI instructing a qualified helicopter pilot, whereas that flown by the reporting pilot was crewed with a QHI instructing a basic student. It was evident to the Member that at this stage even flying straight and level may have been a challenge to the student in the RH seat of Squirrel (A), furthermore, his look-out to starboard may not have been as all-encompassing as that of a qualified pilot and Squirrel (B) could not have been seen by either crew-member in Squirrel (A) until it started to draw abeam. The report from the QFI in Squirrel (A) states that he spotted Squirrel (B) when it suddenly appeared in their 5 o'clock position so this was probably the earliest opportunity he could have detected it and he estimated that when the other helicopter passed it was about 70ft away. For their part, the crew of Squirrel (B) had Squirrel (A) in plain sight throughout as they approached from its starboard quarter and it was the PIC of Squirrel (B) that determined the horizontal separation when they overtook – he estimated they passed 300ft away horizontally and the radar recording suggested it was in the order of 0.1nm co-altitude – but helicopter pilot Members could not understand why they had flown unnecessarily so close. The HQ Air Training Member's comments had reinforced this view and helicopter pilot Members agreed that it would have been better airmanship to have afforded Squirrel (A) a wider berth. Without further debate the Board concluded that this Airprox had resulted because Squirrel (B) crew flew close enough to cause Squirrel (A) crew concern.

Irrespective of whether the QHI of Squirrel (B) had correctly surmised that Squirrel (A) would be turning L for Ternhill, instructional sorties can be somewhat unpredictable and at this range there was little time to react to any sudden manoeuvre by the student pilot flying Squirrel (A); furthermore no warning was possible on the RT as they were operating on different frequencies. Nevertheless helicopter pilot Members judged that the crew of Squirrel (B) had kept Squirrel (A) in sight throughout the overtaking manoeuvre and could have turned away if necessary. This allowed the Members to agree, unanimously, that there was no Risk of a collision in these circumstances.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Squirrel (B) crew flew close enough to cause Squirrel (A) crew concern.

Degree of Risk: C.

AIRPROX REPORT No 2011087

Date/Time: 14 Jul 1100Z

Position: 5117N 00122E (FATO area
Sandwich Helipad – elev 12ft)

Airspace: LFIR (Class: G)

Reporting Ac Reported Ac

Type: Bell 206 Bell 206
JetRanger(A) JetRanger(B)

Operator: Civ Comm Civ Comm

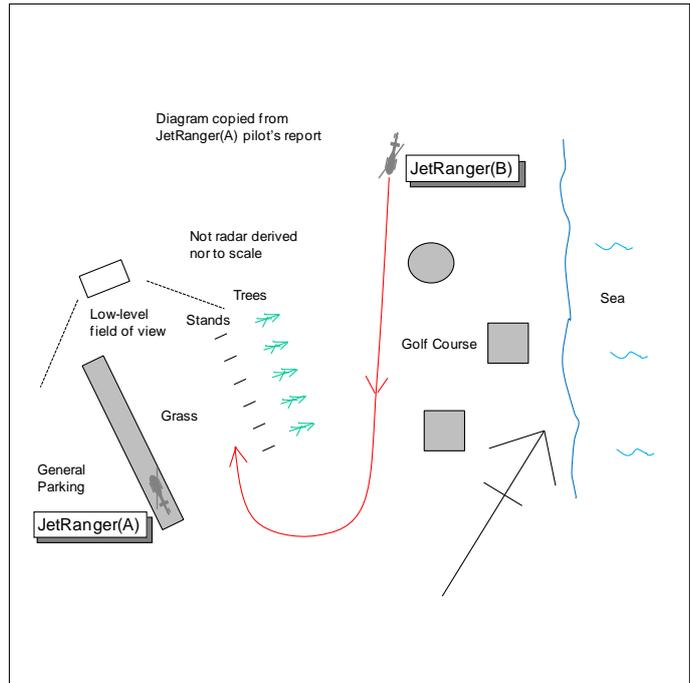
Alt/FL: 0-6ft 50-70ft↓
agl Rad Alt

Weather: VMC CLBC VMC CLBC

Visibility: 10km 10km

Reported Separation:
100-150ft 50m

Recorded Separation:
NR



BOTH PILOTS FILED

THE BELL 206 JETRANGER(A) PILOT reports departing Sandwich helipad VFR using the Final Approach and Take Off (FATO) area and in communication with Sandwich Radio on 121.175MHz, squawking 4250 with Mode C. The visibility was 10km clear below cloud in VMC and the helicopter was coloured red/white with nav and anti-collision lights switched on. He advised A/G that he was lifting from his stand and requested to "air-taxi and backtrack RW29 for the threshold to hold" and was told "at your discretion". As he was backtracking he was able to check for other helicopters on base and final and he heard JetRanger(B) pilot call downwind. As he had only just called "downwind" he assumed he was at a considerable distance from base, let alone final approach. He stopped at the threshold and turned slowly as the flight was at near maximum AUW, called "departing RW29" and was told "at your discretion". After transitioning close to the ground for 25m, height up to 6ft agl and before climbing, he noticed JetRanger(B) about 100-150ft above and on his R, abeam, and heard its pilot call "going around". JetRanger(B)'s manoeuvre was not abrupt or worrying and did not arouse or alarm him. At the time he did not consider it to be an Airprox. Next day he spoke to the pilot of JetRanger(B), who was from the same company, and asked if he wished to discuss the incident. The other pilot wondered what had happened and thought that he, pilot(A), was holding as (B) was about to land. They subsequently discussed the incident with the A/G operator, who didn't consider it to be an Airprox but pilot (B) elected to complete a report form for consideration later. The next day they discussed the event and agreed that it was prudent to send a report and also informed the CAA FOI of their intention to file a report, albeit late owing to workload, and believed it was acceptable because no remedial action appeared to be needed. He assessed the risk as very low. The converging nature of the downwind leg caused by the need to not overfly the adjacent seaward golf course meant base leg was probably no more than 200m long. This funnelling effect definitely was a contributory factor. There was no question of fatigue or either pilot being inexperienced/low hours or any haphazard behaviour. A lesson had been learnt but he was unsure how it would best be disseminated to other company pilots.

THE BELL 206 JETRANGER(B) PILOT reports inbound to Sandwich helipad from Manston VFR and in communication with Sandwich Radio on 121.175MHz, squawking 7000 with Mode C. The visibility was 10km clear below cloud in VMC and the helicopter was coloured burgundy/white with nav and strobe lights switched on. He called "request join from the N" and was instructed by

Sandwich Radio to "join downwind R base FATO 29" which he read back. JetRanger(A) was rotors running and requested to hover-taxi for FATO 29. Information on his helicopter (B) joining was given and pilot (A) stated he would wait by the threshold of 29 for the joining helicopter (B). Sandwich Radio called JetRanger(A) flight "with that joining rotary traffic in mind, depart at pilot's discretion". JetRanger(A) had hover taxied from the stand to the threshold in such a manner that any traffic on the downwind leg or base leg would not be visible; no clearance turn was made to allow the joining traffic to be seen. JetRanger(A) pilot then elected to line-up for a 29 departure and began to transition. He, pilot(B), was now turning final and had been unable to call "final" owing to the 2-way RT exchange between Sandwich Radio and pilot(A), believing that JetRanger(A) was going to wait by the threshold. Now seeing JetRanger(A) transitioning, he conducted a go-around as he was certain that his helicopter had not been seen by pilot (A), who was unaware of JetRanger(B)'s position until its pilot called "going around". The go-around was conducted in a manner that provided sufficient clearance from JetRanger(A), vertical separation not <50ft. He landed without further incident. JetRanger(A) continued with its departure from FATO 29 following his "go-around" call. The Sandwich Radio controller spoke to him after the Airprox and apologised. He believed that Sandwich Radio was not at fault but they did have a lack of vision of any traffic on the downwind leg and only limited vision of traffic on base leg. A combination of lack of mental positioning and visibility of his joining helicopter and failure to conduct a clearing turn and the judgement of "at pilot's discretion" by pilot (A) were the main contributory factors. Following a discussion with pilot (A) the next day, pilot (A) was made aware of the close proximity of the 2 helicopters and he apologised.

ATSI reports approval of an 'Air Ground Communication Service RTF Aeronautical Radio Station' had been agreed by the CAA, relative to 'The Open Golf Championship' at Sandwich Helipad in Kent. This was valid from the 11th to the 18th July 2011. The site included a Final Approach and Take Off area (FATO) aligned 11/29, with dimensions 250mx30m, at 12ft amsl.

The Sandwich A/G operation was not recorded. Consequently, no information is available from the allocated frequency. Any investigation, therefore, relies on information received from the pilots concerned and the A/G operator (see below). Apart from the general comments in the next two paragraphs ATSI has nothing to add.

General information regarding an A/G service is stated in CAP413 (Radiotelephony Manual) Chapter 4 Page 32:

'An AGCS radio station operator is not necessarily able to view any part of the aerodrome or surrounding airspace. Traffic information provided by an AGCS radio station operator is therefore based primarily on reports made by other pilots. Information provided by an AGCS radio station operator may be used to assist a pilot in making decisions, however, the safe conduct of the flight remains the pilot's responsibility'.

AGCS radio station operators are reminded that they must not use the expression 'at your discretion' as this is associated with the service provided by a Flight Information Service Officer. It is noted that both pilots quoted the A/G Operator using the term 'pilot's discretion' in their respective reports of the incident.

The site operator and incidentally the A/G operator at the time made the following comments: 'The incident involved 2 JetRangers, (A) and (B). (A) had started on stand and called for taxi for a N'ly departure. The temperature was quite warm, the helicopter was full and so the hover-taxi was slower than usual, using the FATO C/L as there was no other known traffic at that time. On reaching the threshold the helicopter performed a spot turn for departure, and the pilot requested departure. By this time JetRanger(B) flight had called inbound from Manston as previously stated, having passed a reporting point at the disused Richborough Power Station chimneys [~1.5nm NNW Helipad]. JetRanger(A) flight was given a departure at his discretion, with 1 company ac inbound from the N, but he remained in a low hover. From my position in the control box, (B) was seen descending at a moderate speed on base leg, and then to turn on to final. JetRanger(A) initiated its departure along the FATO at this time, at which point JetRanger(B) initiated a go-around from approx 30ft with a marked nose-up tight 360° turn. I was surprised at this as in my opinion the pilot must have been

listening out to hear that JetRanger(A) was not airborne, and should have seen (A) at the threshold at which point could have entered a 360° turn or straight hover either on base leg or on short finals, yet he elected to continue at speed, whilst (A) could only accelerate slowly. Although the 2 helicopters came close to each other, I was surprised that one pilot decided to file an Airprox because in my opinion there was only a low risk of collision as by this time they were moving away from each other. On A/G all movements are ultimately at the pilot's own discretion and for reference I have had an aircraft closer off my own wingtip when flying practice formation.

UKAB Note (1): NOTAM H3619 was issued for the Open Golf Tournament:-

H3197/11
INTENSE HEL ACTIVITY WI 2NM 5117N 00122E (BRITISH OPEN GOLF
TOURNAMENT, SANDWICH, KENT). 11-07-0337/AS 2.
LOWER: SFC
UPPER: 1500FT AMSL
FROM: 11 JUL 2011 00:00 **TO:** 18 JUL 2011 23:59
SCHEDULE: HJ

UKAB Note (2): The Aerodrome Operating Procedures valid 11-17 July Areas to avoid states:-

‘Sandwich town to the SSW, Clubhouse and event (to S and SE of landing site).’

