

AIRPROX

Military Aviation Authority
MAA



THE PUBLICATION OF THE UK'S AIRPROX BOARD

2013



INSIDE

STRAIGHT-IN TO CONFLICT

What can go wrong in the circuit

TALES OF THE UNEXPECTED

The ones you don't see coming...

RADIO, COMMS & ATC

On the wrong wavelength

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WELCOME...

to the annual Airprox Report Magazine 2013



WELCOME TO THE AIRPROX edition of *Clued Up*. Most of us know the old adage about superior pilots being those who use their superior judgement and experience to avoid situations that might require them to demonstrate their superior skill, but even superior pilots can be involved in airprox incidents and you can reduce the probability by learning from the experiences of others, which is the aim of this magazine.

Of note, the airprox reports have been edited considerably to allow sufficient examples to be included; the complete versions are on the Airprox Board website www.airproxboard.org.uk

Suffering an airprox doesn't make anyone a bad pilot, but failing to report it does miss the opportunity to find out what really happened and to allow others to learn. Therefore we should all feel indebted to the pilots who have reported openly and honestly events that in some cases, with hindsight, probably weren't their finest hours.

So what should you do if you have an airprox? If you have a radio and a licence, say something immediately on the RT so that everyone on the frequency will make a mental note of where they were and what they were doing. As soon as possible after landing, report it to your club and local ATC if appropriate and fill in an airprox reporting form (available on our website www.airproxboard.org.uk). Don't worry if you change your mind about wanting to make a report; you can withdraw it at any stage. Then relax: you have done your bit to promote flight safety.

What happens next is that the Airprox Board secretariat will assemble the casework (reports from other pilots and ATCOs, RT transcripts, radar recordings, data loggers etc.) for a panel of experts to make an assessment of the causes and levels of risk. The panel comprises 14 experienced and

current civil and military pilots and controllers, plus a dozen or more supporting specialist advisors. Their assessment is all about safety. We don't do blame and we dis-identify the reports as far as possible. Within 10 days of the panel meeting, you will have a copy of the report and the opportunity to comment or ask questions. The entire process takes up to four months depending upon the complexity of the incident and how long it takes to trace the other pilot.

Every airprox is different, but far and away the most frequent causes are non-sightings and late sightings of aircraft that were in plain view; therefore lookout is one of the four airprox themes we have chosen for this magazine. We've all heard the saying that 'putting on a headset or flying helmet instantly reduces a pilot's intellect by half' (not that we believe it), but it is worth offsetting any potential 'headset effect' by planning every flight meticulously including your arrival at the destination airfield; poor sortie planning and circuit flying regularly cause airprox and are two more of our themes.

We often see reports in which pilots have asked ATC for a service that is inappropriate for their sortie or the weather. Understanding the provisions and limitations of Air Traffic Services, communicating unambiguously on the RT and developing Situational Awareness by listening to the RT is our final theme. Running through all of these themes, and more broadly, is the need to develop good airmanship and show courtesy to the aviators with whom we share our crowded airspace.

The pilots who have reported their airprox have shown us the courtesy of sharing their experiences – now we can show them the courtesy of learning from them. ●

Steve Forward
Director, UK Airprox Board

AIRPROX

Cover photo
Brian Barr/Simon Finlay

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THE AIRPROX BOARD

Board Members form a team with first-hand civil and military 'know how' on Air Traffic Control disciplines; Commercial Air Transport (CAT) and General Aviation (GA) rotary, fixed-wing and glider flying and military flying undertaken by the RN, Army, the RAF and UK-based USAF aircraft.

They are selected for acknowledged expertise in their particular field of aviation. Members are nominated by civil/ military organisations, sitting as experts in their own right and not representing any group or organisation.

Advisors provide expert advice on their particular specialisation to Board meetings. Advisors from areas such as the CAA's Air Traffic Services Investigations team, the MoD's Military ATC Operations and the Directorate of Aviation Regulation & Safety (DARS) attend the Board routinely while those from HQ 3rd AF (USAFE) and MOD (DPA) will come as and when their specialist knowledge is required.

A small Secretariat supports the work of the Board. The three Inspectors in the Secretariat have considerable experience in military and civil flight operational and air traffic control disciplines.



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AIRPROX BY NUMBERS

But what are the common causes?

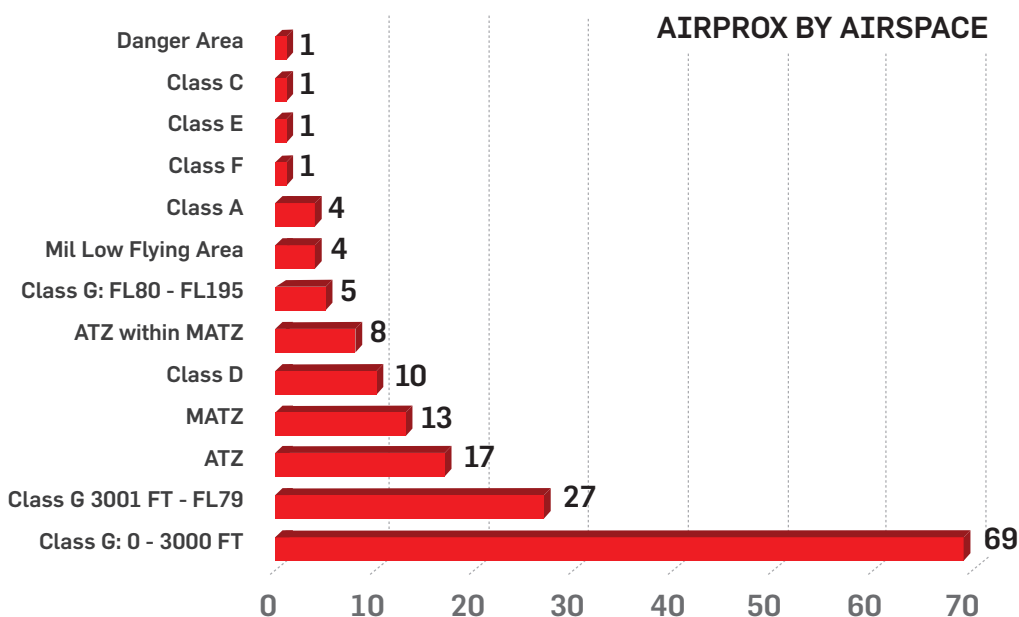
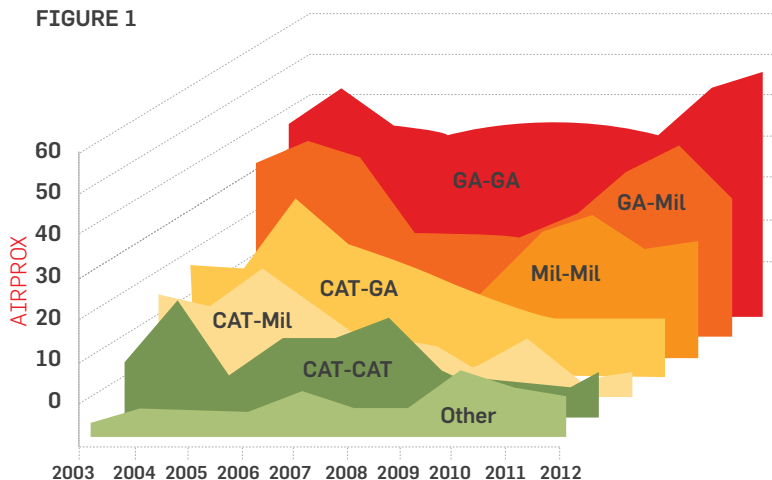
AIRPROX STATISTICS are compiled on an annual basis. Over the last 10 years, the number of airprox reported and investigated has reduced from around 200 per annum to 160 per annum.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Civil~Civil	87	109	99	95	93	93	74	63	73	84
Civil~Mil	67	69	74	46	38	38	36	54	50	39
Mil~Mil	23	22	8	12	12	17	30	34	26	28
Other	4	7	7	6	11	7	7	16	12	10
TOTALS	181	207	188	159	154	155	147	167	161	161

FIGURE 1

RATES OF AIRPROX per flying hour are difficult to compile and unreliable across the different categories of operation, but the recession has reduced Commercial Air Transport by some 10 per cent. There is anecdotal evidence of a reduction in General Aviation activity, and military activity has been affected by the reduction in fast jet aircraft types.

FIGURE 1 shows the breakdown by flight category; 'Other' refers to airprox in which one of the aircraft has not been traced.

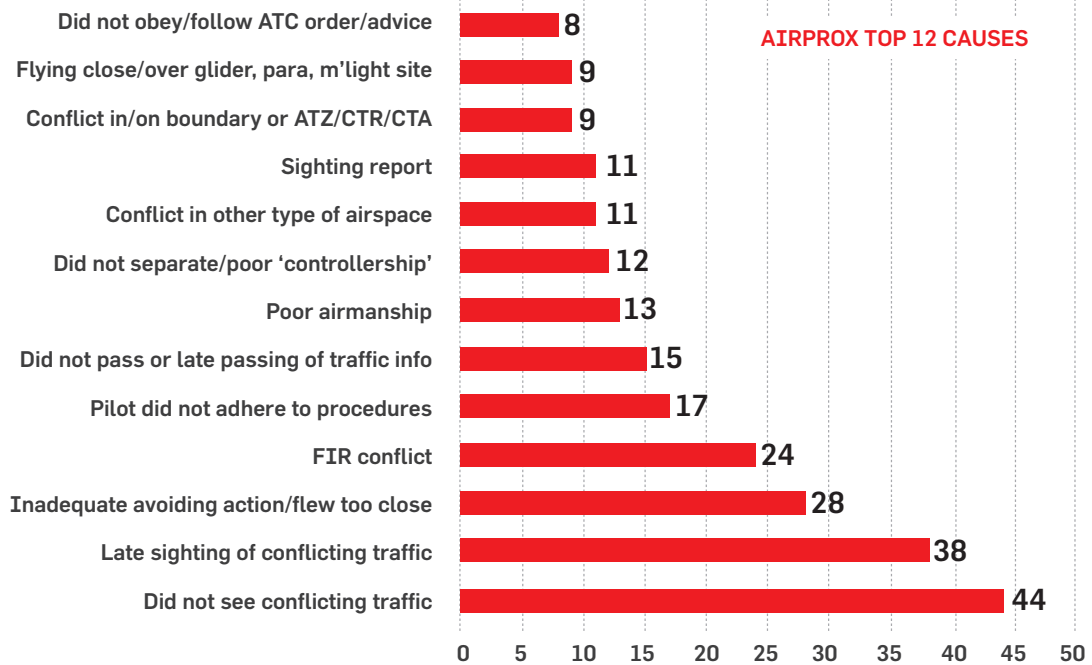


THE BREAKDOWN of airprox by airspace is shown in **FIGURE 2**. The figures are for those for 2012, which show a typical distribution. In 2013, of the first 35 airprox, 17 occurred in Class G airspace below 3,000ft. So on the next CAVOK day, if you are free to choose your cruising altitude, what will it be?

■ Number of airprox

TURNING TO THE CAUSES, most airprox have more than one cause assigned; for example, a pilot flying over a glider site and coming into conflict with a glider he does not see would be assigned a minimum of 'did not see' and 'flying close/over a glider site'. In addition to the causes which are obviously sighting issues, a 'conflict' is often assigned when

one pilot A sees aircraft B late and files a report, but pilot B saw aircraft A in good time and avoided. The breakdown of 319 causes for the 161 airprox in 2012 (Figure 3) was typical of every year, with sighting issues accounting for between one third and one half of the total.



THE AIRPROX BOARD

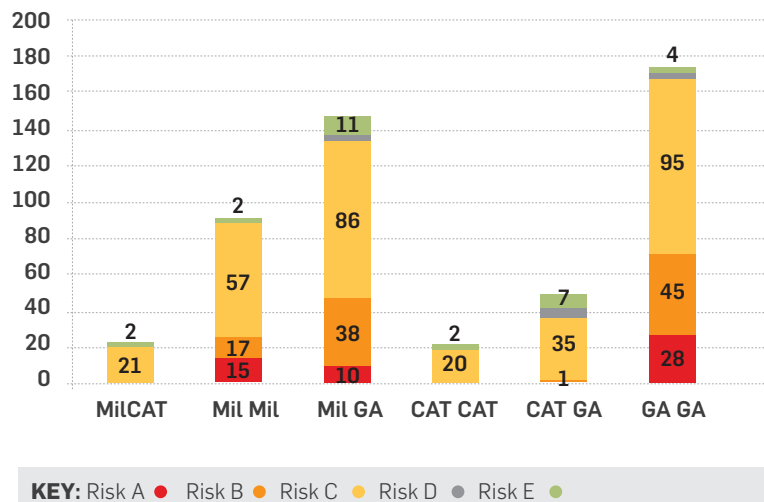
follows the ICAO convention on Risk classification of A-E:

A: RISK OF COLLISION	An actual risk of collision existed
B: SAFETY NOT ASSURED	The safety of the aircraft was compromised
C: NO RISK OF COLLISION	No risk of collision
D: RISK NOT DETERMINED	Insufficient information was available to determine the risk involved, or inconclusive or conflicting evidence precluded such determination
E: NON- EVENT	Met the criteria for reporting but, by analysis, it was determined that the occurrence was so benign that it would be misleading to consider it an airprox event. Normal produces, safety standards and parameters pertained.

FIGURE 4 shows a breakdown of the risks by flight classification. Almost half of GA-GA airprox are assessed to be risk-bearing (Risk A & B) and one third of GA-Mil and Mil-Mil are

risk-bearing. These results correlate with the see-and-avoid nature of many GA and Mil flights and the preponderance of non- and late-sightings shown earlier.

AIRPROX BY RISK AND FLT CLASS 2010-13





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IT'S ALL ABOUT FITTING IN

How do you rejoin the circuit? Poor arrivals in the pattern are the cause of a number of airprox every year

LEAVING THE CIRCUIT is usually pretty straightforward for most pilots, whatever level they are at in their flying career and whatever type they fly; but rejoining? This has become a feature in many airprox incidents, as the following summaries show.

Sometimes the question is how, or in which part of the circuit, to rejoin. In one case, and contrary to advice in the UK AIP, a pilot elected to fly a straight-in approach to Goodwood Aerodrome resulting in his aircraft coming into conflict with a PA-24 on base leg. This incident (report 2011093) came into 'Risk Category A' and the UK Airprox Board assessed the cause as the pilot of a PA-31 not integrating safely into the Goodwood/Chichester circuit.

A pilot member of the Airprox Board commented that fitting-in with other circuit traffic is more easily accomplished by entering the pattern either overhead, crosswind etc. and adjusting the circuit size accordingly, whereas flying a straight-in approach leaves the pilot with only one option for corrections – adjusting the airspeed.

There are two other noteworthy points from this incident: first, it appeared that both pilots had not heard or assimilated

calls made by the other party; such information is an invaluable aid to 'situational awareness'. Second, when an aircraft is in flight, an aerodrome Flight Information Services Officer can pass only information and not instructions. This last comment applies also to report 2012145 (see below).

In another incident where a pilot did not conform to the circuit traffic pattern (report 2012090), his aircraft came into conflict with another which was correctly positioned on the downwind leg of the Wellesbourne Mountford circuit.

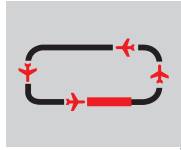
The pilot of the former aircraft, a DR400, reported that he had visited Wellesbourne many times previously and it had been his habit to join the circuit downwind, a practice that had never attracted comment in the past. Recognising that he had a responsibility when joining the circuit to give way to aircraft already established, after landing he spoke with – and apologised to – the PA-28 pilot. This airprox is a prime example of why an overhead join is normally the safest way of entering a circuit pattern.

The 'human factor' trigger for the incident featured in report 2012128 is arguably 'distraction'. En route from Fair Oaks and approaching Goodwood, while endeavouring – a number of times – to contact Farnborough

AIRPROX REPORTS

Circuit Joins reports featured:

- No: 2011093
- No: 2012090
- & ● No: 2012145
- No: 2012128



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

Radar to change frequency to Goodwood Information, a PA-28 pilot began his descent. It was not clear why he descended from 2,400ft to circuit height on a direct track into the ATZ without first contacting Goodwood Information.

Had he not descended, he would then have been in a position to effect a standard overhead join and would probably have remained clear of Goodwood circuit traffic. Unfortunately, however, the descent brought his aircraft into the Goodwood ATZ without first obtaining information from the FISO. An airprox with a DR400 in the circuit ensued, after which the PA-28 pilot left the ATZ before rejoining overhead.

One report (2012145) has been treated as two airprox incidents. The first occurred as both a PA-28(B) and an RC114 were integrating into the visual circuit, the traffic pattern of which had already been established by a third aircraft, PA-28(A). Two lessons are worth highlighting here, the first of which is the importance of making sure that when joining, we know where everyone is in the circuit. Secondly, if – perhaps to help a student when training – a circuit pattern is established that is larger than normal then it may be harder for pilots to see one another's aircraft, especially when joining. →



KEITH WILSON/SEB PHOTOGRAPHIC

01 / STRAIGHT-IN TO CONFLICT

REPORTING AIRCRAFT: PA-31 – REPORTED AIRCRAFT: PA-24

REPORT DETAILS

AIRPROX REPORT:
2011093

Date/Time:
July 28, 2011 1433Z

Position:
2nm from final approach runway
24 Goodwood

Airspace:
ATZ/London FIR (Class: G)

Reporting aircraft: Type: PA-31
Reported aircraft: PA-24

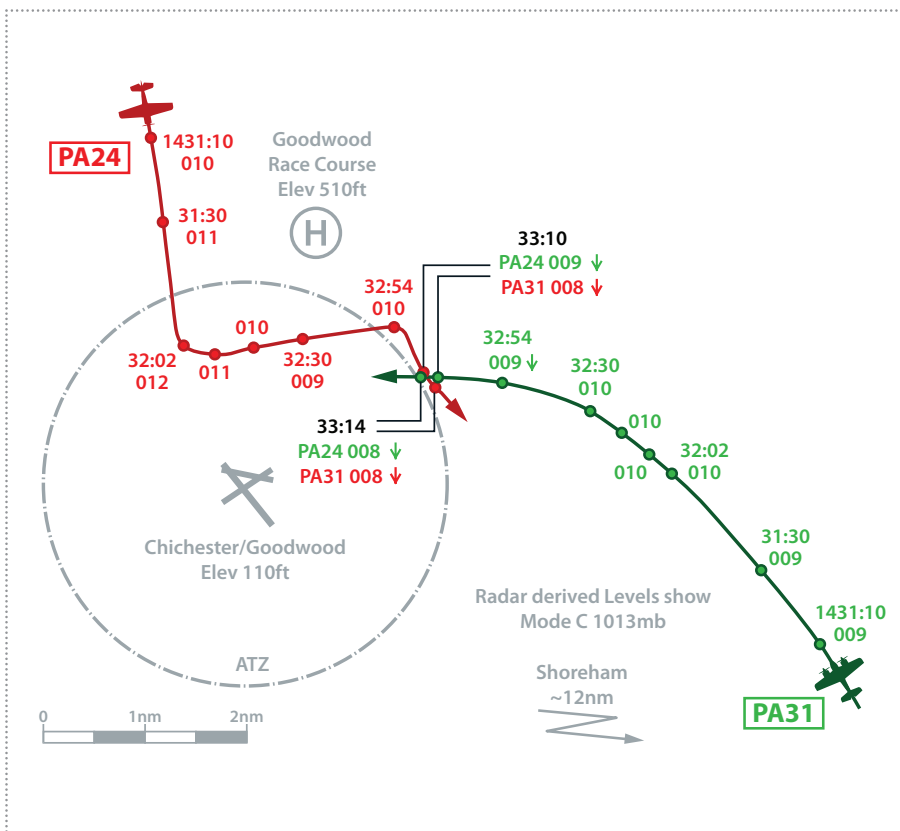
Alt/FL:
1000ft ▼ 800ft ▼
QNH (1022mb) Not known

Weather:
VMC CLOC VMC CAVOK

Visibility:
10km

Reported Separation:
50ft V/30-40m H 'underneath'

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



// SUMMARY

BOTH AIRCRAFT WERE inbound VFR to Chichester/Goodwood. The pilots were in radio communication with Goodwood Information. The PA-31 pilot elected to join for a straight-in approach while listening to other traffic position reports and adjusting speed accordingly. The PA-24 pilot requested to join the right-hand circuit downwind.

