

# AIRPROX

THE PUBLICATION OF THE UK'S AIRPROX BOARD

2014



INSIDE

## WHEN IT ALL GETS BUSY

Pressures in the circuit

## THE EYES STILL HAVE IT...

How your kit can let you down

## DEFENCE MATTERS

The Military's view



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# WELCOME...

to the annual Airprox Report Magazine 2014



**WELCOME TO THE** second edition of *Clued Up's Airprox* magazine, and I hope that you'll find some thought-provoking articles inside which might cause you to reflect on the experiences and unplanned encounters of others as you go about your own flying activities – be they sport, civil or military focused. ICAO's Airprox definition is broad, but it's important to recognise that some of these events are near-accidents and, as the UK's focal point for investigating and reporting the circumstances, causes and risk of collision for all Airprox occurrences in UK airspace, the UK Airprox Board's (UKAB) focus is purely on enhancing air safety through the prevention of airborne conflict and mid-air collision.

To emphasise the scope of our work, we're sponsored jointly, and funded equally, by the Civil Aviation Authority (CAA) and the Military Aviation Authority (MAA) as a distinct entity of our own. Although I do provide a regular overview of Airprox outcomes and issues directly to Chief Executive Officer CAA and Director General MAA, we conduct our investigations and reporting as a quasi-independent endeavour beyond their day-to-day oversight. This is a really important point because it means that we can dis-identify and protect the identity of those who do report to us so that there's no fear of the regulators pouncing on them as a result of their altruistic attempts to act for the benefit of all.

Another fundamental aspect is that, in order to encourage an open and honest reporting environment, it is not the purpose of the UKAB to apportion blame or liability. The sole objective of each investigation is to assess notified Airprox in the interests of improving air safety by identifying lessons that may be applicable to others, or policy and procedures which might be improved. The entire process takes up to four months or so depending on the complexity of the incident and how long it takes to trace the other pilot. We're always aiming to get this down to a minimum and, if you do have an Airprox, I encourage you to declare it on the frequency you're using because this really speeds up the

identification of those involved and helps us to access quickly any associated radar and R/T recordings. It also prompts the other pilot to note down what he/she was doing because they might not even realise they've had an Airprox if they didn't see you. Additionally, as soon as possible after landing, report it to your club and local ATC if appropriate, and fill in an Airprox reporting form (available at [www.airproxboard.org.uk](http://www.airproxboard.org.uk)). Don't worry if you change your mind about wanting to make a report afterwards; you can withdraw it at any stage – it's all voluntary.

So, with all that in mind, I've chosen six themes for this year's magazine: flight planning; electronic conspicuity; understanding ATS; visual circuits; gliding; and military operations. The first is a must; don't neglect your flight planning, and especially reading NOTAMs and airfield briefing documents if you're on a navex or landing away – I see too many Airprox where it's pretty clear that people haven't thought about the implications of NOTAMs, or haven't thought of a Plan B for when things don't go quite to plan. With regard to electronic conspicuity, if there's one thing that I recommend you do if you can afford it, then have a look at fitting a collision warning device such as FLARM or P-FLARM. It's surprisingly cheap, and I see no end of reports where pilots praise it for highlighting potential conflicts with gliders. If you have a transponder then do squawk Mode C and S rather than turning them off or to standby so that you give those fitted with TCAS or a collision warning system a chance to pick you up. Understanding ATS sounds obvious, but you should all remember that with all UK FIS services the pilots remain responsible for collision avoidance at all times (even when IMC). Don't be lulled into thinking that because you're getting a 'service' that

## ICAO Doc 4444: PANS-ATM defines an Airprox as:

A situation in which, in the opinion of a pilot or a controller, the distance between aircraft, as well as their relative positions and speed, was such that the safety of the aircraft involved was, or may have been, compromised.

### Airprox: Air Proximity Hazard

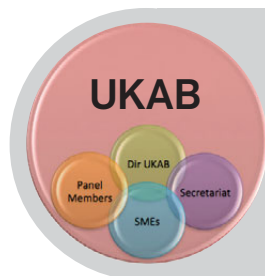
means that ATC have taken over responsibility – even under a Deconfliction or Procedural Service, it still remains the pilots' ultimate responsibility. And while I'm on the topic of responsibilities, it's all of our responsibilities to fly with consideration for others: in the visual circuit this means listening out, looking out, and not assuming

you can enter the circuit without making sure you know where everyone else is first. If you're operating near gliding sites in particular then have consideration for winch-launching gliders (up to thousands of feet) if you're flying overhead, and the potential for conflicting with thermalling gliders nearby if you're skirting their sites. And if flying near parachuting sites don't be tempted to fly overhead – give them a wide berth so you don't inadvertently come into conflict with parachutists. Finally, I've included a section on military operations so that we can all have a think about what they will be doing as their flying focus shifts back to the UK on return from Afghanistan. If you can avoid flying in the height band 500-1,000ft in the open FIR then you'll go a long way towards not encountering a military fast-jet or helicopter as they go about their low-flying activities.

My thanks to all of you who have taken the bold step of sharing your experiences through Airprox reporting. If you recognise yourself within our stories then you can be assured that you've done your bit for air safety and the education of all. For those others, learn from their experiences and respect them for their open and honest participation.

Safe flying!

**Steve Forward**  
Director, UK Airprox Board



**Managed overall by the Director**, the UKAB comprises three elements: 14 experienced aviator and controller voting members of the Airprox assessment panel (Chaired by Dir UKAB) who decide the causes and risks of Airprox; a collective of airspace and flight operations subject-matter expert advisors who provide the in-depth policy and operations experience (but have no vote in deciding cause and risk); and the Secretariat (currently comprising three Airprox inspectors and three administrative staff) who prepare the casework. In investigating the circumstances of Airprox, we draw on the resources of the CAA Safety and Airspace Regulation Group – principally their flight operations staff and the Air Traffic Standards Inspectorate; the military Radar Analysis Cell at NATS Swanwick; and relevant military HQs and their associated air safety organisations.

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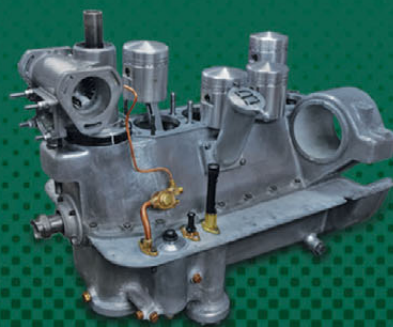
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## AIRPROX

**Cover photo**  
Keith Wilson

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**Publisher**  
Archant Dialogue, Prospect House,  
Rouen Road, Norwich NR1 1RE

**Tel:** 01603 664242 **Fax:** 01603 627823  
**Email:** mail@archantdialogue.co.uk  
**Web:** www.archantdialogue.co.uk

**Consultant Editor** Nick Wall  
**Editorial Assistant** Jessica Phillipson  
**Junior Art Editor** Craig Pearce  
**Creative Director** Nick Paul  
**Ad Production Assistant** Andy Copland  
**Account Director** Katherine Berryman  
**Account Manager** Laura Stringer  
**Editorial Director** Jonathan Arnold  
**Advertising Sales Director** Sam Overton  
**Publishing Director** Zoë Francis-Cox  
**Managing Director** Gavin Miller

#### Advertising team

Estelle Scott  
**Sales** 01603 772608  
estelle.scott@archantdialogue.co.uk



UK Airprox Board  
RAF Northolt  
West End Road  
Ruislip  
Middlesex  
HA4 6NG

# AIRPROX BY NUMBERS

*They're on the up, the question is why?*

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
GA-MIL	47	43	25	25	24	29	40	46	33	41
GA-GA	55	46	44	46	47	46	44	55	59	41
CAT-CAT	28	10	19	19	24	11	5	4	11	12
CAT-GA	26	43	32	28	22	17	14	14	14	26
CAT-Mil	22	31	21	13	14	7	14	4	6	14
Mil-Mil	22	8	12	12	17	30	34	26	18	19
Other	7	7	6	11	7	7	16	12	10	17
<b>Total</b>	<b>207</b>	<b>188</b>	<b>159</b>	<b>154</b>	<b>155</b>	<b>147</b>	<b>167</b>	<b>161</b>	<b>161</b>	<b>171</b>

**THERE WERE 171** Airprox assessed in total in 2013, which is slightly more than in the previous few years as shown in the table above, and seems to indicate a steady return to historic numbers after a dip in reported incidents over the period 2006 to 2009.

Whether this dip was associated with reduced GA flying during the UK recession years is hard to tell for sure because there are no records kept of GA hours flown on

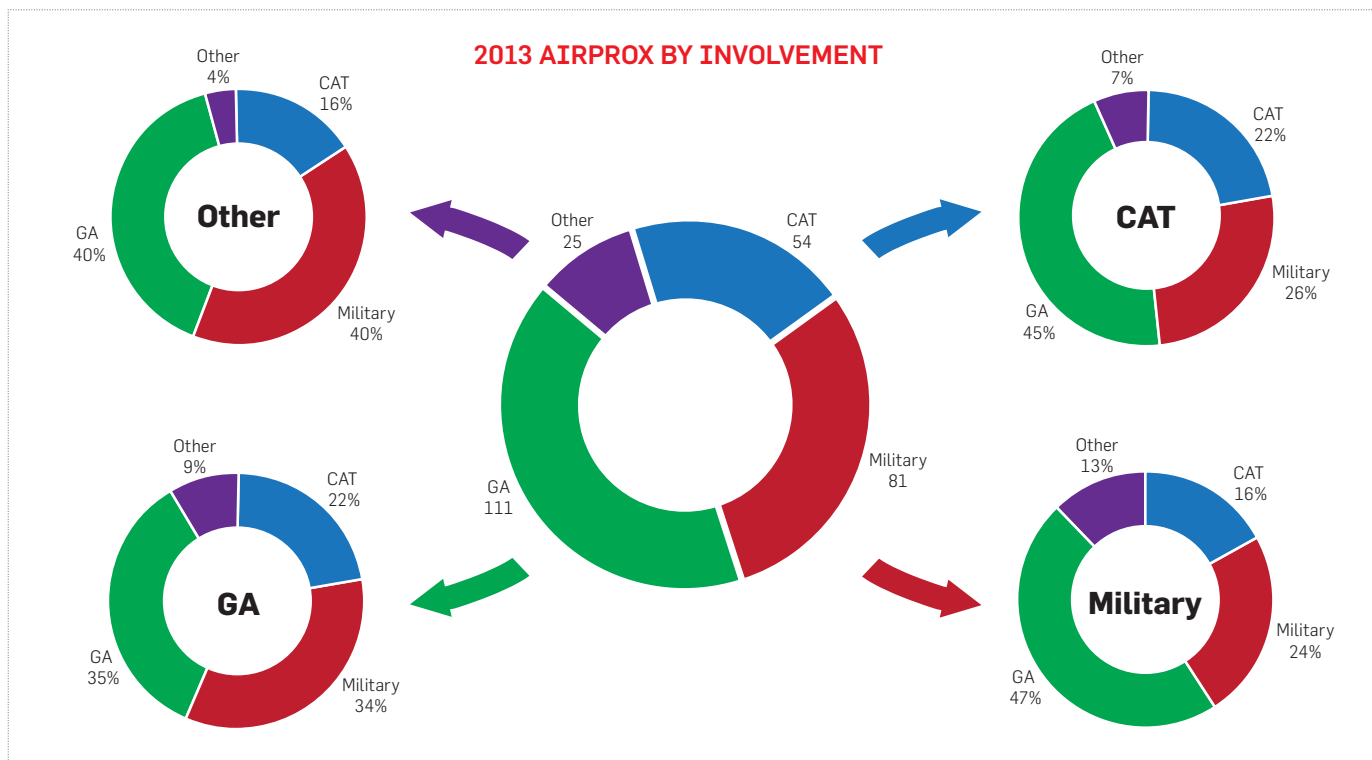
an annual basis. What can be said is that commercial flying rates did reduce over that time and are now recovering towards pre-recession levels but, in contrast, military flying has been affected by a reduction in fast-jet aircraft types and numbers.

For the purposes of the following charts and graphs: 'CAT' refers to the totality of commercial flying (including training schools and air taxis etc); 'Mil' refers to all military

types; 'GA' refers to all private and sports aviation; and 'Other' sweeps up everything else including air ambulances, police helicopters, and any unknowns that were reported.

The centre pie chart of Figure 1 shows the breakdown of 2013 Airprox by involvement of aircraft categories. The sharp-eyed among you will no doubt have already added up the numbers and come to more than 171! That's because some Airprox involve two categories, while some involve only one, so the figures won't add up 'by involvement' because there will be sub-sets of pairs (for example, a single GA/military Airprox will be counted in both sectors).

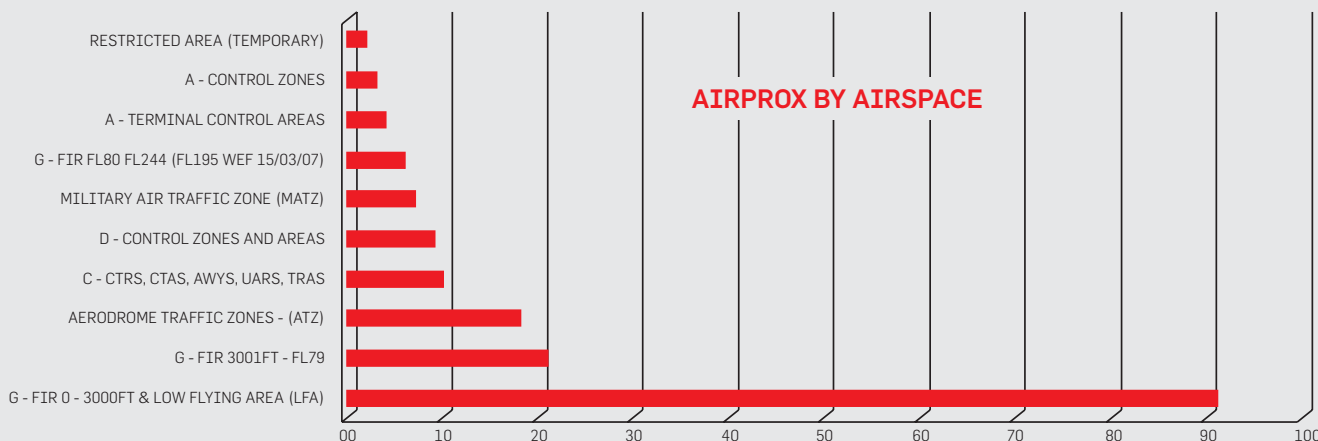
Looking at the four main classifications, overall, ~65% of Airprox involved GA, ~47% involved the military, ~31% involved commercial aircraft, and ~15% involved other aircraft categories. For interest, the sub-pie charts show the percentage of Airprox interactions within each of the involved category types – you can therefore see for yourselves which other categories are the main threats to your flights.



**THE GRAPH** opposite shows a breakdown of where the Airprox occurred in terms of airspace types. Of the 171 assessed, 91 occurred in Class G airspace/LFAs below 3,000ft (~53%) – if you have the option, fly above 3,000ft! Perhaps

surprisingly, 25 Airprox occurred within ATZ/MATZ (~15%) where one would expect pilots to be very much aware of other aircraft that should be operating within defined procedures. Keep a sharp eye out and listen on the radio (if you

have one fitted) but, more importantly, think about others in the visual circuit – better to hold off and positively identify everyone in the circuit rather than blindly join and conflict with others who you haven't seen.

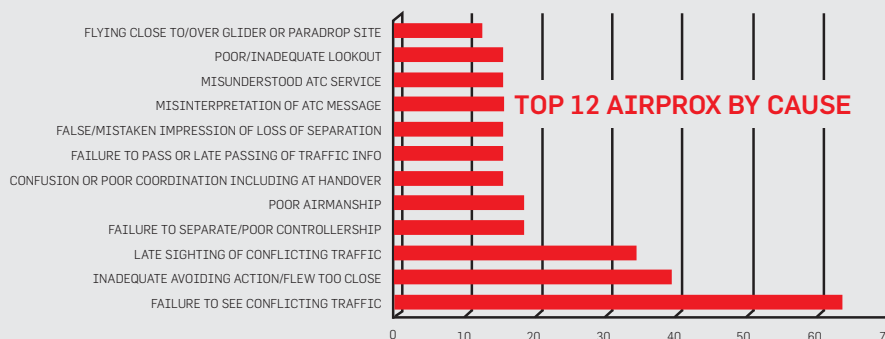


**ON THE THEME** of causes, the graph to the right shows the top 12 Airprox causes for 2013. 'Failure to see other aircraft' and 'late sighting' both feature highly. The human body is not optimised for flight (otherwise we'd have wings!) and our eyes rely largely on relative movement when detecting other objects so we have to help ourselves by actively searching, looking around cockpit obstructions, and changing the aspect of our aircraft if possible so that others might detect the movement.

All that being recognised, it's disappointing to see that 'inadequate avoiding action/flew too close' features as the second most prevalent cause; there really is no excuse for not taking

positive action when you see another aircraft – even if it is supposed to give way to you. I liken this to stepping out onto a

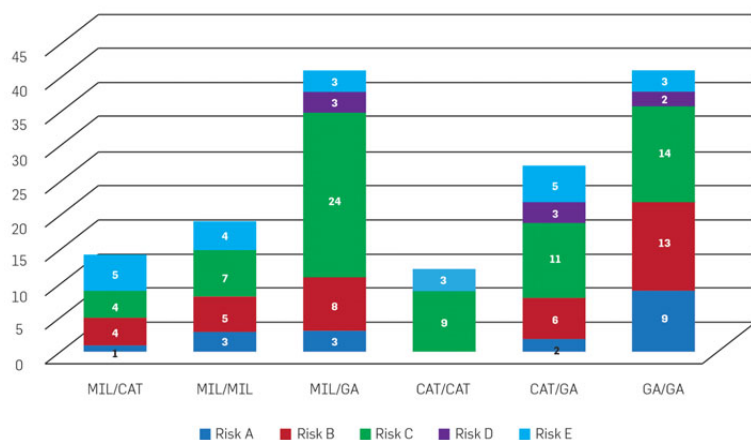
pedestrian crossing in front of a No.10 bus – cold comfort from your hospital bed to know that you had 'right of way'...



**FINALLY, THE BELOW** chart shows the breakdown of Airprox risk and mix of categories (from Table 1) while Table 2 gives some further granularity to the ICAO risk definitions used by the Airprox Board. We generally refer to the Category A and B risks as the 'risk-bearing' Airprox because these were the very close calls – ~54% of

GA/GA, ~42% of Mil/Mil, and ~27% of Mil/GA were risk-bearing events. That being said, some of the most valuable lessons come from the Category C, D and E events which often reveal breakdowns in procedures or systemic issues as opposed to simple encounters of chance in the wider UK airspace.

### 2013 AIRPROX BY AIRCRAFT MIX AND RISK



### AIRPROX BOARD RISK CATEGORISATION

CATEGORY	ICAO Doc 4444 PANS-ATM classification	UKAB collision risk descriptor/word picture
A	<b>Risk of Collision:</b> ...aircraft proximity in which serious risk of collision has existed.	<b>Providence.</b> Situations where separation was reduced to the bare minimum and which only stopped short of an actual collision because chance played a major part in events: the pilots were either unaware of the other aircraft or did not make any inputs that materially improved matters.
B	<b>Safety not assured:</b> ...aircraft proximity in which the safety of the aircraft may have been compromised.	<b>Safety much reduced.</b> Situations where aircraft proximity resulted in safety margins being much reduced below the normal either due to serendipity, inaction, or emergency avoiding action taken at the last minute to avert a collision.
C	<b>No risk of collision:</b> ...aircraft proximity in which no risk of collision has existed.	<b>Safety degraded.</b> Situations where safety was reduced from normal but either fortuitous circumstances or early enough sighting/action allowed one or both of the pilots to either monitor the situation or take controlled avoiding action to avert the aircraft from coming into close proximity.
D	<b>Risk not determined:</b> ...aircraft proximity in which insufficient information was available to determine the risk involved, or inconclusive or conflicting evidence precluded such determination.	<b>Non-assessable.</b> Situations where insufficient information was available to determine the risk involved, or inconclusive/conflicting evidence precluded such determination.
E	No risk classification	<b>Non-proximate.</b> Met the criteria for reporting but normal safety standards and/or standard separation parameters pertained.



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# CIRCUIT JOINS UNDER PRESSURE

*Airfields are often busy places and ripe for the unexpected to occur*

**A NUMBER OF USEFUL** points arise from Airprox reports 2013002 and 2013003 in which the pilot of a Nanchang CJ-6 elected to return to his departure point following an in-flight emergency. It is understandable that the pilot would be very busy but nevertheless there is always a need for alertness after emergencies. In these particular instances, the CJ-6 pilot was operating a non-radio aircraft in a normally radio environment. Extra care was necessary as others may be unaware – as here – of the 'non-radio' status: the CJ-6 pilot needed to integrate with particular care into the established circuit pattern.

Also of note are the actions of the PA-28 pilot (Airprox 2013002) who commendably maintained an all-round lookout in the circuit – as the incident shows, the circuit is not a 'protected' environment and other aircraft may appear. As here.

Airprox Report 2013058 also serves to emphasise the importance of good situational awareness; good lookout; and appreciation of the relative performance capabilities of aircraft in a visual circuit. The pilot of an SR22 neither looked nor listened out effectively, rather he appeared to be preoccupied with his TCAS/TAS in the circuit. The PA-38 pilot was 'well on top of the situation' in tracking and avoiding the SR22 that was overtaking and cutting inside him.

Aware that the CAA were conducting a review of visual circuit procedures and definitions, the UK Airprox Board agreed that this Airprox would be presented to the relevant CAA general aviation working group to help publicise the importance of assimilating traffic information with visual



cues and other sources of information in order to develop sound situational awareness.

When assessing any given Airprox investigation report, the UK Airprox Board routinely considers whether there are any particularly important 'contributory factors' that should be highlighted. Airprox report 2013061 is one such, at the end of which the following contributory factors are listed:

- Leuchars did not co-ordinate the right-hand base join with Dundee;
- There was insufficient Traffic Information from ATC regarding the PA-34;
- The Dundee controller was distracted by non-operational tasks;
- The use of ambiguous reporting points; and
- A lack of questioning of the Traffic Information by the Do328 pilot.