Arrival & Approach Procedures for RW29 states:-

‘Traffic inbound from Manston Airport call when clear of circuit with ETA and route towards Richborough power station – reporting point ‘Chimneys’.’

Landing Procedures states:-

‘Approach towards aiming point situated midway along FATO and after landing vacate FATO and proceed as advised towards the marquee area and parking spots, giving way to outbound traffic.’

Departure Procedures states:-

‘Preferential direction 29.
Engine start - call on A/G to request start-up; request runway in use and taxi as advised.
Helicopters not to lift until given ‘thumbs-up’ by ground crew.
Spot turn, then hover; hover-taxi only when safe to proceed.
Hovering not permitted on adjacent bays
Outbound traffic has priority.
Route via outbound taxiways to threshold of FATO.
When safe to do so line up on the centre line and take off at pilot’s discretion.
After take-off runway 29 for environmental reasons turn on to heading of approx 240 deg to route over roundabout on Sandwich bypass for Ash village, avoiding built up areas at Great Stonar and thence to Wingham Church at 6 miles.’

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, a report from the A/G Operator involved and reports from the appropriate ATC authorities.

Without the benefit of an RT transcript it was not possible for Members to determine what transmissions were made during this encounter. However, from the information provided by both pilots and the A/G Operator it was clear that, irrespective of the service being provided, it was very

much down to the pilots to operate safely through good airmanship. JetRanger(A) pilot had elected to taxi and then depart, without seeing the approaching JetRanger(B), in the belief that he had plenty of time to execute the manoeuvre following JetRanger(B) pilot calling downwind and before (B) would be on final approach. On the other hand, JetRanger(B) pilot had joined the cct and flown the pattern whilst watching JetRanger(A) taxi out and then commence its transition from the threshold after its pilot had an RT exchange with the A/G operator. Members agreed that either pilot could have coordinated with each other to clarify their intentions if it was unclear what was happening. JetRanger(B) pilot had elected to continue his approach and when it became apparent that JetRanger(A), who had priority, was still occupying the FATO area, he commenced a go-around, albeit later than ideal, and then broadcast the fact on the RT. JetRanger(A) pilot saw JetRanger(B) to his R and above and continued his take-off but by then the situation had been resolved. The Board concluded that during the incident JetRanger(B) pilot had flown close enough to cause JetRanger(A) pilot concern but the actions taken by pilot(B) had been effective in removing any risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Bell 206 JetRanger(B) pilot flew close enough to cause Bell 206 JetRanger(A) pilot concern.

Degree of Risk: C.

AIRPROX REPORT No 2011092

Date/Time: 26 Jul 2011 1448Z

Position: 5133N 00106W (3nm FIN APP
RW01 Benson - elev 203ft)

Airspace: MATZ/FIR (Class: G)

Reporting Ac Reporting Ac

Type: Puma C42 Ikarus

Operator: HQ JHC Civ Club

Alt/FL: 1250ft↓ 800ft↑
QFE (1009mb) QNH (1015mb)

Weather: VMC CLBC VMC CLBC

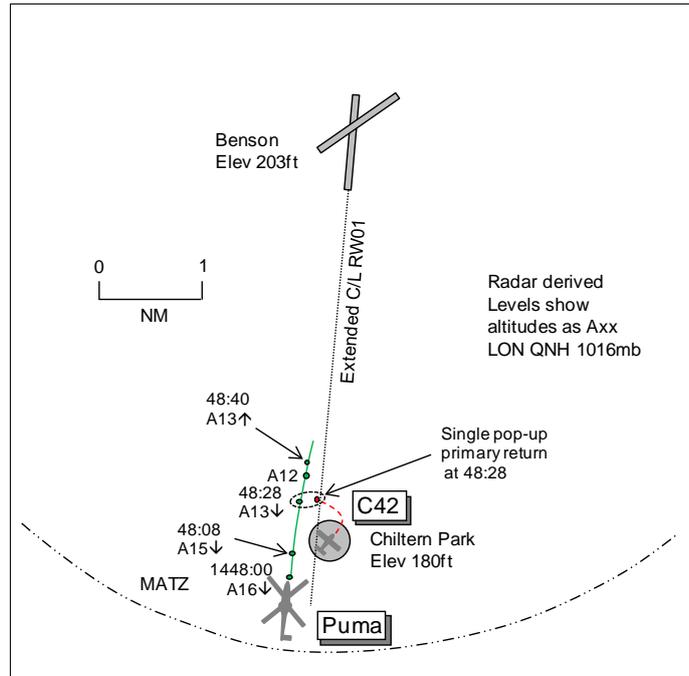
Visibility: 20km 10km

Reported Separation:

150ft V/200m H 100ft V/200m H

Recorded Separation:

0.1nm H



BOTH PILOTS FILED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE PUMA PILOT reports flying an instrument approach into Benson and in receipt of a TS from Benson Talkdown, squawking 3611 with Mode C. The visibility was 20km flying 2000ft below cloud in VMC and the helicopter was coloured green with nav and strobe lights switched on. During a PAR approach heading 015° at 100kt ATC reported a light ac to be on their RHS and below and with lateral separation. They became visual with the ac shortly afterwards with 3-5nm to go on the approach when passing 1250ft QFE 1009mb. The high-wing ac, coloured white with red stripes, was seen to be on a parallel track about 300ft below and slightly behind in their 4 o'clock appearing as if it had just departed from a nearby airstrip. The crewman maintained visual contact with the ac and at range 3nm, whilst reported by Talkdown to be on track and on the GP, the crewman noted that the other ac was climbing and turning towards their helicopter. When the crewman told them of this, and as ATC gave a 'check gear' call, they again became visual with the ac, which appeared to be closing quickly. The decision was made immediately to break-off the approach and ATC were informed of the go-around; a ROC was applied at the same time. At the CPA the other ac was about 150ft below and 200m away and starting to turn away but still in their 4 o'clock position. The ac was seen to make an approach back to the nearby airstrip but not land. About 10min later they carried out another PAR and landed without further incident. He assessed the risk as medium.

THE C42 IKARUS PILOT reports flying a local dual training sortie from Chiltern Park, VFR and in receipt of an A/G service from Chiltern Radio on 134.025MHz; no transponder was fitted. The visibility was >10km clear below cloud in VMC and the ac was coloured white with red accents. They took-off from RW04 and climbed ahead at 70kt before they turned L onto crosswind heading 310° and rolled wings-level; a large military helicopter was immediately revealed. Climbing through 800ft QNH 1015mb he, the Capt, took control and instituted a steep climbing turn to the R to avoid, estimating separation as 100ft vertically and 200m horizontally. He later called Benson Zone on 120.9MHz to report an Airprox and he assessed the risk as medium.

He went on to say that Chiltern Park has had a trouble free relationship with RAF Benson for 23yr. During the 2 months preceding this incident there had been a number of instances where Benson helicopter traffic has flown close to Chiltern Park with no regard for ac joining, departing or in the cct.

The airfield manager had queried these with Benson ATC but to no avail. On at least 2 occasions Benson had responded with "we have a MATZ, you don't have an ATZ". Chiltern Park airfield owner is seeking a meeting with Benson ATC.

THE BENSON TALKDOWN CONTROLLER reports the Puma was inbound to RW01 RH cct and was correcting to the C/L from the L, already descending on the 3-5° GP. As the Puma approached 4.5nm a radar contact was seen on the PAR at about 3-5nm climbing out from LL in the vicinity of Chiltern Park. The contact moved away to the E as it climbed and he perceived there to be no risk to the Puma. However, the contact then proceeded to turn and, as it did, he told the Puma flight that Chiltern Park was active, the pilot reporting that he copied the traffic. The unknown ac's contact then turned back towards the approach lane and the Puma, whose pilot elected to break-off the approach before he could give avoiding action. He climbed the Puma flight to 1900ft and handed the flight back to Approach. The Chiltern Park ac moved away to the W, he thought, and off the PAR display.

THE BENSON SUPERVISOR reports that ATC had been informed earlier in the day that Chiltern Park would be active with 2 ac flying until sunset up to 3000ft. This information was broadcast on the ATIS and was available to ac as they checked in for departure or recovery. Whilst monitoring Zone and Talkdown frequencies with a talkdown in progress he observed, along with Zone, a primary radar return appear in the vicinity of Chiltern Park. With the Puma inbound he advised Talkdown to pass TI which he duly did in generic form as he thought it wasn't showing on PAR at the time. The Puma pilot responded in a manner that led him to believe that he was visual. As the unknown ac appeared on PAR in azimuth and elevation the Puma pilot reported he was breaking-off the approach and he was issued an immediate climb to 1900ft by Talkdown. Supervisor continued to monitor the unknown ac's track from Chiltern Park and its pilot eventually called Zone at CPT, 8-10nm SW of Chiltern Park. The ac was identified and its pilot, when asked, confirmed that he wanted to file an Airprox. Having reviewed the LoA, dated 20 Aug 2010, he believed a contributory factor was the Chiltern ac's pilot did not call Zone prior to leaving the cct and climbing above normal cct height of 700ft.

THE BENSON USMO comments that on revisiting the LoA, it states that 'RT equipped ac are advised to contact RAF Benson on frequency 120.9MHz immediately prior to, or upon getting airborne.' The LoA will now be reviewed before Aug 2012 and it has been agreed that a liaison visit to Chiltern Park will happen in the near future.

THE BENSON ZONE CONTROLLER reports he observed, during a PAR to RW01 by a Puma, a non-squawking ac departing Chiltern Park and flying through the approach lane without making contact on any Benson frequencies. The ac, a C42, later called Zone in the vicinity of CPT to file an Airprox. The pilot stated that he had departed Chiltern Park and climbed to 1000/1100ft QNH and encountered a Puma which he thought was flying through the Chiltern Park cct. The details were logged and Chiltern Park was informed.

BM SAFETY MANAGEMENT reports that this Airprox occurred between a Puma on a PAR in receipt of a TS from Benson Talkdown and a C42 Ikarus departing Chiltern Air Park VFR.

All heights stated are based upon SSR Mode C from the radar replay unless otherwise stated.

Unfortunately, the PAR data was not impounded and, given the height at which the Airprox occurred, the NATS supplied radar data has limited utility in this investigation.

The Puma pilot reported VMC with 20km visibility in nil Wx with SCT cloud at 4000ft QFE 1009mb, with the incident occurring approximately 3-25nm from touchdown.

The Talkdown controller reported that as the Puma approached 4.5nm from touchdown, a "contact was seen on the PAR at around 3-5nm, climbing out from low level in the area Chiltern Park is known to be. The track moved away to the east as it climbed and I perceived there to be no risk to my aircraft on PAR; however, the track then proceeded to turn and as it did I advised my aircraft that Chiltern Park was active." Based upon the transcript and radar replay, this warning was passed at

1448:08, with the Puma approximately 3.75nm from touchdown and was acknowledged by the Puma's crew at 1448:18.

The Supervisor's report is broadly supportive of Talkdown's statement adding that they and Zone had observed a PSR-only contact appear on SRE in the vicinity of Chiltern Park. This prompted the Supervisor to direct Talkdown to pass TI to the Puma flight which was passed generically about Chiltern Park's activation status as the ac had not yet appeared on the PAR display.