Notwithstanding that a Flight Information Service Officer cannot be asked for permission or clearance, the PA-24 pilot requested to join the right-hand circuit

downwind. He reports transmitting at 5nm, then 'downwind' and 'late downwind' (2DME, as he turned onto right base). The PA-31 pilot reports transmitting at 8nm, 4nm and at the moment of the incident which occurred at 2nm, the PA31 being just below the PA-24. The pilot of the PA-31 increased his aircraft's rate of descent and landed ahead. The pilot of the PA-24 pulled-up and asked if he could orbit left and complete a landing behind the PA-31, which he did.

Without access to radio recording it is not possible to confirm the calls and their

timings. Both pilots appeared not to hear or assimilate the transmissions made by the other until the pilot of the PA-31 reported at 2nm.

// ASSESSMENT

THE PA-24 PILOT HAD joined the active visual circuit right-hand downwind for runway 24 behind two aircraft already established ahead. The PA-31 pilot had elected to join on a 'straight-in' approach with three aircraft in the circuit. Guidance in the UK AIP Goodwood entry says: "Fixed-wing standard join is overhead at 2,000ft. 'Straight-in' and 'base' joins are strongly discouraged when the circuit is active. Air traffic services can advise on circuit status."

With no radio transcript, it was not known what information was broadcast on the Goodwood Information frequency. From the reports it appeared that both the PA-31 and PA-24 pilots had made calls which were either not heard or assimilated by the other party. Radio calls are an aid to building situational awareness, but the primary means of avoidance in this Class G air traffic zone was 'see and avoid'. Neither pilot reported being aware of the other until just before the airprox occurred.

Cause: The PA-31 pilot did not integrate safely into the circuit pattern.

● **Degree of Risk:** A — risk of collision



KEITH WILSON/SFB PHOTOGRAPHIC

02 / DOWNWIND OR OVERHEAD?

REPORTING AIRCRAFT: PA-28 – REPORTED AIRCRAFT: DR400



KEITH WILSON/SEB PHOTOGRAPHIC



Believing he was still some distance from the airfield... he turned right to intercept the upwind end of the downwind leg

// INCIDENT

THE PA-28 PILOT was teaching flapless approach instructional techniques. He was flying downwind on a right-hand circuit for runway 18 at 1000ft on Wellesbourne's QFE. The anti-collision strobe and HISL were on. He

was in contact with 'Wellesbourne Information'. The pilot of a joining Robin DR400 was heard reporting 5nm NW of the airfield, stating his intention to join downwind. Abeam the runway threshold, the PA-28 pilot spotted the joining aircraft, flying towards him at a similar level and an estimated range of 100 metres. He climbed to avert the immediate collision risk.

The DR400 arrived from the west, its pilot having called Wellesbourne at 10nm. The Flight Information Service Officer replied with circuit traffic information and that a downwind join would be at the pilot's discretion. Due to haze, the DR400 pilot had some difficulty identifying the airfield and its layout. Believing he was still some distance from the airfield, outside the circuit pattern, he turned right to intercept the upwind end of the downwind leg, informing Wellesbourne of his actions.

When the airprox occurred he was in a right turn, level at 700ft QFE. The strobes and landing light were on. The Flight Information Service Officer warned him of another aircraft close to his position [the PA-28] which he saw almost simultaneously, 250m ahead, 200ft above and to his left. He continued his right turn maintaining visual contact with the PA-28.

// ASSESSMENT

THE BOARD NOTED that although both pilots had an equal and shared responsibility to 'see and avoid', the DR400 pilot was required to conform to the pattern of traffic (Rule 12 of the Rules of the Air). The Board opined that the slant range visibility in haze

seemed to cause the DR400 pilot concern and that an overhead join would have kept him deconflicted from circuit traffic while establishing the pattern with regard to the airfield position and layout.

It was probable that the DR400 pilot's reported habit of joining downwind was reinforced by the absence of comment after previous downwind joins. A downwind join does not necessarily result in increased risk, but habitual use of such a join does not take variable conditions into consideration and so increases risk.

Although the PA-28 pilot saw the DR400 late, he increased separation by climbing and his avoiding action was considered to have been effective. The Board also commended the Flight Information Service Officer's actions in providing traffic information to the aircraft involved.

Cause: The DR400 pilot did not conform to the traffic pattern contrary to Rule 12 of the Rules of the Air, and flew into conflict with the PA-28 downwind.

● **Degree of Risk:** B

REPORT DETAILS



AIRPROX REPORT:
2012090

Date/Time:
27 Jun, 2012 1450Z

Position:
5211N 00137W
(DW RW18 RHC Wellesbourne
Mountford - elev 159ft)

Airspace:
ATZ (Class: G)

Reporting aircraft: Type: PA-28
Reported aircraft: DR400

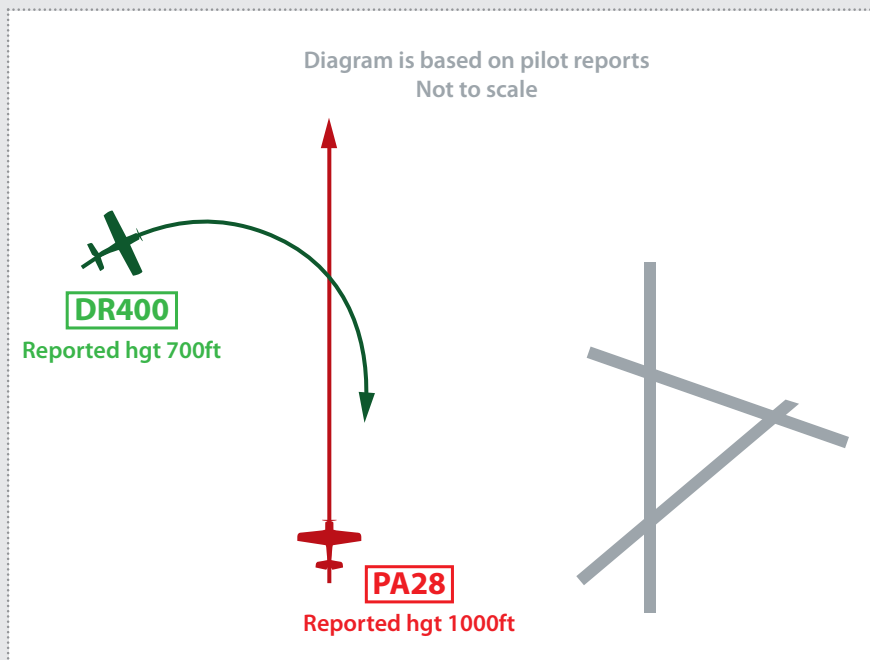
Operator:
Civ Trg Civ Pte

Alt/FL:
1,000ft QFE (1012hPa)
800ft (1015hPa)

Weather:
VMC CLBC VMC Haze

Visibility:
>10km >10km

Reported Separation:
50ft V/0m H 200ft V/60m H



03 / DOUBLE TROUBLES

REPORTING AIRCRAFT: PA-28(A), ROCKWELL COMMANDER 114
– REPORTED AIRCRAFT: PA-28(B)

// SUMMARY

THE ROCKWELL COMMANDER

114 and PA-28(B) were both inbound to Wellesbourne from Compton Abbas and Gloucestershire respectively. In accordance with Rules of the Air Rule 12(a) [‘that the commander shall... conform to the pattern of traffic formed by other aircraft intending to land at that aerodrome or keep clear of the airspace in which the pattern is formed...’], both aircraft could be expected to integrate into the circuit pattern already established by a third aircraft, PA-28(A).

All three pilots were operating VFR and in communication with Wellesbourne Information. The airprox was reported by the pilots of PA-28(A), the Rockwell Commander 114 and the Flight Information Services Officer when another aircraft, PA-28(B), flew into conflict with both of them.

The incident was assessed as two independent airprox with two separate causes and risks, so the summary takes the two incidents in chronological order.

**SUMMARY OF FIRST AIRPROX:
 RC114 – PA-28(B)**

On arrival, the pilot of the PA-28(B) was informed of two other aircraft in the circuit with the expectation that the pilot would position accordingly. He joined overhead and

then to the deadside. On tracking crosswind he was visual with the (faster) RC114 in his 11 o’clock. He reported downwind, explaining that he was visual with the RC114.

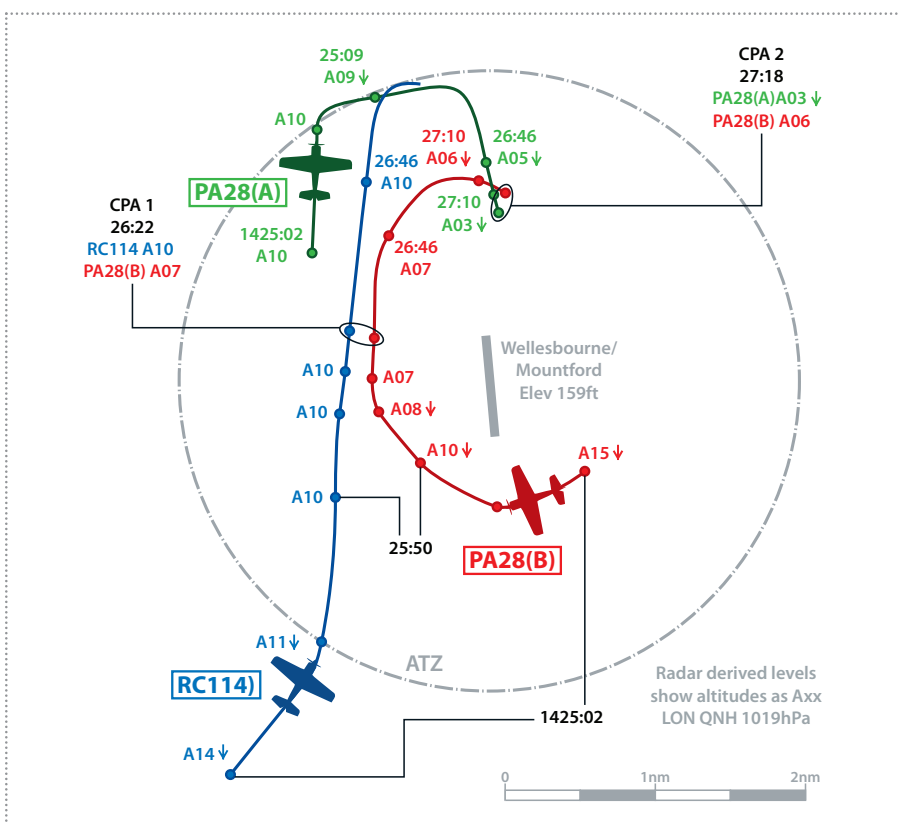
The pilot of the Rockwell reported that he joined downwind at 1000ft QFE, first seeing PA-28(B) on PCAS and immediately visually. PA-28(B) was on a conflicting track, 1.4nm off to his right. At 0.4nm, PA-28(B) turned right to parallel the RC114’s downwind track. The PA-28 then descended and moved under the starboard wing with PCAS indicating 0.3nm. With his aircraft being the faster of the two, the RC114 pilot took no avoiding action, intending to allow the PA-28 to take the ‘No 2 to land’ position.

UK AIRPROX BOARD ASSESSMENT

The Board discussed this incident extensively, concluding that as neither aircraft had formed a pattern ahead of the other, the cause was a conflict on the downwind leg between PA-28(B) and the RC114. Assessing the degree of Risk, with the early visual sightings obtained by both pilots and the actions taken by PA-28(B) pilot, the Board concluded that any risk of collision had been effectively removed.

Cause: A conflict on the downwind leg between PA-28(B) and the RC114.

● **Degree of Risk:** C



REPORT DETAILS



AIRPROX REPORT:
 2012145

Date/Time:
 Sept 9, 2012 1427Z

Position:
 1nm final approach runway18
 Wellesbourne Mountford

Airspace:
 ATZ (Class: G)

Reporting aircraft:	Reported aircraft:
Type: PA-28(A), Rockwell Commander 114	PA-28(B)

Alt/FL:		
500ft ▼	1,000ft	1,000ft ▼
QFE (1002mb)	QFE	QFE

Weather:		
VMC CAVOK	VMC	VMC

Visibility:		
Not recorded	>10km	>10km

Reported Separation:
 PA-28(A) v PA-28(B) 50ft V/<100m H
 RC114 v PA-28(B) Nil V/0-3nm H
 PA-28(B) v PA-28(A) 500ft V

Recorded Separation:
 300ft V/0-1nm H

**1. SUMMARY OF SECOND AIRPROX:
 PA-28(A) – PA-28(B)**

Following the above events, both the PA-28(B) and the Rockwell Commander continued towards landing. The PA-28(B) pilot reported that, as he was turning onto base leg, he realised that PA-28(A) was on final. He initiated a climbing go-around into the deadside, informing air traffic. He hadn’t heard the other PA-28’s circuit calls to establish its position, saying that he only saw it when it was at 500ft on final.

The pilot of PA-28(A), an instructor conducting training, reported that while descending on final approach to runway 18 he saw two aircraft (PA-28(B) and RC114) very close together downwind. At that stage there was no risk of collision as far as his aircraft was concerned so he continued, concentrating on flying the final approach.

Descending through 500ft on final, he suddenly noticed an aircraft 100m away on a very tight right base heading straight towards his aircraft. Assessing the situation quickly he realised it was on a direct collision course from the right and above so he called on the radio to ask ‘aircraft on base to go-around immediately’ while diving away with a left turn.

// ASSESSMENT

AFTER THE ROCKWELL Commander had passed on his left-hand side, the PA-28(B) pilot turned onto base leg without assimilating the position of PA-28(A) on final and this caused the second airprox. The Flight Information Services Officer had told the PA-28(B) pilot that there were two aircraft in the circuit [the PA-28(A) and RC114] ahead when he joined

overhead, but one member wondered whether the Rockwell Commander's passage had led PA-28(B) pilot, unaware that the Rockwell pilot intended to extend his downwind leg to let PA-28(B) land ahead of him, to execute an early turn towards final in order to stay ahead of the RC114, instead of following it as No 3. Whatever the reason, the PA-28(B) pilot was wrong to turn towards final when he did.

The instructor in PA-28(A) was commended

for his actions when he noticed PA-28(B), converging and descending from his right during his final approach. PA-28(B) pilot saw PA-28(A) late and executed a climbing go-around, estimating 500ft vertical separation at the closest point of approach. While these actions had removed the actual collision risk, the pilot of PA-28(B) had descended towards PA-28(A) – the radar recording reveals that PA-28(B) crossed just 0.1nm behind and 300ft

above PA28(A) – which was still descending with each aircraft unsighted to both pilots. The Board concluded that safety had not been assured during the encounter.

Cause: The pilot of PA-28(B) turned into conflict with PA-28(A) on final.

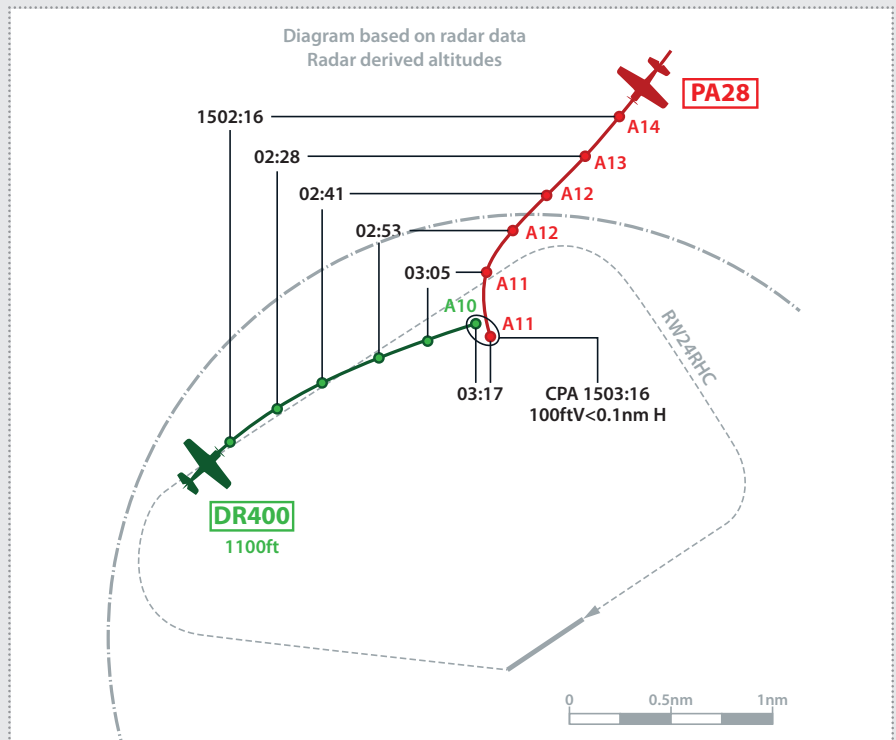
● Degree of Risk: B

04 / RADIO WOES

// SUMMARY

THE ROBIN DR400 PILOT was operating under VFR in contact with the Goodwood Flight Information Service Officer. After take-off from runway 24 in a right-hand circuit, the DR400 pilot climbed to be at 1,200ft at the start of the downwind leg. Alerted by the FISO to other traffic, he was maintaining 'a very good lookout'. Approaching the end of the downwind leg he was informed of conflicting traffic, the PA-28, and he replied he was visual. The PA-28 was 300-500m in his 10 o'clock position at almost exactly the same height, tracking at 90° to him. He watched the aircraft descend slowly and pass below.