The full Report 2013061 is well worth reading, by pilots of all levels of experience and by air traffic controllers. The reader will find it at [airproxboard.org.uk/docs/423/2013061pl.pdf](http://airproxboard.org.uk/docs/423/2013061pl.pdf)

In addition to determining whether or not

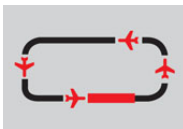
contributory factors should be highlighted, the Board also decides if it would wish to make one (or more) recommendations to further reduce the risk of recurrence. This was the situation with Airprox 2013089 as abridged here.

Another Airprox report that can be used as an example is 2013141, which involved a Sikorsky S92 helicopter and a Jetstream 41, the latter on short finals for Aberdeen RW17. The Board determined that this was a classic 'Swiss-cheese' event where the S-92 pilot lined up on the runway by mistake after hearing a clearance for another helicopter. The Aberdeen controller did not see the S92 line up and cleared the JS41 to land. The UK Airprox Board listed two contributory factors: firstly that the Aerodrome controller did not operate the 'C3' stop-bar lights and secondly that the aerodrome controller did not see the S92 during his visual check and cleared the JS41 pilot to land on an occupied runway. A recommendation was made that Aberdeen Airport considers the fitment of stop-bar 'auto-timeout' functionality. The full investigation report is again worthy of consideration – [airproxboard.org.uk/docs/423/2013141.pdf](http://airproxboard.org.uk/docs/423/2013141.pdf) →

## AIRPROX REPORTS

Visual circuits reports featured:

- No: 2013058
- No: 2013061
- No: 2013089
- No: 2013141
- No: 2013002
- No: 2013003

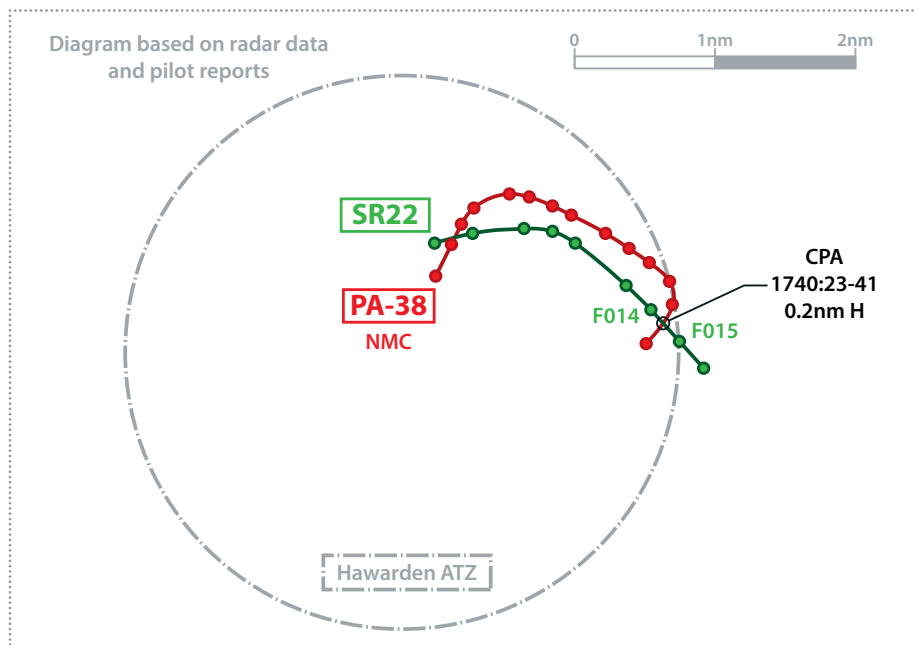


Risk A ● Risk B ● Risk C ● Risk D ● Risk E ●

# 01 / SUPERB SITUATIONAL AWARENESS

REPORTING AIRCRAFT: PA-38 – REPORTED AIRCRAFT: CIRRUS SR22

## REPORT'S DETAILS



**AIRPROX REPORT:**  
2013058

**Date and time:**  
21 Jun 2013 1740Z

**Position:**  
53 10N 002 58W  
(Hawarden Aerodrome)

**Airspace:**  
Hawarden ATZ (Class: G)

**Reporting aircraft:** Type: PA-38  
**Reported aircraft:** Cirrus SR22

**Operator**  
Civ Club Civ Trg

**Alt/FL:**  
900ft 1500-1800ft  
QFE (1007hPa) NK

**Weather:**  
VMC CLBC VMC N/R

**Visibility:**  
N/R N/R

**Reported Separation:**  
200ft V/200m H N/R V/N/R H

**Recorded Separation:**  
N/R V/0.2nm H

### // SUMMARY

**IN GOOD WEATHER** with little cloud and excellent visibility, a PA-38 pilot was conducting training circuits to RW04 right-hand. He heard an SR22 pilot request a VFR departure with a right turn out. The Tower controller cleared the SR22 for departure, passing traffic information on the PA-38 but the SR22 pilot does not appear to have assimilated this information.

The PA-38 pilot had noted that the SR22 was considerably faster than his own aircraft and reports that he maintained visual contact with it. When he realised that the SR22 was turning inside his circuit he instructed his student to level at 900ft agl, the SR22 passing within 0.2nm of his aircraft with around 340-440ft vertical separation.

The SR22 pilot reports that on turning right after take-off, he was 'alarmed by TAS traffic' but could not see the other aircraft. He kept

his aircraft in 'straight flight' while continuing to look for the other aeroplane but he did not see it at any point. The Tower controller felt that the SR22 pilot was having difficulty understanding. The controller monitored both aircraft until it seemed clear that the SR22 was going to 'position nicely behind the PA-38'. The Tower controller heard the PA-38 pilot transmit that he was visual with the SR22 flying closely behind his aircraft so tried to contact the SR22 pilot – three times – to check that he had visual contact with the PA-38.

### // ASSESSMENT

**BOARD MEMBERS NOTED** that the PA-38 pilot had made particularly good use of his student and had displayed outstanding situational awareness in recognising, at an early stage, the potential for a conflict. In contrast, they also thought that the SR22 pilot seemed to have become fixated on

the 'Traffic System' in his cockpit at the expense of his lookout. Although there appeared to be difficulty in establishing clear communication between the controller and the SR22 pilot, it was noted that the Tower controller had persisted in his efforts to ensure that both pilots had the traffic information that they needed.

**Cause:** The SR22 pilot flew into conflict in the visual circuit with the PA-38, which he did not see.

• **Degree of Risk:** C

# 02 / OUCH! OPPOSITES ON BASE

REPORTING AIRCRAFT: D0328 – REPORTED AIRCRAFT: PA-34

### // SUMMARY

**THE AIRPROX OCCURRED** within Class G airspace near the boundary of the Dundee ATZ when the Dornier 328 and the PA-34 turned onto opposite base legs at approximately the same time. Both aircraft were under the control of the Dundee controller who was providing a combined Aerodrome/Approach service.

The PA-34 was inbound VFR, positioning downwind left-hand to RW27. The Do328 was inbound IFR from the North but the Dundee controller believed, based on its callsign, that the aircraft was inbound from the South. Consequently, when his colleague was discussing the aircraft's arrival routeing with RAF Leuchars he requested that it join on left-base.

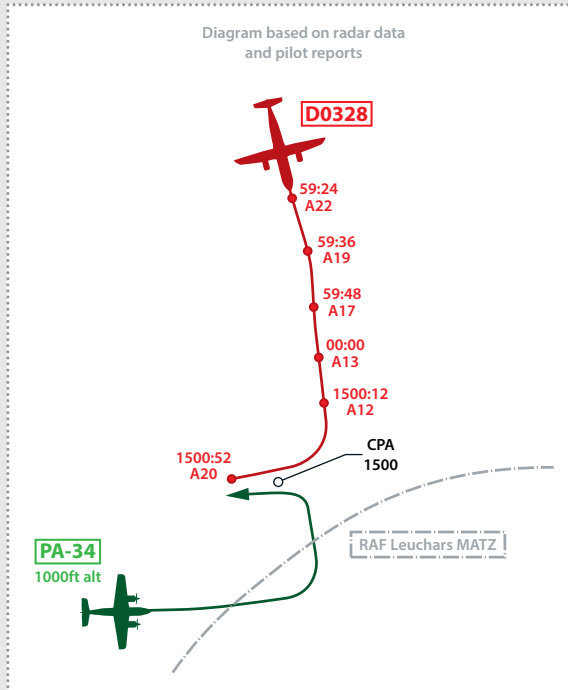
Although this was agreed, Leuchars

changed the Do328's route to join on right-base without informing Dundee, thereby not complying with the LoA. When the Do328 contacted Dundee, the Controller did not register that the aircraft reported on right-base. The Do328 pilot was informed he was 'No2' in traffic but no information was passed about the position of the 'No1' nor was the PA-34 pilot informed about the believed position

of the Do328. The Controller tried to obtain visual contact with the Do328 but this was not achieved because he was looking towards the SE whereas the aircraft was approaching from the NE. Subsequently, the Do328 pilot reacted to a TCAS RA climb and became visual with the PA-34, the pilot of which did not see the Do328 until after the Airprox.

**// ASSESSMENT**  
**THE DO328 PILOT** was advised that he was No2 in traffic. Board members agreed that the controller should have stated the position of the No1 in order to assist the Do328 pilot in sequencing his join. Equally, the Do328 pilot should have asked for this information because he would require visual contact with the No1 in order to join the circuit safely.

When the PA-34 pilot reported ready for base-leg neither he nor the controller had visual contact with the Do328. He was instructed to turn base but to maintain 1000ft. The Board considered that this precaution may have introduced a further element of doubt as to which aircraft actually was No1 in the traffic pattern. Ultimately, the Do328 continued towards final approach with no visual contact with the PA-34 and then turned into conflict with it, the Do328 pilot then reacting to a TCAS RA climb.



**REPORT'S DETAILS**



**AIRPROX REPORT:**  
2013061

**Date and time:**  
1 Jul 2013 1458Z

**Position:**  
5627N 00302W (2nm E Dundee Airport)

**Airspace:**  
Dundee ATZ (Class: G)

**Reporting aircraft:** Type: Do328  
**Reported aircraft:** PA-34

**Operator:** CAT  
 Civ Trg

**Alt/FL:** 2000ft  
 QNH (1010hPa)  
 1000ft  
 QNH (1010hPa)

**Weather:** VMC  
 VMC CLBC

**Visibility:** >10km  
 30km

**Reported Separation:** 50ft V/100m H  
 NK

**Recorded Separation:** NK

**Cause:** Having been told that he was No.2 in the pattern, but in the absence of effective Traffic Information, the Do328 pilot turned into conflict with the PA-34.

• **Degree of Risk:** C

# 03 / OUT OF SIGHT ON APPROACH

**REPORTING AIRCRAFT: PA-18 – REPORTED AIRCRAFT: R44 HELICOPTER**



**// SUMMARY**

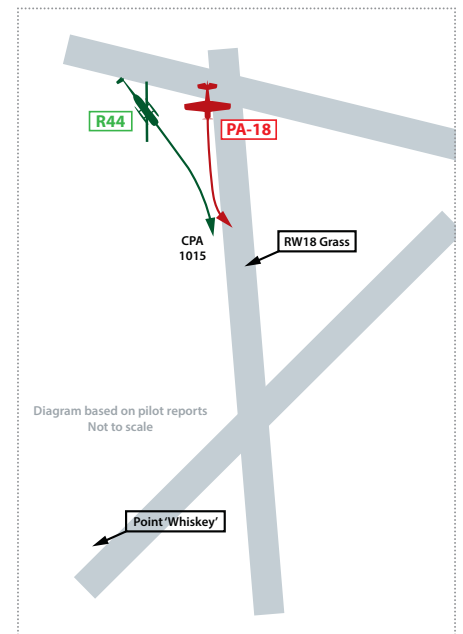
**A PA-18 WAS** undertaking flight training and an R44 a proficiency check. The PA-18 pilot was carrying out right-hand visual circuits on the RW18 grass strip while the R44 helicopter pilot was carrying out right-hand visual circuits from holding spot Heli 'W' [Point 'Whiskey' in the diagram]. The FISO, who was providing a Basic Service to both aircraft, expected that the helicopter would follow the standard helicopter circuit pattern centred on Heli 'W' thereby segregating the two aircraft.

Just prior to the Airprox, the PA-18 reported on final and the FISO advised 'land at your discretion on the grass'. The R44 pilot, who reported not hearing this radio exchange, called 'final for aiming point Heli 'W'' which the FISO acknowledged. The R44 pilot had initiated a simulated emergency for an approach to the hover three-quarters of the way along the grass that runs alongside the west of RW18, unaware that the PA-18 was using the grass strip, and unaware that there was a grass strip anyway.

The R44 descended into close proximity with the PA-18 whose pilot took avoiding action by commencing a left turn on the ground. The (unpromulgated) grass runway is only available for locally-based 'tail-dragger' aircraft such as the PA-18 in this incident.

**// ASSESSMENT**

**THE PA-18 PILOT** was aware from the radio that a helicopter was on final approach to Heli 'W' but, because the helicopter circuit and



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# 04 / WHEN THE 'HOLES' LINE UP

REPORTING AIRCRAFT: JS41 – REPORTED AIRCRAFT: S-92A

the fixed-wing circuit are segregated at Wellesbourne, expected the helicopter to be outside the 'protected zone' for fixed-wing traffic. Approaching the grass runway threshold, the PA-18 pilot became aware that the helicopter had deviated from the helicopter circuit and was descending over the grass runway. A pilot member explained that from the rear seat of the aircraft, because of the high wing it would not have been possible to see the helicopter any sooner.

Several members felt that the R44 pilot had become absorbed and was not sufficiently aware of the presence of the PA-18 even though its pilot had reported making a final approach to the grass RW18. Members found it most surprising that the R44 pilot reportedly did not know of the presence of the grass runway. The Board noted, however, that no reference was made to it in the Wellesbourne Aerodrome and FISO manuals nor is there any reference in the Wellesbourne UK AIP entry.

On approaching the airfield on this occasion, instead of positioning well to the west of the main runway and routing towards Heli 'W', the R44 pilot allowed the candidate to approach towards the grass runway and was unaware of the Airprox as the R44 approached Heli 'W'.

**Cause:** The R44 crew flew into conflict with the PA-18 which they did not see.

• **Degree of Risk:** A

## REPORT'S DETAILS



**AIRPROX REPORT:**  
2013089

**Date and time:**  
24 Jul 2013 1015Z

**Position:**  
5212N 00137W  
(Wellesbourne  
Mountford Airfield)

**Airspace:**  
Wellesbourne ATZ (Class: G)

**Reporting aircraft:** Type: PA-18  
**Reported aircraft:** R44 helicopter

**Operator:**  
Civ Trg Civ Trg

**Alt/FL:**  
NK 5-10ft  
NK NK

**Weather:**  
NK VMC CLBC

**Visibility:**  
NK 10km

**Reported Separation:**  
10ft V/50m H Not seen

**Recorded Separation:**  
NR

### // SUMMARY

**HAVING JUST CHANGED** frequency from ground and expecting to expedite his departure, the pilot of the S-92 read-back an instruction to line-up that had been issued to the pilot of another helicopter, a Super Puma. The incorrect read-back was not discernible to the aerodrome controller because of a simultaneous dual transmission from the Super Puma.

The aerodrome controller did not then see that the S-92 pilot had lined up on the runway. At the time, the runway stop-bar at the S-92's holding point had been previously de-selected following an earlier movement and not returned to the 'stop' condition. The JS41 pilot was cleared to land on RW16 after the previous helicopter had departed. The JS41 pilot reported that, at a range of 400yds and at height 200ft, he saw the S-92 on the runway only after it had turned through 90°: the JS41 pilot reported going around.

### // ASSESSMENT

**THE BOARD CONCLUDED** that this incident displayed the classic hallmarks of the holes in the many available safety barriers aligning to result in an unfortunate final outcome:

- The aerodrome was busy with numerous mixed types with conflicting priorities that placed a heavy workload on the aerodrome controller.
- Although he had been told to contact the aerodrome controller first, the S-92 pilot misinterpreted and actioned a call for another aircraft that was made soon after he came on frequency. Noting that the Aerodrome was busy, such a call might not have been considered out of place to him.
- The S-92 pilot's radio response to the 'clearance' to line-up was perfectly blocked by the other helicopter's transmission, thus the aerodrome controller was not alerted to the confusion.
- In scanning the runway, the aerodrome controller did not see the S-92 on the runway after it had lined up in the hover because it merged into the background and may have been at least partially obscured by a pillar in the Visual Control Room (VCR).
- The aerodrome controller had left the 'C3' stop-bar lights off after another aircraft had lined up before the S-92, and the S-92 pilot interpreted their absence as corroborating his impression that it was he who had been cleared to line-up.

## REPORT'S DETAILS



**AIRPROX REPORT:**  
2013141

**Date and time:**  
23 Sep 2013 1424Z

**Position:**  
5712N 00212W  
(Aberdeen Airport)

**Airspace:**  
Aberdeen CTR (Class: D)

**Reporting aircraft:** Type: Jetstream 41  
**Reported aircraft:** Sikorsky S-92A

**Operator:**  
CAT Civ Comm

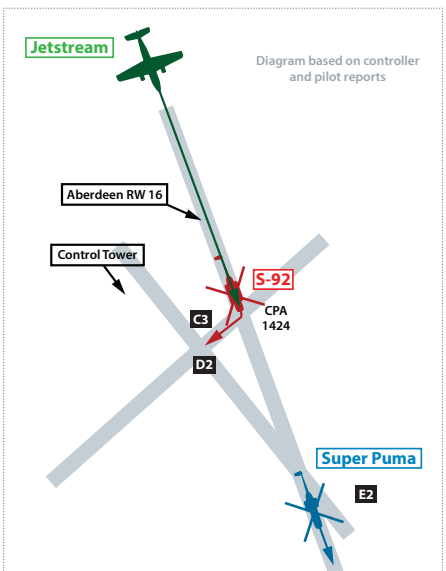
**Alt/FL:**  
300ft 10ft  
QNH (1022hPa) NK

**Conditions:**  
VMC VMC

**Visibility:**  
10km >10km

**Reported Separation:**  
50ft V NK

**Recorded Separation:**  
NK



**Cause:** The S-92 pilot lined up without clearance.

• **Degree of Risk:** C

# 05 / TWO INTO ONE

REPORTING AIRCRAFT: PA-28, PA-18 – REPORTED AIRCRAFT: NANCHANG CJ-6

## REPORT'S DETAILS



**AIRPROX REPORT:**  
2013002 & 003

**Date and time:**  
12 Jan 2013 1511Z (-002)  
and 1514Z (-003) (Saturday)

**Position:**  
5130N 00047W (White Waltham)

**Airspace:**  
White Waltham ATZ (Class: G)

<b>Reporting aircraft:</b>	<b>Reported aircraft:</b>
Type: (-002) PA-28	Nanchang CJ-6
(-003) PA-18	Nanchang CJ-6

<b>Operator:</b>	
Civ Trg	Civ Pte

<b>Alt/FL:</b>	
(-002) 200ft	250ft
(-003) 240ft	250ft
(QFE NR)	(QFE NR)

<b>Weather:</b>	
VMC NR	VMC HAZE

<b>Visibility:</b>	
>10km	10km

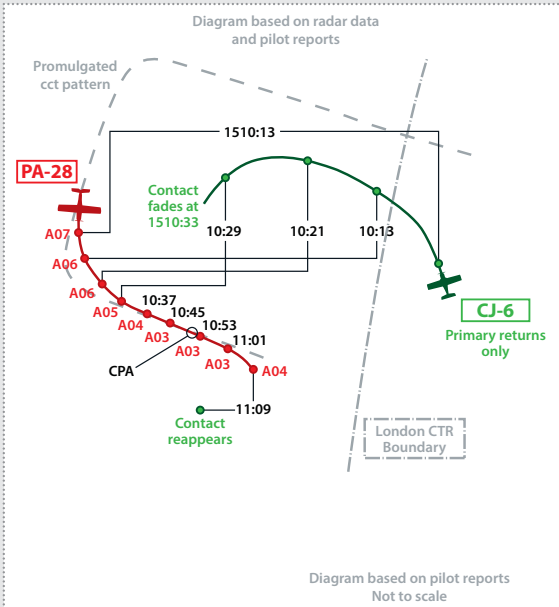
<b>Reported Separation:</b>	
(-002) 0ft V/25m H	0ft V/160ft H
(-003) 100ft V/100m H	NR V/100ft H

**Recorded Separation:**  
NR

**Cause (2013002):** The CJ-6 pilot flew into conflict with the PA-28 on final approach, which he did not see.

**Cause (2013003):** The CJ-6 pilot did not conform to the pattern of traffic formed and flew into conflict with the PA-18 on final, which he had not seen.

- Degree of Risk (2013002): C
- Degree of Risk (2013003): B



around due to the Airprox with the PA-28, repositioned for a second circuit, again without conforming with the circuit pattern already established and flying into close proximity with the PA-18. The PA-18 pilot reports that he was aware from RT transmissions that the pilot of a PA-28 had just had a 'near miss' with a CJ-6. He was visual with the PA-28 as it turned early crosswind but could not see the CJ-6. Established on final approach at a height of about 240ft, the A/G operator asked him whether he had seen the CJ-6. He looked to his left and had a fleeting view of it in his 8 o'clock position before it passed underneath his aircraft.

Following his first go-around, the CJ-6 pilot 'turned in again', this time 'keeping an eye over [his] shoulder' for the PA-28 he had just encountered. Just before turning final again he rolled wings level and saw a 'yellow Cub' in his 2 o'clock position, crossing from right to left slightly below, on very short finals at a height of 250ft. He extended on the base leg, flew behind the Cub and went around again.

### // SUMMARY

**ALL THE PILOTS** involved in Airprox 2013002 and 2013003 were operating under VFR in VMC. The incidents occurred in quick succession to each other. During the first, Airprox 2013002, the PA-28 pilot was instructing a circuit rejoin exercise for RW11 whilst the pilot of the Nanchang CJ-6, a non-radio ex-military training aircraft, reports intending to conduct a short flight from White Waltham to include aerobatic training/practice.