Although the Puma crew reported that they received more specific TI than was the case, they were able to use the generic TI to visually acquire the Ikarus and maintained visual contact throughout the incident sequence. They did not inform Talkdown that they were visual with the Ikarus and Talkdown did not pass any further, nor more specific, TI to the Puma flight.

At 1448:28 a primary-only contact appears on the radar replay for 1 sweep, 0.1nm E of the Puma and approximately 3.1nm from touchdown. At 1448:31 the Puma pilot reported "breaking off the approach" as the "civilian ac looked to be closing quickly." The Puma pilot assessed minimum separation as 200m laterally and 150ft vertically.

The Ikarus pilot reported that they departed RW04 at Chiltern Park, before turning cross-wind onto a heading of 310°, maintaining a climb, and rolling wings level. It was at that point that "the helicopter was immediately revealed."

Chiltern Park is situated 3.5nm S of RAF Benson and slightly to the E of the extended C/L to RW01 RH (see Figure 1 below), with a visual cct height of 700ft QFE. Published within the AIP as a microlight site, there is no avoidance criteria associated with the site. Chiltern Park and RAF Benson are signatories to a LoA which states that ac wishing to depart above the Chiltern Park cct height of 700ft are advised to contact Benson Zone prior to leaving the cct; it is not a mandatory requirement. The Ikarus flight did not contact Zone in this instance. In the Ikarus pilot's written report, he stated that the Airprox occurred at 800ft QNH, whereas during their later report of the Airprox to Zone on frequency at 1452:23, he stated that they "we're climbing through approximately a thousand or ish seven hundred feet QNH."

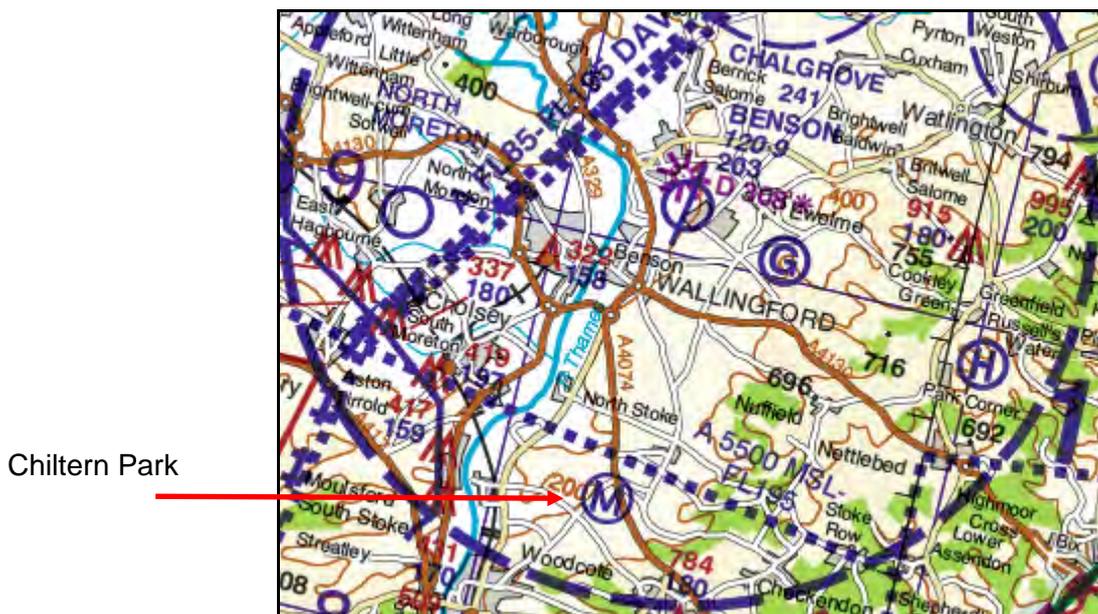


Figure 1: RAF Benson Local Area

Analysis of the RT transcript from Talkdown has shown that following the instruction to commence descent at 1447:00, the Puma remained on the notional 3.5° GP until breaking-off the approach at 1448:31. Furthermore, the Puma remained L, then slightly L of the C/L throughout the incident sequence.

Based upon discussions with Talkdown and the Supervisor, the Supervisor stated that prior to directing Talkdown to pass TI, they observed there to be no contact on the PAR display. When asked 10wk after the event, Talkdown was unable to recall the incident with any clarity. However, the evidence suggests that the point at which the Sup and Zone observed the Ikarus' PSR-only contact, was after it had "moved away to the east" and off the lateral dimensions of the PAR display. Therefore, the TI passed by Talkdown to the Puma flight was generically about Chiltern Park's activation status, rather than specifically about the Ikarus. Moreover, discussion with Talkdown and the Supervisor has demonstrated that at the point that they perceived the Ikarus to be turning back towards the Puma, the Puma's crew elected to break off the approach. In sum, the TI passed by Talkdown to the Puma flight, whilst generic, increased the Puma crew's alertness such that they were able to visually acquire the Ikarus.

At 3nm from touchdown, based upon a 3.5° GP, a Puma on the GP would be passing 1200ft QFE, according with the Puma pilot's report of the Airprox occurring at 1250ft QFE. The aerodrome elevation at RAF Benson is 203ft, thus the Puma's approximate altitude at the time of the Airprox was 1450ft. The aerodrome elevation of Chiltern Park is 180ft; consequently the Ikarus pilot's reported 800ft QNH accords to 620ft QFE, which is below cct height of 700ft QFE. Based upon the evidence and the subsequent outcome, it is more likely that the Ikarus was flying at approximately 1000ft QNH, which equated to 820ft QFE, which suggests that approximately 450ft vertical separation existed. However, given the separation reported by both pilots and the method of calculation, this should be considered to be the maximum separation.

Following Airprox 2011051 in similar circumstances, ATC at RAF Benson have liaised with Chiltern Park about the wording of the section of the LoA that discusses contacting Zone before leaving the visual circuit. However, the airfield operator has stated that they are unable to amend the advice to contact Benson Zone to make it a requirement. Whilst that is perhaps a reasonable standpoint, it is clear that the position of Chiltern Park in relation to RAF Benson is far from ideal with respect to the safeguarding of IFR approaches to RAF Benson. Therefore, it is incumbent upon users of Chiltern Park to demonstrate airmanship in being aware of the implications of their actions on other airspace users. In this instance, the Ikarus pilot climbed above the Chiltern Park cct height, without speaking to Benson Zone and turned towards the approach lane of RAF Benson. Moreover, the high-wing monoplane design of the Ikarus would have restricted the pilot's view during the turn, delaying the point at which they could have visually acquired the Puma.

Finally, the requirement for Chiltern Park users to operate a LH cct to RW04 could be considered to be a latent condition within the incident. Currently, the system "fails unsafe" in that crews are required to turn across the approach path to an instrument RW at RAF Benson. The safety barriers are vertical deconfliction through the height of the cct at Chiltern Park, the issuance of deconfliction advice by Talkdown to ac on a GCA PAR and "see and avoid." The latter is prejudiced by aircrews departing Chiltern Park being potentially unsighted due to cockpit/ac design and the high workload of the aircrews recovering IFR to RAF Benson with an "assumed" level of protection from being on an IFR approach. The deconfliction advice argument is undermined by the conduct of IFR approaches other than a GCA PAR, meaning that deconfliction advice may not always be available. Finally, the vertical deconfliction provided by the Chiltern Park visual cct height of 700 ft QFE is undermined both by human error, should aircrews accidentally climb above 700ft QFE, and the wording of the LoA which does not make mandatory the requirement to contact Benson Zone prior to climbing above 700ft QFE.

HQ JHC comments that the current deconfliction procedures in the LoA between RAF Benson and the Chiltern Park Aerodrome (CPA), made an Airprox more likely to happen. Therefore it is strongly recommended that it should be reviewed to seek a safer deconfliction solution that does not fail unsafe.

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 BM SM Advisor informed Members that some sort of deconfliction plan based on vertical or lateral separation was needed between Benson and Chiltern Park as the advice to call on RT was not foolproof. The Board discussed the requirement for the LoA to be more prescriptive with regard to Chiltern Park traffic calling Benson and making it compulsory for traffic to remain at 700ft QFE or below in the cct until in RT contact. Some Members considered that a RH cct onto RW04 would also alleviate the potential for conflict. However, when this incident occurred, there was no requirement for traffic flying in, or departing, the Chiltern cct to contact Benson Zone. The responsibility for collision avoidance was with both crews, this being discharged through see and avoid. The Benson ATC team had seen the C42 on radar and Talkdown passed generic TI to the Puma crew which enabled them to see the light ac on departure to their R. The C42 pilot was not aware of the Puma's presence until he turned onto the crosswind wind leg and rolled 'wings level'. Members thought that both crews had discharged their responsibilities at the earliest opportunity; however, the ac were on conflicting flightpaths which had caused the Airprox.

The Puma crew had monitored the C42's flightpath and executed a go-around as the C42 pilot had also taken avoiding action by turning away. These combined actions were enough to allow the Board to conclude that any risk of collision had been quickly and effectively removed.

Members were briefed that since this Airprox the wording had changed in the LoA such that pilots 'should' call Zone when getting airborne or before climbing above 700ft QFE. Also, the relationship between both parties had improved with the Chiltern Park operator more aware of Benson operations and when traffic is likely to affect their airfield operations. The activity status of Chiltern Park is displayed on each console at Benson and is also broadcast on the ATIS. Mindful of these facts, the Board declined to make a recommendation with respect to integration/deconfliction of Benson and Chiltern Park operations.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G airspace on the final approach to Benson RW01.

Degree of Risk: C.