REPORTING AIRCRAFT: DR400 – REPORTED AIRCRAFT: PA-28



REPORT DETAILS

AIRPROX REPORT:
2012128

Date/Time:
Aug 18, 2012 1503Z

Position:
Goodwood

Airspace:
Goodwood ATZ (Class: G)

Reporting aircraft: Type: DR400
Reported aircraft: PA-28

Alt/FL:
1,250ft QFE (1011hPa) 1,500ft QNH (1014hPa)

Weather:
VMC CAVOK VMC CLBC

Visibility:
>10km 10km

Reported Separation:
100ft V/0ft H 100ft V/100ft H

Recorded Separation:
100ft V/<0.1nm H

The PA-28 pilot was inbound from Fairoaks with a basic service from Farnborough Radar. About 5nm north of the Goodwood zone, he called Farnborough Radar to change frequency to 'Goodwood Information'.

Despite repeated calls, he was not able to re-establish two-way contact so, as he was just about to enter the Goodwood zone, he gave up calling Farnborough and switched to Goodwood. He then saw the Robin DR400 in his 1 o'clock position at a range of 60m and about 100ft above, travelling from right to left. He judged that neither he nor the DR400 pilot needed to alter course.

// ASSESSMENT

THE BOARD AGREED that the PA-28 pilot's pre-occupation with making contact with Farnborough had led to him entering the Goodwood zone unannounced. If he had simply made a 'blind' call to Farnborough, advising of his intentions to leave the frequency, while

maintaining height, he could have remained clear of Goodwood. As it was, he descended to circuit level and entered the air traffic zone into conflict with circuit traffic, without first contacting Goodwood information.

In this case the Board was divided on the degree of Risk. Several members thought that safety margins were much reduced, while others thought that the DR400 pilot had first seen the PA-28 at a range of 300-500m, both pilots having time and space to carry out at least a degree of avoiding action had that been necessary. Ultimately, it was decided that Risk B was unwarranted.

Cause: The PA-28 pilot entered the Air Traffic Zone without first obtaining information from Goodwood, in contravention of Rule 45, and flew into conflict with the DR400 downwind.

● Degree of Risk: C

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



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DROPPING IN ON THE MILITARY

Visiting an RAF base – how hard can that be? Well not very, but there are some things you need to know

FIRST, YOU MIGHT BE INVITED to join the circuit through the Initial Point or 'Initial'. Typically, this is a point about three miles from the in-use runway threshold and on the deadside. Military fast-jets and training aircraft routinely join through Initial at 1,000-1,500ft on the QFE. From Initial there are broadly two choices: a 'standard' join or a 'run in and break'.

For a standard join (recommended for visitors!) fly towards the airfield remaining on the deadside at circuit height until abeam the upwind end of the runway then turn downwind; call 'deadside' abeam the runway threshold (note the deadside call will not be acknowledged by ATC). During your transit from Initial, you may see or even be overtaken by aircraft conducting a 'run and break'.

These aircraft will maintain faster than their normal circuit speed from Initial to a point abeam the runway threshold where they will conduct a tight turn to downwind, climbing to circuit height in the turn if the run in was below circuit height. This method of circuit entry developed from the requirement for combat aircraft to maintain high speed (combat speed) until it was safe to

decelerate inside the airfield's air defences. It is also an efficient way of recovering formations in quick succession.

The second thing you need to know is that military pilots are taught not to extend downwind for spacing from aircraft ahead or on radar. Rather, if they cannot turn final from the normal position downwind (note: military circuits are flown as ovals with no base leg), military pilots go around at circuit height, crossing to the deadside and flying upwind. A call on the RT, 'going around from downwind' is sufficient to alert ATC and other traffic.

Two other things that might be useful at a military airfields is to understand the RT calls 'High Key' and 'Low Key', which are position calls for aircraft conducting Practice Forced Landings (PFLs). 'High Key' means that the aircraft is positioned high above the runway on the dead side or above the upwind end of the runway from where a descending, unpowered, short circuit pattern to the runway can be flown. The call 'Low Key' is made high on the downwind leg abeam the planned touchdown point.



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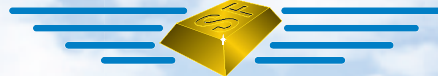


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IT'S ALL (OR NOT) IN THE PLANNING

Poor pre-flight planning is the cause of many airprox that could easily be avoided, as these cases show

AIRPROX REPORTS

Planning reports featured:

- No: 2012141
- No: 2011065
- No: 2010129
- No: 2010176
- No: 2012011



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



“IN HINDSIGHT, proper attention to planning would have made my flight a lot safer – and much more enjoyable.” That true comment following an incident isn’t a sentiment most pilots want to feel as they drive away from the airfield when it’s too late to put matters right. And it’s one of the reasons why thorough pre-flight planning is so vital – as a steady stream of related airprox incidents continues to reveal.

In *CluedUp* Spring/Summer 2013, David Phillips, an experienced pilot of some 30 years standing, asked ‘Good to Go?’. His article is well worth close attention. David concludes by saying that pre-flight preparation is not something that can be taken lightly or rushed. Instructors emphasise this during training and for very good reason. The five airprox that follow, summarised from the associated full reports to bring out the ‘pre-flight planning’ aspects, underscore the point still further.

There was, for example, a helicopter which flew into a notified and active Free-Fall Dropping Zone and into conflict with a skydiver (report 2010129). In this case there was an actual risk of collision which, in the circumstances, would most probably have incurred fatalities. Accepting that the helicopter

pilot was inexperienced, nevertheless the pre-flight planning really was inadequate.

Some years ago, in a not dissimilar incident, the ‘free-faller’ had a video camera fitted in his helmet. You might have seen that recording (you’ll find it on YouTube, search ‘skydiver flyby’) especially the few seconds just before ‘closest point of approach’ – it’s frightening, to say the least.

In another case of poor planning (report 2010176), a Tornado was climbing away from a low-level attack in the Holbeach Air Weapons Range. A C120 unintentionally infringed the range, which led to a conflict, resolved by the Tornado pilot turning his aircraft away.

Another airprox that also occurred in a Danger Area (report 2011065) happened when a pilot had planned his route to avoid such airspace but then entered it when avoiding cumulonimbus. Unfortunately, the pilot was unaware of the NOTAM relating to a military exercise in the Danger Area (which is permanently active anyway).

Having worked at the UK Airprox Board for five years and been a reader of its Reports before (and after!) those days, there are certain incidents that fall into the category of ‘oh dear, not another!’ One such is powered aircraft flying overhead promulgated and active glider

launching sites, below the maximum height of the winch cable, and into conflict with a glider ‘on the wire’.

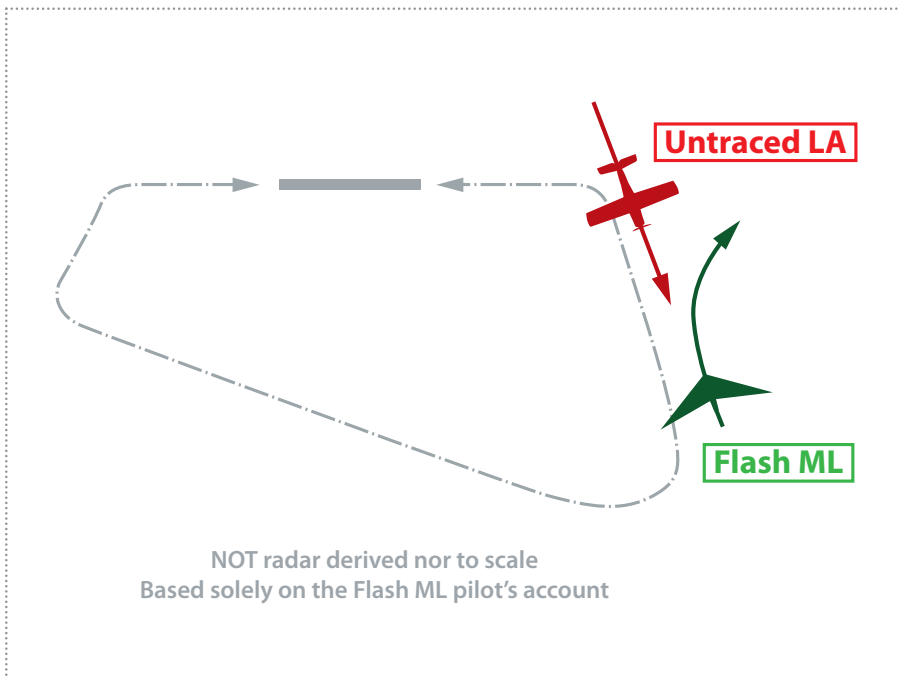
Report 2012011 falls into this category. Had the glider launched 30sec to 1min earlier then the helicopter would almost certainly have flown into the winch cable (about 4mm diameter and thus invisible to passing ac) with catastrophic consequences. Glider sites must be treated with the greatest respect. Plan to avoid!

And finally for this theme, an untraced light aircraft flew into conflict with a flexwing microlight in the circuit at Finmere, Oxon (report 2012141). Finmere Microlight Site, having the same status as aerodromes, is marked as an active A/D on CAA and military charts. It has operated as a microlight training school since 2002 and its noise abatement procedures and circuit pattern are published in the UK AIP and all current flight guides. It is worth noting that modern microlights have performance equal to most other light aircraft and therefore their circuit patterns are of commensurate size.

It is unfortunate that the UK Airprox Board did not have a report from the pilot of the light aircraft, who remained untraced. Nevertheless, it reinforces the importance of proper pre-flight planning for the benefit of others. →

01 / MICROLIGHTS HAVE RIGHTS, TOO

REPORTING AIRCRAFT: FLASH 2A ML – REPORTED AIRCRAFT: UNTRACED LA



// SUMMARY

THE MAINAIR FLASH 2A flexwing microlight (Flash ML) was conducting a training flight in the left-hand circuit to runway 28 at Finmere. As it turned onto left base at 42kt, flying at 700ft, both pilots became aware of a high-wing light aircraft approaching head-on at exactly the same height, some 500m away. Its pilot did not deviate from his course so they took avoiding action and the oncoming aircraft passed within 150m at the same height.

The owner of the aircraft identified by the Flash ML pilot reported that he has never flown around Finmere and is adamant that his aircraft was not the one reported to be

involved in this airprox. Notwithstanding extensive tracing action, the identity of the reported aircraft remains unknown.

// ASSESSMENT

FINMERE IS LOCATED where the surrounding airspace constraints (Turweston ATZ, Bicester glider site, Croughton HIRTA) create a funnelling effect. Nevertheless, members agreed that flying so close to a microlight site that is clearly marked on VFR charts was indicative of poor sortie planning and/or poor airmanship.

The CAA Flt Ops Advisor confirmed to that microlight sites are considered to fall within

REPORT DETAILS

AIRPROX REPORT:
2012141

Date/Time:
Sep 1, 2012 1417Z

Position:
Finmere Microlight Site

Airspace:
London Flight Information Region (Class: G)

Reporting aircraft:	Reported aircraft:
Type: Flash 2A ML	Untraced LA

Alt/FL:	
700ft	NK
aal (QFE)	(NK)

Weather:	
VMC CLBC	NK

Visibility:
10km

Reported Separation:	
Nil V/150m H	NK

the definition of an aerodrome. Therefore Rule 12 of the Rules of the Air applies, requiring pilots transiting the local area to conform to the traffic pattern formed by other aircraft or keep clear of the airspace in which the pattern is formed.

In discussing the risk associated with the airprox, the Board noted that having spotted the light aircraft some 500m away, the Flash pilot had waited two to three seconds before initiating avoiding action. There was some difference of opinion but, by a majority, the members assessed that the Flash pilot's sighting had been early enough to enable him to perform a manoeuvre that effectively removed the risk of a collision.

Cause: The pilot of the untraced light aircraft did not comply with Rule 12 and flew into conflict with the Flash 2A on the base leg for runway 28 at Finmere.

● **Degree of Risk:** C

02 / DANGERS OF A DANGER AREA

REPORTING AIRCRAFT: EXTRA 300 LPS – REPORTED AIRCRAFT: CIRRUS SR20

// SUMMARY

THE EXTRA 300 LPS was participating in a NOTAM'd exercise, SFC to FL170 and for which a landline 'point of contact' was specified, in the permanently active EG D208. Its pilot stated that the Cirrus SR20 passed 200ft directly below.

The Extra pilot took no avoiding action as the

SR20 was not seen until it was directly underneath and clearing away from his flight path. He thought that, as they had not seen the other aircraft approach and were manoeuvring constantly within their allocated altitude block, the 200ft vertical separation could have been eroded in fractions of a second and resulted in a collision. The Cirrus SR20 had departed Old

Buckenham VFR, bound for Waterford, Ireland. The planned route circumnavigated to the north of EG D208. In level cruise and in receipt of a Basic Service from London Information, the pilot altered course to avoid cumulonimbus cloud and heavy rain, which took him into D208. The SR20 pilot did not see the Extra at any stage.

REPORT DETAILS

AIRPROX REPORT:
2011065

Date/Time:
Jun 30, 2011 1325Z

Position:
4 1/2 nm south-west of Watton

Airspace:
EGD 208 (Danger Area)

Reporting aircraft: Type: Extra 300 LPS
Reported aircraft: Cirrus SR20

Alt/FL:
2,500ft QNH (1025mb) 2,200ft QNH

Weather:
VMC CLBC VMC In Rain

Visibility:
10km 6km

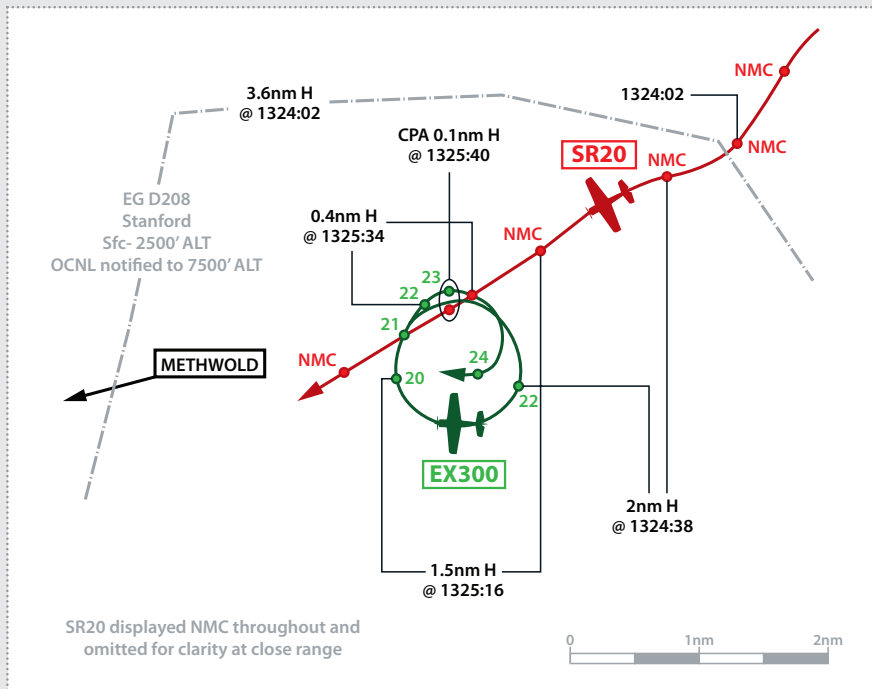
Reported Separation:
200ft V/nil H NR

Recorded Separation:
0:1nm H

Board concluded that the safety of the aircraft involved had been compromised.

Cause: The SR20 pilot flew through a promulgated and active Danger Area and into conflict with the Extra.

● **Degree of Risk:** B



// ASSESSMENT

AT A REPORTED TRANSIT ALTITUDE of 2,200ft, the radar recording revealed that the SR20 pilot entered D208, thereby placing his aircraft in conflict with the Extra participating in the close air support exercise within the Danger Area and for which a NOTAM had been issued notifying other airspace users that fast-jets and helicopters would conduct high-energy manoeuvres.

Members noted that the SR20 pilot reports he was unaware either of the NOTAM or that D208 was active, which was

indicative of inadequate pre-flight planning and awareness of the airspace surrounding his track.

The Extra pilot was unable to take any avoiding action as the SR20 was not seen until it was directly underneath. Some members contended that with no less than 200ft of vertical separation reported by the Extra pilot and somewhat more than that apparent from his aircraft's Mode C indication, the vertical separation was sufficient to avert an actual collision.

Following a comprehensive debate, the

REPORT DETAILS

AIRPROX REPORT:
2010129

Date/Time:
Sep 2, 2010 1518Z

Position:
Chatteris

Airspace:
London Flight Information Region (Class: G)

Reporting aircraft: Type: Skydiver
Reported aircraft: Robinson R44

Alt/FL:
2,500ft (agl) 1,500ft (NK)

Weather:
VMC NK VMC NK

Visibility:
unltd unltd

03 / SKYDIVER AND THE HELICOPTER

REPORTING AIRCRAFT: SKYDIVER – **REPORTED AIRCRAFT:** ROBINSON R44

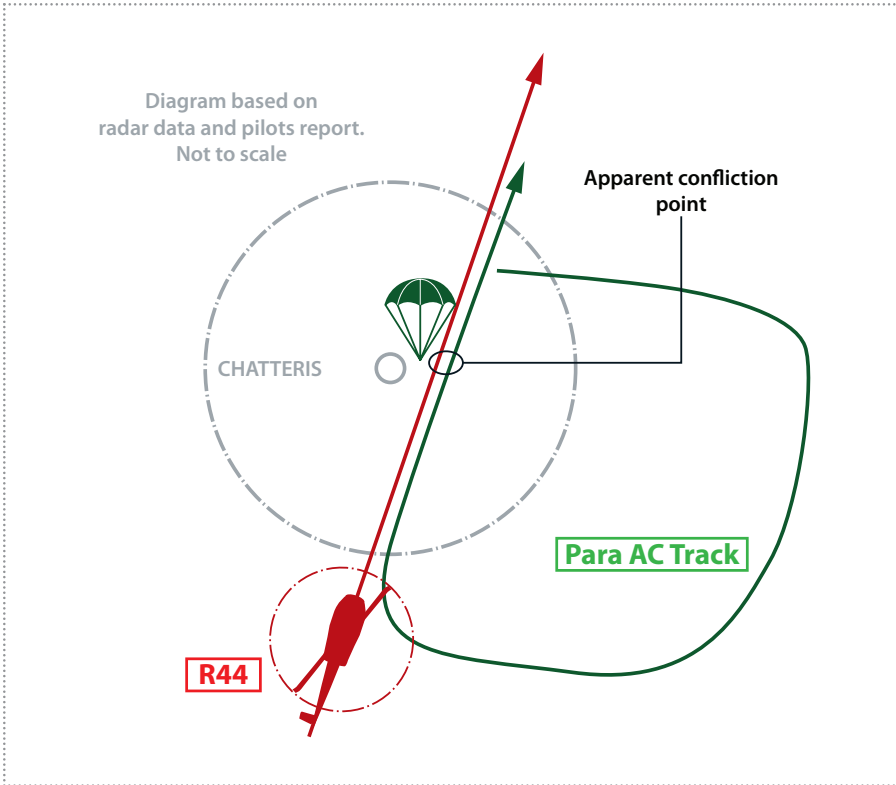
// SUMMARY

THE SKYDIVER ASSESSED the risk as being high. He had jumped at 5,000ft agl and had a fully operational parachute at 2,500ft. Looking to his right, he saw a black helicopter, which looked like a Robinson R44, coming straight towards him. He slowed his descent rate and the helicopter passed directly below. The pilot of an R44 helicopter in the area at the time of the incident reported that he saw nothing. He was flying a qualifying Navex from a private site near Salford.