Contrary to Rule 17(2) (Notification of arrival and departure) of the RoA, the CJ-6 pilot had not notified his departure nor, contrary to the White Waltham FOB, that he would be operating non-radio. The PA-28 pilot was in receipt of an A/G service from Waltham Radio. The CJ-6 pilot returned to White Waltham due to an electrical problem, the pilot electing to join for a short circuit pattern without conforming with the circuit pattern already established.

As he rolled out on short final for RW11, he saw the PA-28 in his one o'clock position at the same level and a range of 160ft. He performed a go-around, keeping the PA-28 on his left. For his part, the PA-28 pilot noted the CJ-6 make one continuous turn from downwind to final approach until it was exactly left abeam, on final approach, at height 200ft. He decided to go around. The CJ-6 passed behind him, emerging on his right-hand side, apparently also having elected to go-around.

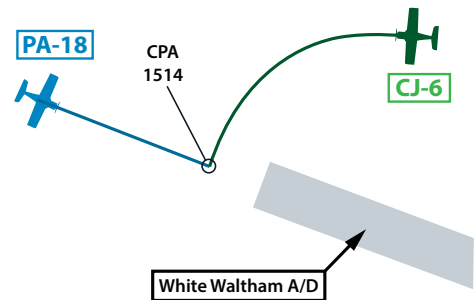
The second Airprox, 2013003, occurred when the pilot of the CJ-6, having gone

### // ASSESSMENT

**HAVING DEPARTED THE** circuit, experienced the aircraft emergency and carried out the checklist actions, the CJ-6 pilot made the decision to return to White Waltham where he carried out a 'PFL circuit'. Rules of the Air Rule 13(4) states that 'If the commander of an aircraft is aware that another aircraft is making an emergency landing, he shall give way to that aircraft'. The Board concluded that the PA-28 pilot could not have known of the CJ-6 emergency and that it was therefore the CJ-6 pilot's responsibility to conform to the pattern of traffic intending to land.

As regards the second Airprox, radio calls by the PA-28 pilot alerted the PA-18 pilot to the presence of the CJ-6 in the circuit. The absence of radio calls from the CJ-6 pilot should have alerted circuit traffic and the A/G operator to the possibility that the CJ-6 pilot was operating non-radio. After some discussion, the Board reached much the same conclusions as for Airprox 2013002.

Diagram based on pilot reports  
Not to scale



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# IT'S ALL IN THE (GOOD) PLANNING

*How do you plan your flights? Time spent on pre-flight preparation – and contingencies – is time well spent*

**“KICK THE TIRES; light the fires and let’s go!” – it’s a good line but not really the way to approach any flight. Even if you know your local area very well and can usually get by on a quick scan of the Met and a glance at the NOTAMs, experience shows that a structured pre-flight planning routine is an essential tool to safety and set aside at one’s peril.**

Establish a routine that you always follow, modifying your actions as circumstances dictate. Going somewhere for the first time; flying on a busy weekend; flying on a day when the weather forecasts require special attention – these and many other factors influence how our routine might play out. But stick to your routine; and think. Always.

The first of the five Airprox under this theme, 2013013, illustrates a particular ‘planning’ issue. The PA-28 pilot reported

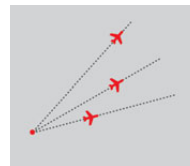
that he realised that his manoeuvre placed him close to the boundary of the Wethersfield ATZ, which he knew, and the presence of the glider confirmed, was active. As the UKAB noted: “Wethersfield Gliding Site does not have an associated ATZ.” Notwithstanding this misunderstanding, it would have been wiser for the PA-28 pilot to plan to avoid Wethersfield by a good margin, horizontally and/or vertically on what was likely to be a busy Sunday afternoon. A contingency plan would also have been helpful.

Airprox 2013016 highlights the need to consult all necessary documents, not just to rely on one source. Here, the RC114 pilot relied on NOTAMs to alert him to parachuting activity at Tilstock, whereas essential information is given in UK Aeronautical Information Publication (AIP) ENR 5.5-6. Knowledge of the parachuting would be especially important in this case where a

## AIRPROX REPORTS

Flight planning reports featured:

- **No: 2013013**
- **No: 2013016**
- **No: 2013074**
- **No: 2013102**
- **No: 2013152**



Risk A ● Risk B ● Risk C ● Risk D ● Risk E ●

flight was being planned – in the middle of the day, a Good Friday – to test a new avionics installation: much ‘head-in’ time could be anticipated. This Airprox highlights two other matters: firstly, it would have been wise to carry an observer as a ‘second pair of eyes’. The incident also reminds us that Airprox are not just about aeroplanes and helicopters but also about parachutists and other airspace users. Aviators need to consider all likely aviation activities and be aware of their requirements and modus operandi.

Next under this ‘flight planning’ theme, Airprox 2013074 involved a pilot being confronted as he took off by another aeroplane making a straight-in approach contra to the runway in use. There are a number of shortcomings evident in the PA-28 pilot’s pre-flight planning here, not least that assumptions had been made based on Met from another airfield and that the pilot had the wrong opening times and frequencies for Lee-on-Solent. Extra care was needed when planning this flight which was this pilot’s first visit to Lee-on-Solent.

The abridged version, published in this magazine, of the full report on Airprox 2013102, concentrates on the ‘flight planning’ aspects of the incident, omitting of necessity a number of ATC matters. The reader may well find these of interest: full details on the UKAB website: [airproxboard.org.uk/docs/423/2013102.pdf](http://airproxboard.org.uk/docs/423/2013102.pdf)

The final incident, Airprox 2013152, relates to an Agusta A109 helicopter which flew through the Kenley glider site. This action caused concern to the pilot of a Viking glider in the circuit. The Viking was operating some five minutes after notified operating hours which may be technically acceptable but is ill-advised with an unlit glider at sunset. The A109 pilot most likely assumed that there would be no gliding after sunset.

Planning is an essential pre-flight requirement. With the plan in place, get airborne and ‘fly the flight’. And if the plan needs to be varied once airborne? – well, that’s almost an everyday event so how much better to do a few ‘what ifs’ at the pre-flight stage? ‘What if’ I encounter gliders near Wethersfield? – how best to react? ‘What if’ I find myself head down with the new kit? – perhaps call someone and seek a different level of air traffic service? – have I got a good frequency to hand? ‘What if’ no-one answers when I try to contact Lee-on-Solent? Plan for contingencies in pre-flight planning, too. →



# 01 / MISSING OUT ON THE OPTIONS

REPORTING AIRCRAFT: VIKING T1 – REPORTED AIRCRAFT: PA-28

## REPORT'S DETAILS

**AIRPROX REPORT:**  
2013013

**Date and time:**  
3 Mar 2013 1643Z (Sunday)

**Position:**  
5158N 00030E (Wethersfield G/S)

**Airspace:**  
Lon FIR (Class: G)

**Reporting aircraft:** Viking T1  
**Reported aircraft:** PA-28

**Operator:** Mil Club (Civ Club)

**Alt/FL:** 550ft QFE (1010hPa) ~1200ft QNH (1021hPa)

**Weather:** VMC NR VMC CLBC

**Visibility:** 10nm >10km

**Reported Separation:** 200ft V/0m H 100ft V/300m H

**Recorded Separation:** NR V/<0.1nm H

from Andrewsfield. Abeam the winch at 750ft and passing through a heading of about 220° to commence the right-hand downwind leg for runway10, the Viking T1 pilot saw an aircraft about 2nm away in his low 9 o'clock position. He initially assessed that there appeared to be no conflict and continued to the downwind leg, scanning but without regaining visual contact. When downwind abeam the caravan he looked out to the right and saw the aircraft pass underneath.

Early in the sequence, the PA-28 pilot reported seeing and converging on a glider. He altered course to the right to pass behind. Realising that this manoeuvre now placed him close to the boundary of the Wethersfield ATZ which he knew – and the presence of the glider confirmed – was active, he turned left. Throughout, he kept the glider in view on his left side at what he considered to be a safe distance. He was unable to maintain as much separation from the glider as he would have liked, as he was "...now between the glider and the ATZ".

the glider pilot in an avoidable situation. Board Members were unanimous that the PA-28 pilot appeared not to have planned ahead sufficiently. Having seen the glider, the PA-28 pilot had sufficient space and time to exercise a number of options: to turn either to the left or right; to route around Wethersfield G/S to the East and North; or even to orbit until the glider was clear. Any of these options would have mitigated conflict but the PA-28 pilot essentially continued on course.

**Cause:** The PA-28 pilot flew close enough to cause concern to the Viking pilot downwind in the Wethersfield circuit.

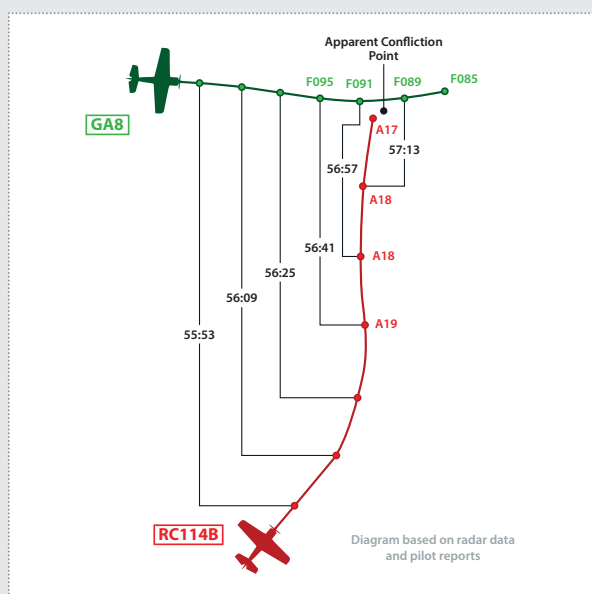
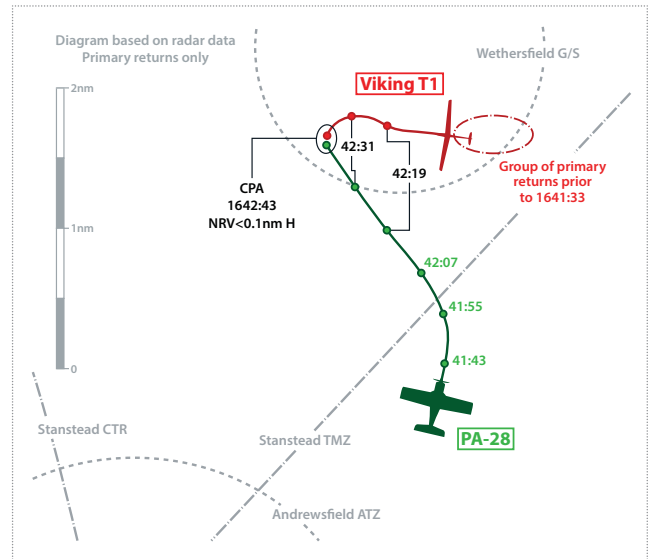
• **Degree of Risk:** C

### // SUMMARY

**BOTH AIRCRAFT WERE** being operated under VFR in VMC, the Viking T1 on a training flight from Wethersfield Gliding Squadron while the PA-28 was climbing on departure

### // ASSESSMENT

**THE BOARD THOUGHT** that although the PA-28 pilot took effective and timely action to avoid a collision, he placed both himself and



# 02 / PASSING THROUGH PARA-DROPPING

REPORTING AIRCRAFT: Parachutist – REPORTED AIRCRAFT: ROCKWELL RC114B

### SUMMARY

**THE GA8 AIRVAN** pilot was conducting parachute dropping at Tilstock, promulgated in the UK AIP ENR 5.5-6 as a Parachute Jumping site of 1.5nm radius, up to FL85, and normally active during daylight hours, Monday to Saturday, 0800 – 2000 during winter and one hour earlier in summer. He was receiving an air-to-ground service from 'Tilstock Radio'.

The RC114B pilot was operating autonomously, testing a new avionics installation. He was listening out on Shawbury LARS. The radar replay showed the RC114B flying overhead the drop zone at altitudes between 1700ft and 2200ft on six occasions in the half-hour preceding the Airprox. Its pilot did not report seeing parachutists.

At about 1301, the aircraft was seen to fly north-south along the central portion of the drop zone, with parachute canopies in the air

**REPORT'S DETAILS**



**AIRPROX REPORT:**  
2013016

**Date and time:**  
29 Mar 2013 1258Z (Good Friday)

**Position:**  
5256N 00238W  
(Tilstock Parachuting Site)

**Airspace:**  
Shawbury AIAA (Class: G)

**Reporting aircraft:** Type: Parachutist  
**Reported aircraft:** Rockwell 114B

**Operator:**  
NK Civ Pte

**Alt/FL:**  
1400ft NK 1500ft QFE (1002hPa)

**Weather:**  
VMC NK VMC NK

**Visibility:**  
10km > 10km

**Reported Separation:**  
400ft V/0.5nm H NK

**Recorded Separation:**  
NK

above it. The D/Z controller instructed all parachuting activity to be suspended and pilots to land. Two of the parachutists in the air saw the RC114B, one of whom took avoiding action at about 1400ft, reporting separation of 400ft V/0.5nm H.

**// ASSESSMENT**

**IT APPEARED FROM** additional information submitted that the locally-based RC114B pilot was not aware of the operating hours of Tilstock parachuting site, believing that parachuting activity would be promulgated by NOTAM. Board Members re-emphasised that mitigation against mid-air collision in Class G airspace is achieved by effective lookout and the RC114B pilot's lack of appropriate planning and ineffective lookout placed all the airspace users at risk.

The Board also observed that a parachuting D/Z such as Tilstock, with no civilian regulated or controlled airspace associated with it, does not have priority over other entitled airspace users. As such, the D/Z controller's decision to suspend operations was commended by the Board.

**Cause:** The RC114B pilot flew through a promulgated and active parachuting site and into conflict with a parachutist who he did not see.

- **Degree of Risk:** C

# 03 / SELF-BRIEFING MISSING THE FINER POINTS...

**REPORTING AIRCRAFT: IKARUS C42 – REPORTED AIRCRAFT: PA-28**



**// SUMMARY**

**THE C42 WAS** carrying out circuit training on RW23 right-hand at Lee-on-Solent. As the aircraft was climbing out after a touch-and-go, the pilot observed an aircraft positioning on final approach to RW05. He made an avoiding action left turn away from this aircraft, keeping it in sight.

The PA-28 pilot obtained a briefing from Jersey on weather and operational procedures at Lee-on-Solent which informed him that Air/Ground shuts at 1700(L). He therefore did not expect Air/Ground to be manned. Based on wind direction from Southampton Airport's ATIS, he decided to land on Lee's RW05. Approaching from the south, he 'blind' called his registration, position and intention to land on RW05, unfortunately he had



A GA pilot Member considered that the PA-28 pilot was badly self-briefed and this was a contributory factor

**REPORT'S DETAILS**



**AIRPROX REPORT:**  
2013074

**Date and time:**  
12 Jul 2013 1628Z

**Position:**  
5049N 00113W  
(Lee-on-Solent Airfield)

**Airspace:**  
London FIR (Class: G)

**Reporting aircraft:** Type: Ikarus C42  
**Reported aircraft:** PA-28

**Operator:**  
Civ Trg Civ Pte

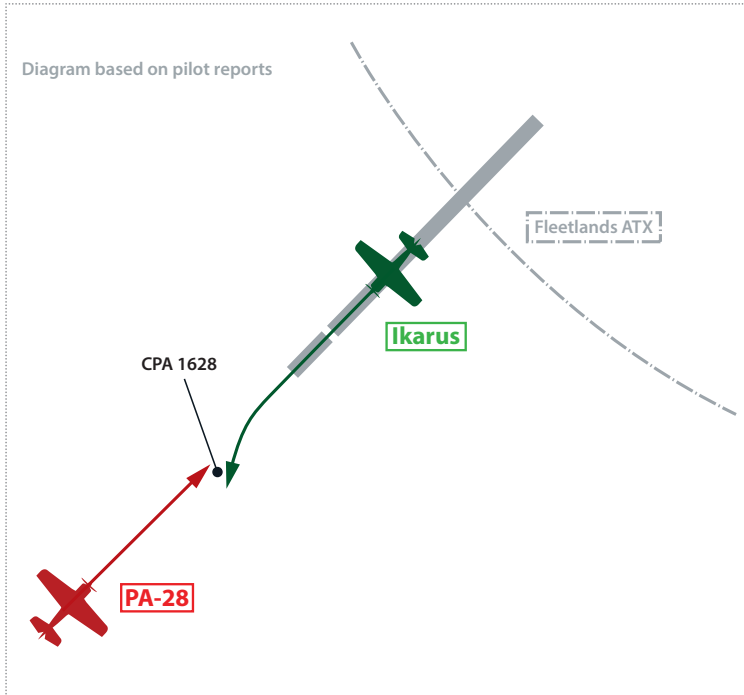
**Alt/FL:**  
300-400ft NK 300ft NK (1021hPa)

**Weather:**  
VMC NK VMC NK

**Visibility:**  
25km >10km

**Reported Separation:**  
150-200ft V/NK H 200ft V/500ft H

**Recorded Separation:**  
NK



selected an incorrect frequency.

Once established for RW05, he called again, advising his registration, position, distance from the runway and his intention of making a straight-in approach. He repeated the same call approximately 1nm from the airfield. He did not see the C42 climbing from RW23 until after it had passed his aircraft.

**// ASSESSMENT**

**THE BOARD AGREED** that the C42 pilot was conducting his flight in an appropriate manner. Conversely, the PA-28 pilot had used the Lee-on-Solent website to brief himself prior to his flight, his first to Lee-on-Solent airfield, but had obtained an incorrect frequency and hours of operation of the Air/Ground radio. This led him to believe wrongly that the Air/Ground operation had ceased and he elected to land on RW05 without properly assessing the state of operations at the airfield. A GA pilot Member considered that the PA-28 pilot was badly self-briefed and this was a contributory factor to the Airprox.

**Cause:** The PA-28 pilot flew into conflict with the C42 in the Lee-on-Solent visual circuit.

• **Degree of Risk:** C

**Contributory Factor:** Lack of planning preparation by the PA-28 pilot.

# 04 / DISTRACTION AND THE 'MATZ' THAT WAS BRIZE CTR

**REPORT'S DETAILS**

**AIRPROX REPORT:**  
2013102

**Date and time:**  
14 Jul 2013 1752Z (Sunday)

**Position:**  
51 44N 001 24W  
(6.7nm SE of Brize Norton)

**Airspace:**  
Brize Norton CTR (Class: D)

**Reporting aircraft:** Type: Falcon 900  
**Reported aircraft:** Beech 76

**Operator:** Foreign Mil  
Civ Pte

**Alt/FL:** 2800ft  
NK (1023hPa)  
2400ft  
QNH (NR)

**Weather:** VMC CAVOK  
VMC CAVOK

**Visibility:** >10km  
>10km

**Reported Separation:** 200ft V/0.5nm H  
NR V/NR H

**Recorded Separation:** 700ft V/0.3nm H

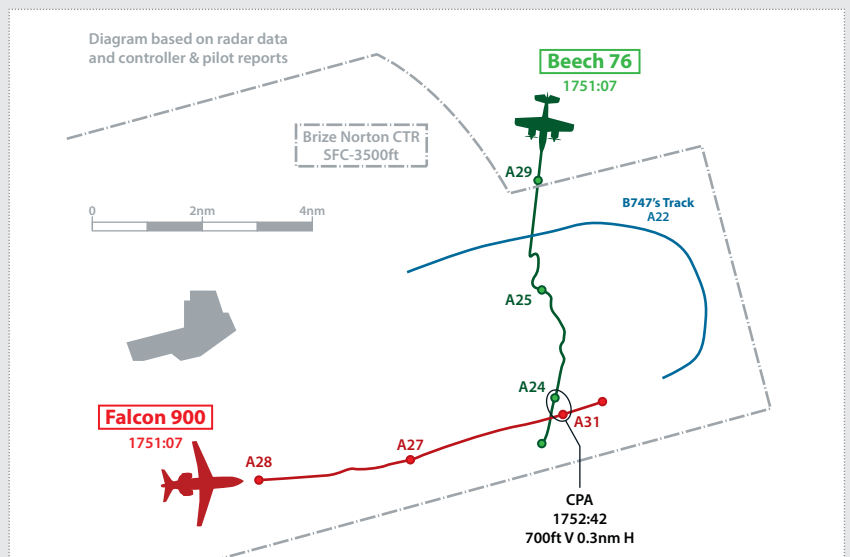
**REPORTING AIRCRAFT: FALCON 900 – REPORTED AIRCRAFT: BEECH 76**

**// SUMMARY**

**THIS AIRPROX OCCURRED** between a Falcon 900 and a Beech 76 within the Brize Norton CTR (Controlled Traffic Region). The Falcon 900 was flying IFR in VMC, recovering to Brize Norton for an ILS approach. The Beech 76 was operating VFR in VMC, the incident occurred as the Beech 76 entered the Brize Norton CTR without

clearance from, and not in communication with, Brize Norton ATC.

The Beech 76 pilot reports that he was unable to raise Brize Norton ATC on the published LARS frequency. (In the summer, Brize Norton LARS is available within a 60nm radius of Brize Norton from 0800Z to 1600Z: the closest point of approach occurred at 1752:40Z). As the Beech 76



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approached the CTR, the pilot-side door came open, distracting the pilot. By this time the aircraft was overhead the Brize Norton CTR. The pilot recalls placing 'many blind calls' to Brize Norton. The Beech 76 pilot subsequently telephoned Brize Norton ATC and reported that he had previously believed that the Brize Norton CTR was a MATZ rather than Class D controlled airspace.

**// ASSESSMENT**

**THE BOARD AGREED** that the issue of the Beech 76 door coming open would have proved a significant distraction but, nonetheless, all members were clear that the pilot had displayed very poor

understanding of the status of the Brize Norton CTR and had clearly not prepared well enough for a transit through it.

**Cause:** The Beech 76 pilot entered the Brize Norton CTR without clearance and flew into conflict with the Falcon 900.

• **Degree of Risk:** C

**Contributory Factor:**

1. Insufficient planning by the Beech pilot.
2. Brize Norton ATC did not comply with Class D separation minima against unknown traffic.