AIRPROX REPORT No 2011093

Date/Time: 28 Jul 2011 1433Z

Position: 5053N 00043W (2nm FIN APP
RW24 Goodwood - elev 110ft)

Airspace: ATZ/LFIR (Class: G)
Reporting Ac Reported Ac

Type: PA31 PA24

Operator: Civ Pte Civ Pte

Alt/FL: 1000ft↓ 800ft↓
QNH (1022mb) NK

Weather: VMC CLOC VMC CAVOK

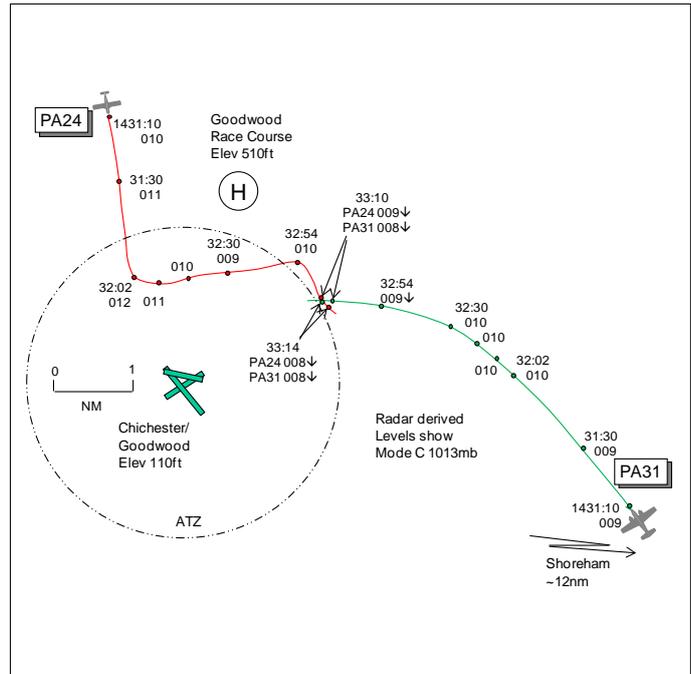
Visibility: 10km

Reported Separation:

50ft V/30-40m H 'underneath'

Recorded Separation:

<100ft V/<0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE PA31 PILOT reports inbound to Chichester/Goodwood VFR and in receipt of a BS from Goodwood Information on 122.45MHz, squawking 7000 with Modes S and C. The visibility was 10km in VMC and the ac was coloured white/red; no lighting was mentioned. On approaching Goodwood from the ESE he was advised that RW24 was in use and that 3 ac were in the cct. He elected to join for a straight-in approach while listening to other traffic position reports and adjusting his speed accordingly. ATC advised him to join at 4nm and on reporting at 4nm he was asked to report at 2nm. The only traffic when calling at 4nm was on short final and sufficient space was available for his approach. At 2nm heading 240° at 110kt descending through 1000ft QNH 1022mb an ac appeared in his windscreen in his 2 o'clock range 30-40m and 50ft above passing from R to L just in front. He took avoiding action by increasing his ROD and reported the 'near miss' to Goodwood Information with the other ac's registration, possibly a PA28 type. He initially stated separation was 100ft but he was a little shocked and later thought it was definitely a lot closer. The other ac's pilot, when asked by ATC, confirmed that it was his ac that had flown in front of his PA31. He had not heard any radio calls from this flight stating its position or intentions prior to the 'near-miss'. He assessed the risk as high. He believed the other ac's pilot showed poor airmanship by not communicating his position and intentions to ATC, by flying across the FAT of a busy active RW at cct height, by showing a total disregard for the safety of his PA31 and that of others and dismissing the seriousness of the situation with no apology or offer of discussing the incident. He felt the other pilot will cause a similar situation in the future as he showed poor airmanship, poor judgement and dangerous flying.

THE PA24 PILOT reports inbound to Chichester/Goodwood from a private site near Hull, VFR and in receipt of an AFIS from Goodwood on 122.45MHz, squawking 7000 with Mode C. The Wx was CAVOK. Inbound he called at 5nm to run and was told that the RW in use was 24 operating RH ccts to the N. He requested to join downwind and shortly after this he recalled hearing another flight report 'late downwind'. He joined downwind and reported this on the RT and on reaching 2 DME from GWC, which he considered was late downwind, he turned onto R base and reported this on the radio. Heading 170° at 100kt descending through 800ft, it was then he heard another flight report 2nm final for the same RW. He immediately pulled-up while looking for the other ac and then spotted it as it passed beneath before the other ac's pilot reported a 'near-miss' on the frequency. He informed ATC that his ac was the reported one and he asked if he could orbit L and complete a

landing behind the other ac, which he did. While aware of an ac late downwind when he joined from the N, he didn't hear the flight report R base or turning finals or he wouldn't have turned in from downwind himself. After landing he telephoned ATC and discussed what happened and they thanked him for calling and told him the other ac's pilot did not wish to take matters further. He did not assess the risk. He thought it strange that Goodwood were operating ccts to the N given the proximity of the horse racing course on a race day, where helicopters are engaged in shuttle flights to and from the racecourse to the S. The cct seemed rather constrained when having to observe clearance from the racecourse, there being far more room to manoeuvre if fixed-wing ccts were to the S.

THE GOODWOOD FISO reports the PA31 flight was inbound from Shoreham and called to join the cct on a long final for RW24, initially reporting at 8nm. The PA24 flight called for joining information and read back all the details correctly. The PA31 pilot called at 2nm final and stated that an ac (initially identified as a PA28) had crossed the approach in front of his ac heading S'bound by around 100ft. ATIS identified the ac as the PA24 and asked the pilot his intentions, who responded positioning for RW24. The PA31 landed safely at 1434 and vacated RW24 and the PA24 positioned onto short final for RW24 and landed safely at 1435; the pilot was asked to call the Tower after shut down.

Unofficial Goodwood MET observation gave 22010KT 9999 SCT/BKN025 Qxxxx=

ATSI reports that the unit did not impound the required information as requested, consequently no RT recording of the event is available. Therefore, this report is based on the reports from both pilots and the Goodwood FISO.

The pilot of the PA31 commented that no calls were made by the PA24 on the frequency before the Airprox occurred. The pilot of the PA24 stated that he had requested joining information from Goodwood and this was confirmed by the FISO. The PA24 pilot said he was 5nm from the airfield at the time. It is not known if this contact had occurred before the PA31 was listening on the frequency. The PA24 pilot was informed that the RW in use was 24, RH cct and he requested to join downwind. He continued to join the cct, later reporting downwind. When 2nm from GWC, he commenced a R turn onto R base, reporting this on the frequency. The FISO made no comments in his report about the PA24 reporting, or turning, on to R base. It was at this time the pilot of the PA24 heard the PA31 reporting on final approach at 2nm. He pulled up and spotted the PA31 as it passed underneath.

The FISO reported that the PA31 had requested to join the cct for a straight-in approach at 8nm. The pilot stated that he had been advised to join at 4nm and was informed about 3 ac in the cct. Reporting at 4nm, he was asked to call at 2nm. The only traffic he was aware of was landing traffic on short final. At 2nm, he sighted the PA24 in his 2 o'clock, 50ft above and 30-40m to the R. It passed R to L in front of his ac. He commented that he had heard no radio calls by this flight.

Without access to an RT recording it is not possible to confirm the calls and their respective timings made by both flights. Both pilots appeared not to hear the transmissions made by the other flight, until the pilot of the PA31 reported at 2nm. Neither reported being aware of the presence of the other ac until just before the Airprox occurred.

CAP427 (Flight Information Service and the FISO Licence) states:

'Flight Information Service is provided at an aerodrome to give information for the safe and efficient conduct of flights in the Aerodrome Traffic Zone. From the information received, pilots decide the appropriate course of action to be taken to ensure the safety of flight. A FISO (at an aerodrome) has the following responsibilities:

- a) Issuing information to aircraft flying in the Aerodrome Traffic Zone (ATZ) to assist pilots in preventing collisions.

During the notified hours of watch of the FISO unit, entry of aircraft into the ATZ to transit or land is subject to the pilot obtaining information from the FISO which will enable the flight within the zone to be conducted safely'.

The UK AIP, Page AD 2-EGHR-1-5, Para 2.22 Flight Procedures for Goodwood states:

- a. 'Fixed-wing circuit height 1200ft or as directed by ATS. Circuit directions: Runways 06, 14L/14R and 10 – LH; Runway 24, 28 and 32L/32R – RH or as directed by ATS.
- b. Fixed-wing standard join is overhead at 2000ft. 'Straight-in' and 'base' joins are strongly discouraged when the circuit is active. ATS can advise on circuit status'.

Goodwood is situated within an ATZ (Class G airspace), circle radius 2nm centred on runway 14R/32L, with vertical limits from surface to 2000 ft aal; airfield elevation 110ft.

UKAB Note (1): The radar recording at 1431:10 shows the PA31 6nm ESE of Chichester/Goodwood tracking 315° squawking 7000 indicating unverified FL010 (1270ft QNH 1022mb) with another 7000 squawk, believed to be the PA24, 3.75nm NNW of Goodwood tracking 175° indicating unverified FL010 (1270ft QNH). At this time radar shows 2 other ac in the cct, 1 ac on a 1nm final and the other 1.5nm NE of Goodwood on R base leg. The PA24 passes 1.5nm W of Goodwood Racecourse before commencing a L turn at 1432:02 showing FL012 (1470ft QNH), rolling out onto a 080° track. Meanwhile, the PA31 has commenced a slow L turn towards RW24 final approach. At 1432:54 the PA24 is seen to commence a R turn onto base leg at FL010 (1270ft QNH) in the PA31's 1230 position range 1.25nm, the PA31 is now tracking 275° in a slow descent passing FL009 (1170ft QNH). The PA24 steadies on a 160° track and at 1433:10 is seen to also commence a descent passing FL009 (1170ft QNH) in the PA31's 12 o'clock range 0.1nm, the latter descending through FL008 (1070ft QNH). The next sweep 4sec later at 1433:14 shows the ac having crossed, both ac indicating FL008 with the PA24 tracking 140° and now 0.1nm SE of the PA31. The CPA occurs between radar sweeps but separation is estimated to <100ft and <0.1nm.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, radar photographs/video recordings, reports from the FISO involved and reports from the appropriate ATC authorities.

Members were disappointed that the RT was not impounded and available for transcription. Without this information, it was not known what information was broadcast on the frequency. From the reports received it appeared that both the PA31 and PA24 pilots had made calls on the frequency which were either not heard or assimilated by the other party. Although RT exchanges are an aid to pilots to build up their SA of the cct pattern, the primary means of avoidance in this Class G ATZ was through see and avoid. The PA24 pilot had joined the visual cct from the N, albeit in a truncated manner revealed from the radar plot, but had integrated behind the 2 other ac already established ahead. Members noted that the PA31 pilot had elected to join on a 'straight-in' approach with 3 ac in the cct, contrary to the guidance promulgated in the AIP; the radar recording shows the PA31 joining initially on a wide L base leg before commencing a gentle L turn onto final and placing it into conflict with the PA24 on R base. In doing so, Members agreed that the PA31 pilot did not integrate safely into the cct pattern and this had caused the Airprox. One controller Member opined that when the PA31 pilot called at 4nm he would have expected the FISO to update the cct status; however, the FISO had not made comment in his report and this element could not be corroborated owing to the lack of RT transcript. Another pilot Member commented that fitting-in with other cct traffic is more easily accomplished by entering the pattern either O/H, crosswind etc and adjusting the cct size accordingly, i.e. widening crosswind or extending downwind if required, whereas flying a straight-in approach leaves the pilot with only one option by adjusting his airspeed.

Turning to risk, the PA31 pilot was turning belly-up to the PA24 when he saw it 30-40m away and just 50ft above as it crossed from R to L, increasing his ROD to avoid. The PA24 pilot heard the PA31

pilot report at 2nm and pulled-up while looking for it and then saw the ac pass 'underneath'. Members thought that luck had played a part in this Airprox and it was fortunate the PA24 pilot's actions had mirrored those of the PA31 pilot. Taking these facts into account, combined with proximity of the ac revealed by the radar recording, the Board concluded that an actual risk of collision had existed during this encounter.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The PA31 pilot did not integrate safely into the cct pattern.

Degree of Risk: A.