Although both the para-dropping aircraft and the R44 show on radar throughout, the precise geometry of the incident could not be determined. At 1513, a contact south of Chatteris squawking 7,000 with Mode C at

FL013, presumed to be the R44, turns onto a track of 015°, which it maintains. At 1514:54 the dropping aircraft passes over the airfield on a northerly track at FL050, the R44 then being 2nm due south of the airfield. It is assumed that the jump takes place as the dropping aircraft passes just to the east of the airfield at FL050, tracking 015°, at 1515:43. At 1518 the R44 passes the probable incident position, 0.2nm to the east of the airfield centre, at FL014 (1710ft amsl).

Chatteris is promulgated as a Free-Fall Drop Zone (DZ) of 1.5nm radius, up to FL150, active daylight hours Tuesday-Sunday and public holidays. (The incident day was a Thursday.) This is a warning, not a prohibition.



// ASSESSMENT

THE BOARD CONSIDERED this a straightforward example of inadequate flight planning by an inexperienced pilot. Chatteris drop zone is promulgated and clearly marked on recognised VFR charts and electronic navigation systems: the Board could not therefore understand why the R44 pilot had not avoided it by a reasonable margin and, apparently, was not aware of its existence.

While recognising that like many others, Chatteris Free-Fall DZ is not restricted airspace, members agreed that, in order to ensure the safety both of skydivers and aircraft, pilots should avoid the site by a suitable margin during operating hours.

Bearing in mind the skydiver's very limited ability to manoeuvre, that the R44 pilot neither saw nor avoided him and that, although the actual separation could not be estimated, it was clearly a very close encounter. Members agreed unanimously that there had been a risk that the skydiver would have collided with the R44 most likely with fatal consequences.

Cause: The R44 pilot flew into a notified and active Free-Fall DZ and into conflict with a skydiver.

● **Degree of Risk:** A

04 / TROUBLED TORNADO

REPORTING AIRCRAFT: TORNADO GR4 – REPORTED AIRCRAFT: C120

REPORT DETAILS

AIRPROX REPORT:
2010176

Date/Time:
Dec 9, 2010 1432Z

Position:
Holbeach Air Weapons Range

Airspace:
D 207 (Class: G)

Reporting aircraft: Type: Tornado GR4
Reported aircraft: C120

Alt/FL:
200ft (Rad Alt) NR

Weather:
VMC NR NR

Visibility:
30km NR

Reported Separation:
V 800ft/H 200ft NR

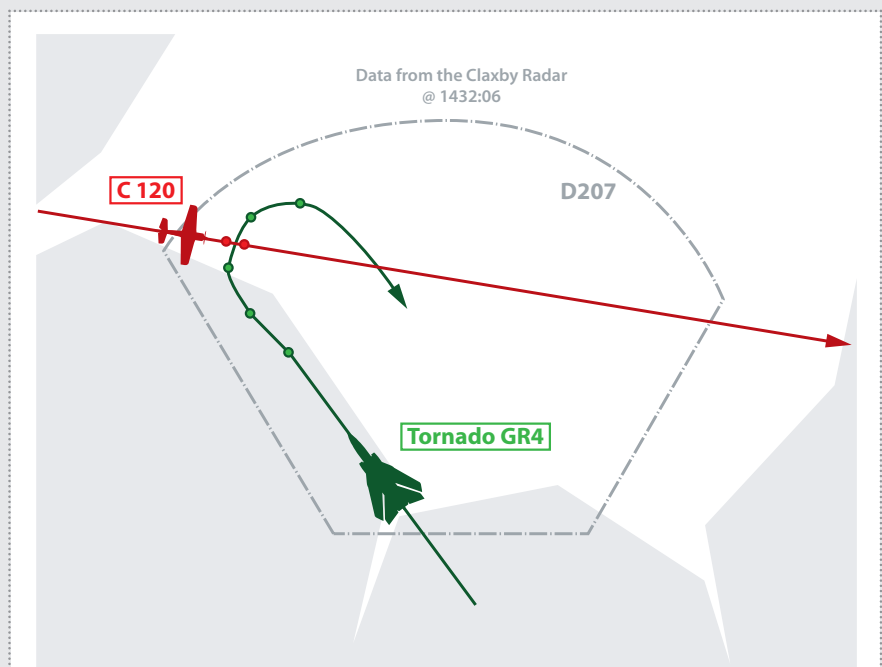
Recorded Separation:
NR

// SUMMARY

THE TORNADO WAS flying on a sortie on Holbeach Air Weapons Range (AWR),

squawking 7002 with Mode C. On initial contact joining the Range, the crew was advised of a light aircraft just outside the AWR to the west of the targets.

Following a low level attack, the Tornado was in a shallow climb, turning right onto a reciprocal heading. The crew saw a high-wing, light aircraft flying straight and level on an opposite track, about 800ft above them and 200ft laterally spaced. They continued the turn to increase separation. →



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In the absence of radio contact from any other aircraft in the vicinity and because the Range Safety Officer (RSO) does not have radar, he contacted both RAF Coningsby and Marham. An appropriate radar return could be seen inside the range Danger Area but there was no height information.

The subject intruder aircraft continued to operate in the local area, clearing the range to the south and, after some time, it routed towards Fenland airfield where it disappeared from radar. The RSO contacted Fenland and thence the pilot of a Cessna C120 who agreed that he had been operating in the area but did not believe that he had infringed the range.

// ASSESSMENT

THE INVESTIGATION HAD been hampered by the Cessna pilot not providing a report. Anecdotally, its pilot thought that he had remained clear of the range but the radar recording showed that the ac thought to be the C120 was over 1nm inside its western boundary. While penetration of this range is not actually 'illegal', it remains poor airmanship and in some circumstances could endanger the penetrating aircraft. The Tornado crew would have been in a high workload situation and would not have expected an intruder.

While accepting that lookout by aircrews

flying range details is most important, members agreed that in these circumstances, due to their focus on the bombing attack until coming off the target, the Tornado crew could not have reasonably been expected to see the Cessna any earlier. The Tornado crew fortuitously saw it well above, which had prevented any conflict of flightpaths and therefore any risk of collision.

Cause: The Cessna pilot entered a notified and active Danger Area.

● **Degree of Risk:** C

05 / GLIDER SIGHTS

REPORTING AIRCRAFT: ASK13 – REPORTED AIRCRAFT: AGUSTA A109

REPORT DETAILS

AIRPROX REPORT:
2012011

Date/Time:
Feb 1, 2012 1134Z

Position:
Overhead Camphill Gliding Site

Airspace:
London Flight Information Region (Class: G)

Reporting aircraft: Type: ASK13
Reported aircraft: Agusta A109

Alt/FL:
100ft▲ QFE 500ft agl

Weather:
VMC CLBC VMC NR

Visibility:
>50km 10km

Reported Separation:
400ft V Not seen

Recorded Separation:
NR

// SUMMARY

THE ASK13 GLIDER was flying a dual training sortie from Camphill in excellent visibility with a cloudbase of 1,500ft. It was about to take-off to the north when its pilots heard and saw a helicopter ahead, flying south at the western edge of the airfield at an estimated height of 500ft.

Passing the windsock, the helicopter turned 15° left and flew directly overhead the winch launch point. The ASK13 had just commenced its launch. Its pilots had the option of releasing the cable and abandoning the launch but elected to continue since the helicopter was passing 400ft overhead just as they left the ground.

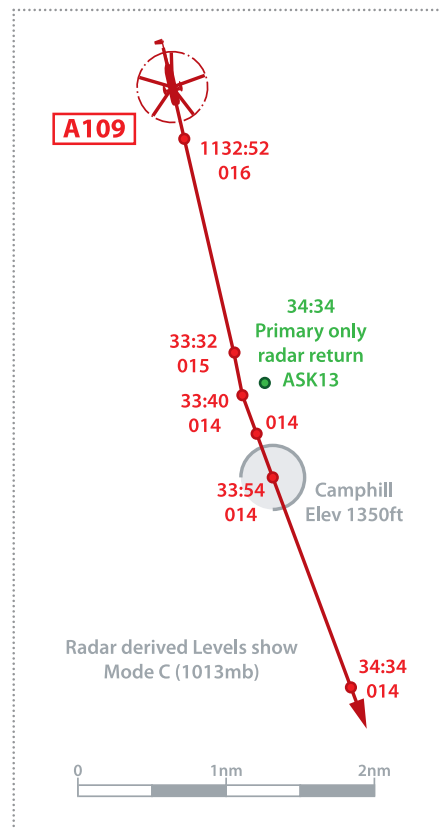
The helicopter was en route to Shoreham from a private site near Skipton, cruising at 500ft at 140kt, heading south and flying into sun. Its pilot flew this route regularly. He did not see the glider but considered that he may have unintentionally flown close to Camphill glider site. In future he intended highlighting all glider sites on his regular routes.

// ASSESSMENT

THIS INCIDENT COULD have been averted by thorough pre-flight planning by the A109 pilot. Route planning using the 1:500,000 topographical chart should reveal any airspace hazard that may affect transit through an area, including glider sites.

Camphill is clearly marked on the 1:250,000 and 1:500,000 charts with the site elevation and maximum altitude to which gliders can be encountered on the winch cable. It was unclear whether the A109 pilot was using an on-board navigation system/moving map in flight, the database of which may not show glider launching sites.

It is the responsibility of pilots to take due regard of airspace hazards and to ensure that any avoidance is taken by a suitable margin. As



it was, the A109 passed an estimated 400ft above the ASK13 as it climbed through 100ft just after take-off. Members agreed that there was the potential for a more serious incident if the helicopter had arrived overhead slightly later with the possibility of encountering the glider towards the top of its launch, still attached to the winch cable.

Cause: The A109 pilot flew overhead a promulgated and active glider launching site below the maximum height of the winch cable and into conflict with the ASK13 which he did not see.

● **Degree of Risk:** C



KEITH WILSON/SFB PHOTOGRAPHIC

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



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TALES OF THE UNEXPECTED

Conflicting aircraft can come from the most unusual of places. And then there's your own distraction...

AIRPROX REPORTS

Lookout reports featured:

- No: 2010035
- No: 2010060
- No: 2012013
- No: 2012025
- No: 2012119
- No: 2012131



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

"YES, OF COURSE I UNDERSTAND THE IMPORTANCE OF GOOD LOOKOUT. Yes, yes, of course I always ask my passenger to help. Yes, yes, yes, of course I know that another aircraft can be hidden from view so I must move either my head or the aircraft." Easy to say; easy to understand – but sometimes difficult to achieve.

Good lookout is a skill requiring practice. A pilot can be distracted while performing an essential task – looking at a map, changing RT frequency – so one learns how to integrate such tasks into the lookout scan. And if caught out by the unexpected, a pilot's reaction can make all the difference to the outcome of an incident.

Routinely in airprox reports, we read words like: "This incident took place in a busy area of Class G airspace where 'see and avoid' is the principal method of collision avoidance." Or perhaps: "Both aircraft were operating in Class G airspace, the pilots being equally responsible for collision avoidance." The following summaries of airprox reports are a reminder of the importance of these points.

We all know how difficult it can be to see modern gliders – often white in colour, moving relatively slowly and, for obvious reasons, very slim in line. Lookout needs to be especially good to spot them in time to ensure no collision risk. Therefore the first and best defence is to avoid the places they are likely to be found.

In the first incident (report 2010035) a glider was thermalling over a power station, not an obvious place for power pilots to find a circling glider so perhaps a reminder is appropriate.

Another reminder that gliders like to fly in rising air is report 2010060 which illustrates the value of visible airspace around us. Flying just below the cloud base can restrict the time available to react if another aircraft comes into view from just out of, or around, the clouds. Gliders can often be found right up to the base of convective cloud so, if possible – where there is a safe opportunity to be a few hundred feet lower – we should try to put some 'clear air' around our aircraft to facilitate good lookout.

There's a different aspect of this theme in report 2012013, that of 'reaction'. The Traffic Information (TI) provided by the controller

to the Tutor pilot was accurate, timely and updated sufficiently to enable the Tutor pilot to gain visual contact. Notwithstanding, the pilot continued on his course; perhaps it might have been better to make a small change of heading on receipt of the TI while continuing to scan the sky to acquire the other aircraft visually?

We will return to the 'reaction' theme in a moment, but first it's worth considering report 2012025; the incident falls into the 'distraction' category of this theme. Here, the pilot of a PA-28 was in the process of changing radio frequency while the Jodel pilot, approaching his destination, could well have been thinking about his arrival and landing.

Whatever the reasons, the Jodel pilot saw the other aircraft at a distance of 100m while the PA-28 pilot did not see anything until it was almost underneath him. It's easy to criticise but haven't we also been distracted from conducting a full lookout scan at times?

'Lookout' is most definitely the key safety aspect in airprox report 2012119, involving a Hawk T Mk 1 and a paraglider. Technological improvements have resulted in modern microlights, hang gliders and paragliders attaining levels of performance that now take them potentially into conflict with much larger, heavier and faster classes of aircraft.

There remains no suitable electronic conspicuity device for hanggliders or paragliders and, as this incident illustrates, primary radar cannot be relied on for collision avoidance. Risk reduction therefore involves awareness: keeping in mind that if there are places where there is obviously a lot of thermal activity – for example, on days when there is scattered/broken Cu cloud – then these locations are attractive to non-powered aircraft. If you have to fly beneath active Cu cloud, be warned and alert. Also keep in mind that the normal rules of VFR and IFR do not apply to hang gliders and paragliders – see for example the excellent article 'Clouds' by Tom Hardie of the British Hang Gliding and Paragliding Association, which can be read on the Airprox website (airproxboard.org.uk).

Back to 'reaction', with report 2012131. Remember the cartoon of the pilot appearing at the Pearly Gates with his halo and saying rather mournfully to St Peter: "Yes, but I was in the right!"? As the UK Airprox Board Members agreed when discussing this report "...it would be wise always to assume that the other pilot had not seen one's own aircraft until positive actions prove otherwise".

The RoA require pilots with right of way to maintain their course. On this occasion, a small level change early on by the C172 pilot was all that was needed to deconflict the flightpaths and prevent a Risk B airprox.

Well worth remembering is the advice on UK aeronautical charts, that when flying adjacent to aerodromes with Instrument Approach Procedures pilots are "strongly recommended, when flying within 10nm of the aerodrome to contact the aerodrome ATIS as is clearly marked on the legend of civil aeronautical charts".

It's also worth keeping in mind that while VFR charts indicate A/Ds with IAPs, information regarding the position of Instrument Approach holding patterns is not included and realistically could not be, due to map clutter constraints. The '10nm' advice is sound. →



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01 / FAST JET, SLOW GLIDER

REPORTING AIRCRAFT: TYPHOON – REPORTED AIRCRAFT: ASW 28 GLIDER

REPORT DETAILS



AIRPROX REPORT:
2010035

Date/Time:
Apr 8, 2010 1410

Position:
6nm east of Gamston

Airspace:
London Flight Information Region (Class: G)

Reporting aircraft: Type: Typhoon
Reported aircraft: ASW 28 Glider

Alt/FL:
2,300ft [2,300ft]
(Regional Pressure Setting 1025mb)
[datalogger]

Weather:
VMC (CLBL) VMC CLBC

Visibility:
40km 20km

Reported Separation:
0 V/500ft H 100ft V/200m H

Recorded Separation:
NR

therefore broke left to give the greatest possible spacing and generated a lateral miss-distance of about 500ft thus ensuring that there was no risk of collision.

The ASW 28 pilot reported that he was flying a white glider on a day of strong thermic activity. He was on a cross-country flight from Saltby and was climbing in a left-hand turn in strong lift over Tuxford Power Station. Just after passing through an easterly heading he saw a Typhoon directly in front of him, 200m away, banking steeply to the left; it then rolled back onto its original heading and he could see its rear. From this he deduced that the Typhoon had originally been heading directly towards him. His datalogger trace shows a very strong climb from 2,080ft at 1409:00 to 2,700ft at 1410:00. He considered that transiting a fast jet through the choke point between Scampton/Doncaster at between 2,000ft and 4,000ft on a thermic day and over a major thermal trigger such as the power

station had significantly increased the probability of encountering gliders.