# 05 / TROUBLES OF A TRANSIT IN THE TWILIGHT

## REPORT'S DETAILS

**AIRPROX REPORT:**  
2013152

**Date and time:**  
29 Oct 2013 1644Z

**Position:**  
5118N 00005W  
(Kenley Glider Site)

**Airspace:**  
Lon FIR (Class: G)

**Reporting aircraft:** Type: Viking T1 (Grob 103) **Reported aircraft:** A109

**Operator:** HQ Air (Trg) **Civ Exec**

**Alt/FL:** 650ft QFE (997hPa) **1500ft NK**

**Weather:** VMC **VMC**

**Visibility:** 10km **>10km**

**Reported Separation:** 0ft V/150m H **1000ft**

**Recorded Separation:** NK V/0.2nm H



**REPORTING AIRCRAFT: VIKING T1 – REPORTED AIRCRAFT: A109**

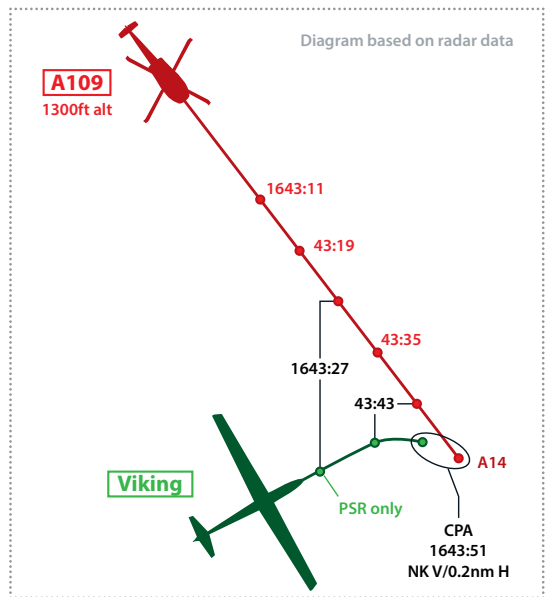
**// SUMMARY**

**THE VIKING WAS** established in the left-hand visual circuit for RW25 at Kenley Glider Site, downwind to land when an Agusta A109 flew through the circuit at approximately 650ft agl. The Viking pilot was alerted to the helicopter's presence as it approached from the north and acknowledged that he was in visual contact with it, first seen at a range of 2nm. It tracked southwards and passed directly in front of the Viking, maintaining straight and level flight, at a range of approximately 400-500ft and at the same level.

The A109 pilot reports conducting a transit flight. The pilot was operating in receipt of a Basic Service from Farnborough LARS(E). He overflew Kenley in level cruise at 1500ft, he thought, heading 150° at 140kt. He saw two gliders, one on the ground, despite there being no lights and it being after sunset. (Sunset at Kenley Aerodrome occurred at 1639 on 29 October 2013). The Farnborough LARS(E) controller alerted the A109 pilot to the relative position of Kenley.

**// ASSESSMENT**

**THE BOARD FIRST** considered the actions of the Viking pilot. He was downwind in the visual circuit and had seen the A109 at range. Although the glider was not legally required to display lighting until half-an-hour after sunset, the Board could find no evidence that any risk assessment had been conducted concerning unlit glider conspicuity in twilight. Furthermore, the Board opined that there was little point in publishing notified hours



of operation if gliding was going to be undertaken beyond them.

As regards the A109 pilot, the Board considered that while he was not required to avoid the glider site, he had been advised of its location by Farnborough LARS(E) and he subsequently flew overhead the airfield at about 100ft above the Viking pilot's reported altitude. A small course correction would have been warranted.

**Cause:** While flying through a promulgated glider site, the Agusta A109 pilot flew close enough to cause the Viking pilot concern.

• **Degree of Risk:** C

**TO READ MORE REPORTS OR TO FIND OUT MORE INFORMATION VISIT: AIRPROXBOARD.ORG.UK**

# THE FAST SHOW

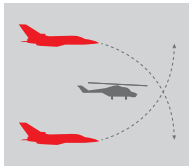


*Military 'hardware', both aircraft and equipment, brings its own considerations*

## AIRPROX REPORTS

Military Ops reports featured:

- **No: 2013037**
- **No: 2013048**
- **No: 2013065**
- **No: 2013070**
- **No: 2013107**



Risk A ● Risk B ● Risk C ● Risk D ● Risk E ●

**MILITARY 'FAST JETS'** are capable of amazing performance, but sometimes this has to be reined in for the safety of other airspace users. One effect of a too-vigorous 'zoom climb' is to obviate the benefits of TCAS, the equipment not being able to read and action Mode C data when climbs or descents are in excess of 10,000fpm.

Airprox 2013037 is an example of this effect. The F-15 crew initiated a low-level climb-out through broken cloud, calling ATC during the manoeuvre rather than before leaving low-level. There was also a question about whether their having left a previous ATC unit's squawk on at low-level may have caused other ATC units to assume that the F-15 was not at low-level and

therefore not likely to zoom climb.

Airprox 2013048 involved two Lynx aircraft from the same unit. Both crews were using night vision goggles while low-flying towards a common landmark and had every opportunity during their planning and execution to ensure that they remained separated when conducting their respective exercises. Pre-departure, a deconfliction plan had been agreed, separating the aircraft by 15mins. In the event, that plan was insufficiently robust because it failed to factor in the subsequent delayed – by 15mins – departure of one of the Lynx.

The investigation findings serve as a salutary reminder of the need to retain an effective de-confliction plan and maintain a good lookout for other aircraft, especially at night and while using NVGs. Both crews' lookout scans narrowed as they focused on crossing the wires at approximately the same point. Although both Lynx were in receipt of a Basic Service on the same frequency from the same controller, the aircraft were painting intermittently on radar and the controller had no indication of their relative proximity. The Airprox also highlights the potential value of TCAS, not currently fitted to the Lynx Mk8 helicopter.

Another Airprox which occurred at low level was investigated as detailed in Airprox Report 2013065. Three Tornados were flying at low level when they encountered an opposite direction Ikarus C42. The lead Tornado crew alerted their colleagues in the following aircraft who also saw the Ikarus

well above them. The Ikarus pilot reported that he only saw the formation of two Tornados (the Ikarus pilot remarking 'what a great sight they were' to the other pilot on board!).

Military flow-arrows exist at many 'choke-points' around the UK, the intent being to prevent fast-moving military low-level traffic routeing in opposite directions through constrained areas. Non-military traffic is not required to conform to the flow-arrow requirements and flow-arrows are not printed on CAA VFR charts. HQ Air Command commented that civilian aircraft may be found almost anywhere and at any time within what the military term the low flying system. While serving to remind military crews of this, the incident is also an opportunity to remind GA pilots that they are most likely to encounter military fast jet traffic between 250ft and 1500ft across the majority of the UK.

Another feature of the 'high rate of climb' issue, mentioned above in respect of Airprox 2013037, was shown by the investigation into Airprox 2013070. In this instance, TCAS was not a factor, but highly dynamic, high-speed fast jets can cause TCAS Traffic Alerts and Resolution Advisories in civil airliners in airways. The two Typhoons were in military standard formation (which requires the No2 to deselect Mode C). Although a Category E risk, this incident highlights the issues with highly-dynamic (especially climbing) manoeuvring of military fast-jets in the vicinity of airways.

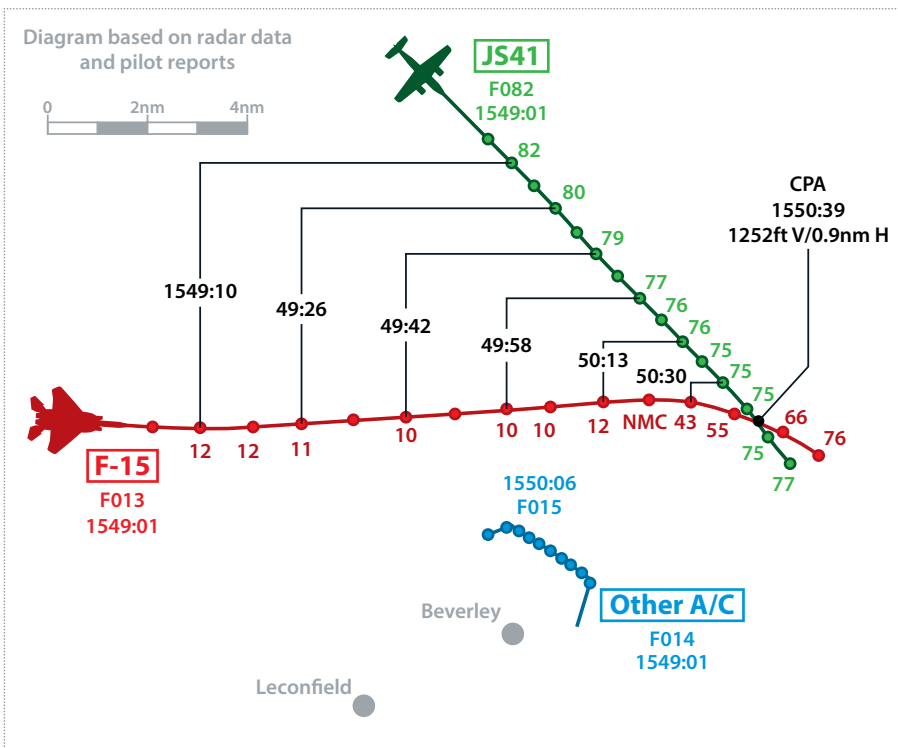
Finally, Airprox 2013107 involved a Tornado and a Merlin helicopter. The Tornado crew descended to low-level in conditions of scattered cloud and through the reported level of the Merlin on which they had been given traffic information. Arguably, both crews could have made better use of ATC facilities: the Tornado crew elected not to call Brize Norton Radar (which would have given a better service in that area than LATCC (Mil) ) and the Merlin crew had elected to stay with a Traffic Service whereas it would have been better to have asked for a Deconfliction Service.

The UK Airprox Board considered that there were two contributory factors associated with this incident: firstly that LATCC (Mil) allowed the Tornado crew to descend through the Merlin's level and, secondly, the lack of timely Traffic Information from Brize Norton Radar to the Merlin crew.

Discussing the ATC aspects of this complex event, some ATC members of the Board were of the opinion that the controllers should have effected coordination between themselves, but others felt that this was not necessarily appropriate. A fundamental tenet of radar-based air traffic service provision was that traffic was controlled using the information available on the radar screen irrespective of the ability to co-ordinate it – the Merlin and Tornado were there on the radar and the controllers should have conducted their business accordingly.

# 01 / FAST CLIMB INTO CONFLICT

REPORTING AIRCRAFT: JETSTREAM JS41 – REPORTED AIRCRAFT: F-15E



## // SUMMARY

**THE JETSTREAM CREW** were flying from Aberdeen to Humberside under IFR and in receipt of a Deconfliction Service (DS) initially from LATCC(Mil) NE and subsequently from Humberside Radar. They had selected strobe, conspicuity and navigation lights on and had SSR modes 3/A, C and S selected.

The Airprox occurred when the F-15 crew commenced a rapid climb from low level and into proximity with the JS41 at FL75 which, following the radar handover, was in between frequencies and not at the time in receipt of an Air Traffic Service. Unknown to the Humberside controller, the JS41 had responded to a TCAS Resolution Advisory and on the JS41's initial call to Humberside the controller gave avoiding action.

Although the F-15 crew reported that they were VMC and utilising their radar

to search for conflicting aircraft, they did not acquire the JS41 visually or electronically. Although in the end the JS41 crew were alerted to the presence of the F-15 by TCAS, they did not visually acquire it.

## // ASSESSMENT

**UNFORTUNATELY, THE AIRPROX** sequence commenced while the JS41 crew were changing frequency and with the F-15's Mode C display disappearing at the same time, so the controllers could not have reacted any more quickly than they did.

The JS41 crew had established a DS for their descent: their actions were appropriate. The F-15 crew were carrying out a controlled but rapid climb from low-level using their radar to search ahead while they contacted ATC. A pilot member noted the F-15's significant rate of climb for a short period

## REPORT'S DETAILS

**AIRPROX REPORT:**  
2013037

**Date and time:**  
16 May 2013 1550Z

**Position:**  
5358N 00014W  
(9nm NE of Leconfield)

**Airspace:**  
London FIR LFA11  
(Class: G) (Class: G)

**Reporting aircraft:** Type: Jetstream JS41  
**Reported aircraft:** F-15E

**Operator:** CAT Foreign Mil

**Alt/FL:** FL80 FL80

**Weather:** IMC VMC

**Visibility:** NR 20km

**Reported Separation:** NR V/1nm H NR V/NR H

**Recorded Separation:** 1200ft V/>0.1nm H

and that its Mode C display had been lost at around this time. The effect of the loss of Mode C was that the JS41's TCAS could not respond until it returned.

The Board agreed that, although the JS41 crew had responded to the TCAS Resolution Advisory, the loss of Mode C data had reduced the warning time given by TCAS.

**Cause:** The F-15E pilot climbed into conflict with the JS41 which he did not see.

• **Degree of Risk:** B

# 02 / NIGHT TRIALS FOR A PAIR OF LYNX

REPORTING AIRCRAFT: LYNX(1) – REPORTED AIRCRAFT: LYNX(2)

## // SUMMARY

**THE PILOTS OF** both Lynx were conducting NVG navigation exercises at 200ft agl. Both were grey camouflaged, had navigation lights and flashing red anti-collision beacon selected 'on' as were the SSR transponders with Modes A, C and S. Neither was fitted with ACAS. The crews were operating under VFR in VMC, each with a Basic Service from Yeovilton APP.

Prior to crossing a 200ft power line, the Lynx(1) instructor observed another Lynx vertically displaced above by 20ft and offset to the right, approximately 50ft away. On sighting, the instructor intervened by taking control and rapidly altering course to the left while maintaining level flight.

Lynx(2)'s instructor highlighted that his field of view was restricted due to the use of NVG and that the aircraft were on

converging headings, approaching from either side of a ridge line. He stated that during the squadron's night-flying brief the Lynx sorties had planned to deconflict by time – 15mins – through a known point of route crossing. During start-up Lynx(1) was delayed by 15min due to an unserviceability issue. Once airborne, about 5min prior to the incident, the

Lynx(2) pilot had visually identified Lynx(1) before their routes separated, estimating that a time deconfliction still existed.

**// ASSESSMENT**

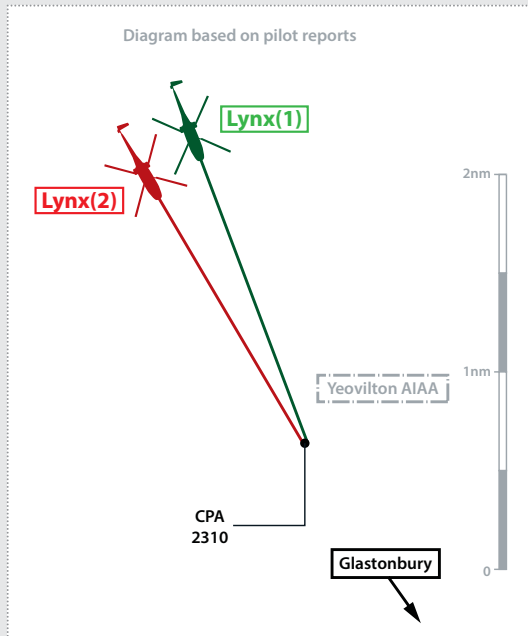
**BOTH AIRCRAFT WERE** being operated from the same squadron facilities with the crews able to communicate a mutual deconfliction plan to each other for their respective sorties. Based on achieving set take-off times, this deconfliction plan crucially did not appear to incorporate any other contingent mitigation such as Air Traffic Services; timed waypoint or radio co-ordination in the event of a subsequent deviation from plan.

In this case the Board felt the crews placed a degree of over-reliance on deconfliction being achieved by separate take-off times and visual lookout, whereas the actual hazard of the common pylon crossing point was not explicitly deconflicted.

**Cause:** A late sighting and non-sighting by the Lynx pilots.

**Contributory Factor(s):**  
Ineffective deconfliction plan.

• **Degree of Risk:** A



**REPORT'S DETAILS**

**AIRPROX REPORT:**  
2013048

**Date and time:**  
4 Jun 2013 2310Z (Night)

**Position:**  
5111N 00244W  
(1.5nm NNW Yeovilton)

**Airspace:**  
NRR 2 (Class: G)

**Reporting aircraft:** Type: Lynx(1)      **Reported aircraft:** Lynx(2)

**Operator:**  
RN      RN

**Alt/FL:**  
200ft agl      200ft agl

**Weather:**  
VMC CLOC      VMC CLOC

**Visibility:**  
10km      25km

**Reported Separation:**  
20ft V/50ft H      NK

**Recorded Separation:**  
NK

**03 / LOW? WATCH OUT**

**REPORTING AIRCRAFT: TORNADO GR4 – REPORTED AIRCRAFT: IKARUS C42**



**// SUMMARY**

**AN IKARUS C42** and members of a Tornado formation came into close proximity over the Lake District. All of the pilots were operating autonomously under VFR in VMC in Class G airspace. The Tornado crews were operating at low-level in accordance with military low-flying regulations. The Tornados had navigation lights and high intensity strobe lights 'on'. All four SSR transponders were selected 'on' with

Modes A, C and S. None of the aircraft were fitted with an Airborne Collision Avoidance System. The pilots all had equal responsibility for collision avoidance.

The lead Tornado crew observed a white, high-wing, single-engine aircraft about 0.5nm ahead, flying in the opposite direction, about 500ft above. The crew informed the other formation, a pair following at low-level about 5min behind, using the intra-formation

**REPORT'S DETAILS**

**AIRPROX REPORT:**  
2013065

**Date and time:**  
30 May 2013 1016Z

**Position:**  
5432N 00303W  
(Thirlmere)

**Airspace:**  
LFA 17  
Lon FIR (Class: G)

**Reporting aircraft:** Type: Tornado GR4      **Reported aircraft:** Ikarus C42

**Operator:**  
HQ Air (Ops)      Civ Pte

**Alt/FL:**  
350ft agl (RPS 1006hPa)      12-1500ft agl NK

**Weather:**  
VMC CLBC      VMC CLBC

**Visibility:**  
20km      10km

**Reported Separation:**  
500ft V/0m H      NK

**Recorded Separation:**  
NK



frequency, and put out an information call on the low-level common frequency. The following pair subsequently saw the light aircraft, assessing it to be 300ft above them under a cloudbase that gradually lowered from north to south.

**// ASSESSMENT**

**THE BOARD SURMISED** that the military crew had filed an Airprox in no small part due to their surprise at seeing opposite direction traffic in an area that was constrained by the surrounding high terrain; by the lowering cloudbase and by the military low-flying requirement to follow the flow-arrow.

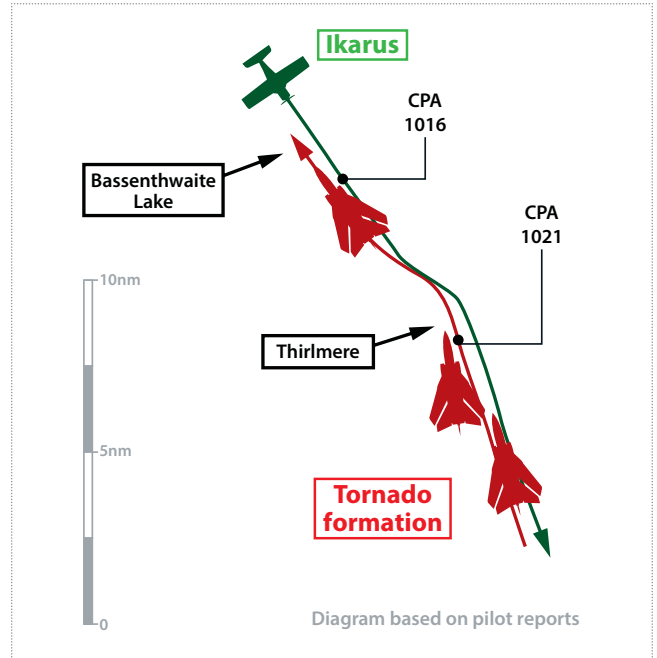
Board members decided that the GA community could usefully be made more aware of aspects of flow-arrows such as their location, orientation and applicability, although they recognised that civilian pilots were not required to abide by their limitations. It was also noted that flow-arrows had previously been printed on CAA VFR charts but the Board was not convinced that their re-introduction would improve matters.

The Board commended the Tornado crew on their decision to file an Airprox.

**Cause:** Sighting report.

- **Degree of Risk:** C

**Recommendation(s):** CAA to review education of GA pilots to improve understanding of implications of military low-flying 'flow arrows'.



# 04 / RADAR DOESN'T ALWAYS GET IT RIGHT

REPORTING AIRCRAFT: B777 – REPORTED AIRCRAFT: TYPHOON FGR4

**REPORT'S DETAILS**

**AIRPROX REPORT:**  
2013070

**Date and time:**  
9 Jul 2013 1845Z

**Position:**  
5501N 00128W  
(8nm ESE NATEB)

**Airspace:**  
UAR UL602 (Class: C)

**Reporter:**  
PC Montrose Sector

**Reporting aircraft:** Type: B777  
**Reported aircraft:** Typhoon FGR4

**Operator:** CAT HQ Air (Ops)

**Alt/FL:** FL380 FL330

**Weather:** VMC NK VMC CLAC

**Visibility:** N/R 10km

**Reported Separation:** Not seen 5000ft V/NK H

**Recorded Separation:** 5000ft V/0.2nm H

**// SUMMARY**

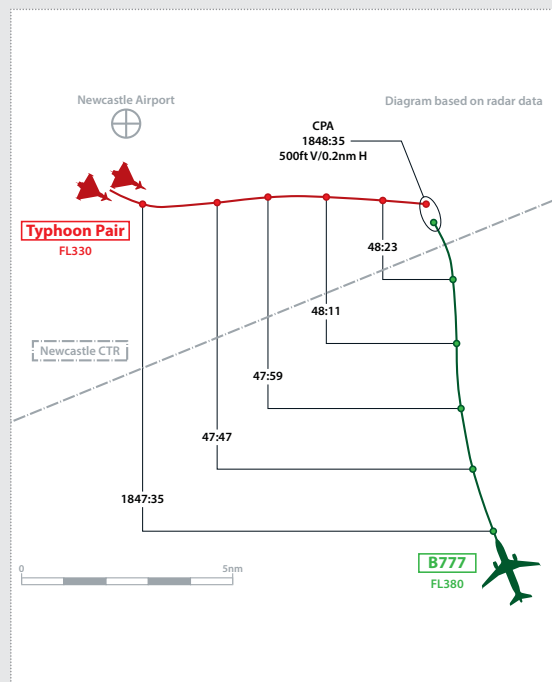
**THE AIRPROX OCCURRED** in Class C airspace. The B777 and Typhoon pair were being provided with Radar Control Services respectively by the Montrose Sector and RAF Boulmer. The B777 was maintaining FL380 so, in order to provide 5,000ft separation, the Typhoons were cleared to climb to only FL330.