AIRPROX REPORT No 2011096

Date/Time: 26 Jul 2011 0954Z

Position: 5303N 00050W (3nm
ENE of Syerston - elev
228ft)

Airspace: Lincolnshire AIAA (Class: G)

Reporting Ac Reported Ac

Type: Vigilant MG Europa

Operator: HQ Air (Trg) Civ Pte

Alt/FL: 2000ft 2300ft
QFE (1008mb) QNH (1016mb)

Weather: VMC CLBC VMC CLBC

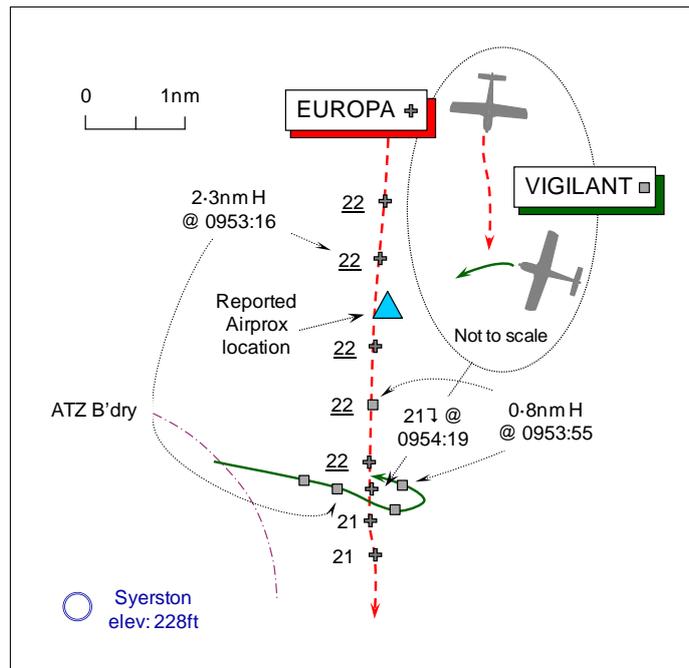
Visibility: 30km >10km

Reported Separation:

50ft V/50m H 50ft V/50m H

Recorded Separation:

Not recorded



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE VIGILANT MOTOR GLIDER (MG) PILOT, a gliding instructor, reports he was conducting an elementary glider training sortie with an Air Cadet from Syerston and was in communication with Syerston RADIO on 125.425MHz. A squawk of A7000 was selected; neither Modes C, S nor TCAS are fitted. The MG is coloured white with red flashes on the fuselage/wingtips and orange stripes on the mainplane. Strobe lighting, navigation lights and the landing lights were all on.

About 4nm NE of Syerston, heading 290°, during a straight and level cruise at 60kt at 2000ft Syerston QFE (1008mb), some 500ft clear below cloud, a low-wing single-engine light ac was sighted about 200m away to starboard in his 1 o'clock and about 50ft slightly below his MG. A L turn was initiated to avoid the conflicting ac – the Europa – that maintained straight flight throughout and passed some 50m away and 50ft below his Vigilant. He assessed the Risk as 'high'.

THE EUROPA PILOT reports he was in the cruise on a VFR flight from Sandtoft to Redhill; his next waypoint was Wycombe Air Park. He was in receipt of a BS from Doncaster RADAR on 126.225MHz flying at an altitude of 2300ft QNH (1016mb). A squawk of A6160 was selected with Mode C; neither Mode S nor TCAS is fitted. There was a reasonably consistent cloud layer at around 2500ft so he was about as high as he could fly without being too close to the base of the layer. After passing Newark, approaching a position 3nm to the E of Syerston, heading 180° at 125kt, he noticed for the first time an ac at about the same level in his 10:30 position about 200m away, very close, on a converging track. He could see that there was a chance of collision and recognised that he was slightly below the other ac's altitude, so to avoid it he applied forward stick to decrease his altitude. A few seconds later he flew about 50ft under the other ac about 50m away, noticing that it was a predominantly white Vigilant MG. He did not notice any avoiding action taken by the Vigilant pilot and no lighting was observed on the MG; he assessed the Risk as 'medium'.

Resuming a level cruise, he asked Doncaster RADAR on the radio if they had seen the Vigilant, as they had not reported any traffic to him. The controller replied that he had not, but also stated that he had not been closely following his track as he was only under a BS. He made no further comment and proceeded en-route.

He remarked that he would hope to have sighted the Vigilant earlier, but it certainly demonstrated to him the difficulty of picking up a white ac against a predominantly white sky. In theory, he believes that he had 'right-of-way', but his instinct was to push forward as he was already slightly lower than the Vigilant. As for the BS, he thinks in the future he will always ask for TS; in the past he has done this but it has so often been downgraded to a BS that his habit has become to only ask for BS in the first instance. This had not worried him unduly as he has often had conflicting traffic reported to him, even under a BS, although he understands that this is at the controller's discretion. He has reported this Airprox as a 'medium' Risk, though if he had either not sighted the ac at all or not taken avoiding action then he would have put it down as 'high'. He would be interested to learn if the pilot of the Vigilant MG had seen his ac and taken avoiding action as he did not notice any and also if the other ac was squawking Mode C.

ATSI regrets that due to an error in the request process from ATSI, the RT recording from Doncaster RADAR is not available for the period of the Airprox.

The pilot of the Europa was in receipt of a BS from Doncaster RADAR and his written report indicates that he asked Doncaster if they had seen the other ac. The controller responded that he had not, adding that he had not been following the track of the Europa. CAP744 states:

A controller may identify an aircraft to facilitate co-ordination or to assist in the provision of generic navigational assistance, but is not required to inform the pilot that identification has taken place.

Identification of an aircraft in receipt of a Basic Service does not imply that an increased level of service is being provided or that any subsequent monitoring will take place. Controllers may allocate SSR codes to aircraft in receipt of a Basic Service. The issuance of such a code does not constitute the provision of a surveillance service.

On the basis of the information available, ATSI is not able to process a formal report.

ATSI have identified an issue with processing procedures and have taken steps to ensure that a similar error does not recur.

UKAB Note (1): The UK AIP at ENR 2-2-2-4, notifies the dimensions of the ATZ at the government aerodrome of Syerston as a circle of radius 2nm, centred on RW07/25, extending from the surface to 2000ft above the aerodrome elevation of 228ft. An Air/Ground Communications Service is provided, C/S Syerston RADIO on 125.425 MHz, which is active in summer from 0730UTC to Sunset.

UKAB Note (2): Analysis of the LAC Debden and Claxby radar recordings is somewhat inconclusive as this Airprox is not shown clearly. The Europa, shown squawking A6160 and identified from following the track to Redhill, maintains a level cruise at 2200ft (1013mb) as it tracks S passing the Airprox location reported by the Vigilant pilot just after 0953:16. The Vigilant MG is shown exiting the Syerston ATZ only as a primary contact, before crossing through the Europa's 12 o'clock at a range of 2.3nm before turning about onto a heading of 290°, as reported. Unfortunately at 0953:55, moments before the Airprox occurs, the Vigilant fades from coverage in the Europa pilot's 11 o'clock at a range of 0.8nm. Just after the Europa passes the projected point of conflict the Mode C indicates a slight descent to 2100ft (1013mb), which is maintained thereafter and perhaps indicative of the Europa pilot's avoiding action descent. Although not shown, the Airprox is presumed to have occurred at 0954:19, some 3nm ENE of Syerston, clear of the ATZ.

HQ AIR (TRG) comments that this was clearly a close Airprox as both parties concur on the separation. The mutual avoiding action appears to have been effective, although given the geometry, the Europa pilot's vertical manoeuvre is likely to have been more significant. The lessons regarding availability of a Traffic Service are valid and indicate that without additional resource, scope for improvement in use of surveillance services is limited.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Board Members echoed the Europa pilot's view over the provision of a TS to flights operating in Class G airspace. Whilst the pilot says that he had not asked for a TS because it was so often downgraded to a BS, Members agreed that it is wiser airmanship to obtain a radar service whenever possible. Clearly a BS will not generally deliver TI about any other ac in the vicinity and in this location other flights would be unlikely to be working Doncaster/Sheffield ATC. The Board recognised that it was not always feasible for controllers at terminal ATSUs to provide a radar service to transit traffic and priority will invariably be accorded to flights arriving or departing at that aerodrome. However, a nominated LARS unit should be able to provide a radar service within the normal constraints of traffic loading and radar/radio coverage. The Board agreed the Europa pilot could have chosen a more suitable ATSU as he progressed S along his route and here Waddington might be a more helpful choice perhaps with better coverage. Moreover, Members were keen to emphasise that past experience should not inhibit pilots from asking for a TS or DS in the first instance to supplement their own lookout whenever appropriate.

The Europa was not fitted with any form of collision warning system, but as the Vigilant was evidently not transponding Mode A and the type is not fitted with Mode C altitude reporting this would not have helped here. Nevertheless, controller Members emphasised the importance of SSR data, both in the provision of ATC services and to enable TCAS to detect other ac, so pilots should always ensure they are squawking when airborne in accordance with standard procedures. There were no other ac shown in the vicinity of the Europa's track clear to the E of Syerston and the primary contact that had been identified on the radar recording as the subject Vigilant faded just before the closest point, so the separation could not be assessed independently. With both pilot's reporting that they sighted each other's ac at a range of 200m during this crossing encounter, in the short time available this allowed little scope to assess the situation and take appropriate action. The difficulties of sighting white gliders of small cross-sectional area at the same level against a cloudscape was recognised, but applied equally to small aeroplanes such as the Europa. Members agreed unanimously that the Cause of this Airprox was a late sighting by both pilots.

With 50ft vertical separation, 50m apart both pilot's reports agreed on the minimum separation that was plainly too close for comfort. Although the Europa pilot perceived that he had 'right-of-way', the Board noted the Vigilant pilot was 'gliding' when the Airprox occurred and therefore he had right of way. Either way, at these close ranges the Europa pilot wisely elected to descend as the Vigilant pilot turned L. Fortunately, the avoiding action taken by both pilots was complimentary, but at these distances a test-pilot Member opined that in view of the Vigilant's relatively slow rate of roll, its pilot would likely have achieved greater separation in the vertical plane than was possible by turning. Since the Vigilant pilot's L turn probably had little effect on moving his ac out of the way, one experienced Member concluded that there was an actual Risk of collision. However, this was a solitary view; the Board concluded that whilst the resultant separation was barely sufficient, the action taken had been effective in augmenting what separation there was. Members agreed that the safety of the ac involved had been compromised.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Late sightings by both pilots.

Degree of Risk: B.