// ASSESSMENT

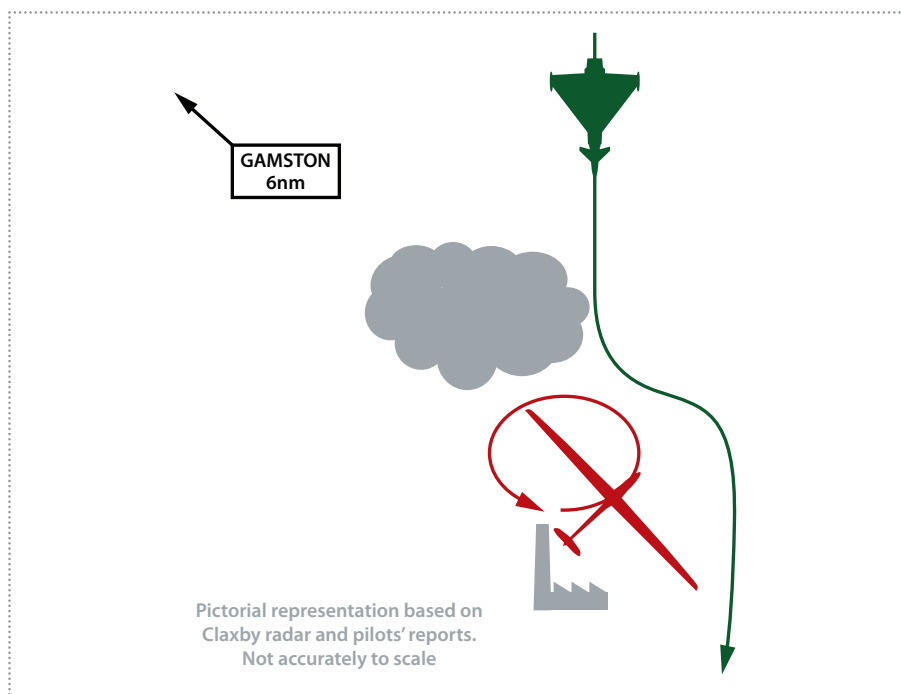
THE GA MEMBER said that the Typhoon pilot did well to see the small cross-section, white glider early enough to assess its flightpath and avoid it when it made an unexpected turn towards him. The HQ air member noted the glider pilot's comment regarding thermals over power stations and the increased probability of encountering gliders in such locations. He thought that many military aircrew would not be aware of this so making the point worth publicising.

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

● **Degree of Risk:** C

// SUMMARY

THE TYPHOON WAS CONDUCTING a training flight. While heading 180° at 360kt and 2,300ft on the Regional Pressure Setting, a mid-wing, unpowered glider was seen about 2nm ahead in a left turn, at the same altitude but to the right of the nose. Initially, the Typhoon pilot did not consider it necessary to take avoiding action as the glider appeared to be moving away to the right. As the aircraft closed, however, he observed that the glider's high turn rate and low turn radius was such that it had performed a level, left-hand turn through about 120° and was then converging from right to left, significantly reducing the separation distance. The Typhoon pilot



02 / OBSCURED BY CLOUDS

REPORTING AIRCRAFT: AH64 APACHE – REPORTED AIRCRAFT: GLIDER

// SUMMARY

THE APACHE WAS FLYING an instrument flight training transit sortie from Lyneham to Middle Wallop in receipt of a reduced (SSR only) Traffic Service from Lyneham Approach and squawking Modes C and S. The student was flying from the rear seat and the captain in the front was conducting the

lookout and operating the radar in the air/air mode.

They were heading 130° at 110kt at FL30 in good visibility, but just below the base of the scattered cloud when a white glider appeared from behind a cloud, less than 300m away tracking from left to right in front of them and at the same level. They took avoiding action in



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REPORT DETAILS



AIRPROX REPORT: 2010060

Date/Time:
May 21, 2010 1332Z

Position:
5nm south of Swindon

Airspace:
London Flight Information Region (Class: G)

Reporting aircraft: Type: AH64 Apache
Reported aircraft: Glider

Alt/FL:
FL020 NK

Weather:
VMC CLBC NK

Visibility:
20km NK

Reported Separation:
V 100ft/H 250m NK

the form of a left turn descending to FL20 but the glider continued, its pilot apparently not having seen them.

Despite extensive procedural tracing action, the glider could not be identified. Although the glider contact showed clearly as a primary-only contact on the recording of the Cleve Hill radar, it did not show on the Lyneham controller's SSR-only picture and therefore he was not able to give the Apache crew any warning of its presence.

// ASSESSMENT

ALTHOUGH GLIDERS DO sometimes operate in cloud, it was most likely that the glider involved had been just below the cloudbase and had probably been obscured or not visible to the Apache safety pilot until a late stage. That being the case, members agreed that the Apache pilot could not reasonably have been expected to see the glider any earlier.

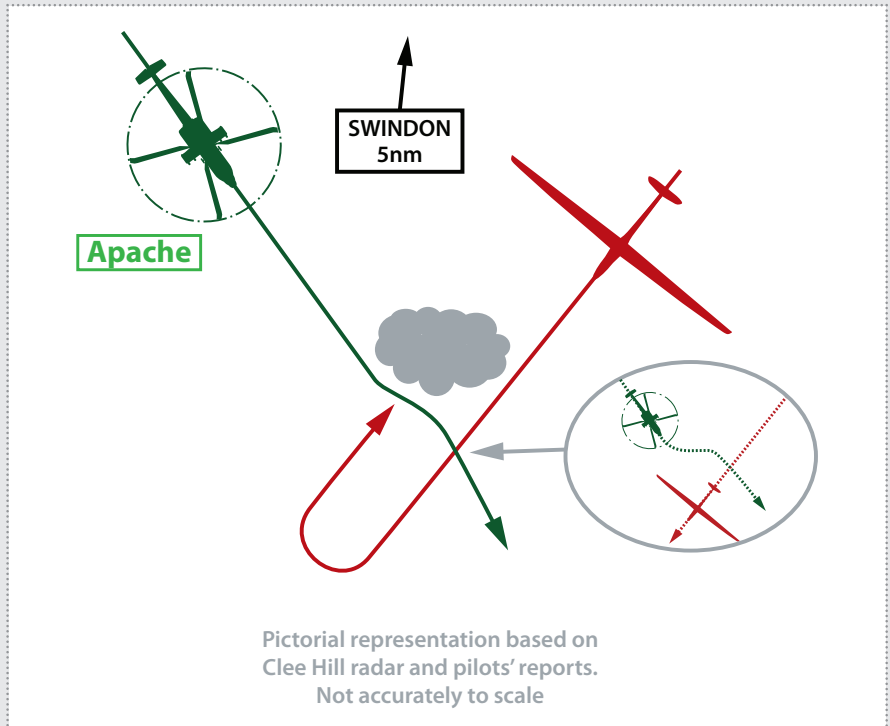
Since the Apache pilot saw the glider in time to react and build in both vertical

and lateral separation, there was no risk of collision.

Members considered that the Apache pilot had been unwise in operating just below the cloudbase thereby restricting the time available to see and avoid other aircraft.

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

● Degree of Risk: C



03 / EMERGENCY BREAK

REPORTING AIRCRAFT: GROB TUTOR T1 – **REPORTED AIRCRAFT:** CESSNA C152

// SUMMARY

BOTH AIRCRAFT WERE OPERATING VFR and speaking to different Air Traffic Service Units. Both were conducting navigation exercises. Both pilots report flying at 2,000ft, with the Tutor operating on the Barnsley Regional Pressure Setting of 1018hPa and the C152 on 1024hPa, equating to 180ft vertical separation. The C152 was not equipped with a Mode C transponder.

The Tutor pilot reports that he was given Traffic Information at range 4nm and again at 2nm before a Cessna was seen visually in his 1 o'clock at range 1.5nm [subsequently amended to 0.5nm by the instructor], heading towards him at the same level. The Tutor pilot made an emergency left break turn onto south, before resuming his original heading when he became visual with the Cessna again.

Flying into sun, the Cessna pilot reports spotting a Grob Tutor 1,500m or more away in

his 11 o'clock. The Tutor was approximately 500ft above, he thought, wings-level and heading away. The Tutor then appeared to descend, turning onto a heading of about 090°. It then tracked in the opposite direction, no closer than 1,000m away, passing down his port side about 200-300ft above.

// ASSESSMENT

MILITARY PILOTS ARE TAUGHT

emergency break turns during flying training, the procedure being to turn hard through 90° and then roll wings-level to re-assess the threat aircraft. The Tutor pilot was given a good level of accurate Traffic Information by Cottesmore Zone. A small heading change early on was all that was needed to deconflict the flight paths. As it was, at about 1nm range, the Tutor pilot saw the C152 and took avoiding action by executing a 180° turn away, resulting in 0.7nm separation at the closest point of approach. The Cessna instructor first saw the



KEITH WILSON/SFB PHOTOGRAPHIC

REPORT DETAILS



AIRPROX REPORT:
2012013

Date/Time:
Feb 14, 2012 1517Z

Position:
(11nm south south-west Wittering)

Airspace:
London Flight Information Region
(Class: G)

Reporting aircraft: Grob Tutor T1
Reported aircraft: Cessna C152

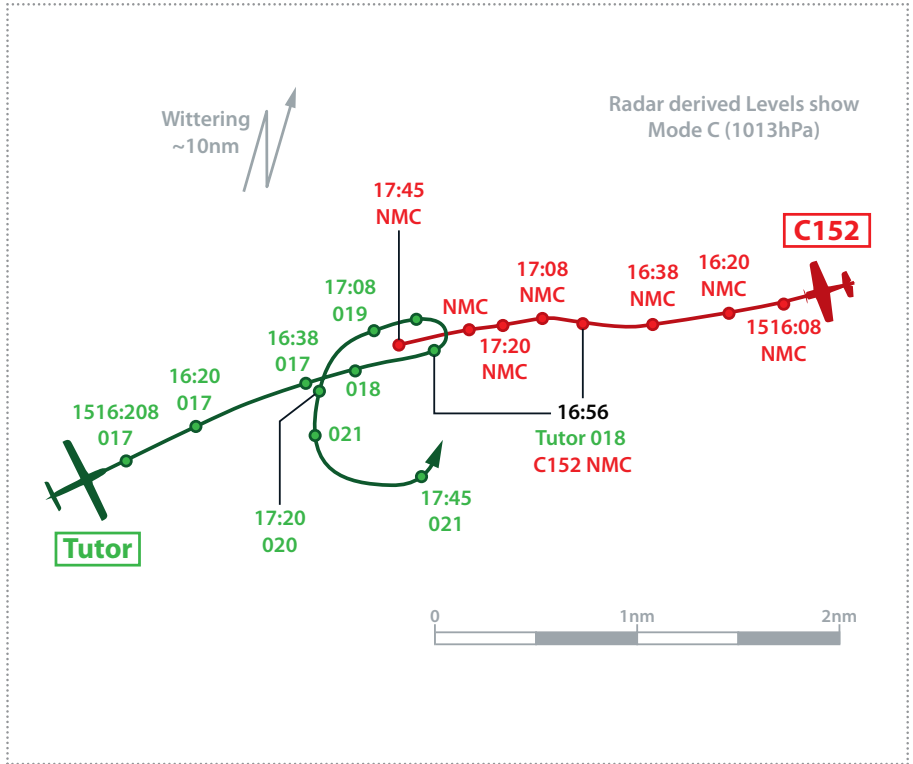
Alt/FL:
2,000ft
Regional pressure setting (1018hPa)
QNH (1024hPa)

Weather:
VMC CLBC
VMC CLOC

Visibility:
15km
>10km

Reported Separation:
Nil V/1.5nm H
>1,000m H

Recorded Separation:
0.7nm H 1516:56
0.6nm H 1517:45



Tutor as it rolled out onto a westerly heading, then watched it turn across his track to pass

clear on his left-hand side. Members agreed that these sightings, although apparently late, had occurred in reasonable time given the head-on geometry (small target aspect) compounded by the Cessna flying into sun. From the Cessna pilot's viewpoint, unaware the Tutor had already turned through 180°, nothing untoward had happened and the

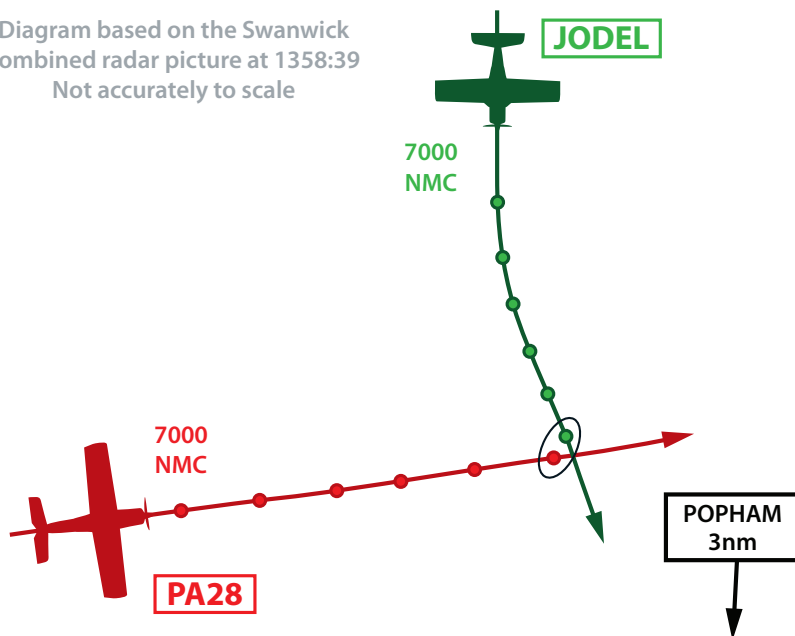
subsequent manoeuvring by the Tutor pilot was a non-event.

Cause: Conflict in Class G airspace resolved by the Tutor crew.

● **Degree of Risk:** E

REPORTING AIRCRAFT: Jodel D105 – REPORTED AIRCRAFT: PA-28

Diagram based on the Swanwick combined radar picture at 1358:39
Not accurately to scale



04 / CHANGING CHANNELS

// SUMMARY

BOTH AIRCRAFT WERE FLYING VFR in VMC, the Jodel inbound to Popham while the PA-28 was en route to a private strip in Kent. The Jodel pilot was in contact with Popham air-to-ground; the PA-28 pilot was in the process of changing frequency from Thrupton to Farnborough LARS west when he would request a Basic Service. Both aircraft were equipped with elementary Mode S; their transponders were squawking 7,000 and the Jodel pilot reported having Mode C 'on' but neither aircraft appeared to provide Mode C information on recorded radar.

The Jodel pilot reported that he was in level cruise when he suddenly became aware of a single-engine low-wing aircraft about 100m away in his 2 o'clock and at about the same level. He immediately dived and saw it

05 / PARAGLIDER POSER

REPORT DETAILS



AIRPROX REPORT:
2012025

Date/Time:
Feb 26, 2012 1359Z

Position:
3nm north of Popham

Airspace:
London Flight Information Region (Class: G)

Reporting aircraft: Type: Jodel D105
Reported aircraft: PA-28

Alt/FL:
2,200ft QNH (1029hPa) 2,200ft QNH (1027hPa)

Weather:
VMC CLBC VMC

Visibility:
10nm NK

Reported Separation:
10ft V/0m H 200ft V/0m H

Recorded Separation:
NR V/<0.1nm H

REPORTING AIRCRAFT: HAWK T MK1 – REPORTED AIRCRAFT: UNTRACED

// SUMMARY

THE HAWK T MK1 was conducting a 'Radar to PAR' approach at RAF Leeming operating under VFR with a 'reduced' Traffic Service from Leeming Director. The aircraft was overall black in colour with external lights; HISLs and nose light were selected on. The handling pilot was flying 'on instruments'; the other acting as safety lookout.

Meteorological conditions were assessed as FEW-SCT Cu, base 3,500ft, estimated tops 5,000ft, with a cumulus cell to the left of the aircraft's track.

Passing 3,600ft descending, clear of – but adjacent to – the edge of a cumulus cell, the safety lookout pilot became aware of a paraglider with a light green/yellow canopy at the base of cloud in the 3 o'clock position, co-altitude at a range of approximately 300m.

As the descent continued, an estimated four more paragliders were observed up to Xnm west of the first contact. Some appeared to be operating near to or within the base of cloud. ATC were informed of the paraglider activity. There were no radar returns at that time nor had Leeming ATC received any pre-notification of activity in the area. Furthermore, the airprox was not apparent on the NATS radar replay.

With the help and full co-operation of the local paragliding community it was possible to trace six individuals who were in the area at the airprox time and at altitudes between 3,370ft and 4,085ft. However, none were flying a light green/yellow coloured canopy and none recall seeing or hearing another aircraft at that time and position. →

REPORT DETAILS



AIRPROX REPORT:
2012119

Date/Time:
Aug 9, 2012 1408Z

Position:
In the vicinity of Ripon

Airspace:
London Flight Information Region (Class: G)
Vale of York Area of Intense Aerial Activity

Reporting aircraft: Type: Hawk T MK1
Reported aircraft: Untraced

Alt/FL:
3,600ft▼ QNH (1026hPa) NK

Weather:
Intermittent VMC NK

Visibility:
40km NK

Reported Separation:
0ft V/300m H NK

Recorded Separation:
NR

pass directly above him and then continue straight and level.

As mentioned, the PA-28 pilot reported that was in the process of changing frequency when the airprox occurred. He reported having no warning of any aircraft in close proximity on his PCAS and no indication from ATC of any aircraft in close proximity.

// ASSESSMENT

IN CLASS G AIRSPACE, 'see and avoid' is the principal method of collision avoidance. One member observed that the PA-28 pilot may have been 'heads-in' selecting a new frequency in which case his lookout would have been curtailed.

The Jodel pilot did see the PA-28, albeit at a distance of 100m, and dived his aircraft immediately. The PA-28 pilot reported first seeing the Jodel almost below, therefore too late to take avoiding action. Both pilots had an equal responsibility to see and avoid other aircraft, the Jodel, having the PA28 on its right, should have given way.

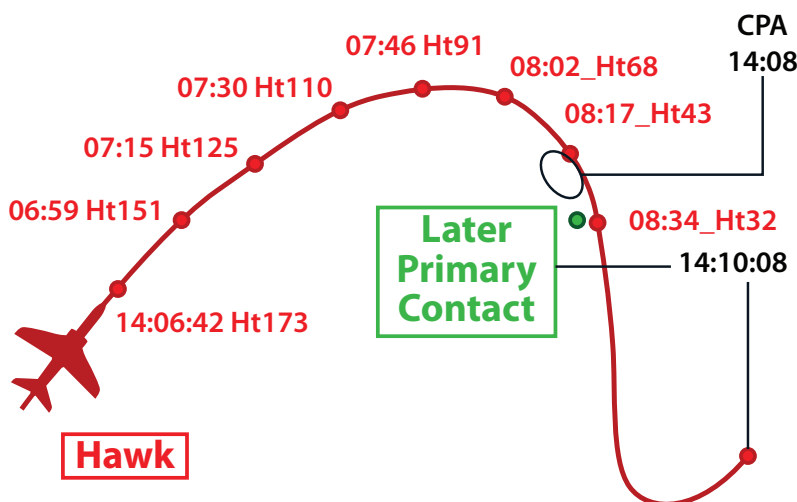
Cause: Effectively a non-sighting by the PA-28 pilot and a late sighting by the Jodel pilot.