When the Typhoon's squawk was passing FL325 and co-ordination had not yet been effected, the Montrose controller, unsure whether the Typhoons would stop the climb at FL330, gave the B777 avoiding action to the right. Boulmer turned their traffic to the east due to potential conflicting traffic to the west. The Montrose controllers thought that

the Typhoon's squawk had climbed through FL330 due to the predictive element of the NATS Multi Radar Tracking system.

The high climb rate of the Typhoons, calculated to be in excess of 8,000fpm, would also be a factor. The Mode C displayed on the controllers' situation displays briefly showed the Typhoon's squawk at FL339 although this was inaccurate. The Typhoons used their sensors to gain situational awareness of the B777 at considerable range. No loss of separation in fact occurred.

**// ASSESSMENT**  
**BOARD MEMBERS FULLY** considered the actions of the controllers and then turned to consider the actions of the Typhoon pilots and, specifically, the rate of climb of



# 05 / DESCENDING INTO CONFLICT



The Montrose controllers thought that the Typhoon's squawk had climbed through FL330 due to the predictive element of the NATS Multi Radar Tracking system

the trailing Typhoon as it was climbing towards the lead aircraft. In doing so, the trailing Typhoon pilot had exceeded the 8,000fpm rate-of-climb limit, which was a contributory factor in influencing the Montrose controller's thinking.

Although the trail Typhoon pilot had in fact not climbed above FL330, due to the prediction algorithms of the NATS Multi Role Tracking (MRT) system, the Montrose controller's radar display showed it passing FL340. As the MRT system is predictive; when the trailing Typhoon switched off Mode C (as it joined formation) with a high rate-of-climb, MRT extrapolated the last known rate-of-climb and SSR Mode C in order to generate a potential level which it calculated would be FL340.

**Cause:** A perceived conflict by the Montrose Sector controller.

• **Degree of Risk:** E

**REPORTING AIRCRAFT:** MERLIN HC3 – **REPORTED AIRCRAFT:** TORNADO GR4

**// SUMMARY**

**A MERLIN HELICOPTER** and a Tornado GR4 flew into conflict 10nm east of Gloucestershire aerodrome. The Merlin crew were transiting at FL55 under IFR in intermittent VMC, in receipt of a Traffic Service; the Tornado crew were descending to low-level under VFR in VMC in receipt of a Traffic Service from another agency. Both aircraft had transponders selected 'on' with Modes A, C and S but neither was fitted with a TAS/ACAS. The Merlin pilot saw the Tornado about 0.5nm ahead and 200ft above. No avoiding action was taken.

The LATCC (Mil) CEN Tac trainee controller had passed information to the Tornado pilot of possible conflicting traffic on the nose at 5000ft. While descending through FL60, a further update was passed giving traffic at '12 o'clock two miles, passing left to right'. To avoid this traffic, the aircraft was manoeuvred to the left and rapidly descended through FL50 to provide a height and geographic deconfliction. HQ Air Command commented that the decision to continue descending through the height of reported traffic at close range suggests that the situational awareness of the Tornado crew was not optimal.

**// ASSESSMENT**

**WHILE NOT A** mandatory requirement, traffic descending to low-level on departing the Daventry corridor to the west is routinely handed over to Brize Norton (BZN) for a radar-based Air Traffic Service. Because it had not been pre-noted to them by CEN Tac, BZN Radar assumed that the Tornado would not descend on exiting the Daventry corridor. This expectation

may have caused the BZN Radar not to monitor the Tornado's subsequent descent sufficiently such that he could pass timely Traffic Information to the Merlin pilot.

The unit investigation determined the CEN Tac OJTI had spotted the potential conflict and could reasonably have intervened by informing Brize Norton. Had the Merlin crew been offered Traffic Information on the Tornado then they may have taken their own avoiding action or requested a Deconfliction Service. The Board noted that, on leaving the Daventry corridor, the Tornado crew had elected to go straight to Gloucester despite its absence of a radar, there being considerable cloud in the area, and the fact that they had been told that the Merlin was effectively ahead of and below them.

**Cause:** The Tornado crew descended into conflict with the Merlin, which they did not see.

• **Degree of Risk:** A

## REPORT'S DETAILS



**AIRPROX REPORT:**  
2013107

**Date and time:**  
9 Aug 2013 1122Z

**Position:**  
5156N 00159W  
(10nm E Gloucester A/D)

**Airspace:**  
Lon FIR (Class: G)

**Reporting aircraft:** Type: Merlin HC3  
**Reported aircraft:** Tornado GR4

**Operator:**  
HQ JHC HQ Air (Ops)

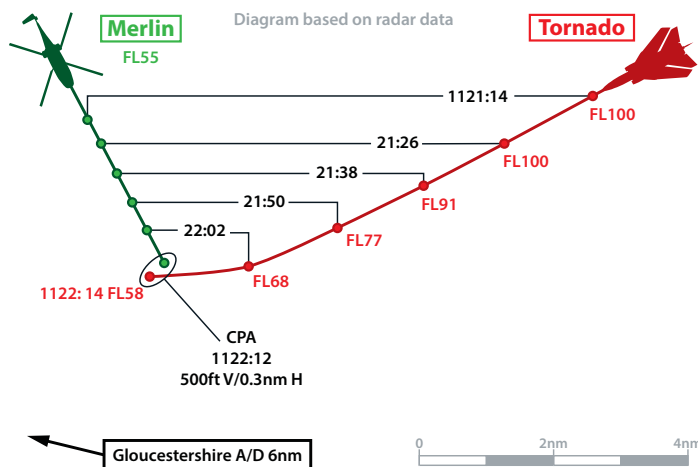
**Alt/FL:**  
FL55 NK

**Weather:**  
IMC/VMC CLBL VMC NK

**Visibility:**  
NK 10km

**Reported Separation:**  
200ft V/0.5nm H Not Seen

**Recorded Separation:**  
500ft V/0.3nm H



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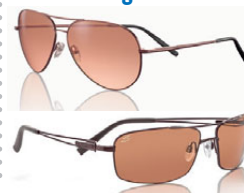
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Every year there is a steady stream of Airprox reports involving gliders and/or gliding and the same lessons keep cropping up: some of what follows may well therefore be familiar to you.

Airprox reports 2013042 and 2013069 were assessed as 'risk category A' incidents, "...in which serious risk of collision has existed and chance played a major part in events". In the first of these incidents, two powered aeroplanes almost collided over Lasham during a NOTAM'd major gliding competition while in the second, another two almost collided near Lee-on-Solent.

Assuming the PA-32 pilot was aware of the NOTAM, one wonders why this pilot chose not to route around the competition area or at the very least call Lasham either by radio or

phone to check the latest situation. UK Airprox Board members thought that the PA-32 pilot's report indicated an unwise level of reliance on TCAS in Class G, and probably a lack of appreciation of the type of air traffic service he was receiving with regard to traffic information under a Basic Service.

Airprox 2013069 also illustrates the importance of giving gliding activities a wider berth than normal as indeed do the circumstances described in Airprox 2013122 wherein the Sabre pilot could have given Ringmer a wider berth. Note too that a glider may not show up on radar and so controllers may not be aware of them even if you are under a Traffic Service: visual acquisition, challenging though that can be with today's high performance glider, is still the best way to avoid close calls (but do consider fitting P-FLARM as well to your aircraft – most gliders these days have FLARM fitted).

A quick-thinking glider pilot was commended by the UK Airprox Board for his actions in Airprox 2013125. Assessing the situation as his glider was in the initial stages of a winch launch, a critical stage involving a steep nose-up attitude close to the ground, the pilot aborted the launch and landed ahead. Risks here for the helicopter pilot, apparently unaware of Rivar Hill, were those of collision either with the launching glider or with the cable. Note that cables go

## AIRPROX REPORTS

Gliding reports featured:

- No: 2013042
- No: 2013069
- No: 2013122
- No: 2013125
- No: 2013148



Risk A ● Risk B ● Risk C ● Risk D ● Risk E ●

up a long way, usually 2,000ft to 3,000ft above the site, and contact with them is usually fatal.

Finally, as reported in Airprox 2013148 a paraglider pilot was concerned as a light aircraft approached from behind and then turned across him. Although the risk of actual collision might not have been high, pilots need to give canopy-suspended aircraft a very wide berth because turbulence can collapse canopies. So that other pilots can predict where they might encounter hang-gliders and paragliders, the UK Airprox Board recommended that the British Hang Gliding and Paragliding Association should consider publicising the locations of paraglider/hang-glider sites.

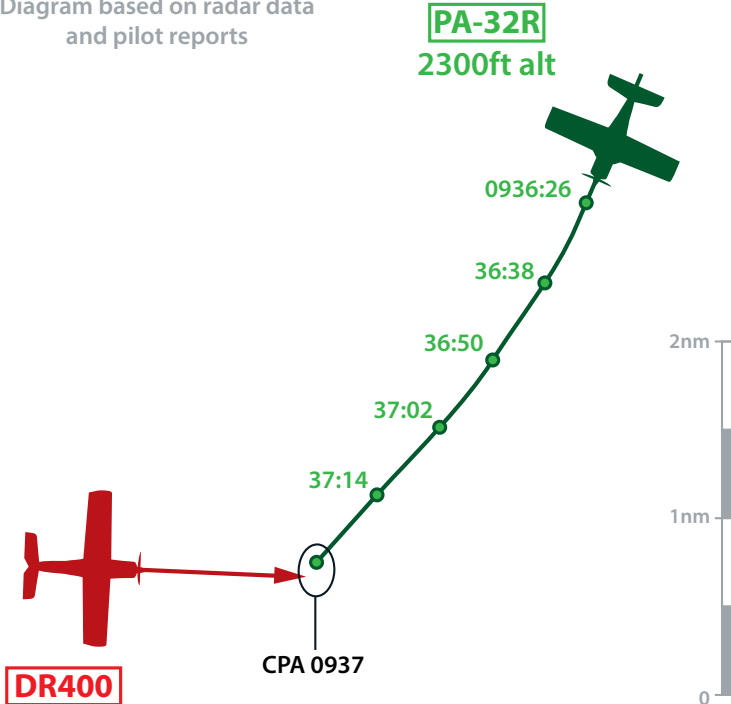
The overall point is for powered pilots to appreciate the special features of glider operations, in all their 'flavours', and to plan and fly appropriately. →



# 01 / NOTE THE NOTAMS...

REPORTING AIRCRAFT: DR400 – REPORTED AIRCRAFT: PA-32

Diagram based on radar data and pilot reports



## REPORT'S DETAILS

**AIRPROX REPORT:**  
2013042

**Date and time:**  
25 May 2013 0937Z (Saturday)

**Position:**  
5111N 00104W  
(1nm NW Lasham G/S)

**Airspace:**  
Lon FIR (Class: G)

**Reporting aircraft:** Type: DR400  
**Reported aircraft:** PA-32

**Operator:**  
Civ Club Civ Pte

**Alt/FL:**  
1500ft 2400ft  
QFE (NK) QNH (1022hPa)

**Weather:**  
VMC CLBC VMC NK

**Visibility:**  
>20km >10km

**Reported Separation:**  
0ft V/50ft H 0ft V/100m H

**Recorded Separation:**  
NK

## // SUMMARY

**THE DR400 PILOT** was part of an activity Notam'd as "MAJOR GLIDING COMP INCLUDING X-COUNTRY ROUTES, MAIN ACTIVITY WI 10NM RADIUS OF PSN 511107N 0010157W (LASHAM AD, HAMPSHIRE). UP TO 100 GLIDERS AND 10 TUG ACFT MAY PARTICIPATE." The PA-32 was transiting from Elstree to Bembridge with a pilot and two passengers.

The DR400 pilot was returning following glider release when he saw another aircraft 'at the last minute'. The other aircraft passed down his left side 'a wingspan away'. He banked right to increase separation and heard the other aircraft's engine as it passed.

At 0937:10, the Farnborough LARS controller gave relevant and timely Traffic Information to the PA-32 pilot "...just caution Lasham very busy at the minute winch launch gliding up to three thousand seven hundred feet there's a couple of gliders just southwest of you by a mile but they're all around". The PA-32 pilot acknowledged the call. Moments later, he suddenly saw another aircraft, crossing his intended flight-path. He immediately disengaged the autopilot and turned sharply left to avoid a possible collision.

## // ASSESSMENT

**PILOT MEMBERS OPINED** that the incident stemmed from the PA-32 pilot's apparent lack of appreciation of the NOTAM'd Lasham activity, the amount of traffic that would be

# 02 / GLIDER TUG TOW PATH TROUBLES

**REPORTING AIRCRAFT:**  
CHIPMUNK – **REPORTED AIRCRAFT:** PA-24

## // SUMMARY

**THE INCIDENT OCCURRED** when a PA-24 and a Chipmunk tug came into close proximity. Neither pilot was in receipt of an air traffic service albeit both were in contact with 'Lee Radio'. The Chipmunk pilot had just released a glider and was turning back to land at Lee while the PA-24 pilot reports transiting to Sandown, Isle of White. Both pilots were aware from the radio of each other's presence, and the Lee Radio operator provided appropriate information to the PA-24 pilot to aid his situational awareness.



associated with it, and his choice of routing in the immediate vicinity. Although not required to avoid the NOTAM'd area, Members were of the unanimous opinion that he would have been better served by routing around it, either vertically or laterally or both.

**Cause:** A late sighting by both aircraft.

**Contributory Factor(s):** The PA-32 pilot flew through the NOTAM'd competition area.

• **Degree of Risk:** A

The Chipmunk pilot thought initially that the other aircraft was 'a couple of miles' behind him and potentially at the same height, heading in roughly the same direction. He had heard the other pilot say that they were visual with 'the combination'. After releasing the glider the Chipmunk pilot immediately made a sharp descending right turn to return to the airfield believing that the PA-24 was at a higher level.

The PA-24 pilot saw the tug release the glider and turn back towards Lee-on-Solent. It descended rapidly; crossed in front and passed to his right side, still descending. His biggest concern was to avoid the tow cable.

**// ASSESSMENT**

**THE BOARD CONSIDERED** that the Chipmunk pilot had built a flawed mental model of the PA-24's position and intentions from the radio. Having just released the



**REPORT'S DETAILS**



**AIRPROX REPORT:**  
2013069

**Date and time:**  
6 Jul 2013 1202Z (Saturday)

**Position:**  
5047N 00114W  
(2nm SW Lee-on-Solent G/S)

**Airspace:**  
Lon FIR (Class: G)

**Reporting aircraft:** Type: Chipmunk  
**Reported aircraft:** PA-24

**Operator:** Civ Club Civ Pte

**Alt/FL:** 2220ft 2100ft  
QFE (NK) QNH (1029hPa)

**Weather:** VMC CLBC VMC CLBC

**Visibility:** 10km >10km

**Reported Separation:** 15ft V/35ft H 100ft V/75m H

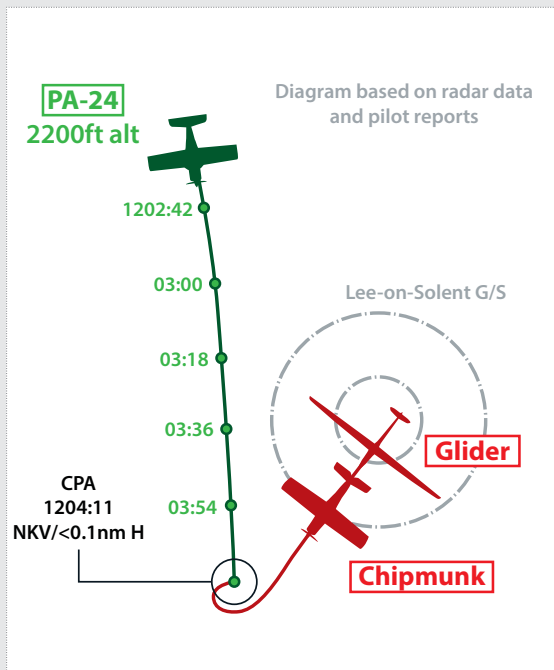
**Recorded Separation:** NK V/<0.1nm H

glider, he was no doubt intent on returning expeditiously to Lee-on-Solent, but would have been better served by a more thorough clearing lookout before commencing the turn. Turning to the PA-24 pilot, he had seen the Chipmunk and glider well before and saw the glider release from the Chipmunk.

The Board were unable to ascertain why the PA-24 pilot then allowed the Chipmunk to fly into such close proximity, he would have been well advised to have changed his flight path much earlier to give both the glider and tug a wider berth from the outset.

**Cause:** The Chipmunk pilot turned into conflict with the PA-24.

• **Degree of Risk:** A



# 03 / CUTTING IT FINE WITH A SABRE

**REPORTING AIRCRAFT:** ASW 15b GLIDER – **REPORTED AIRCRAFT:** F-86A SABRE

**// SUMMARY**

**THIS AIRPROX OCCURRED** between a thermalling ASW15b glider, in a left-hand turn at around 2,500ft amsl, and an F-86A Sabre, flying on a southerly heading at 2,400ft while co-ordinating a 'display slot time' with Shoreham Approach. Neither pilot was in receipt of an air traffic service. Both report

flying into sun under VFR in VMC.

The Sabre pilot reports cruising at 240kt, heading 200°, when he saw a glider 1nm away in his 11 o'clock. Assessing his options for action, the Sabre pilot elected to maintain his flight-path which he assessed would take him 'clear horizontally [of the glider], albeit closer than usual standards'.

**// ASSESSMENT**

**THE BOARD NOTED** that the Sabre pilot had not requested an air traffic service, which may have been available from Farnborough LARS. Although the pilot reported flying just below the 250kt speed at which he would be required to obtain a Radar Service under the terms of his CAA permission to fly, Board

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REPORT'S DETAILS



**AIRPROX REPORT:**  
2013122

**Date and time:**  
31 Aug 2013 1508Z (Saturday)

**Position:**  
50 56N 000 06E  
(1.6nm north of Ringmer Glider Site)

**Airspace:**  
London FIR (Class: G)

**Reporting aircraft:** Type: ASW 15b Glider  
**Reported aircraft:** F-86A Sabre

**Operator:**  
Civ Club Civ Pte

**Alt/FL:**  
2500ft QNH (NK) 2400ft RPS (NK)

**Conditions:**  
VMC VMC

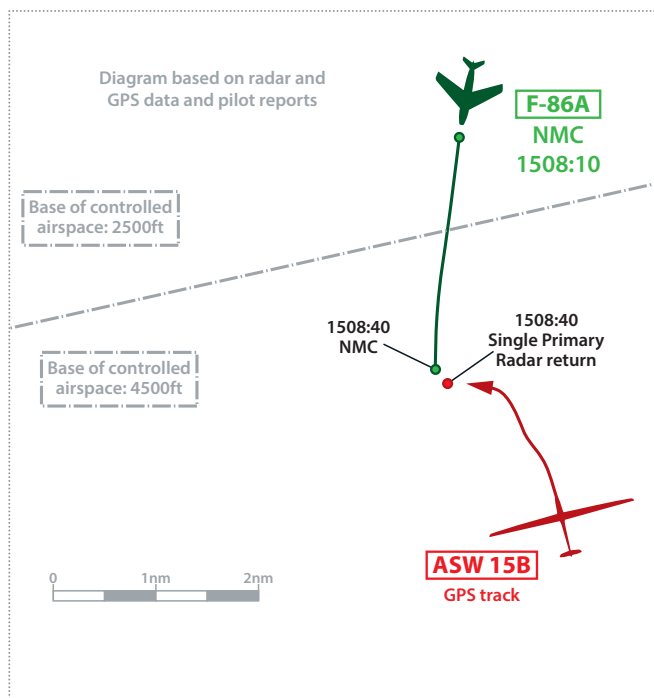
**Visibility:**  
20km NK

**Reported Separation:**  
100m V/Nil H 0ft V/1000m H

**Recorded Separation:**  
NK V/ <0.1nm H

members opined that, in such busy airspace, and with such a high performance aircraft, he would have been well served in seeking a Radar Service regardless of his airspeed. Nonetheless, members also conceded that, in this particular event, it would have been unlikely that Farnborough's radars would have been able to detect the ASW15b. However, the Sabre pilot's inaction on sighting the glider meant that separation and safety margins had been much reduced below normal.

With regard to gliding activities, the Board commented that pilots flying in this area needed to be very alert to glider winch and aerotow operations: tracking towards Ringmer at 2400ft (below the notified 2600ft top altitude of Ringmer's winch launch), the Sabre pilot would have needed to manoeuvre positively if he was to avoid Ringmer laterally.



**Cause:** A late sighting by the Sabre pilot and, effectively, a non-sighting by the ASW 15b pilot.

• **Degree of Risk:** B



The helicopter would have passed over the airfield with a winch cable in the air, with a high probability of colliding

# 04 / WORRY ABOUT WINCH CABLES

REPORTING AIRCRAFT: ASW 15b – REPORTED AIRCRAFT: B206 JETRANGER

**// SUMMARY**

**THE ASW 15 WAS** winch launching at Rivar Hill gliding site while the Bell 206 JetRanger was transiting to a private site. Both pilots were operating under VFR in VMC, the B206 pilot was tracking northeast-bound from his departure airfield in receipt of a Basic Service from (a very busy) Boscombe Down.

The ASW 15b pilot had just entered the full climb with a nose-up attitude of 40°-50°.