AIRPROX REPORT No 2011098

Date/Time: 29 Jul 2011 1131Z

Position: 5158N 00031E (0.75nm
NE of Wethersfield GLS)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: Viking Glider AW 139

Operator: HQ Air (Trg) Civ Exec

Alt/FL: 950ft↓ 1400ft
QFE QNH (1023mb)

Weather: VMC CLBC VMC NR

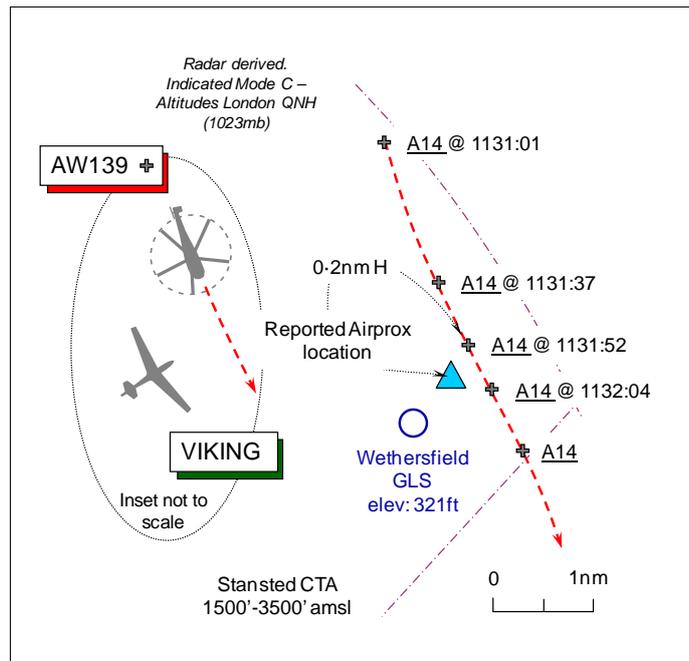
Visibility: 10km 8km

Reported Separation:

<100ft V/<100m H 200ft V/500m H

Recorded Separation:

Not recorded – see Note (1)



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE VIKING CHIEF GLIDING INSTRUCTOR reports that a white and green Agusta 139 helicopter was seen suddenly, tracking S across the eastern half of Wethersfield aerodrome at an estimated height of 1000ft beneath a 1200ft overcast. The Viking glider pilot was carrying out cadet training in the RH cct to RW04 at a height of about 950ft heading 060° at 50kt when he spotted the helicopter 2km away. However, the helicopter pilot appeared not to see the Viking glider, which was in his 1-2 o'clock position, very slightly below, and heading towards. Quickly and deliberately lowering the nose of the glider, whilst keeping the helicopter in sight, the glider pilot turned away to increase separation between his glider and the conflicting Agusta 139, which passed by less than 100m away and less than 100ft above the Viking glider at the closest point. The white and green helicopter maintained its southerly track and the glider subsequently landed without further incident. The glider pilot considered that there could have been a risk of collision had the helicopter made a slight course deviation to its R. If no avoiding action had been taken by the glider pilot, the aircraft would have passed dangerously close to one another and he assessed the Risk as 'high'. Wethersfield was NOTAM'd for operations at the time of the incident.

Farnborough LARS was contacted, and stated that a helicopter, squawking A7000 was shown on radar, but they were not in RT contact with the pilot.

THE AGUSTA/WESTLAND A139 HELICOPTER PILOT (A139) reports he was the PIC and the PF from the RH seat, whilst in transit under VFR routing from Newmarket to Braintree VRP and thence to Hicksted, S of Gatwick. A squawk of A7000 was selected with Modes C and S on; TCAS I is fitted. Flying at an altitude of 1400ft beneath the Stansted CTA in VMC some 700ft below cloud, he had contacted Essex RADAR but due to controller workload they were unable to provide a TS. Because of Wethersfield Glider Launching Site (GLS) along their track, he had altered his course further to the E to avoid flying too close to Wethersfield; he estimates that their track passed about 2nm NE of the gliding site at the closest point heading 170° at 145kt. The HISL was on and as he approached Wethersfield he switched on the fixed landing lights to assist visual conspicuity. Aware of some gliders on the ground, both he and the PNF in the LH seat were actively scanning for any conflict with airborne gliders when he became aware of a glider to their right about 500m away in their 2:30 position and 200ft below his helicopter. They were already ahead of the glider so he maintained his course. The glider was not spotted earlier due to the thick door pillar, neither had the

PNF seen the glider until he pointed it out to him. There was no Risk of collision. When they reached Braintree they contacted Farnborough LARS for a BS, who advised them that his helicopter had flown overhead Wethersfield, which he disputed

UKAB Note (1): The LAC Stansted 10cm radar recording does not illustrate this Airprox as the Viking glider is not shown at all, therefore, the minimum separation that pertained cannot be ascertained independently. However, the A139 is clearly shown in transit beneath the north-eastern stub of the CTA, maintaining an altitude of 1400ft London QNH (1023mb). The A139 makes a slight track alteration at 1131:37, turning slightly L thereby increasing the track displacement from Wethersfield, as reported, before drawing abeam the reported location of the Airprox at 1131:52, the helicopter following a track displaced 0.2nm from the reported point. The A139 passes about 0.8nm abeam Wethersfield GLS at the closest point at 1132:04, before clearing to the S.

UKAB Note (2): The UK AIP at ENR 5-5-1-7, notifies the GLS at Wethersfield A/D as active from Sunrise to Sunset on Fridays, Saturdays, Sundays and Public Holidays or as notified by NOTAM. Winch launching is notified to 2000ft above the aerodrome elevation of 321ft amsl. A NOTAM – H3372/11) had been issued notifying extended gliding activity from 25 – 28 Jul, in addition to the normal activity for this Friday.

ATSI reports that when the A139 crew contacted Essex RADAR at 1126, the pilot was asked to standby. Some 7min later the controller asked the pilot of the A139 to pass his message, if he was still on the frequency. In this intervening period the controller's workload was high. The RTF recording shows that he was controlling ten Stansted movements, which included both inbound and outbound flights. The A139 pilot reported, at 1133, that he was on a flight from Newmarket and at the time was passing Braintree at 1400ft, which is about 6nm S of Wethersfield, consequently, the Airprox had already occurred before an ATS could be established.

HQ AIR (TRG) comments that the A139 passed within 1nm of an active glider site at the operating altitude and it appears he only saw the Viking approaching the CPA. By contrast, the Viking pilot acquired the A139 at a good distance and was able to avoid it as it approached, fortunately without affecting his recovery.

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 and reports from the appropriate ATC and operating authorities.

Despite the close location of the Stansted 10cm radar head to the position of the Airprox, the small Viking glider with its composite structure is not shown on the radar recording. Consequently, the significant disparity between the minimum separation reported by Viking glider pilot and that contained in the AW139 pilot's account could not be resolved. The 500m horizontal separation filed by the AW139 pilot was more than 5 times the <100m perceived by the glider pilot leading some Members to contend that the AW139 pilot had not seen the glider flown by the reporting pilot. Moreover, an effective lookout regimen should include clearing areas behind 'blind-spots' regardless of airframe obstructions and a slower transit through this confined part of Class G airspace might have helped the AW139 crew to discharge their responsibilities to 'see and avoid' other ac.

It was evident that the AW139's track was closer to Wethersfield GLS than the A139 Captain's estimate. The radar recording shows that the helicopter passed about 0.8nm abeam the GLS at the closest point, level at 1400ft amsl, and would have been closer if the helicopter crew had not made their earlier course alteration. Helicopter pilot Members voiced a concern that the AW139 crew had flown closer than was prudent at an altitude below that which can be attained by gliders on the winch wire. Fortunately, the presence of the helicopter flying close by had been detected in time to enable the glider pilot to take robust and effective avoiding action. The Board concluded, therefore, that this

Airprox had resulted from a conflict in the vicinity of a promulgated and active glider launching site resolved by the Viking pilot, whose avoiding action had effectively removed the Risk of a collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A Conflict in the vicinity of a promulgated and active glider launching site resolved by the Viking pilot.

Degree of Risk: C.

AIRPROX REPORT No 2011101

Date/Time: 09 Aug 2011 1206Z

Position: 5208N 00050W (6nm NW Milton Keynes)

Airspace: LFIR (Class: G)

Reporting Ac Reported Ac

Type: Grob Astir Untraced
M/Light

Operator: Civ Pte NK

Alt/FL: 3676ft NK
amsl

Weather: VMC CLOC NK

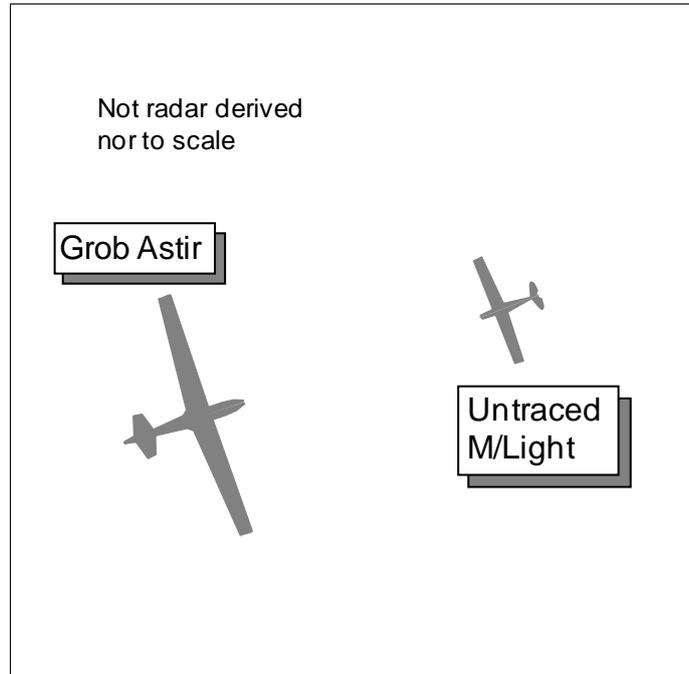
Visibility: >20nm NK

Reported Separation:

10-15ft V NR

Recorded Separation:

NR



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE GROB ASTIR PILOT reports flying in a gliding competition from Wittering, VFR and not in communication with any ATSU. The visibility was >20nm flying 1000ft below cloud in VMC and the ac was coloured white. He was en-route from a turning point at Silverstone towards another turning point N of Cambridge, cruising in a level attitude and slight descent at 65kt. On reaching the turning point he looked down to change radio frequency to monitor Cambridge Tower. On looking up he was confronted with a M/Light head-on at the same level and very close, 150m. He immediately pushed forward on the stick and passed directly underneath the M/Light with 10-15ft clearance. The M/Light was red coloured high-wing with tricycle undercarriage and engine mounted above the cockpit on a pylon. Being somewhat shaken he landed at Bedford aerodrome and abandoned the competition flight. He assessed the risk as high. At the time of the Airprox he was flying at 3676ft amsl heading 075° and the position was O/H the M1 between J15 and Newport Pagnell services.

RAC MIL reports that despite extensive tracing action the identity of the M/Light remains unknown. Intermittent primary returns, believed to be gliders, show in the Airprox area but no radar return shows that could be correlated to the M/Light on a SW'ly track. Eleven M/Light clubs and sites were contacted during the procedural tracing phase; however, no ac were identified as likely candidates.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the Grob Astir pilot.

Members were disappointed that the M/Light could not be traced, leaving them with only one viewpoint of the incident on which to make an assessment. Given the reported geometry and separation, Members were surprised that the M/Light pilot had not filed a report unless the Grob had passed unsighted, for whatever reason, to the pilot. Although the Grob Astir pilot had right of way under the RoA Regulations, there was equal responsibility for both pilots to maintain their own separation from other ac through see and avoid. It was unfortunate that the Grob pilot's scan had been interrupted by a 'heads-in' cockpit task at a critical time, which had led to a late sighting and a part cause of the Airprox. The Grob Astir pilot did not report seeing the M/Light taking any avoiding

action which led Members to believe that the M/Light pilot had probably not seen the glider during the encounter, the other part cause.

Looking at the level of risk, the Grob Astir pilot saw the M/Light late with only 150m separation and took immediate action to avoid it; however, the ac passed in such close proximity that the Board concluded that an actual risk of collision had existed during the encounter.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Probable non-sighting by the untraced M/Light pilot and a late sighting by the Grob Astir pilot.

Degree of Risk: A.