● Degree of Risk: B

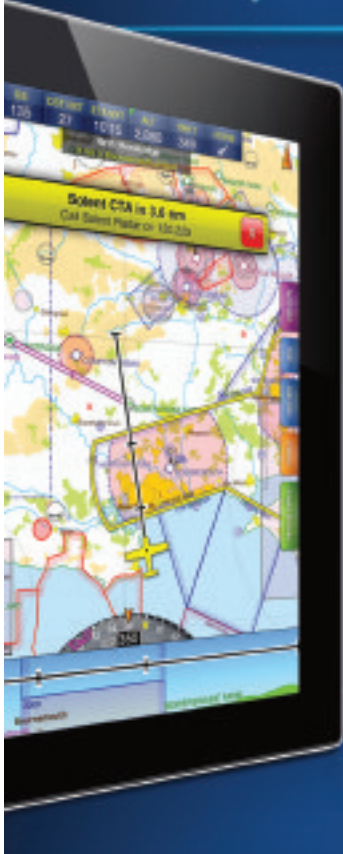


The pilot may have been 'heads-in' selecting a new frequency

Diagram based on radar data



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// ASSESSMENT

BOTH PILOTS WERE OPERATING in Class G airspace and thus the Hawk pilot was required to give way to the paraglider. Notwithstanding current legislation, the Board agreed that the provisions of Rule 9 of the Rules of the Air were written at a time when aircraft operated at slower speeds and with smaller speed

differential and consequently had more time to 'see and be seen'.

Members agreed that the Hawk pilot's sighting of the paraglider in his 3 o'clock was so late as to be effectively a non-sighting. The miss-distance was somewhat providential: the paraglider pilot was under the base of cloud due to the thermal lift

and the Hawk pilot was skirting around the cumulus cell.

Cause: Effectively a non-sighting by the Hawk pilot.

● **Degree of Risk:** B

06 / APPROACH DILEMMA

REPORTING AIRCRAFT: CESSNA F406 – **REPORTED AIRCRAFT:** CESSNA 172

// SUMMARY

THE F406 CREW were conducting instrument training, an NDB/DME approach to runway 20, operating under IFR in VMC with a Procedural Service from Shoreham Approach. The C172 pilot was en route from Goodwood to Germany operating VFR in VMC believing that he was in receipt of a Basic Service from Farnborough LARS(W). [At the time of the airprox the Farnborough controller had lost contact with the C172 pilot.]

Shoreham has an Instrument Approach Procedure; published advice states that 'pilots who intend to fly to or route adjacent to aerodromes with IAPs are strongly recommended when flying within 10nm of the aerodrome to contact the aerodrome Air Traffic Service Unit'. The C172 pilot did not contact Shoreham.

The F406 pilot reported that approximately 30 seconds after passing abeam the [SHM] beacon, on the 203° outbound radial, heading 210° at 140kt and

altitude 2,500ft, he saw a white, high-wing, Cessna type aircraft which flew straight across his track from right to left, approximately 50-100ft above him and at a range of no more than 100m.

The C172 pilot's report stated that he first saw the F406 at approximately 1,000m, to the left and 100m below, climbing. The C172 pilot considered avoiding action but decided to maintain height and heading as "anything else did not appear to be appropriate. It was up to the other pilot to avoid a collision". The C172 pilot observed that the F406 abruptly made a right turn and crossed behind him at a distance of 100m or less.

// ASSESSMENT

PILOTS WOULD BE well advised in the first instance, to route further than 10nm from aerodromes with Instrument Approach Procedures. Where this is not practical, pilots should request appropriate service provision. Where that was not available,

pilots should be ready to establish timely contact with the aerodrome, albeit that a 'freecall' may suffice.

Both aircraft were operating in Class G, the pilots being equally responsible for collision avoidance. The C172 pilot saw the F406 in good time and assessed that there was a collision risk. He also correctly assessed that he had right of way and decided to maintain course and height, which he did throughout the airprox.

Members were at a loss to understand why he apparently took no avoiding action. While Rule 9 afforded him right of way, both pilots were equally responsible for collision avoidance. His lack of action significantly increased the risk to both aircraft involved.

Cause: Late sighting by the F406 crew.

● **Degree of Risk:** B

REPORT DETAILS



AIRPROX REPORT:
2012131

Date/Time:
Aug 23, 2012 1354Z

Position:
Shoreham NDB Hold

Airspace:
London Flight Information Region (Class: G)

Reporting aircraft:	Reported aircraft:
Type: Cessna F406	Cessna 172

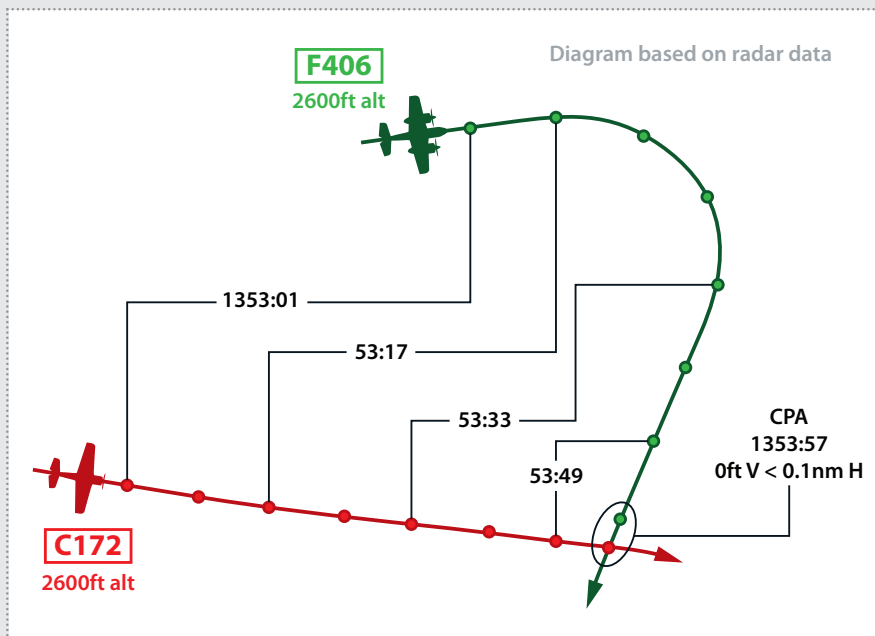
Alt/FL:	
2,500ft	2,700ft
QNH(1014hPa)	QNH(1014hPa)

Weather:	
VMC CLBC	VMC CAVOK

Visibility:	
>10km	>10km

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

Recorded Separation:
0ft V/<0.1nm H



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HEAR AND AVOID

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UNDERSTANDING THE PROVISIONS OF ATSCAS, and asking for an appropriate level of service, is important, as airprox report 2010040 illustrates. The Sea King was under a Traffic Service (TS) and was being vectored around the radar pattern for an instrument approach. Under a TS, ATC will provide specific Traffic Information (TI) to assist the pilot in avoiding other traffic. Timely TI was issued to the Sea King crew about the AC11 (and the AC11 pilot was given non-specific information about the Sea King as appropriate under a Basic Service).

However, during the Airprox Board's discussions, a commercial air transport pilot member suggested that the Sea King pilots might have had different expectations under the TS; pilots receiving a TS should request updates on notified traffic that they cannot see.

Pilots are expected to discharge their collision avoidance responsibilities under a TS without assistance from ATC. Generally, the controller would proffer no form of deconfliction advice and if the pilots required deconfliction advice they should ask for an upgrade to a Deconfliction Service. Using a DS does not have to inhibit track progression or the achievement of training objectives. Under such a service a pilot may elect not to act on the controller's deconfliction advice. The pilot then accepts responsibility for initiating subsequent collision avoidance against that particular conflicting aircraft.

In this edition of *Airprox*, the full reports are being summarised so that more examples can be given in the interests of safety. In the particular case of airprox report 2011082, while the diagram and text in this magazine give an overview, readers may wish to refer to the full, unedited document report No 26 on the Publications pages of the Airprox Board website (www.airproxboard.org.uk). The key message from the incident is that in Class D airspace, VFR pilots are under radar control but have an additional responsibility to avoid VFR and IFR traffic.

Sometimes for training flights it is essential to find 'clear air' in which to conduct an exercise. This was the case in report 2011089 in which the PA-28 pilot's report indicated that he had intended to remain relatively close to the Liverpool/Manchester CTA but, wishing to



KETH WILSON/SEIP PHOTOGRAPHIC

simulate an engine failure, was further south than planned due to weather.

The AS350 instructor appeared not to have assimilated the potential confliction after being given timely and accurate TI by Shawbury on several occasions. As broached by the PA-28 crew in their report, with hindsight a call to Shawbury for a service (a TS would have been pertinent with the cloud structure at the time) would probably have elicited information on the manoeuvring AS350 and improved their situational awareness.

Both crews would have benefitted from a higher level of ATS in the weather conditions on the day; the AS350 from a Deconfliction Service and the PA-28 from a Traffic Service. If ATC is busy, the service you want may not be available – but you should always ask for what you want.

'Misunderstanding' is a feature of life in general and aviation is no exception. The airprox summarised in report 2011094 illustrates one such misunderstanding in that the TB10 pilot did not realise that 'own navigation' means in the lateral plane only, any level restrictions remaining until further instructions from ATC. Thus the TB10 pilot should not have climbed above 1000ft QNH without further reference to the Approach controller.

The importance of requesting 'the service you want' was emphasised above and the same theme occurs in respect of report 2012034, concerning a BE 350 and a C525A Citation. Both crews were in receipt of a TS and the controllers had applied the ATS correctly, updating the TI when they both believed that a collision risk existed.

During the Airprox Board discussion, one controller member expressed surprise that neither of the controllers had telephoned the other to determine the intentions of the other flight and to agree coordination if required. Notwithstanding that such coordination was beyond the provisions of a TS, he considered it would have been good defensive controllership. Another controller member suggested that there was always the option open to both crews to request an upgrade to a DS if they were unhappy with the service or the situation as it unfolded.

An incident which most definitely illustrates the importance of effective, timely communications – in this case with ATC – is summarised in airprox report 2012156. The UK

Airprox Board considered that it was poor airmanship for the A109 pilot to cross the Southend RW06 extended C/L at a range of 8nm without contacting Southend Approach, which led to confliction with an ATR 42. As is stated in CAP774 UK Flight Information Services:

Pilots flying in the vicinity of aerodromes, ATS routes, or navigational aids where it is known that a Procedural Service is provided, are strongly encouraged to attempt to establish RTF contact with the notified ATS provider.

ATC will not prompt pilots to make such contact – it is down to our planning and good airmanship to do so.

The other crucial lesson from this airprox is for pilots flying TCAS-equipped aircraft; the aircraft you can see visually may not be the one that is showing causing the TA and RA. This was a most serious (Risk Category A) airprox which makes a review of the full Report, on the UK Airprox Board website, very worthwhile.

The last incident in this section is summarised in report 2012172, involving a Lynx Mk 8 and a Beech 76. As already mentioned, selecting the appropriate ATS for the sortie is important. The Airprox Board JHC Member said that the Lynx pilot knew the air-test would involve more than normal in-cockpit activity and consequently his lookout would be degraded, exacerbated by the Lynx Mk8 only having flying controls for the single pilot. He would therefore have been better served by using a TS or DS. →

AIRPROX REPORTS

Comms reports featured:

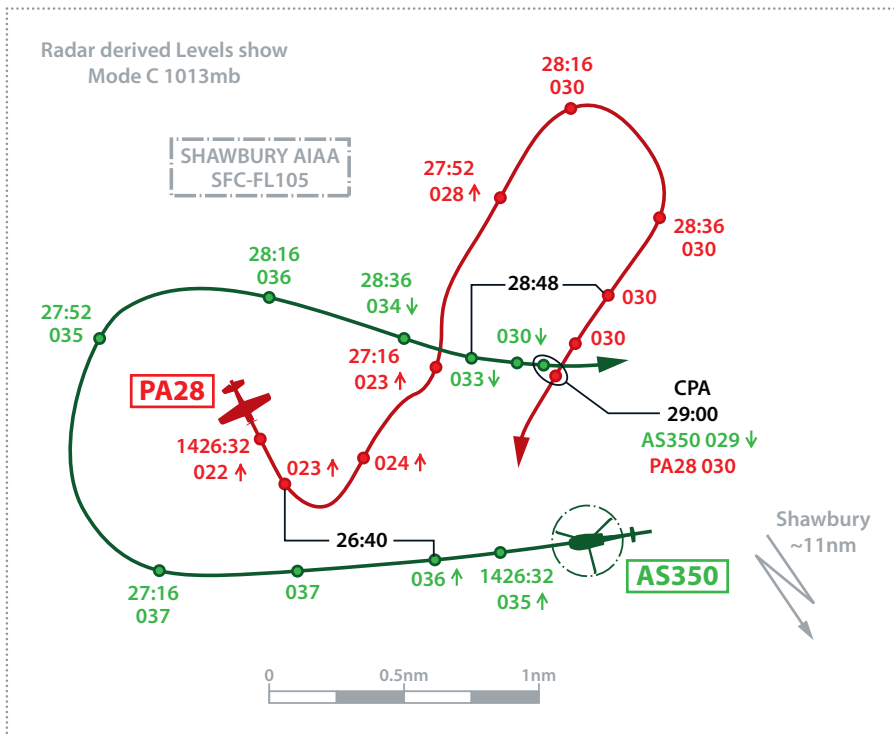
- No: 2011089
- No: 2010040
- No: 2011082
- No: 2011094
- No: 2012034
- No: 2012156
- No: 2012172



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

01 / LOSING CONTACT

REPORTING AIRCRAFT: EUROCOPTER AS350 – REPORTED AIRCRAFT: PA-28



// SUMMARY

BOTH PILOTS WERE FLYING dual sorties in Class G airspace. The AS350 was in receipt of a Traffic Service from Shawbury Approach while the PA-28 was flying VFR and in receipt of a Basic Service from Liverpool Approach. Both were squawking with Mode C. The AS350's strobe lights, landing and position lights, and the PA-28's anti-collision light, were all on.

Good, updated Traffic Information on a fixed-wing aircraft had been passed to the AS350, its instructor seeking to establish visual contact. Descending through 2800ft RPS while conducting an autorotation, he spotted the other aircraft in his 10 o'clock, slightly low and close. The Instructor took control and initiated avoiding action, the fixed-wing aircraft passed down their right-hand-side by 100m at the same level.

Flying level at 3000ft, the PA-28 student was searching for a sufficiently large clear area to

simulate an engine failure: both crew were looking out. A helicopter had been seen at 1nm range some minutes before the incident. While lookout ahead and to the sides was considered good, the PA-28 pilot felt that a combination of difficult rear vision and the presence of broken cloud may have been a factor. An additional factor, he reported, could have been his decision to remain with Liverpool Approach rather than Shawbury. Commonly, if intending to fly much further south, it was usual to request a Basic Service from Shawbury. However, this flight was intended to remain close to the Liverpool/Manchester CTA and it was judged appropriate to remain with Liverpool. In the event, the position used for the exercise was reported to be slightly further south than planned due to the availability of suitable weather.

// ASSESSMENT

WEATHER APPEARS to have played a part in

this incident as the PA-28 pilots had previously seen the AS350 but had lost sight of it, only regaining visual contact with the helicopter as it was passing behind at the closest point of approach.

The AS350 instructor, who was responsible for lookout as his student was under an IF hood, appeared not to have assimilated the potential confliction after being given timely and accurate traffic information by Shawbury on several occasions. Nevertheless, having spotted the PA-28 at close quarters, the actions taken by the AS350 instructor in taking control and turning left to avoid the PA-28 were judged to have been just enough to prevent an actual collision.

Cause: Effectively a non-sighting by the PA-28 crew and a late sighting by the AS350 instructor.

Degree of Risk: B

REPORT DETAILS

AIRPROX REPORT: 2011089

Date/Time: Jul 22, 2011 1429Z

Position: 11nm NW Shawbury

Airspace: Shawbury Area of Intense Air Activity (AIAA) (Class: G)

Reporting aircraft: Type: Eurocopter AS350
Reported aircraft: PA-28

Alt/FL: 2,800ft> 3,000ft
Regional Pressure Setting (1013mb)
QNH (1017mb)

Weather: VMC CLBC VMC CLOC

Visibility: 10km

Reported Separation: Nil V/100m H50ft V/100m H

Recorded Separation: Nil V/0.1nm H

02 / SEE, HEAR AND AVOID

REPORTING AIRCRAFT: SEA KING HAR3 – REPORTED AIRCRAFT: ROCKWELL COMMANDER 112

// SUMMARY

THE SEA KING was conducting a local VFR training flight from Wattisham and in receipt of a Traffic Service from Wattisham Approach [on UHF]. The pilot flying was using an instrument flight visor and flying from the

right-hand seat. While being vectored for an instrument approach to runway 23 at Wattisham in VMC, Wattisham passed Traffic Information about an aircraft in their 11 o'clock, 6nm, some 200ft below, also working Wattisham, which they acknowledged.

About one minute later, the captain saw an aircraft passing 100m to port and 200ft below.

It was flying straight and level on a reciprocal heading with, he judged, a 'high' risk of a collision. No avoiding action was taken as

the other aircraft was abeam and drawing aft when first seen.

The Rockwell 112 reported that he was in transit to Beccles under VFR at 1500-2000ft amsl in receipt of a Basic Service from Wattisham [on VHF]. Wattisham informed

him about an approaching helicopter but gave no warning to take avoiding action. The Rockwell pilot reported seeing the helicopter from a good distance away; it passed to port and above. The Wattisham controller estimated the minimum separation to be 0.25nm horizontally and 200ft vertically.

Noting the UHF/VHF nature of the radio, ATC transmissions from Wattisham were received by both pilots but they would not have been able to hear the calls made by the other.

// ASSESSMENT

IT WAS EVIDENT that Wattisham had passed accurate Traffic Information about the Rockwell to the Sea King crew when the aircraft were 6nm apart, although the information did not include the Rockwell's heading. The radar recording reflected that the Rockwell continued to constitute a definite hazard after the Traffic Information had been passed and there was widespread agreement among controller members that a second transmission of Traffic Information would have been helpful and, although ATC was very busy, should have been issued. Although the Sea King was in the radar

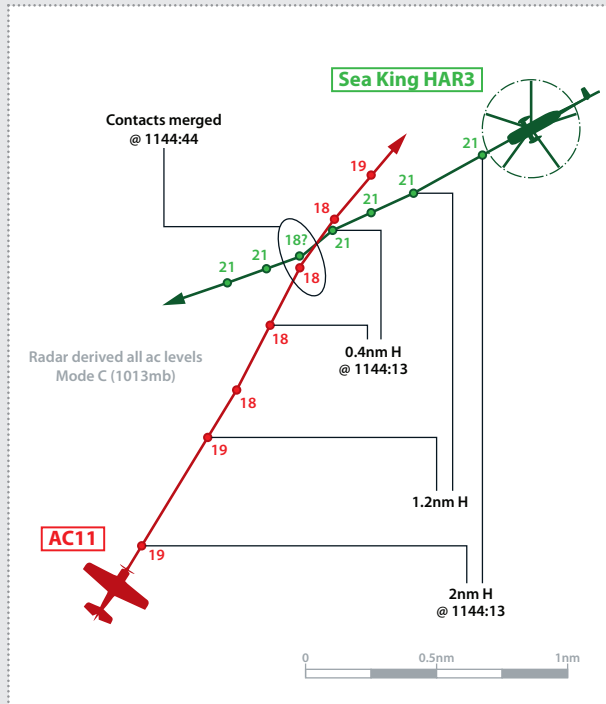
pattern, pilots are expected to discharge their collision avoidance responsibilities under a Traffic Service without assistance from ATC; generally, the controller would proffer no form of deconfliction advice and if the pilots required deconfliction advice they should ask for an upgrade to a DS.