He glimpsed a helicopter in his left 10 o'clock at a range of 1nm, heading towards the airfield at a height well below his expected cable release. He considered it likely that the helicopter would reach the airfield before the winch-launch was completed. At a height of about 150ft, he released the cable and landed ahead. The pilot stated that had he not aborted the launch the helicopter would have passed over the airfield with a winch cable in

REPORT'S DETAILS



**AIRPROX REPORT:**  
2013125

**Date and time:**  
4 Sep 2013 1606Z

**Position:**  
5121N 00133W  
(Rivar Hill Glider Site)

**Airspace:**  
London FIR (Class: G)

**Reporting aircraft:** Type: ASW 15b  
**Reported aircraft:** B206 JetRanger

**Operator:**  
Civ Club Civ Pte

**Alt/FL:**  
150ft QFE (NK) 1300ft NK (1017hPa)

**Conditions:**  
VMC VMC

**Visibility:**  
>20km >10km

**Reported Separation:**  
600ft V/0m H 300ft V/1nm H

**Recorded Separation:**  
570ft V/<0.1nm H

the air, with a high probability of colliding either with his aircraft or the cable.

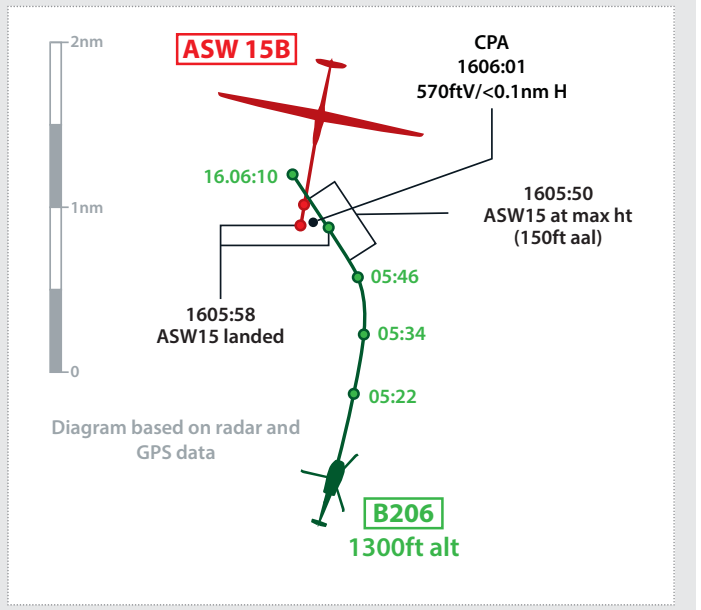
On looking up after setting the squawk, the B206 pilot saw a glider in his 2 o'clock position about 1-2nm away, in a left-hand turn, and another glider beyond. The pilot realised he was 'close to Rivar Hill' and immediately turned left. He stated that his workload was low and visibility was good.

**// ASSESSMENT**

**THE ASW 15 HAD** just entered the full climb of a winch launch when its pilot saw the helicopter approaching. The Board highly commended him for his lookout; presence of mind and subsequent actions. Turning to the B206 pilot, the Board suspected that he may have placed an over-reliance on a GPS-based electronic display as opposed to reference to a map. He was apparently unaware of the precise location of Rivar Hill gliding site. This displayed either a disappointing lack of pre-flight planning or positional awareness in the air, or both.

**Cause:** The B206 pilot flew through a promulgated and active glider site and into conflict with a winch-launching glider.

- Degree of Risk: C



# 05 / PARAGLIDERS CAN BE ANYWHERE

REPORTING AIRCRAFT: SWING STRATUS – REPORTED AIRCRAFT: NK

## REPORT'S DETAILS



**AIRPROX REPORT:**  
2013148

**Date and time:**  
5 Oct 2013 11:30Z (Saturday)

**Position:**  
5429N 00336W  
(St Bees)

**Airspace:**  
Lon FIR (Class: G)

**Reporting aircraft:** Swing Stratus Paraglider  
**Reported aircraft:** NK

**Operator:**  
Civ Club

**Alt/FL:**  
150ft agl NK

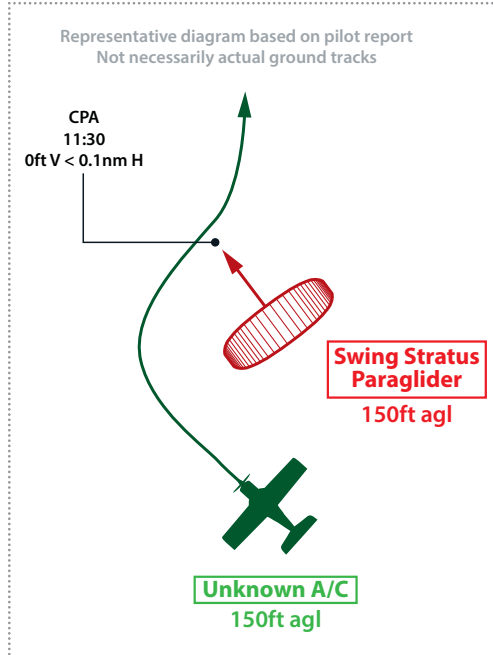
**Conditions:**  
VMC

**Visibility:**  
50km NK

**Reported Separation:**  
0ft V/75m H NK

**Recorded Separation:**  
NK

**Recommendation:** The BHPA considers publicising the location of commonly used launch sites to the wider aviation community.



which was probably why he had not heard the aircraft approaching.

**// ASSESSMENT**

**THE BOARD OBSERVED** that although both pilots were equally responsible for avoiding a collision, the light aircraft was required to give way to the paraglider. There was some discussion about whether or not the light aircraft pilot had actually seen the paraglider - the paraglider could well have been in the light aircraft pilot's blind spot if it was being flown from the left-hand seat. Although the paraglider pilot considered the actual risk of collision to be low, it was the risk of canopy collapse that concerned him.

When coastal flying, the Board highlighted the need for pilots to be aware of the potential for hang-gliders and paragliders to be operating from cliff-top sites. It was noted that certain places on the coastline were frequently used when the prevailing meteorological conditions allowed, and that these were likely to be well known to the hang-gliding/paragliding community. This led the

Board to recommend that the BHPA consider publicising site information to the wider aviation community in the interests of increasing SA.

**Cause:** A late sighting by the Swing Stratus pilot and a possible late sighting by the light aircraft pilot.

- Degree of Risk: C

**// SUMMARY**

**A SWING STRATUS** paraglider pilot was ridge soaring along St Bees cliffs at 150ft agl. An untraced light aircraft approached the paraglider from behind and subsequently turned across and reportedly flew 75m in front of the paraglider. The concerned paraglider pilot had insufficient time to take any avoiding action but had to prepare for any possible wake turbulence. He reported that the tide was in, causing a lot of noise on the pebble beach,

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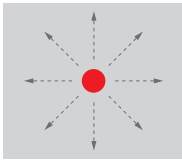
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# DON'T JUST RELY ON THE CLEVER KIT

## AIRPROX REPORTS

Electronic conspicuity reports featured:

- No: 2013001
- No: 2013093
- No: 2013095
- No: 2013099
- No: 2013100
- No: 2013105
- No: 2013121



Risk A ● Risk B ● Risk C ● Risk D ● Risk E ●

**AS OBSERVED BY HQ (AIR) OPS** in the full Report into Airprox 2013001, "A slow moving helicopter will always appear to be virtually stationary to the pilot of a fast jet until a late stage, and limitations of the human visual system mean that detection will be problematic. As shown in this case, on-board systems also cannot be relied on to provide timely warning, and all aircrew must do all that they can at the sortie planning stage to ensure they are de-conflicted from other airspace users."

In other words – plan to avoid, and when in flight use the electronics but also maintain the best possible lookout given the limitations of human sight. That said, modern safety nets such as TCAS (Traffic Alert & Collision Avoidance System) and FLARM do a terrific

*Modern collision avoidance systems generally work well, but be alert with the 'Mk 1 Eyeball'*

job of helping to keep aircraft out of hazardous situations.

But as pilots and air traffic controllers, we need to keep in mind the operating limitations of such systems. Airprox report 2013093 offers a vivid illustration of the manner in which TCAS mechanisation algorithms change function at various levels. The UK Airprox Board noted that the Hercules pilot had remarked that he had not received any TCAS 'traffic alerts'. It's worth keeping in mind that TCAS audio warnings are inhibited below 500ft (so that GPWS has priority). Hence the C130, flying at 250ft, would not have received any audio warnings in this instance.

TCAS has proved itself an invaluable aid to flight safety – and continues to be so – but it only works against other transpondering aircraft, so do have your Mode C and/or Mode S Altitude selecte whenever you are flying. The System is complex by design such that its 'outputs' can be believed and acted upon with confidence. There are, however, circumstances where everyone is carrying out the correct procedures and yet the TCAS produces an 'alert' that appears inappropriate. Such a situation is illustrated by four Airprox reports summarised here, numbers 2013095; 2013099; 2013100 and 2013121. These four all involve VFR/SVFR traffic interacting with Avro RJ1Hs at London City Airport.

Airprox 2013100 is probably the best example to illustrate that VFR traffic can cause TCAS Resolution Advisories (RA) in commercial

aircraft even when everyone is applying the correct procedures. The RAs – 'monitor vertical speed' – were benign alerts in the four Airprox but, as RAs, cannot be ignored. We must not accept TCAS RAs as 'routine events' and simply accept there is a likelihood of them in Class D airspace – otherwise an RA will one day be for real and could be discounted as 'ops normal'.

All four of these events were assessed as risk category E by the UK Airprox Board and "Met the criteria for reporting but, by analysis, it was determined that normal procedures, safety standards and parameters pertained."

The last Airprox under this theme is report 2013105 which illustrates the value of FLARM and PowerFLARM. The Bulldog pilot was alerted to the Discus glider by P-FLARM – he looked out on receiving "an immediate collision threat" and saw the Discus. The Discus pilot also received a FLARM alert (at about the same time that he saw the Bulldog anyway). P-FLARM and FLARM are inexpensive and readily available to all glider and GA pilots as a very effective way of providing some Airprox conspicuity benefits.

If further emphasis of this point is needed, note that the Discus pilot stated that he was "a great fan of FLARM and had been assisted by it on several occasions". The Bulldog operations flight safety officer stated that the company had been using PowerFLARM in its light aircraft for three months and had found it to be a highly effective system, alerting pilots to other traffic in Class G airspace. The company actively promoted the use of such devices to reduce collision risk.

### ACAS AND TCAS

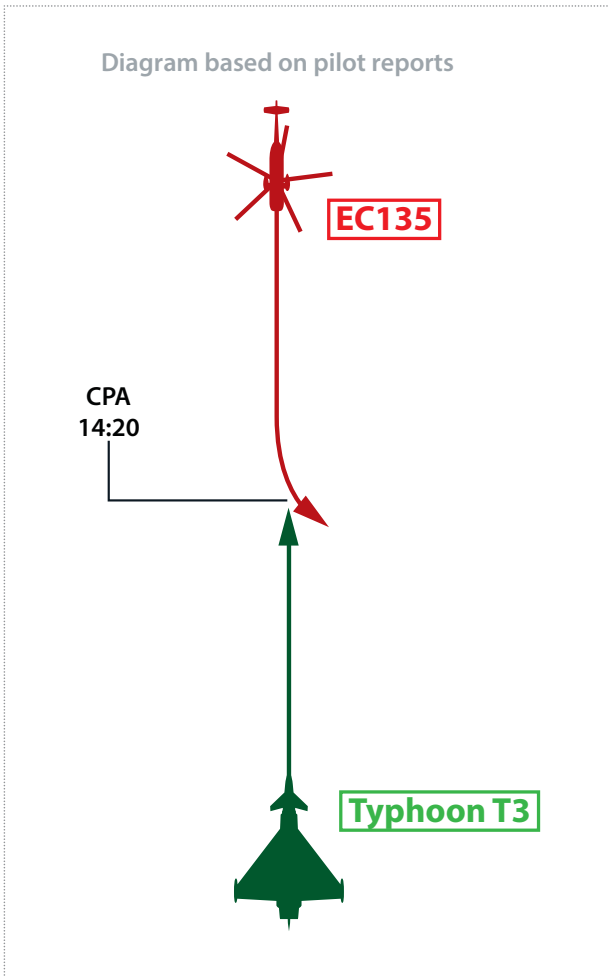
**Airborne Collision Avoidance System (ACAS)** as specified in ICAO Standards and Recommended Practices uses SSR technology to monitor other aircraft in an aircraft's vicinity. ACAS I provides pilots in-flight information (Traffic Advisories); ACAS II additionally provides guidance (Resolution Advisories) to resolve conflicts with other aircraft. Traffic Collision Avoidance System equipment (TCAS) (i.e. TCAS I/TCAS II) provides ACAS functionality. Other non-TCAS collision warning equipment broadly equivalent to ACAS I is also available but is not ICAO SARPS-compliant.

All civil turbine-powered aeroplanes having a Maximum Take Off Mass exceeding 5,700 kg, or a maximum approved passenger seating configuration of more than 19 are required to equip with, and operate, SARPS-compliant ACAS II within European airspace.



# 01 / TYPHOON STORMING IN

REPORTING AIRCRAFT: EC135 – REPORTED AIRCRAFT: TYPHOON T3



consequently, all the crew had a 'raised level of lookout'.

Two further contacts were indicated on TCAS immediately prior to a third in the 12 o'clock position at a range of 1nm which triggered a TCAS Traffic Alert. A Typhoon was visually acquired within one second, heading directly towards him at the same level. He took immediate avoiding action, turning left and descending steeply. The necessary avoiding action could not have been achieved but for the TCAS warning.

The Typhoon was conducting a training sortie with the front-seat student pilot handling at low-level. HISLs and navigation lights were selected on as was the transponder with Modes A and C. The aircraft was not fitted with Mode S nor with an Airborne Collision Avoidance System (ACAS). The student saw a helicopter directly ahead, at a range of 0.5nm and slightly below. He immediately avoided by climbing. The instructor also noted that, while the aircraft's radar was 'looking' in the correct location to pick up the

helicopter, no pre-incident radar detection was indicated.

## // ASSESSMENT

AT THE TIME of the incident, both aircraft had passed outside NATS surveillance coverage. From the narrative of the incident as described by the helicopter pilot it would

seem that TCAS played a vital role in mitigating this potential mid-air collision. The crew's actions in maintaining a vigilant lookout were commended, subsequently proving their worth. Members remarked that an effective lookout scan was an essential activity at all times and even more so at low level in Class G airspace.

**Cause:** A conflict in Class G airspace.

**Degree of Risk:** B

## REPORT'S DETAILS

**AIRPROX REPORT:**  
2013001

**Date and time:**  
11 Jan 2013 1420Z

**Position:**  
5308N 00347W (28nm ESE RAF Valley)

**Airspace:**  
Lon FIR (Class: G)

**Reporting aircraft:** Type: EC135  
**Reported aircraft:** Typhoon T3

**Operator:** Civ Comm  
Mil Trg

**Alt/FL:**  
400ft  
(Rad Alt) 360ft  
(RPS 1011hPa)

**Weather:** VMC CAVOK  
VMC CAVOK

**Visibility:**  
10km  
40km

**Reported Separation:**  
200ft V/0m H  
1-2000ft V/0m H

**Recorded Separation:**  
NR

## // SUMMARY

**THE EUROCOPTER** (now Airbus) EC135 pilot was operating autonomously with high intensity strobe lights (HISL), landing lights and the SSR transponder with Modes A, C and S all selected on. The aircraft was fitted with TCAS 1 which had given several indications of 'fast jet contacts' before the incident:

# 02 / HERCULES VERSUS MICROLIGHT

REPORTING AIRCRAFT: ESCAPADE MICROLIGHT – REPORTED AIRCRAFT: C130 HERCULES

## // SUMMARY

**AN ESCAPADE MICROLIGHT** in the visual circuit at a microlight site flew into proximity and took avoiding action against a C130 conducting low-flying training.

The Escapade was not fitted with lights or an Airborne Collision Avoidance System, but

the SSR transponder was selected on with Modes A, C and S. Its pilot was listening out and making circuit calls on VHF 'Safety Common'. He was about to turn onto left base when his passenger called "Hercules ahead". The pilot reported that he saw the Hercules at a range of 300-400m and that

it appeared lower than him.

The Hercules had navigation lights and strobes selected on as was the SSR transponder with Modes A, C and S. The aircraft was fitted with TCAS II. The pilot was listening out on the low-level common UHF frequency. They flew at their planned

## REPORT'S DETAILS

**AIRPROX REPORT:**  
2013093

**Date and time:**  
1 Aug 2013 1435Z

**Position:**  
5123N 00144W (10nm south of Swindon)

**Airspace:**  
Lon FIR (Class: G) LFA 1 (Class: G)

**Reporting aircraft:** Type: Escapade Microlight  
**Reported aircraft:** C130 Hercules

**Operator:**  
Civ Pte HQ Air (Ops)

**Alt/FL:**  
500ft QFE (990hPa) 250ft msd QNH (1013hPa)

**Weather:**  
VMC CLNC VMC CLBC

**Visibility:**  
>40km 10km

**Reported Separation:**  
50ft V/90m H Not Seen

**Recorded Separation:**  
NK

level of 250ft MSD. No aircraft were observed in the vicinity of the microlight site nor were any TCAS 'traffic alerts' received.

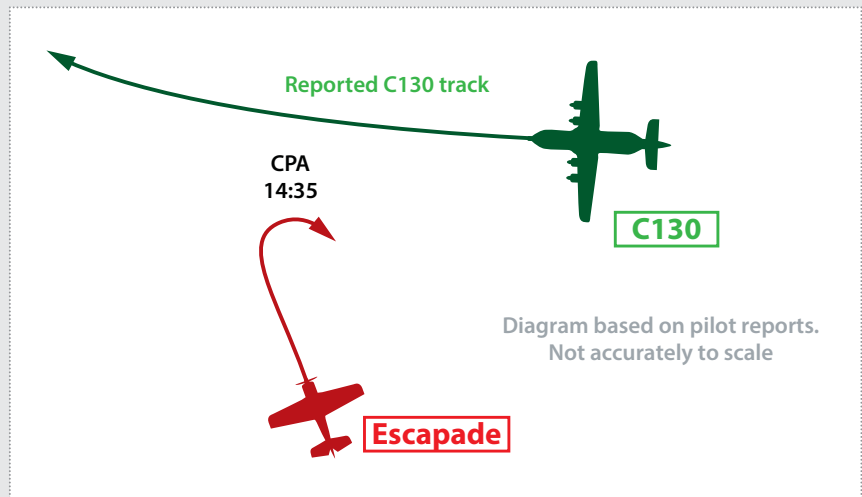
It would appear that the aircraft were close enough to have theoretically generated a TCAS event in the C130. However, TCAS is designed such that all Resolution Advisories are inhibited below 1000ft agl and all aural annunciations are inhibited below 500ft agl.

**// ASSESSMENT**  
**THE ESCAPADE PILOT** was concerned to such a degree that he took avoiding action,

both for the Hercules and for its associated wake turbulence. The Hercules crew had looked for conflicting traffic in the area of the microlight site but did not see any other aircraft. Military members observed that this particular microlight site was well known to local military crews as a busy location.

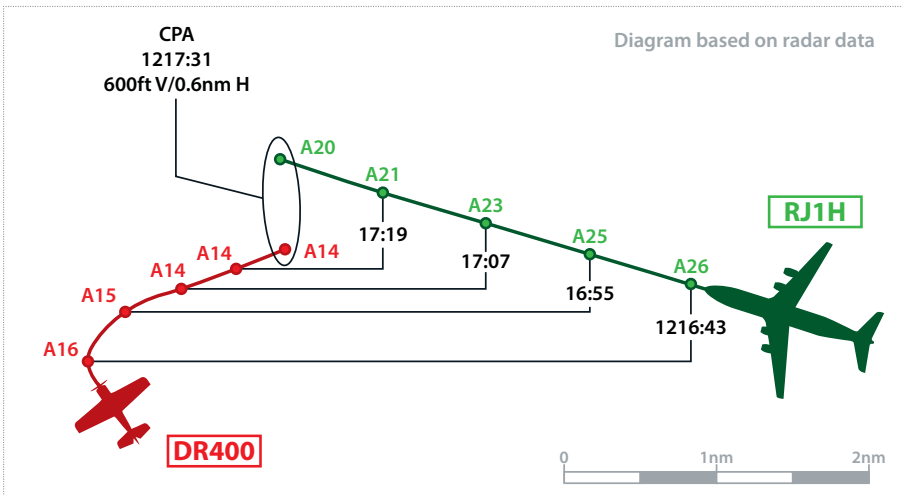
**Cause:** A late sighting by the Escapade pilot and a non-sighting by the C130 crew.

- Degree of Risk: B



## 03 / LONDON CITY ALARM... 1

**REPORTING AIRCRAFT: AVRO RJ1H – REPORTED AIRCRAFT: ROBIN DR400**



### // SUMMARY

**AN AVRO RJ1H** and a Robin DR400 flew into proximity on the edge of the London City CTA. Both were operating in compliance with their respective clearances; were in two-way radio contact with different controllers and each was passed Traffic Information on the other aircraft. The two aircraft had been coordinated by their respective controllers with

500ft vertical separation and the required clearances had been issued. The controllers were required to give traffic information between IFR and VFR traffic which they did.

The Avro RJ1H pilot reports receiving a TCAS Traffic Alert from 'a small VFR traffic about 700ft below and 0.5nm away' in his 10 o'clock position. He saw the traffic and identified it as a 'PA-28 type'. As he was

## REPORT'S DETAILS

**AIRPROX REPORT:**  
2013095

**Date and time:**  
23 Jul 2013 1217Z

**Position:**  
5126N 00001E (4.7nm SSW London/City Airport)

**Airspace:**  
London/City CTA (Class: D/G) Lon FIR

**Reporting aircraft:** Type: Avro RJ1H  
**Reported aircraft:** Robin DR400

**Operator:**  
CAT Civ Pte

**Alt/FL:**  
2000ft QNH (NK hPa) 1500ft QNH (NK hPa)

**Weather:**  
VMC CAVOK VMC CLNC

**Visibility:**  
NK >10km

**Reported Separation:**  
100ft V/0.5nm H NK

**Recorded Separation:**  
600ft V/0.6nm H

levelling off at his cleared altitude of 2000ft, the RJ1H pilot received a TCAS Resolution Advisory 'Monitor Vertical Speed' from his TCAS II equipment which required him not to descend.