AIRPROX REPORT No 2011102

Date/Time: 30 Jul 2011 1545Z (Saturday)

Position: 5436N 00542W (0.5nm FIN
APP RW16 Newtownards -
elev 9ft)

Airspace: ATZ (Class: G)

Reporting Ac Reported Ac

Type: Vigilant C172

Operator: HQ Air (Trg) Civ Pte

Alt/FL: 150ft↓ 300ft↓
QFE (1020mb) QNH

Weather: VMC CLBC VMC CAVOK

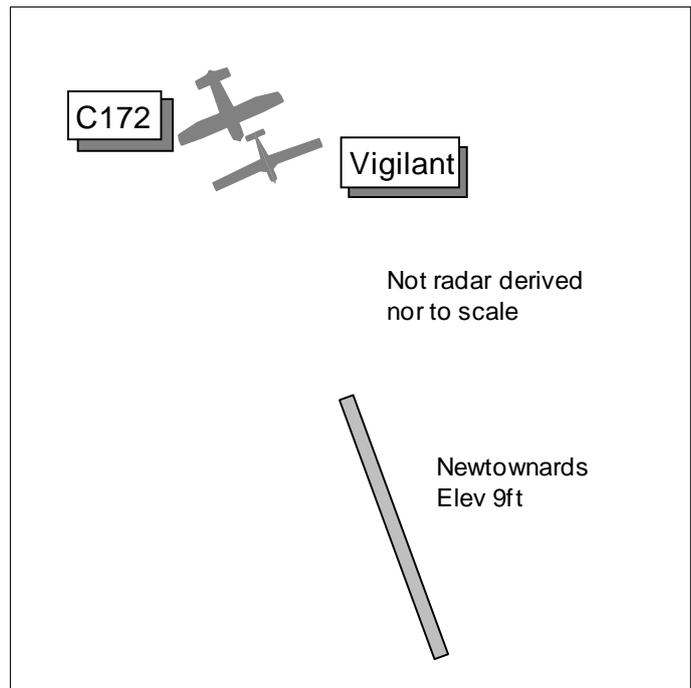
Visibility: 5000m 10km

Reported Separation:

20ft V/10ft H 25ft slant

Recorded Separation:

NR



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE VIGILANT PILOT reports flying a dual training sortie from Newtownards, VFR and in communication with Newtownards Radio on 128.3MHz, squawking 7000 with NMC. The visibility was 5000m flying clear below cloud in VMC and the ac was coloured white with red/orange markings with nav, landing and strobe lights switched on. He was teaching an engine failure exercise and after climbing away from a practice EFATO (landing ahead) on RW16 he climbed onto the downwind leg, levelling-off at 1000ft. While downwind a C172 was overflying the RW at 1000ft and then shortly after turned downwind behind his ac. As he turned base leg he stated on the radio his intentions to carry out a low-approach and go-around. Before turning final he looked onto the downwind leg and noted the C172 was now downwind with another Cessna behind. He proceeded to turn final for RW16 at 65kt and the approach continued normally until approximately 150ft QFE 1020mb at which point a call was made on the radio in a stressed voice saying, "aircraft....maintain altitude". He looked behind and to the R where he spotted the black/gold coloured C172 approximately 10ft behind and 20ft below his ac. He shouted over the radio and immediately initiated a go-around while the C172 continued and landed on the RW. Had the C172 pilot not made the radio call or had he, the instructor, not looked around to the back of his ac when he did, he was confident that a collision could have resulted. On the go-around he contacted Newtownards Radio informing them of the near collision. He assessed the risk as high.

THE C172 PILOT reports inbound to Newtownards VFR and in receipt of an A/G service from Newtownards Radio on 128.3MHz, squawking 7000 with Mode C. The visibility was 10km in CAVOK VMC and the ac was coloured black/gold with anti-collision and strobe lights switched on. The cct was busy with various categories of ac and he had had to go-around on his first approach to RW16 owing to a M/Light ahead. His second approach was high and fast which was occupying his attention as it was a warm day and RW16 is short [displaced threshold 85m, LDA 533m]. He heard another ac's pilot call final but scanning ahead he could not see it. Heading 160° at 70kt descending through 300ft QNH he then saw a Grob M/Glider appear in the top LH corner of his vision about 100ft away descending in front of his ac in the 11 o'clock position. He heard its pilot "going around" and expected that the pilot would apply full power and climb away but he kept descending into his flightpath. He turned his Cessna abruptly R (deadside) with separation reduced to 25ft and the Grob continued upwind on RW heading. He landed his ac as the Grob climbed away. He assessed the

risk as medium. Later, after talking to the resident CFI, he learned that the Grob pilot had transmitted “low approach and go-around”. He had not heard the first part of the transmission owing to his pre-occupation with his approach. With hindsight he should have been more aware that the Grob has a slower and steeper approach than the C172 so he should have been looking above as well as ahead. He normally operated from an airport with ATC where separation is organised by the Tower but he recognised that in the A/G situation, responsibility for separation is totally down to the pilot.

ATSI reports that Newtownards do not record their frequency consequently it was not possible for ATSI to investigate this Airprox further.

NB: An AGCS radio station operator is not necessarily able to view any part of the aerodrome or surrounding airspace. TI provided by an AGCS radio station operator is therefore based primarily on reports made by other pilots. Information provided by an AGCS radio station operator may be used to assist a pilot in making decisions; however, the safe conduct of the flight remains the pilot’s responsibility.

HQ AIR (TRG) comments that this was clearly an alarming event for both crews. The limitations of operating without ATC are well known and this incident highlights how poor awareness, for whatever reason, can be dangerous. The C172 pilot’s open and honest assessment above is very welcome and usefully highlights the pitfalls from which hopefully he and others can learn. Unfortunately, the combination of flight profiles probably left the Vigilant pilot unsuspected on the C172 shortly after the start of his final turn.

UKAB Note (1): The UK AIP at AD 2-EGAD-1-3 promulgates Newtownards ATZ as a circle radius 2nm centred on the longest notified RW (04/22) 543452N 0054131W from SFC to 2000ft aal; aerodrome elevation 9ft.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Members agreed with the HQ Air Trg sentiments with respect to the C172 pilot’s report. After going around from his 1st approach he was obviously unsettled during his 2nd cct when the Airprox occurred. He did not see the C172 ahead of him in the cct pattern or assimilate its pilot’s RT calls. As a result of inadequate SA and being unsuspected on the Vigilant, the C172 pilot flew into conflict with it on final approach which had caused the Airprox. Having established on final approach, the C172 pilot was undoubtedly surprised when the Vigilant appeared in the windscreen in his 11 o’clock and above at close range. He expected the Vigilant to manoeuvre following its pilot’s call of “going around” but he then had to break R to avoid a collision when it continued its approach. The Vigilant pilot saw the C172 close behind and executed his go-around whilst broadcasting his intention on the RT. The Board were in no doubt that this had been a very close and serious encounter. Prior to the visual acquisition by both pilots, the low wing Vigilant was descending from above on to the high-wing C172, until a very late stage in the evolution. These elements were enough to persuade the Board that an actual risk of collision existed during this incident.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The C172 pilot flew into conflict with the Vigilant on final approach.

Degree of Risk: A.

AIRPROX REPORT No 2011115

Date/Time: 3 Sep 2011 1407Z (Saturday)

Position: 5412N 00123W
(Topcliffe ATZ - elev 92ft)

Airspace: ATZ (Class: G)

Reporting Ac Reported Ac

Type: Vigilant Bell 206

Operator: HQ Air (Trg) Civ Pte

Alt/FL: 1300ft 1200ft
QFE (1001mb) QNH

Weather: VMC VMC (into Sun)

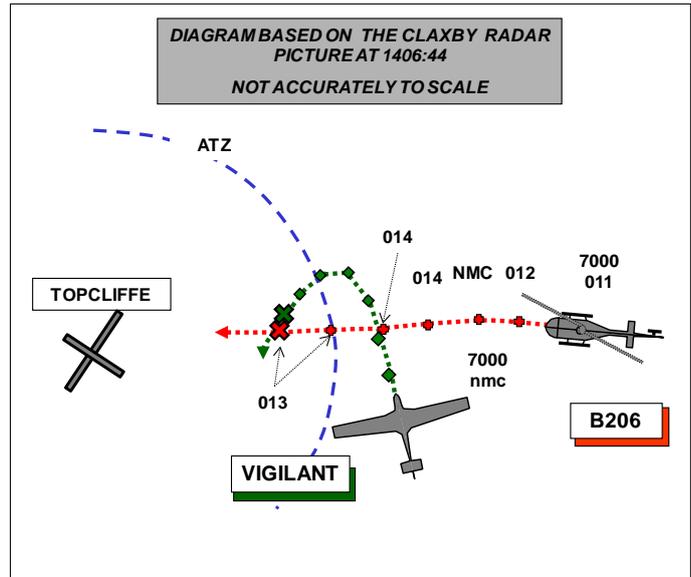
Visibility: 20km 35km

Reported Separation:

200ft V/200m H 300ft V/1nm H

Recorded Separation:

NR V/0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE VIGILANT DUTY INSTRUCTOR (DI) reports that he was supervising flying operations for the day. A helicopter had called Topcliffe Radio previously when flying into Bagby airfield [3nm E of Topcliffe, inside the MATZ] and he had informed the pilot that, although Topcliffe APP was closed and no service was available, the ATZ was active with 6 military motor gliders and he avoided the ATZ.

Later that day the pilot called again and informed of the same; the pilot replied that he would be transiting to the NE of the airfield at 1500ft.

Meanwhile a red and white Vigilant motor glider was heading 290° at 60kt and descending to 1200ft QFE to rejoin the cct, in contact with Topcliffe radio and squawking but Modes C&S were not fitted; it had the engine turned off on a Gliding Induction flight. The helicopter (reg provided) crossed over the airfield from SE to NW about 200ft below and 200m behind the Vigilant, quickly overtaking it before heading away from the airfield still on SW'ly track. Another Vigilant pilot called the helicopter pilot asking if he had seen the engine off ac and he replied that he was visual with it. From his position in the RW caravan, although the distance between the two ac appeared very close, he (the DI) assessed the risk of collision as being low.

No avoiding action was possible by the Vigilant pilot as she would not have seen the helicopter.

THE BELL 206 PILOT reports flying a silver ac on a private VFR flight with all external lights on, from Bagby to a private strip. He was squawking 7000 with Mode C and was in receipt of a BS [he thought] from Topcliffe. He departed from Bagby heading 270° at 100kt and immediately after getting airborne changed from Bagby on 123.25 and called Topcliffe [gliding] on 125.00 asking for traffic and which RW was in use as he climbed to 1200ft; they replied the RW was 20, they were active but would close at 1200 [he thought], he should keep a good lookout and thanked him for call (as they nearly always say). He opined that Bagby and Topcliffe should use the same frequency.

He saw a red and white motor glider at 1500ft, passed 300ft below it and 1nm away and took no avoidance as none was required; he kept the ac in sight and assessed the risk of collision as being none.

UKAB Note (1): Topcliffe is a government airfield with an ATZ which is a circle of 2nm rad centred on 5412.19N 00122.55W up to 2000ft aal (92ft). It is also promulgated in the UKAIP as a glider launch site (HJ) winch/ground tow and tug aircraft/motor glider with no vertical limit published.

UKAB Note (2): Topcliffe A/G frequency is not recorded.

UKAB Note (3): The recording of the Claxby radar shows the incident as shown above. Although both contacts are 7000 squawks there is little doubt that they are the ac involved. Since the Vigilant did not have Mode C and was descending it is not possible to determine the vertical separation. The B206 popped up at 1405.35 about 2nm E of Topcliffe tracking 270° with the Vigilant 1.6nm away in his 11 o'clock. Thereafter the ac close as shown above.