The Sea King crew had a mutual responsibility to 'see and avoid' the other aircraft under the Traffic Service and could have asked for an update of Traffic Information. As the Rockwell had the Sea King continually in sight and could have

manoeuvred if necessary, the Board agreed that no risk of a collision had existed.

Cause: The Rockwell pilot flew close enough to the Sea King to cause its crew concern.

Degree of Risk: C



REPORT DETAILS

AIRPROX REPORT:
2010040

Date/Time:
Apr 28, 2010 1144Z

Position:
20nm ENE of Wattisham

Airspace:
London Flight Information Region (Class: G)

Reporting aircraft: Type: Sea King HAR3
Reported aircraft: Rockwell Commander 112

Alt/FL:
2,000ft QFE (1010mb) vs 1,500-2,000ft QNH (1021mb)

Weather:
VMC Sleet VMC vs NR

Visibility:
10km vs >10km

Reported Separation:
200ft V/100m H vs NR

Recorded Separation:
Nil V – Note: possible Mode C data error

03 / COMPLICATIONS IN CLASS D

REPORTING AIRCRAFT: EUROCOPTER EC225 – REPORTED AIRCRAFT: STING TL2000

// SUMMARY

IN THIS CASE it's best to refer to the diagram and the assessment, as follows.

// UK AIRPROX BOARD ASSESSMENT

MEMBERS UNDERSTOOD the challenges of flying VFR within Controlled AirSpace and sympathised with the Eurocopter pilot's predicament.

The flight, in receipt of a Radio Communication Service, had been given transit clearance of Class D Controlled Airspace via the runway 07 threshold under VFR at 2,500ft. The onus was on the pilot to comply with ATC instructions, albeit he also had an overriding responsibility to avoid other traffic flying under VFR.

He was aware from the radio exchanges that the Sting was on a similar routing, ATC having passed Traffic Information on the aircraft which he saw. Although conscious that he had

to maintain track and altitude, he wanted to alter heading to increase separation but felt he had to continue as cleared. His request to climb to 3,000ft was refused, being offered an orbit for spacing which he declined at the time.

Traffic Information on the Eurocopter was passed to the Sting pilot, albeit late. The Sting pilot was content to proceed on a westerly track while watching the helicopter to his south-west before turning to route overhead the runway 07 threshold. This flightpath placed the Sting ahead of the (faster) helicopter which left the latter's pilot with few options: he elected to execute a right turn to avoid the Sting. A controller member stated that the Eurocopter pilot also had the options of slowing down or overtaking the Sting on its right, the pilot only needing to advise ATC of his intentions/actions.

One pilot member expressed a view that the whole issue of Radio Communication Services and the rules/responsibilities for flights within

Class D airspace were overly complicated and there seemed to be a difference in application by different Air Traffic Service Units. The general feeling was that VFR pilots only wanted a clearance to transit the Controlled Airspace concerned but the radio terminology clouded the situation in pilots' minds. In this incident, the Eurocopter pilot had seen the situation unfolding and resolved the conflict at the last minute.

As regards risk, some members thought the incident had been benign but this view was not shared by the majority who believed that the uncertainty in the helicopter pilot's mind combined with the subject aircrafts' flightpaths had resulted in a confliction which needed resolution.

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

Degree of Risk: C



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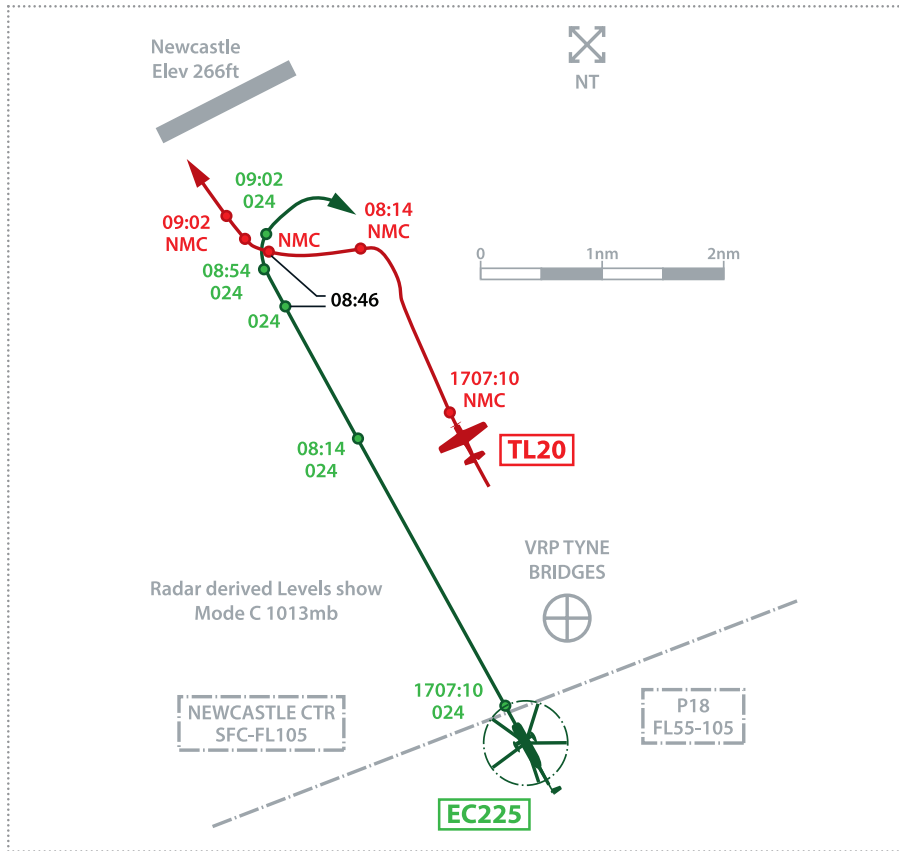
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REPORT DETAILS	
AIRPROX REPORT: 2011082	
Date/Time: Jul 14, 2011 1709Z	
Position: 1nm south Newcastle	
Airspace: ATZ/CTR (Class: D)	
Reporting aircraft: Type: Eurocopter EC225	Reported aircraft: Sting TL2000
Alt/FL: 2,500ft QNH	2,200ft QNH
Weather: VMC CLBC VMC CLNC	
Visibility: >10km 50km	
Reported Separation: 200ft V/300m H 100ft V/ 0.5-0.75nm H	
Recorded Separation: 0.3nm H	

04 / MESSAGE MIX-UP

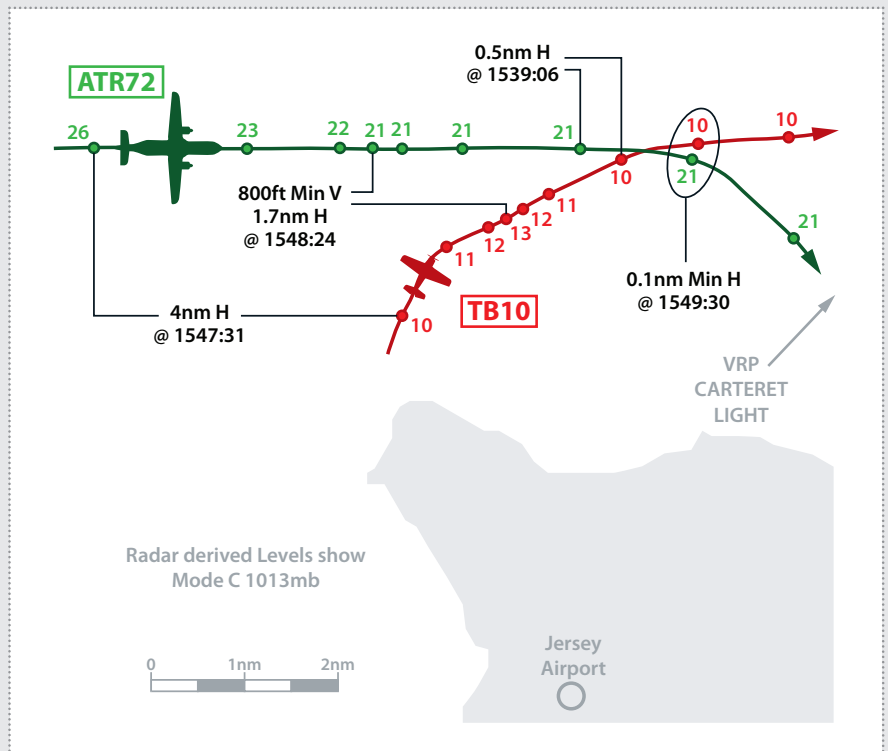
// SUMMARY

THE TB10 WAS DEPARTING from Jersey Airport and was issued a Special VFR clearance not above 1,000ft QNH to Carteret Lighthouse VRP. The ATR72 was inbound to Jersey, IFR under a Radar Control Service and being vectored for an ILS approach to runway 27 descending to an altitude of 2,000ft QNH. After contacting Jersey Approach the TB10 pilot was instructed to turn onto a radar heading, subsequently being released on own navigation to Carteret. There was some confusion in the TB10 pilot's read-back and so the controller restated that the flight was cleared own navigation to Carteret.

Alerted by the TB10's Mode C, Jersey approach asked the TB10 pilot to check his altitude. The pilot was then instructed to descend back to 1,000ft. The ATR72 crew were instructed to stop their descent 'now' and passed Traffic Information on the TB10 below them.

The ATR72 crew acknowledged, levelling at about 2,200ft and advising that they had the TB10 in sight and also on TCAS. The pilot of the TB10 thought that as he had been given

REPORTING AIRCRAFT: ATR72-500 – REPORTED AIRCRAFT: TB10

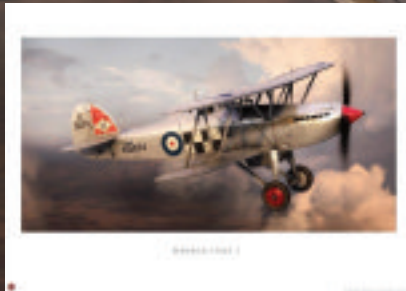


an instruction to assume his own navigation that this meant he could also ascend. He

apologised for his unintentional error, a misunderstanding of the 'assume' instruction.



Art behind the build



A04103 1:48 Scale
Hawker Fury I

Airfix artist - Adam Tooby

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// ASSESSMENT

THE IFR ATR72 was descending in the Class A Channel Islands CTR and the TB10 was departing within the Class D Jersey CTR on a Special VFR clearance. Jersey Approach had restricted the TB10 pilot to a maximum of 1,000ft Jersey QNH beneath the inbound ATR72 descending to 2,000ft. After providing radar vectors around other traffic, the TB10 pilot was then 'released' by the APR to, "...resume own navigation now to Carteret".

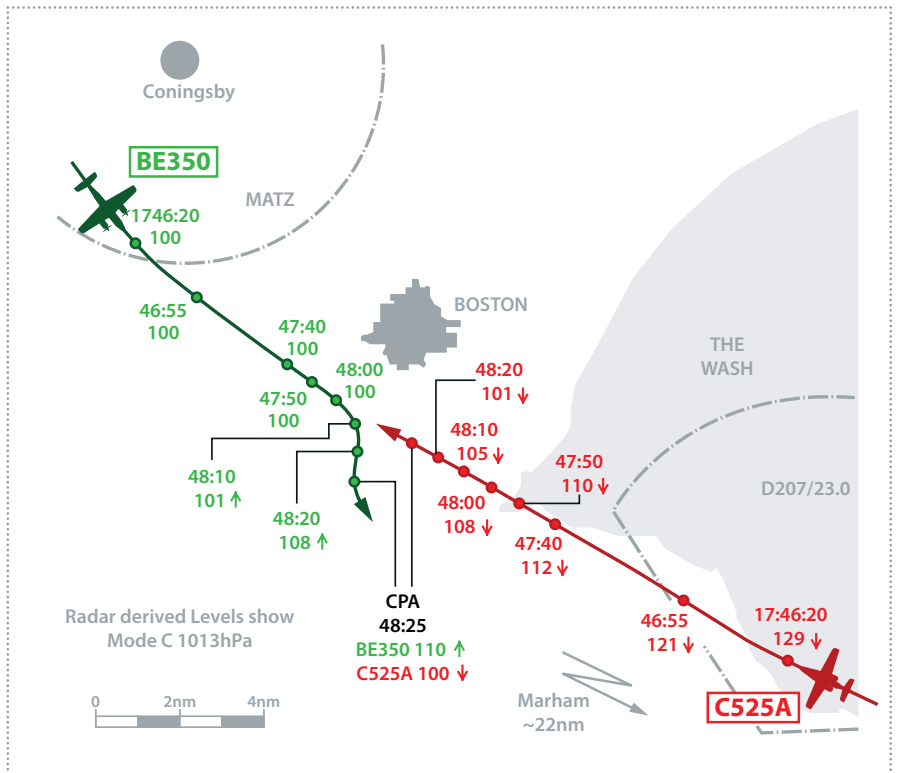
It was evident that the TB10 pilot had misunderstood this message such that he believed he could now turn on track to the VRP and also climb to his desired transit altitude. It was the TB10 pilot's misunderstanding regarding the words "own navigation" that was the crux of this airprox. The GA member observed that it was unfortunate that APR had not passed Traffic Information to the TB10 pilot on the ATR72 and the altitude restriction reinforced, which could have been a helpful safeguard.

Cause: The TB10 pilot climbed into conflict with the ATR72 after assuming his altitude restriction had been removed.

● **Degree of Risk:** C

05 / PREDICTING TROUBLE

REPORTING AIRCRAFT: KING AIR – REPORTED AIRCRAFT: CESSNA CITATION



REPORT DETAILS

AIRPROX REPORT:
2011094

Date/Time:
Jul 23, 2011 1548Z

Position:
(6nm N of Jersey Airport - elev 277ft)

Airspace:
Channel Islands/Jersey CTR (Class: A/D)

Reporter:
Jersey ATC

Reporting aircraft: Type: ATR72-500	Reported aircraft: TB10
Alt/FL: ▼2,000ft QNH (1016hPa)	1,000ft QNH (1016hPa)
Weather: VMC	VMC
Visibility: NR	NR
Reported Separation: 1,000ft V/1nm H	NK
Recorded Separation: 800ft Min V @ 1.7nm H 0.1nm Min H @ 1,100ft V	

// SUMMARY

THIS AIRPROX OCCURRED between a King Air in receipt of a reduced Traffic Service (SSR only) from Marham Approach and a Citation in receipt of a Traffic Service from London Joint Area Organisation E/NE. Both aircraft were squawking Modes S and C; both were equipped with TCAS ('TCAS 1' in the Citation) and both pilots reported flying in VMC with appropriate external lighting switched on.

The King Air pilot observed a TCAS contact at 6nm range and both pilots commenced an intensified visual scan. ATC subsequently reported "traffic 12 o'clock 5nm" but the conflicting aircraft was not visually acquired. They commenced a right turn to deconflict, TCAS generating a Traffic Alert. Subsequently a TCAS Resolution Advisory was received when the conflicting traffic was about 300-400ft above and descending. They turned right 90° and climbed 1,000ft in accordance with the RA instruction to 'climb, climb'. The Citation pilot recalled that traffic was reported in his 12 o'clock at around FL100 and he agreed to increase his rate of descent to pass below it. He did not remember whether a TCAS warning was generated but he did see the other aircraft in his 10 o'clock, well above his level.

// ASSESSMENT

BOTH CREWS HAD ASKED for and were provided with a Traffic Service and were given

REPORT DETAILS

AIRPROX REPORT:
2012034

Date/Time:
Mar 13, 2012 1748Z

Position:
3nm south Boston

Airspace:
London Flight Information Region (Class: G)

Reporting aircraft: Type: King Air	Reported aircraft: Cessna Citation
Alt/FL: FL100	FL100°
Weather: VMC CLAC	VMC NR
Visibility: 30km	>10km
Reported Separation: Nil V/0.25nm H	NR
Recorded Separation: 1,000ft V/1.6nm H	



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timely Traffic Information by both ATSUs. London Joint Area Organisation E/NE had used the predictive level function to assess the Citation's rate of descent, updating the Traffic Information such that the pilot reported increasing it.

The Citation pilot had then reported on the radio being visual with the King Air, the radar recording showing separation as 3.6nm with the Citation 700ft above. The King Air crew had seen the approaching Citation on TCAS in a descent and after receiving Traffic Information from Marham Approach had instituted a right turn to avoid. While turning right, a TCAS Resolution Advisory was generated and the

guidance followed, the crew visually acquiring the Citation as it passed down their left-hand side by 0.75nm and 800ft below.

Both controllers had applied the ATS correctly and updated the Traffic Information when they both believed that a collision risk existed. One controller Member expressed surprise that neither of the controllers had telephoned the other to determine the intentions of the other flight and to agree co-ordination if required; notwithstanding that such co-ordination was beyond the provisions of a Traffic Service, he considered it would have been good defensive controllership.

A controller Member opined that there was

always the option open to both crews to request an upgrade to a Deconfliction Service if they were unhappy with the service or the situation as it unfolded. At the closest point of approach, the Citation was descending through FL100 and passing 1.6nm E of the King Air, which was climbing through FL110 in response to its TCAS Resolution Advisory.

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

● **Degree of Risk:** C

06 / OUT THERE, WHERE?

REPORTING AIRCRAFT: ATR 42 – REPORTED AIRCRAFT: AGUSTA A109

REPORT DETAILS

AIRPROX REPORT:
2012156

Date/Time:
Oct 6 2012 1536Z

Position:
8nm south-west Southend

Airspace:
Lon Flight Information Region (Class: G)

Reporter:
Southend Approach

Reporting aircraft: Type: ATR 42
Reported aircraft: Agusta A109

Alt/FL:
1,500ft (QNH NK) 1,500ft (NK)

Weather: VMC CLBC VMC NK

Visibility:
10km NK

Reported Separation:
200ft V/200ft H 2-3nm

Recorded Separation:
100ft V/0.2nm H

// SUMMARY

THE ATR 42 WAS CARRYING out a procedural ILS approach to Southend runway 066, operating under IFR in VMC with a Procedural Service from Southend Approach. Appropriate external lighting was selected 'on'. Turning left at altitude 1,500ft, inbound to intercept the runway localiser, they saw a helicopter in the 2 o'clock position, slightly high, at a range of approximately 300ft. Immediately afterwards, TCAS alerted with an Resolution Advisory.