### // ASSESSMENT

**THE BOARD DISCUSSED** in detail the issue of TCAS RAs in mixed IFR/SVFR/VFR circumstances, including at the boundaries of controlled airspace. Broadly speaking, RAs could be considered in two classes, those that caused the aircraft to deviate from its planned flight path, either through manual

or automatic intervention (manoeuvre RAs), and those that did not (monitor RAs).

In the former case, e.g. 'Climb Climb', it could reasonably be assumed that the system was changing aircraft flight paths in order to prevent collision or, at the very least, close proximity. In the latter, it could be argued that the aircraft were always going to pass well clear of each other and that the system was simply advising the pilot to remain on the selected flight path in order to maintain already safe separation. It was noted that TCAS II Version 7.1 defines the

'Monitor Vertical Speed' RA as a 'Preventive RA', i.e. the RA is preventing collision by maintaining an already safe separation.

**Cause:** TCAS sighting report.

• **Degree of Risk:** E

**Recommendation(s):** The CAA reviews VFR/SVFR traffic procedures within CAS with respect to RA occurrences in TCAS equipped aircraft.

## 04 / LONDON CITY ALARM... 2

REPORTING AIRCRAFT: AVRO RJ1H – REPORTED AIRCRAFT: R44



### // SUMMARY

**THE AIRPROX OCCURRED** within Class D airspace of the London City CTR. The RJ1H was operating IFR and the R44 VFR. Both the City and SVFR radar controllers complied with ATC responsibilities for flights within Class D airspace; appropriate traffic information was issued to both flights. Both pilots obtained visual contact with the other aircraft. The closest point of

approach was 0.4nm as the aircraft passed each other, vertically separated by 500ft. The RJ1H received a TCAS Resolution Advisory but neither pilot considered there was any risk of collision.

### // ASSESSMENT

**BEFORE CONSIDERING THE** Airprox itself, Board members commented that a number of similar Airprox Reports had been filed by pilots of the operator of this RJ1H. All but one involved aircraft inbound to RW09 at London City receiving TCAS RAs concerning VFR aircraft 500-600ft below them in, or close to, the CTR. The Board noted that the RJ1H pilot did not alter his flight profile as a result of the TCAS alert because the associated RA instruction was simply to monitor vertical speed – level flight was within the required parameters. An airline pilot member confirmed that, as in other similar events, this was appropriate action to take in the circumstances.

Irrespective of the benign circumstances surrounding this particular event, the Board were concerned that it should not be considered normal procedure for aircraft

### REPORT'S DETAILS



**AIRPROX REPORT:**  
No 2013099

**Date and time:**  
1 Aug 2013 1211Z

**Position:**  
5130N 00011W  
(6nm West London City airport)

**Airspace:**  
London City CTR (Class: D)

**Reporting aircraft:** Type: Avro RJ1H  
**Reported aircraft:** R44

**Operator:**  
CAT Civ Pte

**Alt/FL:**  
2000ft QNH (1008hPa) 1500ft QNH

**Weather:**  
VMC CAVOK VMC CLBC

**Visibility:**  
>10km >10km

**Reported Separation:**  
500ft V/400-500m H NK

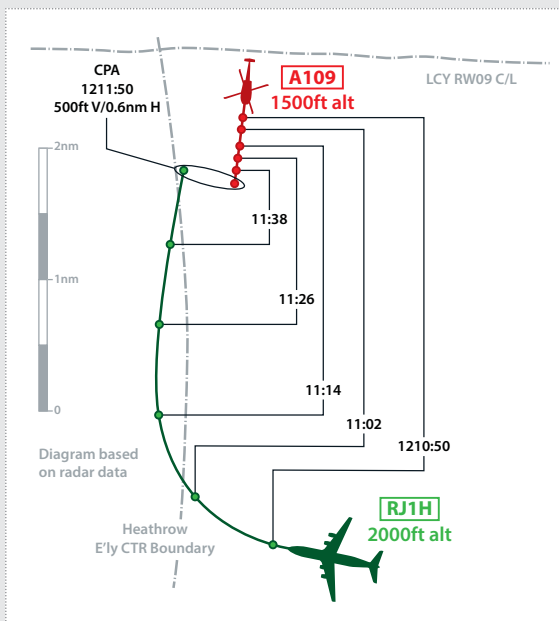
**Recorded Separation:**  
500ft V/0.4nm H

being vectored within the London City CTR to receive TCAS RAs lest pilots become inured to what might become normalised routine behaviour rather than reacting fully to TCAS alerts. Therefore, in conjunction with Airprox 2013095 and 2013121, they decided to generate an overarching Recommendation.

**Cause:** TCAS sighting report.

• **Degree of Risk:** E

**Recommendation:** The CAA reviews VFR/SVFR traffic procedures within CAS with respect to RA occurrences in TCAS equipped aircraft.





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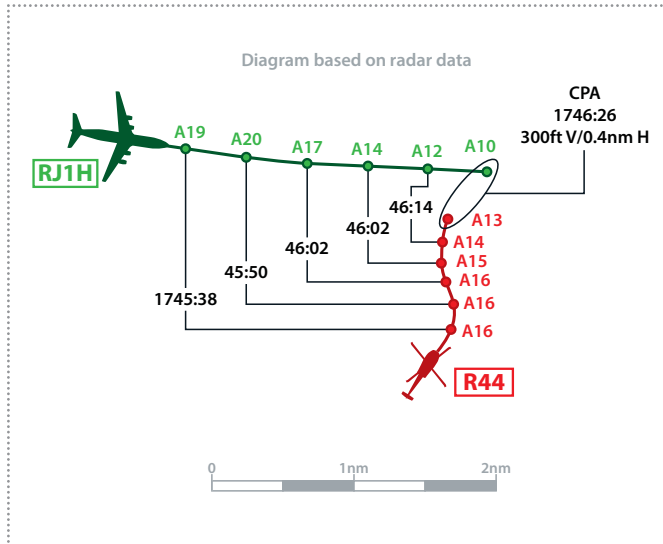
# 05 / LONDON CITY ALARM... 3

REPORTING AIRCRAFT: AVRO RJ1H – REPORTED AIRCRAFT: R44

## // SUMMARY

### THE AIRPROX

OCCURRED within Class D airspace of the London City CTR. The Avro RJ1H was operating IFR and the R44 VFR. Both the City radar and the London City Tower controllers complied with ATC responsibilities for flights within Class D airspace; appropriate Traffic Information was issued to both flights. The R44 was visual with the RJ1H and complied with the City radar's instruction to pass behind it. The RJ1H received a TCAS Resolution Advisory (RA) to descend, which was complied with by descending on the ILS. Neither pilot considered there was any risk of collision.



## // ASSESSMENT

### THE AIRPROX WAS

reported by the RJ1H pilot following receipt of a TCAS RA against an R44 crossing behind. It was noted that there have been a number of similar Airprox reports from the same company operating into London City.

The RJ1H received a TCAS RA due to the helicopter's forward vector impinging on the RJ1H's TCAS Protection Volume. Airline members commented that this was due to the high Glide Path angle at London City (5°), where the aircraft was higher on approach than at other airports such that the RJ1H would still have been above the TCAS Descent RA reporting threshold of 900ft at the time.

It was pointed out that it should not be normal procedure to receive a TCAS RA on final approach (or at any other time in flight); the Board remained very concerned that TCAS RA warnings should not be considered as 'normal' at any time. It was therefore recommended that the CAA reviews TCAS interaction between local traffic and commercial air traffic inbound and outbound in order to determine how operating procedures might be modified to avoid similar occurrences.

**Cause:** Although well clear of the other aircraft and with it in sight within Class D airspace, following appropriate Traffic Information from ATC, the R44 flight vector generated a TCAS RA in the RJ1H.

• **Degree of Risk:** E

**Recommendation:** The CAA reviews TCAS interaction between local traffic and commercial air traffic inbound and outbound at London City.

## REPORT'S DETAILS

### AIRPROX REPORT:

No 2013100

### Date and time:

6 Aug 2013 1745Z

### Position:

5130N 00032E  
(2nm W London City Airport)

### Airspace:

Lon/City CTR (Class: D)

### Reporting aircraft:

Type: Avro RJ1H

### Reported aircraft:

R44

### Operator:

CAT

Civ Pte

### Alt/FL:

1200ft  
QNH (1015hPa)

2000ft  
QNH (1016hPa)

### Weather:

VMC CLBC

VMC NK

### Visibility:

>10km

NK

### Reported Separation:

0ft V/0.5nm H

NK V/0.5nm H

### Recorded Separation:

300ft V/0.5nm H

# 06 / THE BENEFITS OF FLARM

## REPORTING AIRCRAFT:

SA Bulldog

## REPORTED AIRCRAFT:

Discus glider

## REPORT'S DETAILS

### AIRPROX REPORT:

2013105

### Date and time:

9 Aug 2013 1502Z

### Position:

5212N 00049W  
(10nm NW Cranfield)

### Airspace:

Lon FIR (Class: G)

### Reporting aircraft:

Type: SA Bulldog

### Reported aircraft:

Discus glider

### Operator:

Civ Comm

Civ Club

### Alt/FL:

3500ft  
QNH (1015hPa)

3500ft  
QNH (1017hPa)

### Weather:

VMC CLBC

VMC CLBC

### Visibility:

>10km

12km

### Reported Separation:

100ft V/100m H

100m

### Recorded Separation:

0ft V/<0.1nm H

## // SUMMARY

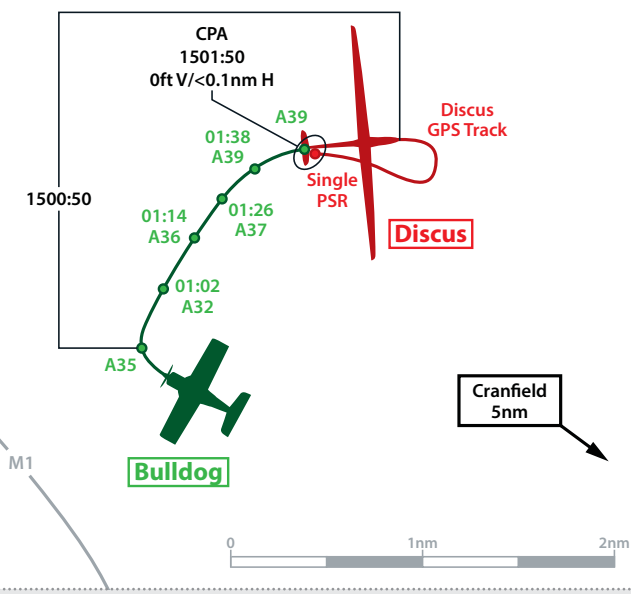
**A BULLDOG AND** a Discus glider flew into conflict near Cranfield. The Bulldog was fitted with a PowerFLARM® Traffic Alerting System (TAS). The pilot reported climbing through altitude 3500ft when he received a PowerFLARM alert displaying an immediate collision threat. He looked out and saw a white glider in the 1 o'clock position at a range of about 100m and 100ft below him. He stated that he believed it was likely the glider pilot had also received a FLARM alert as the glider was turning away when he first sighted it.

The Discus pilot reports flying on a task on the fifth day of a NOTAM'd championship competition. The glider was fitted with a FLARM® TAS.

## // ASSESSMENT

**IN THE EVENT**, both pilots received alerts from their TAS equipment and

Diagram based on radar and GPS data



were able visually to acquire and manoeuvre to avoid the other aircraft. The Board felt that this equipment had been instrumental in reducing the risk of the encounter. The Board commended the use of FLARM and PowerFLARM to all as a highly valuable means of mitigating the risk of mid-air collision for many aircraft types.

Turning to the cause and risk, the Board felt that, given the prevailing weather conditions and geometry of the incident, both pilots had the opportunity to see the other aircraft earlier than they did, and that it was their late sightings that had caused the Airprox. The glider pilot had reportedly seen the Bulldog first, before his TAS alarmed, and had started to manoeuvre away. The Bulldog pilot's visual sighting was associated with the directed lookout derived from his FLARM equipment. The Board therefore felt that, on balance, effective and timely actions had been taken to prevent the aircraft colliding.

**Cause:** Late sighting by both pilots.

• **Degree of Risk:** C

# 07 / LONDON CITY ALARM... 4

REPORTING AIRCRAFT: AVRO RJ1H – REPORTED AIRCRAFT: AGUSTA A109

## REPORT'S DETAILS



**AIRPROX REPORT:**  
2013121

**Date and time:**  
7 Aug 2013 1646Z

**Position:**  
5131N 00007W  
(6nm W London/City Airport)

**Airspace:**  
London City CTR (Class: D)

**Reporting aircraft:** Type: Avro RJ1H  
**Reported aircraft:** Agusta A109

**Operator:**  
CAT Civ Exec

**Alt/FL:**  
2000ft QNH 1500ft NK

**Weather:**  
VMC CLBC VMC CAVOK

**Visibility:**  
>10km >10km

**Reported Separation:**  
500ft V/0nm H NK

**Recorded Separation:**  
500ft V/0.7nm H

### // SUMMARY

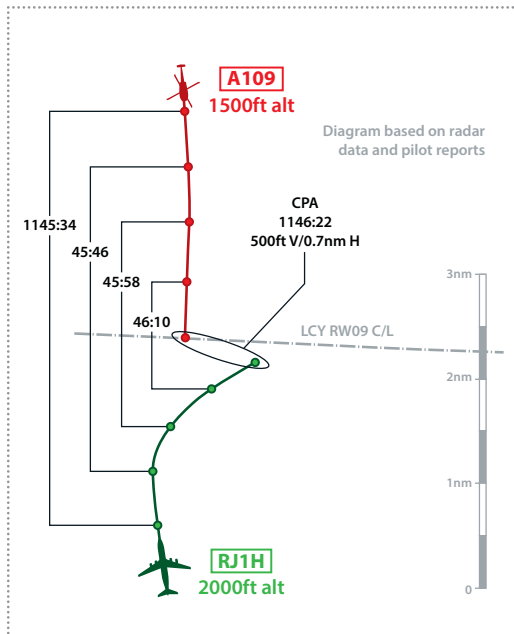
**THE AIRPROX OCCURRED** within Class D airspace. The Avro RJ1H was operating on an IFR flight inbound to RW09 at London City. The Agusta A109 was transiting the London City CTR VFR, from north to south, crossing west of the airport. The controllers complied with their responsibilities for IFR/VFR traffic operating in Class D airspace, i.e. Traffic Information was passed to the pilots of both aircraft.

There is no requirement to provide standard separation between such flights. The RJ1H received a TCAS Resolution Advisory (RA) to monitor vertical speed and the A109, obtaining visual contact with the RJ1H, passed behind it. The RJ1H pilot assessed the risk of collision as 'Low'.

The A109 pilot commented that he probably crosses the City Zone four times a week. He commented that it is not unusual to be co-ordinated 500ft below traffic inbound to London City. In all respects, the A109 pilot considered this to be a routine flight with no unusual Airprox aspects.

### // ASSESSMENT

**BEFORE CONSIDERING THE** Airprox itself, Board members commented that a number of similar Airprox reports had been filed by pilots of the operator of this RJ1H. All bar one involved aircraft inbound to RW09 at London City receiving TCAS RAs concerning VFR



aircraft 500-600ft below them in, or close to, the London City CTR.

**Cause:** TCAS sighting report.

• **Degree of Risk:** E

**Recommendation:** The CAA reviews VFR/SVFR traffic procedures within controlled airspace with respect to RA occurrences in TCAS equipped aircraft.

TO READ MORE REPORTS OR TO FIND OUT MORE INFORMATION VISIT: [AIRPROXBOARD.ORG.UK](http://AIRPROXBOARD.ORG.UK)

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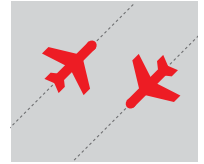
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## AIRPROX REPORTS

Understanding ATS reports featured:

- No: 2013043
- No: 2013071
- No: 2013073
- No: 2013134
- No: 2013123



Risk A ● Risk B ● Risk C ● Risk D ● Risk E ●

to use a Deconfliction Service if they will be persistently IMC. The principal UK Airprox Board recommendation arising from Airprox 2013071 relates to 'education of ATSOCAS' by the CAA and specifically the benefits of a Deconfliction Service in IMC and that the MAA address this same issue through each front line command. The CAA and MAA were also recommended to review the adequacy of guidance for the provision of level allocation to pilots under a Traffic Service.

Airprox report 2013073 offers a further valuable quote from CAP774.

"Basic Service relies on the pilot avoiding other traffic, unaided by controllers/FISOs. 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."

The UK Airprox Board noted that had either pilot obtained a Traffic or Deconfliction Service, this Airprox would probably not have occurred.

The events described in Airprox report 2013123 serve to highlight another aspect of ATSOCAS in that the ATP assumed he had priority under a 'radar service' but in fact he was under a Traffic Service and was therefore still required to effect his own collision avoidance.

Finally, Airprox 2013134 is a reminder that under CAP774: "Pilots must remain alert to the fact that while in receipt of a Procedural Service, they may encounter conflicting aircraft about which neither traffic information nor deconfliction advice have been provided. Additionally, the adequacy of ATC deconfliction advice relies on compliance by pilots, and in the non-surveillance environment ATC are unable to recognise when pilot position reports are inaccurate or incorrect."

While the Sikorsky S92 was on a procedure under a Procedural Service, its pilot still had collision avoidance responsibilities. Perhaps there may have been some thought in his mind that he had priority or 'right of way'? – but the S92 pilot had been given Traffic Information on the Eurocopter (now Airbus) EC135 so also had an avoid responsibility.

It is also noteworthy that the EC135 pilot had been given Traffic Information on the S92 but still persisted on his track towards the NDB approach path. The Board thought that it was not prudent for the EC135 pilot to fly through a promulgated instrument approach without first sighting the S92: he should have avoided the approach track either vertically or horizontally (probably by routing further to the East to give a wider berth as requested by ATC). →



# KNOW YOUR ATS...

... and ask for the service you want in good time

**A TELLING COMMENT** from the UK Airprox Board reads: "Members stated that misunderstanding of the ATSOCAS regulations seemed to be a common feature of many Airprox." Anyone using these services needs to understand what's available, the provisions of each and what a pilot's responsibilities are, as a steady stream of Airprox incidents illustrate. The CAA is aware of the need to improve awareness of the UK Flight Information Services (UK FIS) and through a series of progressive improvements, seeks to ensure and enhance pilot knowledge of all aspects of UK ATS provision.

In Airprox 2013043, the pilot of an Agusta A109(A) did not appear to understand the limitations of a Traffic Service and expected ATC to provide vectors. In respect of a Traffic Service (TS), CAP774 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."

In the weather conditions associated with Airprox 2013043, the pilots of both A109s would have been better served by a Deconfliction Service (DS).

A similar point is evident from the circumstances of Airprox 2013071. In its discussion, the Board identified contributory factors, the first of which was that both pilots were under an inappropriate Air Traffic Service – a Traffic Service – for the flight conditions (IMC). The Tucano pilot did request a Deconfliction Service but too late for ATC to have a chance to effect any separation, which reinforces the need to make an early call for a Deconfliction Service ideally before going IMC.

Post this event and Airprox 2013067 (a similar incident), all Linton Tucanos are now required

# 01 / SERVICING TO AVOID CONFLICT

REPORTING AIRCRAFT: A109(A) – REPORTED AIRCRAFT: A109(B)

## // SUMMARY

**THIS AIRPROX OCCURRED** between two Agusta A109s; the pilot of A109(A) was operating under IFR in IMC. He was in receipt of a Traffic Service from Brize Radar having requested radar vectors en-route to Northolt. The aircraft was fitted with a Traffic Awareness System (TAS). A109(B) was operating IFR and was not in receipt of an ATS at the time of the Airprox, contacting Brize Radar 1min 19sec after the closest point of approach.

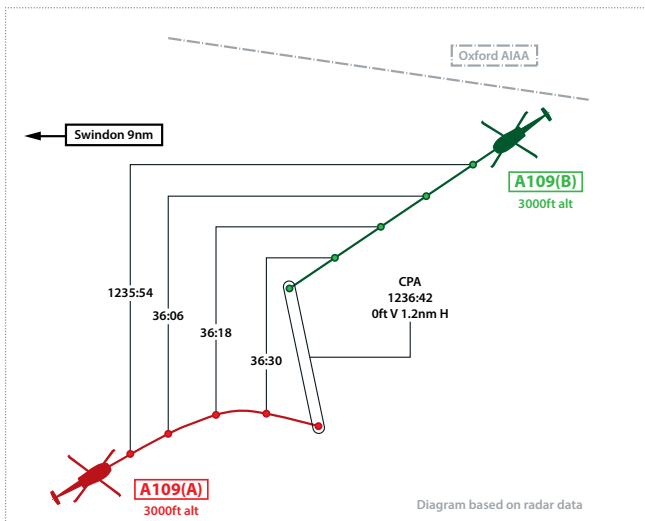
The pilot of A109(A) was given Traffic Information, the TAS indicating an aircraft in the reported position. The pilot turned onto East 10sec later, away from the conflict. The TAS then gave a 'TRAFFIC TRAFFIC' warning and highlighted the confliction on the display. About 10sec later the conflicting traffic indicated it had passed down the left side and behind.

The A109(B) pilot reports operating under IFR in IMC, 200ft above cloud. The aircraft was not fitted with an Airborne Collision Avoidance System. When west of Benson Aerodrome, he free-called Brize Radar. On contact with Brize he heard an extended conversation between the controller and another aircraft. Consequently, some minutes passed before he could establish two-way contact to request a Basic Service and transit to the south-west.

## // ASSESSMENT

**MEMBERS UNANIMOUSLY AGREED** that Brize Radar had provided the service that was requested and, after consideration of the transcript, Members commended him for maintaining an entirely professional service.

Pilot Members opined that the A109(A) pilot appeared to have misunderstood the provisions and limitations of a Traffic Service. Pilot Members agreed that the A109(A) pilot would have been better served in IMC with a Deconfliction Service which Brize Radar would have been able to provide as traffic in the area was of sufficiently low density. Although the A109(A) pilot had a reasonable expectation that ATC would not vector him into conflict, his apparent expectation that ATC would provide navigational vectors for a conflict-free transit to his destination was not reasonable.