HQ AIR (TRG) comments that the Vigilant pilot was unfortunate in that the B206 approached on each occasion from the opposite side to where her attention would have been focussed i.e. the airfield. It might be reasonable to expect the ATZ to be clear of intruder aircraft but experience shows that this is not a safe assumption and that a sound all-round lookout scan must be maintained at all times. From his report, it does not appear that the B206 pilot was visual with the Vigilant in question, which raises concerns over the integration procedures between Topcliffe and Bagby.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from (or on behalf of) the pilots of both ac, radar recordings and a report from the Vigilant operating authority.

The Board accepted that the B206 pilot had made conscientious efforts to contact the gliding school prior to transiting through their operating area. However, Members struggled to reconcile the B206 pilot's estimate of the horizontal separation between his ac and the glider with the evidence from the radar recording. It is not uncommon for pilots transiting close to glider launching sites to see one or more gliders but pass close to another glider that they have not seen. In this case however, the glider's left turn through approximately 150 degrees offered an alternative explanation. Although it was clear to Members that the B206 pilot had initially seen the glider some distance away, they debated whether he saw it when the ac tracks crossed the second time; a majority thought it unlikely that he had as they thought that he would not have estimated the separation as being 1nm when the radar showed it to be only 0.1nm at the CPA. When the Vigilant crossed ahead of the B206 the first time while the latter was heading W climbing out from Bagby, the helicopter pilot's estimate of 1nm would have been fairly accurate. It seemed possible, therefore, that the B206 pilot had initially seen the Vigilant crossing from left to right about 1nm away, then discounted it as a factor and lost sight of it, possibly as it turned tail-on against a background of cloud. For her part, on her northerly heading the Vigilant pilot might have been able to see the helicopter low on her right hand side, but her focus of attention would have been towards the airfield. Once she started her left turn it would have been almost impossible to see the helicopter behind and below until a very late stage. Although both pilots had a responsibility to see and avoid each other, the B206 pilot was required to give way to the glider on his right hand side. The Board concluded, therefore, that the Cause was that the B206 pilot had flown into conflict with the Vigilant, which he may not have seen at its closest point.

Turning their attention to the Risk, a majority of Members accepted that while the B206 pilot had seen the subject glider earlier in the encounter, he did not see it as it passed almost directly above him at the CPA. Furthermore, since the Vigilant pilot's report was submitted by the DI who was located some distance away, Members could not determine whether the HP had seen the B206 as it came from behind and passed almost directly below her; further again, since the DI was not close to the CPA, his estimation of the separation might have been flawed. However, it was accepted that this was not wholly the case as his estimate of the horizontal separation was radar verified and

vertical estimations by experienced observers can be fairly accurate even from some distance. Members therefore agreed that the vertical separation had been about 2-300ft. Since apparently neither pilot had seen or, if necessary, avoided the other ac, a small majority of Members agreed that normal safety standards had probably been eroded.

The purpose of an ATZ is to afford a degree of protection to (powered) aircraft operating therein. They are not established to protect glider (or motorglider) operations; these activities being promulgated in the UKAIP as 'Glider Launch Sites' at ENR 5-5-1-1 et seq and are not afforded any mandatory avoidance or special procedures and they have no promulgated dimensions. Members noted that Topcliffe has an ATZ that is published in the UKAIP [ENR 2-2-2-5] as being open H24; that being the case and that Topcliffe has an ATC unit (albeit closed at the time) the ANO, RoA Rule 45 (3), requires that pilots 'obtain the permission of the ATC unit' to enter (the ATZ) and enable flight to be conducted safely within that ATZ. Since Glider Control reportedly used the callsign 'Topcliffe Radio', implying that an A/G service was being provided, Members considered that the B206 pilot was justified in assuming that he could proceed under RoA 45 (5) which requires only that pilots get information to enable flight to be conducted safely within the ATZ rather than 'permission' to enter. However, in reality Topcliffe Radio is not an A/G service and there is no facility provided for ac to enter Topcliffe ATZ when ATC is closed.

Although the B206 pilot entered the ATZ without permission, Members agreed that this was not a significant factor in this incident, except perhaps that the Gliding Supervisor might have thought that ATZ was established to protect gliders operating therein.

The UKAB Secretariat subsequently contacted HQ Air Cadets to ascertain the situation regarding VGS usage of the callsign 'Radio' implying that the operator is qualified as an Air/Ground Operator rather than a Gliding Supervisor. If this is the case, then locations that provide formal AG services should be promulgated in the AIP 2-2-2-5 – Frequency Purpose A/G.

Post Meeting Note: The MoD is reviewing the operational hours of the Topcliffe ATZ (and MATZ).

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Bell 206 JetRanger pilot entered the ATZ and flew into conflict with the Vigilant, which he might not have seen at its closest point.

Degree of Risk: B.

AIRPROX REPORT No 2011128

Date/Time: 29 Sep 2011 1632Z

Position: 5141N 00010E
(Stapleford CCT– elev
185ft)

Airspace: Lon FIR (Class: G)

Reporting Ac Reported Ac

Type: C152 PA23

Operator: Civ Trg Civ Pte

Alt/FL: 1000ft↓ 1000ft↓
QNH (1023mb) NK

Weather: VMC VMC

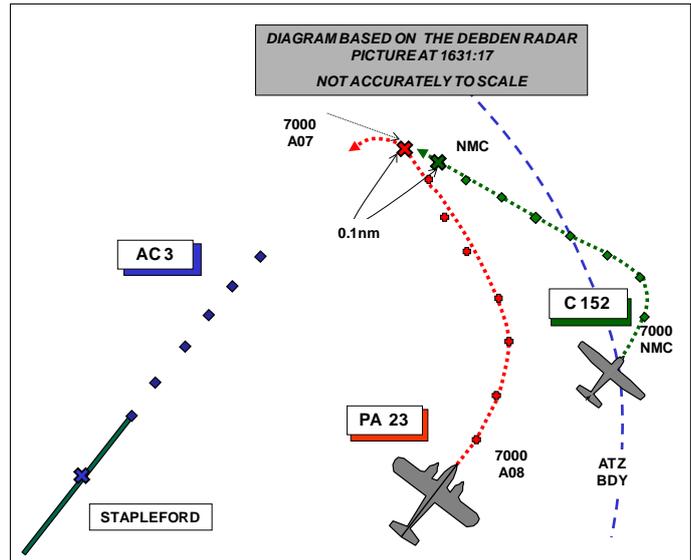
Visibility: 15km 9999

Reported Separation:

200ft V/400m H NK

Recorded Separation:

NR V/0.1nm (180m) H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE C152 PILOT reports that they were flying a white ac on a training flight, squawking 7000 with Mode C but TCAS was not fitted, in receipt of an A/G service from Stapleford while conducting cct training on RW22 (LH). They were established on base leg in the descent, heading 310° at 90kt and while passing through 1100ft QNH, he became aware of a PA23 ac, lower than them and turning inside the base leg from downwind. The PA23 stopped the turn and proceeded to fly underneath their ac so they immediately conducted a climbing right turn having by then descended to 1000ft QNH. The PA23 appeared in front of them and slightly to the L now conducting a climbing left turn onto final approach; he estimated its height at that stage to be below 700ft QNH and it was about 400ft in front of them. Had they not observed the PA23 fly from behind and underneath the nose of their ac they would have collided whilst both making the final turn.

He estimated the risk as being high.

THE PA23 PILOT reports flying a white ac with a red stripe with all external lights switched on, on a private VFR flight from Bembridge to Stapleford via MAY VOR, QE2 Bridge, squawking with Modes C and S, but TCAS was not fitted and initially he was in receipt of a BS from Farnborough East Radar. At the QE2 Bridge he changed to Stapleford Radio, received the airfield information, the QNH and QFE and was told that the RW in use was 22(L).

As he came from the E and Stapleford has a LH cct, he overflew the airfield at 2000ft, reported 2000ft overhead and descended on the dead side. He crossed the end of RW22 at 1200ft and then turned downwind, there was one ac [ac3] about 1.5nm ahead of him also on the downwind leg and he reported downwind one ahead. He turned base for RW22 at 90kt and at the normal distance out of about 2.5nm from touchdown and by that time the ac ahead of him was well into its final approach. He turned final descending at .9nm then called final.

By that time an ac that he later realised was behind and above him called TWR informing them that he turned finals in front of it. He did not know where it came from, didn't see it on the downwind leg or on base and continued to make a safe approach and landing; while continuing his approach and landing the ac behind him went around.

He could not estimate the separation as the ac was behind and assessed the risk as being low.

UKAB Note (1): The Stansted METAR was:

METAR EGSS 291620Z 13010KT CAVOK 25/16 Q1023

UKAB Note (2): The recording of the Debden Radar shows the incident. Although all 3 ac are squawking 7000, from the timings and pilots' reports, there is little doubt that these are the ones involved. At 1630:09 the PA23 is in the mid-downwind position displaced 1.5nm laterally from RW midpoint, at an alt of 1000ft, ac3 is at the end of the base leg, about to turn final at an alt of 900ft and about 1.5nm from the displaced threshold and the C152 is 1.2nm from the PA23 in its 1230 o'clock but not displaying Mode C info (its DW track was displaced 1.7nm laterally from the RW). At 1630:44 ac3 is short final at 600ft alt, abeam the PA23 at 800ft and the C152 is in the PA23's 1230 o'clock at 0.7nm, 2.2nm from the threshold having started its turn onto base leg 18sec previously. As the C152 is crossing the PA23's nose at 0.7nm the latter commences its turn onto base leg inside the C152 at an alt of 800ft. The two ac close to 0.1nm, the C152 always being behind the PA23 and the former commences a go around falling further behind the PA23 which continues inbound and disappears from radar at 1629:41. The vertical separation cannot be determined.

ATSI reports that Stapleford provides an A/G service that is not recorded; that being the case they had nothing to add.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Accepting that smaller aerodromes are not necessarily required to record their RT, the lack of an RT recording/transcript limited the inquiry since it cannot be determined what the respective pilots transmitted or were in a position to have heard.

Aerodrome ccts are visual environments where 'see and separate' is the principal means of collision avoidance and joining ac are required by the RoA to fit in with the pattern established by preceding ac. Regardless of the size of the pattern being flown by ac ahead, following ac should conform to it, go around or depart the cct and rejoin later.

Members noted that this incident took place in good weather and light conditions and in a fairly quiet visual cct.

The PA23 pilot had clearly thought that there was only one ac ahead of him, saw an ac on the final approach and was satisfied that he was fitting in with the traffic pattern. However, in reality there were 2 ac ahead and he did not see the C152 and therefore could not fit in with the pattern it was flying. Although the PA23 pilot reported that he transmitted 'one ahead' this part of his transmission was either not heard or its significance was not assimilated by the C152 pilot or the A/G operator which would most likely prompted a clarification request.

Although the C152 pilot saw the PA23 in sufficient time to initiate effective avoidance, since the latter pilot did not see the C152 nor was he aware of its presence until after the event, Members agreed that safety was not assured.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The PA23 did not conform to the pattern being formed by the C152 and flew into conflict with it on the base leg/final turn.

Degree of Risk: B.