The Agusta was operating to Luton Airport

under VFR in VMC. Its pilot was in the process of changing frequency when the airprox occurred, the aircraft heading north-west at 1500ft. Both pilots report transponders selected on with Modes A, C and S. Both aircraft were in Class G airspace. Southend radar services had been withdrawn due to the unserviceability of the primary radar equipment, the ATM showing SSR information only.

Seeing the two aircraft converging at the same level, the Southend controller sought to have the helicopter transferred to his frequency, meanwhile giving limited Traffic Information to the ATR 42: the two aircraft were at a range of 5.2nm. Traffic Information was again passed to the ATR 42, at 3.2nm range: both transmissions were acknowledged.

The ATR 42 pilot subsequently reported to ATC that he had sighted two aircraft tracking north-west. The area radar showed that the two aircraft were the Agusta and another primary contact.

// ASSESSMENT IT WAS APPARENT

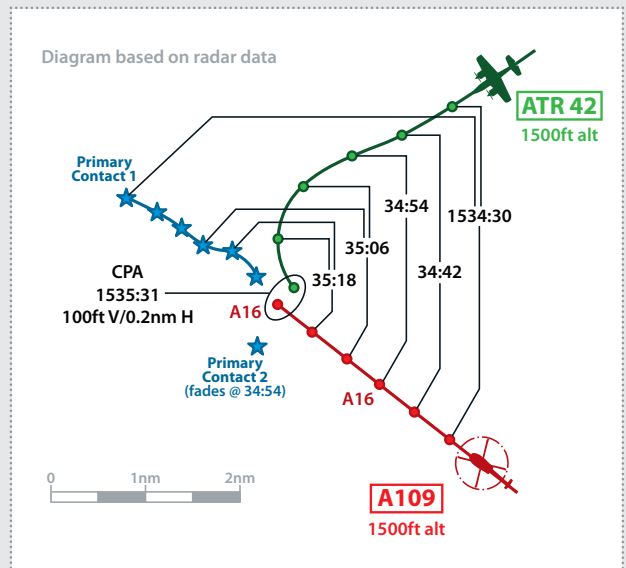
from the pilot reports and radar and TCAS simulation data that there was a degree of confusion over the chronology of events.

The ATR 42 crew received generic traffic warnings referenced to the airfield and the final approach track before being asked specifically if they were visual with traffic. The crew answered that they were 'visual with traffic'. Given the subsequent flight path of the ATR 42, the Board surmised that the traffic in sight was the primary only contact 0.9nm ahead.

It's reasonable to assume that the A109 would have been displayed on the ATR 42's TCAS before the Traffic Advisory and the ATR 42 crew were correct in not manoeuvring on the basis of the azimuth display or on the generation of a Traffic Advisory. It did appear, however, that the ATR 42 crew erroneously correlated the traffic warning and their TCAS TA indications with the primary only contact they had seen on their nose and continued their 'high bank turn to the left' in the belief that they already had the conflicting traffic in sight and that the left turn would resolve the conflict.

The TCAS Resolution Advisory occurred six seconds after the Traffic Advisory, some 17 seconds before the closest point of approach and 19 seconds before 'clear of conflict'. The ATR 42 pilot reports the pilot flying initially followed the Resolution Advisory by disengaging the autopilot and following the TCAS advice to 'Descend'. The radar replay Mode C indication does not reflect a change in aircraft altitude.

Commercial Air Traffic pilot members understood the captain's concern over the proximity of chimneys below; however, complying fully with the Resolution Advisory command, in the 17 seconds before the closest point of approach would have increased the miss-distance.





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Both pilots were operating in class G airspace and were equally responsible for 'see and avoid'; the ATR 42 pilot had right of way over the Agusta pilot until shortly before the closest point of approach. Members thought it poor airmanship for the helicopter pilot to cross the extended centre line of runway 06 at a range of 8nm without contacting Southend Approach. It was probable that the Agusta pilot did not

see the ATR 42 until well after the closest point of approach.

The ATR 42 crew reported first seeing the helicopter in their 2 o'clock at a distance estimated to be 300ft, shortly before the Resolution Advisory. Since the this occurred at a range of 1.05nm it seems likely that their sighting was after the advisory. Either way, a sighting in the 2 o'clock was too late to take avoiding

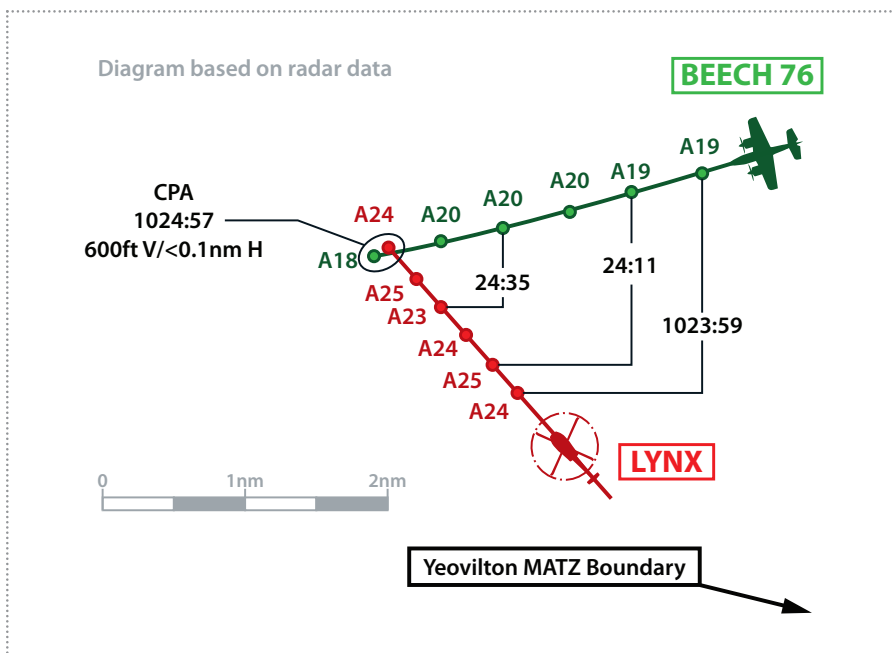
action and constituted, effectively, a non-sighting and the other part of the Cause.

Cause: An apparent non-sighting by the Agusta pilot and effectively a non-sighting by the ATR 42 crew.

● **Degree of Risk:** A

07 / THE LYNX EFFECT

REPORTING AIRCRAFT: LYNX MK 8 – REPORTED AIRCRAFT: BEECH 76



// SUMMARY

THE LYNX WAS CONDUCTING a partial air test following maintenance. Its crew were operating under VFR in VMC, 400ft below cloud, and in receipt of a Basic Service from Yeovilton Approach [on UHF]. The pilot had elected not to take a Traffic Service, based on the level of radio traffic on Yeovilton Approach frequency. The Beech 76 was conducting a navigation exercise, operating under VFR in VMC, the pilot flying being in the process of establishing a Basic Service with Yeovilton LARS [on VHF]. Appropriate external lights were on and transponders on with Modes A and C/S [Lynx/Beech 76 respectively].

The Lynx pilot reported seeing another aircraft in his 3 o'clock position on a closing course. He assessed there was no risk of actual collision so elected to remain 'straight and level'. Approximately one to two seconds later, the conflicting aircraft, which also remained straight and level, passed directly below him.

He stated that cockpit workload was moderate but did require both crew to look inside to verify switch selections. The Beech 76 instructor saw a Lynx helicopter in their 10 o'clock position at a range estimated at 10km. He assessed that it was safe to maintain track and that, being on the right, he had right of way, albeit that both parties had to be visual to 'implement this'. When he deemed it unsafe to continue the instructor took control and descended to avoid the Lynx. Shortly after the incident the Lynx pilot upgraded his service to a Traffic Service.

// ASSESSMENT

THE BOARD FIRST CONSIDERED the actions of the two pilots. The Joint Helicopter Command member said that the Lynx pilot knew the air test would involve more than normal in-cockpit activity and consequently that his lookout would be degraded, exacerbated by the Lynx Mk 8 only having

REPORT DETAILS

AIRPROX REPORT:
2012172

Date/Time:
Nov 28, 2012 1025Z

Position:
RNAS Yeovilton, 320°/10nm

Airspace:
Yeovilton Area of Intense Aerial Activity (Class: G)

Reporting aircraft:	Reported aircraft:
Type: Lynx MK 8	Beech 76

Alt/FL:	2,100ft	2,000ft
Regional Pressure Setting (1008hPa) RPS (1008hPa)		

Weather:	VMC CLBC	VMC CLBC
-----------------	----------	----------

Visibility:	25km	10km
--------------------	------	------

Reported Separation:	100ft V/0ft H	100m V
-----------------------------	---------------	--------

Recorded Separation:
600ft V/<0.1nm H

flying controls for the single pilot. He would therefore have been better served by using a Traffic Service or Deconfliction Service.

Turning to the Beech 76, a civilian pilot member commented that an instructor did have to give his student time to complete procedures that were necessarily limited in tempo by the student's inexperience, but the dividing line between achieving a valuable learning exercise and continuing to the detriment of safety could be a fine one.

Both pilots were operating in Class G airspace and had equal responsibility to 'see and avoid'. The Beech 76 instructor correctly assessed that he had right of way, but the Board emphasised that both pilots were responsible for collision avoidance.

Cause: Late sighting by the Lynx pilot.

● **Degree of Risk:** C

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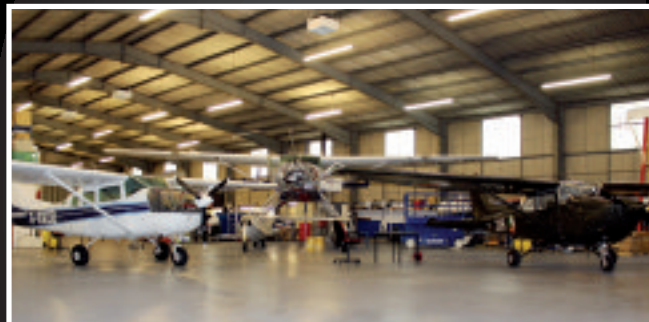
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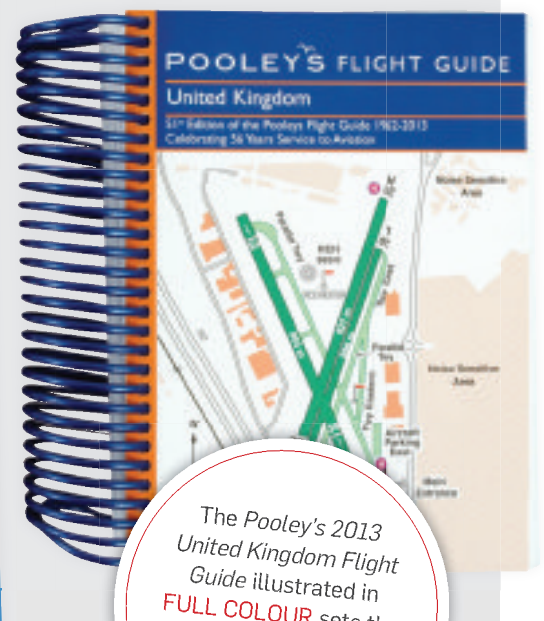
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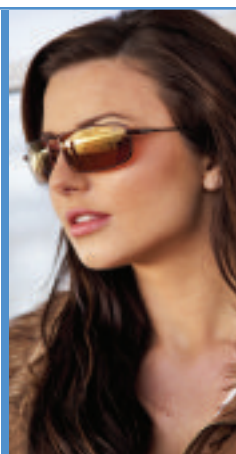
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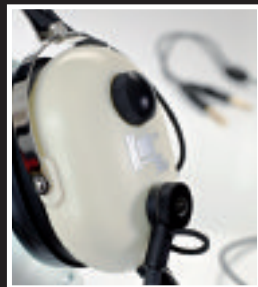
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AIRPROX: JUST HOW CLOSE IS TOO CLOSE?

AS I SAT IN THE COCKPIT going through my closing down checks, there was that lovely moment of silence as I leaned the mixture and the engine finally coughed and died. A few seconds later, all I could hear was the slowing whirr of the gyros and I finally had time to think. Just how close had I come to having a mid-air collision?

It had been my first student solo for five years and my instructor was walking over to greet me. "Did you enjoy that?" he asked. My excitement and enthusiasm were still there, but my first words were: "That was fantastic, but another aircraft bust the circuit and came so close that we had a near miss, I really think I should report it," – and then it all poured out.

I probably repeated myself several times as I recounted seeing another plane only a few hundred metres away flying almost straight at me from my 10 o'clock. I then dived slightly to pass underneath and I described seeing it slide out from behind my starboard wing and begin a gentle climb inside the circuit as I continued my downwind leg. Had I taken any avoiding action? No, but if the other aircraft had not commenced that dive I was a split second away from pulling up hard, irrespective of any 'on the right, in the right' rule.

My instructor had been in the tower, so he was fully aware of the RT calls, or lack of them, and all that our controller had said. I ended my babbling explanation and said I thought I should report it as a near miss, but he kind of gave me a quizzical look and said, "Do you really want to bother? It can't have been that close...".

So, after a short discussion I let it drop. But I could not stop thinking about it.

Although I do not yet have my PPL, I mix in a circle of friends who are quite aviation oriented. My wife holds a commercial licence, and with that inevitably there is also a pragmatism born out of years of experience. That evening I recounted the story to her. She listened, asked a few questions and then said that as the pilot in charge at the time, it had to be my decision to report it or not. No help there then!

Over the coming days the more I thought about it, the more shaken I became as I realised just how close I had come to a collision. I emailed a couple of other pilot friends and when they saw my account in black and white, the advice was clear, report it!

SO HOW DO YOU GO ABOUT REPORTING A NEAR MISS? AND JUST HOW CLOSE IS A NEAR MISS?

The moment you decide to report an incident, you cross a line between the recounting of a story and the formality of a process, but one that most people probably know nothing about. That can be quite daunting, especially as a student pilot. No longer can you be vague on detail, you have to be precise and, most significantly of all, you have to be absolutely honest with yourself. My wife and friends stressed that the airprox process does not seek to apportion blame, it is designed to assess the cause. This was important to me, as I inevitably started to question what really happened: was



KEITH WILSON/SFB PHOTOGRAPHIC

it as close as I thought, or was I mistaken? More to the point, could it have been my fault?

The first thing I did was let the management of my flying school and the airfield know that I was going to file an airprox. I was told that the control tower tapes would be secured so a complete transcript of the RT traffic would be available for review. At no time were they anything other than supportive. I then downloaded the report form and started to fill it in.

As a student, I found some questions hard to answer, simply because I did not know all the correct terms. I felt a little embarrassed that some of my responses might have shown my lack of knowledge; but I was sure about my account of the sequence of events. There were also a few tricky questions: should I admit to being 50ft above circuit height downwind, something that might actually have helped save my life as it turned out? Again, I opted for honesty.

AND THEN THE MOST AWKWARD QUESTIONS OF ALL: WHAT HORIZONTAL AND VERTICAL SEPARATION WAS THERE AT THE TIME OF THE AIRPROX?

Horizontal = None. That seemed hard to claim. Vertical = less than 100ft. To this day I believe it was significantly less than 100ft, but how can you be sure of this? I opted for less than 100ft as anything smaller seemed almost implausible.

Another aircraft just ahead had reported seeing the conflicting traffic and the tower had tried to make contact with it, so I knew something was out there, but not where. The sense of danger I felt, knowing there was a rogue aircraft in my general area but not being able to see it, was tangible. As a consequence, I was looking out even more carefully than usual, but the one place I did not expect to see it was at circuit height in the opposite direction and almost straight at me.

I was scanning all over the place, abandoning my downwind checks and instead looking for the danger I knew was there. When I finally did see it, the aircraft just kept coming straight at me. Yes I had time to pull up if I had needed to, but it started its shallow dive at the same moment I think I was about to pull up. I am slightly ashamed to admit it, but something in me said, "I am at circuit height on the heading I am supposed to be on, on his right", so my first – and possibly naïve – reaction was to expect the other aircraft to avoid me! Looking back I think that is why I did not pull up the moment I saw him heading straight towards me, I had

time to assess and time to see him dive, but if he had not... who knows if I would really have been quick enough.

A moment after the other plane slid underneath, I suddenly realised how close we had been to a collision. That was when the fear hit. The only way I controlled myself over the rest of the flight was to follow my training word for word. I talked out loud to myself through every action just as I had done with my instructor, not allowing myself to think about anything other than landing safely.

I submitted the airprox form not knowing what to expect. Would I be interviewed or summonsed to account for my actions? I had visions of sitting in front of a daunting inquiry panel, but how wrong I was! In the end, a rather standard letter arrived acknowledging receipt of my form and advising me that the process often took a few months to investigate. The letter did not seem to reflect the same level of importance I attached to the situation.

The days turned into weeks, the weeks into months and I had almost forgotten about the process when a letter arrived containing the Board's findings. The feelings I experienced were quite unexpected; holding the report I began to wonder if I had made a big fuss about nothing... would the radar traces back me up, or make me look like the foolish student others might have assumed me to be?

Suffice it to say that my account of events was supported by the evidence provided by the radar traces, the RT transcripts and even the other pilot's account. My slightly off-track downwind leg was there for all to see, but so was the trace of the other aircraft clearly showing our converging tracks and separation.

In the end the formal verdict was category C, 'no risk of collision'. I almost felt embarrassed that I had caused so much work for apparently no reason, but then I read that this had only been carried by the narrowest of majorities. It went on to explain that the Board felt that, on balance, the deciding factor had been the fact that I had seen the other aircraft and had not taken avoiding action.

In all honesty, I think they got it right, but it was a very close run thing and nothing will take away the three big lessons I learned that day.

THE LESSONS I LEARNED:

1. Even in the circuit, never assume that everyone is flying in the same direction as you!
2. No matter how good your lookout, always consider that there might be other traffic coming straight at you from the 'least likely' of places.
3. If you feel you have had a near miss, report it as an airprox immediately to ATC. There's nothing to fear from the process, even if you feel you might have been partially to blame.

Only the other pilot and I know just how close we were. It is not for me to comment on his airmanship, nor for him to comment on my lookout skills; all I will say is that we both got away with it this time. I for one don't ever want to be in that situation again. ●

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