## REPORT'S DETAILS



**AIRPROX REPORT:**  
2013043

**Date and time:**  
29 May 2013 1237Z

**Position:**  
5135N 00133W (9nm E Swindon)

**Airspace:**  
Lon FIR (Class: G)

**Reporting aircraft:** Type: Agusta A109(A)  
**Reported aircraft:** A109(B)

**Operator:** HQ Air (Ops) Civ Comm

**Alt/FL:** 3000ft QNH (1006hPa) 3000ft NK (1006hPa)

**Weather:** IMC KLWD IMC CLBL

**Visibility:** In Cloud 5nm

**Reported Separation:** < 1nm (TAS) Not Seen

**Recorded Separation:** 0ft V/1.2nm H

**Cause:** A conflict in IMC resolved by the A109(A) pilot.

• **Degree of Risk:** C

# 02 / GOING DOWN AND COMING UP

REPORTING AIRCRAFT: TUCANO T1 – REPORTED AIRCRAFT: SOCATA TB20

## // SUMMARY

**A (TCAS 1-EQUIPPED)** Tucano and a (non-ACAS) TB20 flew into conflict in Class G airspace near RAF Linton-on-Ouse (LIN). The incident occurred when the Tucano pilot (IMC in cloud and in receipt of a Traffic Service (TS) from LIN APR) descended towards the TB20 which was climbing on a reciprocal track (also IMC in cloud and in receipt of a TS from Leeds Bradford International Airport (LBIA RAD)).

The Tucano pilot was descending for recovery to LIN and was informed of traffic which he identified on TCAS. An

alert sounded whereupon he requested a Deconfliction Service. ATC advised an immediate left turn onto North, which he implemented, using 60° angle of bank, levelling off at 2300ft.

The TB20 pilot had contacted LBIA RAD, requesting a TS in order to climb through cloud to the planned cruise altitude of 4500ft. LBIA RAD passed Traffic Information, including details of opposite direction traffic in the descent. The TB20 pilot reminded LBIA RAD that he was 'in solid IMC' while continuing the climb, breaking out into 'clear air' at 4000ft.

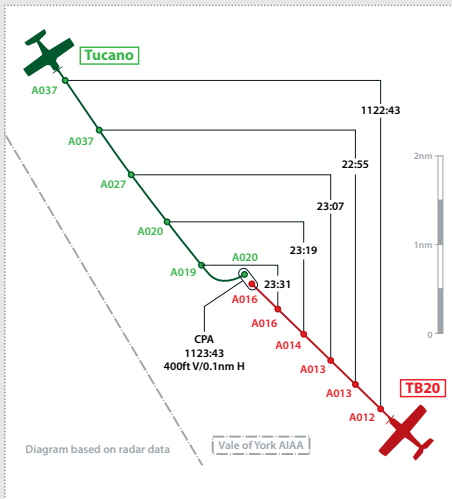
## // ASSESSMENT

**THE BOARD CONSIDERED** that the TB20 pilot had planned his transit conscientiously but that he would have been better served by contacting LIN LARS rather than LBIA. This would have afforded the required level of co-ordination between LIN traffic.

There was some doubt from Members as to the level of understanding of the agreed Traffic Service by the TB20 pilot. He was apparently aware of the developing conflict, albeit at a late stage, but his comment, "Er that's very close ma'am would you like us to stay on track or would you like me to turn left or right?", some 11sec before the

# 03 / WHEN VIGILANCE PAYS OFF

REPORTING AIRCRAFT: VIGILANT T1 – REPORTED AIRCRAFT: PA-28



closest point of approach, indicated that he may not have been fully aware of his collision avoidance responsibility.

For his part, the Tucano pilot was operating with an agreed Traffic Service and did not request a Deconfliction Service until about 23sec before the Closest Point of Approach. The Tucano pilot reacted to the instruction to carry out avoiding action by rapidly levelling off and entering a steep turn to the left whilst flying under IMC on instruments.

**Cause:** The Linton controller descended the Tucano pilot into conflict with the TB20.

• **Degree of Risk:** B

## REPORT'S DETAILS

**AIRPROX REPORT:**  
2013071

**Date and time:**  
11 Jul 2013 1124Z

**Position:**  
5359N 00130W (9.4nm WSW  
RAF Linton-on-Ouse)

**Airspace:**  
Vale of York AIAA (Class: G)

<b>Reporting aircraft:</b>	<b>Reported aircraft:</b>
Type: Tucano T1	Socata TB20

<b>Operator:</b>	
HQ Air (Trg)	Civ Pte

<b>Alt/FL:</b>	
2400ft	NK
QFE (1025hPa)	NK

<b>Weather:</b>	
IMC KLWD	IMC KLWD

<b>Visibility:</b>	
0km	0km

<b>Reported Separation:</b>	
200ft V/0.5nm H	NK

<b>Recorded Separation:</b>	
400ft V/0.1nm H	

### // SUMMARY

A VIGILANT T1 conducting an instructional sortie and a PA-28 transiting in level cruise flew into conflict near RAF Honington. The Vigilant pilot was in receipt of a Basic Service from Lakenheath APR; the PA-28 pilot was in communication with Lakenheath APR but not in receipt of an agreed Air Traffic Service (ATS). He received one Traffic Information call on the Vigilant 8min before the Closest Point of Approach, but he did not see it and continued en-route. Both pilots were operating under VFR in Class G airspace and were equally responsible for collision avoidance.

The Lakenheath Radar Approach Controller applied a Basic Service in accordance with its definition.

### // ASSESSMENT

**THE BOARD NOTED** that the Vigilant pilot had right of way. The PA-28 pilot was not in receipt of an ATS type that could have materially assisted with his collision avoidance responsibility. The Vigilant pilot did not see the PA-28 until it was directly overhead, too late to take any avoiding action. The Vigilant pilot was faced with the competing requirements for a cockpit environment quiet enough for effective instruction and obtaining collision avoidance assistance, through a Traffic or Deconfliction Service.

Turning to the cause, it was apparent that the PA-28 pilot had not been aware of the proximity of other aircraft during his flight and, given the proximity reported by

## REPORT'S DETAILS

**AIRPROX REPORT:**  
2013073

**Date and time:**  
13 Jul 2013 1124Z (Saturday)

**Position:**  
5224N 00048E  
(3.3nm ENE RAF Honington)

**Airspace:**  
Lon FIR (Class: G)

<b>Reporting aircraft:</b>	<b>Reported aircraft:</b>
Type: Vigilant T1	PA-28

<b>Operator:</b>	
HQ Air (Trg)	Civ Pte

<b>Alt/FL:</b>	
2600ft	2500ft
QNH (NK hPa)	QNH (NK hPa)

<b>Weather:</b>	
VMC CLBC	VMC CLOC

<b>Visibility:</b>	
30km	>10km

<b>Reported Separation:</b>	
100ft V/0ft H	Not Seen

<b>Recorded Separation:</b>	
NK V/<0.1nm H	

the Vigilant pilot, the Board's opinion was that he did not see the Vigilant. Given the



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proximity and this non-sighting, the Board felt that safety margins had been much reduced below normal.

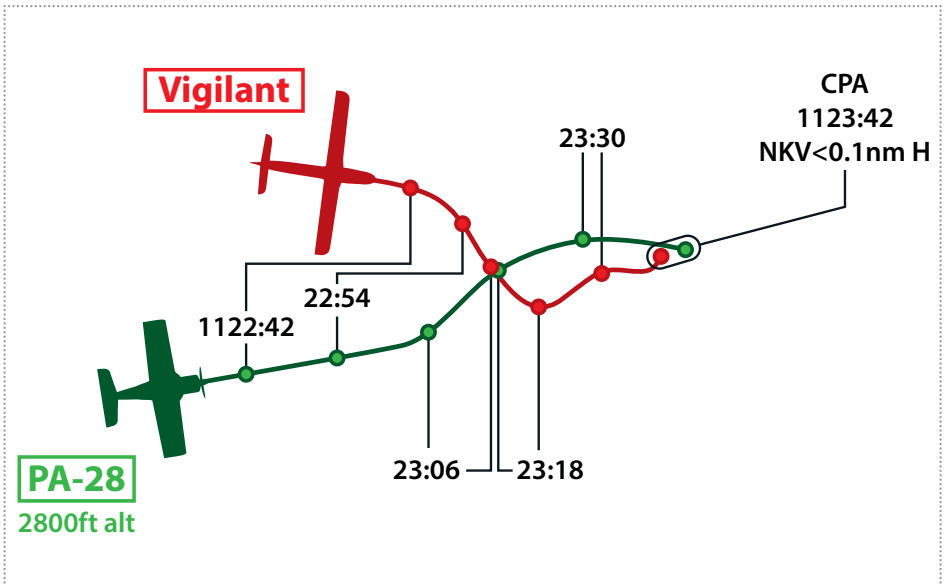
The Lakenheath APR was not required to provide Traffic Information, but the Board opined that he had sufficient situational awareness of the two aircraft that warranted timely Traffic Information; the Board considered that lack of timely TI was contributory to the cause.

**Cause:** A non-sighting by the PA-28 pilot of the Vigilant that he was overtaking.

• **Degree of Risk:** B

**Contributory Factor:** Lack of timely Traffic Information from the Lakenheath controller.

**Recommendation(s):** Lakenheath review their RT nomenclature and ATS provision.



# 04 / YOU CAN'T ALWAYS RELY ON TCAS

REPORTING AIRCRAFT: S92A – REPORTED AIRCRAFT: EC135T2

**// SUMMARY**

**THE AIRPROX OCCURRED** when the Sikorsky S92, its pilot operating IFR in IMC in receipt of a Procedural Service from Scatsta (SCS), and the EC135, in receipt of a Basic Service also from SCS, came into close proximity while operating in Class G airspace.

The controller passed appropriate Traffic Information to the S92 pilot and the EC135 pilot. The S92 pilot saw the EC135 about 200ft below, passing opposite direction, and made a sharp avoiding action left turn. He assessed the risk of collision as high. He did not receive a

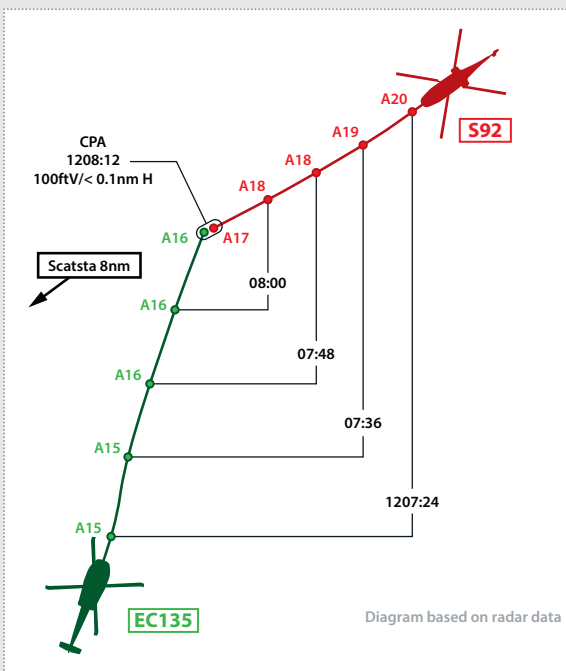
TCAS alert. The pilot of the EC135 did not see the S92.

**// ASSESSMENT**

**THE BOARD NOTED** that the S92 was fitted with TCAS and that the EC135 was squawking Mode C: members were at a loss to explain why the pilot of the S92 had not received a TCAS Resolution Advisory. The S92 pilot was in communication with SCS Approach on the same frequency as the EC135 pilot and consequently should have been able to hear the Traffic Information being issued to the EC135 pilot.

Given that he was operating in IMC, some members considered that it might have been prudent for the S92 pilot to take action himself to avoid a conflict with the EC135 by either requesting a climb for deconfliction or a descent to achieve VMC. Other members believed he had a strong mandate to continue as he was on a published instrument procedure and it was the other pilot that was required to give way.

The EC135 pilot, operating in VMC below the cloud, had been provided with appropriate and timely Traffic Information about the S92 but had not seemingly acted upon it. Additionally, he had been on the same frequency when the S92 pilot reported established on the FAT at a range of



**REPORT'S DETAILS**

**AIRPROX REPORT:**  
2013134

**Date and time:**  
16 Sep 2013 1208Z

**Position:**  
6031N 00104W  
(8nm NE Scatsta Airport)

**Airspace:**  
Scottish FIR (Class: G)

**Reporting aircraft:** Type: Sikorsky S92A  
**Reported aircraft:** EC135T2+

**Operator:**  
Civ Comm Civ Comm

**Alt/FL:**  
1800ft QNH (978hPa)  
1500ft QNH (NK)

**Conditions:**  
IMC VMC

**Visibility:**  
NK >10km

**Reported Separation:**  
>200ft V/0nm H NK

**Recorded Separation:**  
100ft V/0.1nm H

12nm and should therefore have been aware of the S92's location.

**Cause:** A late sighting by the S92 pilot and a non-sighting by the EC135 pilot.

• **Degree of Risk:** A

# 05 / THE MORE INFORMATION THE BETTER



## REPORT'S DETAILS



**AIRPROX REPORT:**  
2013123

**Date and time:**  
27 Aug 2013 1452Z

**Position:**  
5225N 00122W (5nm NE Coventry Airport)

**Airspace:**  
London FIR (Class: G)

**Reporting aircraft:** Type: ATP  
**Reported aircraft:** C172

**Operator:**  
CAT Civ Pte

**Alt/FL:**  
3000ft QNH 4000ft QNH

**Conditions:**  
VMC VMC

**Visibility:**  
>10km >10km

**Reported Separation:**  
500ft V/NK H 250ft V/350m H

**Recorded Separation:**  
500ft V/0.5nm (925m) H

**REPORTING AIRCRAFT: ATP – REPORTED AIRCRAFT: C172**

### // SUMMARY

**THE AIRPROX OCCURRED** in Class G airspace while both pilots were in communication with the Coventry Radar controller. Although there was no formally agreed Air Traffic Service being provided to the ATP pilot, the controller's intention was to provide the flight with a Traffic Service. The C172 pilot had requested, and was in receipt of, a Basic Service. Traffic Information was issued to both pilots and the controller continued to update the information.

The C172 pilot reported sighting the ATP and was able to maintain visual contact, although he was not aware that it would be turning right after passing the CT NDB.

The ATP pilot did not obtain visual contact with the C172 but still turned towards it in accordance with his departure plan. After commencing the turn at the CT NDB, the ATP pilot initially received a TCAS Traffic Advisory, followed by a TCAS Resolution Advisory to monitor vertical speed with which he complied.

### // ASSESSMENT HAVING BEEN INFORMED

about the close position of the C172 in his half-past-two position at 2nm, Civil Airline Pilot Members were surprised that the ATP pilot then continued his climb and made

the right turn at the CT, especially as it was he who should have given way in accordance with the Rules of the Air 2007.

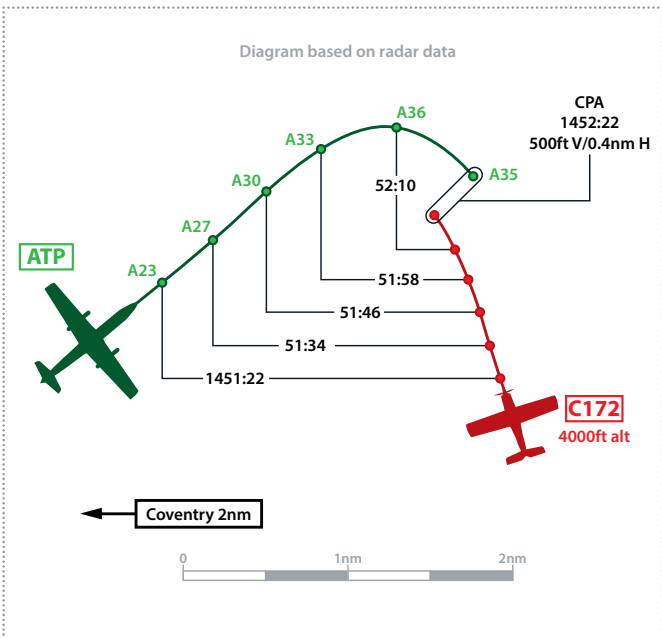
Members commended the C172 pilot for his overall situational awareness and for making preparations to take avoiding action, if he had considered it necessary, by disconnecting his autopilot and ensuring he had maintained visual contact with the ATP.

The Board noted that the controller was not required to achieve deconfliction minima between the aircraft and that the avoidance of other aircraft was ultimately the responsibility of the pilots. Nevertheless, it was considered that, as a duty of care, the Coventry controller could have taken action to control the situation.

**Cause:** The ATP pilot turned into conflict with the C172.

• **Degree of Risk:** C

**Contributory Factor:** Insufficient Traffic Information from ATC to the C172 pilot regarding the ATP's routing.



The avoidance of other aircraft was ultimately the responsibility of the pilots

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# HOW THE MILITARY ARE MITIGATING MAC RISKS

*Defence has targeted three areas – procedural, human factor and technical – to reduce the chance of a Mid Air Collision (MAC)*

**MILITARY AVIATION INCLUDES** a large number of aircraft types, ranging from small training aircraft (such as Grob Tutors), Gliders, RPAS, small and large helicopters, to large and fast jets including C17, Voyager, Hawk, Tornado and Typhoon. This span of capability brings with it a huge level of complexity and a number of challenges, not least the safe operation of such large fleets. Military aviation, like its civil counterpart, takes air safety very seriously.

One of the military's top level Risks to Life is the threat from Mid Air Collision (MAC), for which Airprox is an important indicator and a vital part of wider analysis of the issue. It is also an area where the Military Aviation Authority (MAA)<sup>1</sup>, as the Defence Air Safety Regulator, and its regulated



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community are notably engaged in mitigation activity. Defence considers the risk of mid-air collision and Airprox to have such importance that it jointly and equally, with the Civil Aviation Authority (CAA), funds the UK Airprox Board<sup>2</sup>.

Responsibility for managing air safety risks within Defence lies with Aviation Duty Holders (named individuals within Defence). The Duty Holder construct clearly identifies where and with whom responsibility and accountability for the mitigation of risk to life in military aviation lies. An onus is placed on Duty Holders to manage their risks effectively and in accordance with regulation written by the MAA, while assurance activity is conducted by the Regulator to ensure this is happening. MAC is recognised and managed by Duty Holders as one of the highest Air Safety risks.

Over recent years Defence has made considerable progress in reducing the MAC risk. →

<sup>1</sup> [www.maa.mod.uk](http://www.maa.mod.uk) | <sup>2</sup> [www.airproxboard.org.uk](http://www.airproxboard.org.uk)

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**POST AFGHANISTAN AND RETURN TO CONTINGENCY OPERATIONS**

**Notable changes to military aviation as it returns to 'contingency operations' are as follows:**

- The RAF's overall Tornado fleet will reduce to four squadrons based at RAF Marham. The squadrons will reduce to three in Apr 15, so the return from operations should not change the Tornado flying hours.
- Brize Norton has been an extremely busy aerodrome in recent years supporting air transport to the Middle East, but this activity is expected to be refocused as the UK involvement in Afghanistan reduces.
- Military helicopters will return from Afghanistan and some re-basing will take place. For example the Merlin will relocate from RAF Benson to RNAS Yeovilton in Somerset, which is also where the new Royal Navy and Army Wildcat helicopter is based. Chinooks will continue to be based at Odiham.

Three areas have been targeted, namely: procedural, human factor and technical mitigation. Although the other areas have received equal focus, it is the technical area where activity has often headlined. The decision to fit collision warning systems to the Tornado GR4 and multiple helicopter types is a positive step forward and it is anticipated that, in the near future, most

military aircraft will have an electronic conspicuity system fitted (with consideration being given to mandating for all future aircraft purchases). These improvements in electronic conspicuity will only provide benefit when other traffic is also transponding; those who are equipped with transponders should ensure they are switched on when airborne.

The military is very aware that camouflaged aircraft make the task of visually acquiring other traffic challenging. Seen as a positive in a hostile environment, it does not always suit the principle of 'see and avoid' in more peaceful airspace! Full use is made of anti-collision strobes, landing lights and transponders, and high risk activities are often constrained to segregated airspace such as danger areas. A series of simple procedural changes have been made to mitigate risk (for example where and when we fly), but where possible other solutions are adopted to complement this. For example, most military training aircraft are painted black to increase contrast and therefore conspicuity. Grob Tutors and gliders remain predominantly white, but trials are being conducted with conspicuity-enhancing systems such as glint panels on control surfaces.

Much consideration has gone into predicting future flying rates following the return of British military aircraft from Afghanistan, and the affect this will have on the dynamics of Class G airspace. Flying hours for military aircrews are becoming more precious and every minute airborne is optimised for the maximum training benefit. Interestingly, the



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aircraft moves and return from operations will likely result in very little change in daytime activity levels. Although a careful watching eye will be kept by Defence and the CAA to ensure that 'hot' areas, or areas of increased risk, do not develop; increased low flying in a specific region would be one such area of particular interest.

This issue of the magazine gives several examples of Airprox incidents involving military aircraft. While this short article gives an indication of some of the measures being taken by the military to reduce the risk of mid-air collision, each of the Airprox reports gives an insight into some of the issues faced by aviators. Educating ourselves about these challenges is part of the solution and learning from previous incidents is a key part of this.

Should you wish to deepen your understanding of these issues, much information and advice is available from a number of sources including the CAA<sup>3</sup>, RAF Flight Safety<sup>4</sup>, UK Airprox Board<sup>5</sup> and GASCo<sup>6,7,8</sup>.

Reporting of incidents is crucial to ensure lessons can be learned – clearly it is in everyone's interest to be attuned to safety issues and to keep as safe as possible. ●





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**Trials are being conducted with conspicuity-enhancing systems such as glint panels on control surfaces**

<sup>3</sup> www.airspacesafety.com | <sup>4</sup> www.raf.mod.uk/organisation/rafflightsafety.cfm | <sup>5</sup> www.airproxboard.org.uk | <sup>6</sup> www.gasco.org.uk | <sup>7</sup> www.flyontrack.co.uk | <sup>8</sup> www.skybrary.aero

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