AIRPROX

UK AIRPROX BOARD

THE PUBLICATION OF THE UK'S AIRPROX BOARD 2026

AIRPROX DIGEST 2026


UK AIRPROX BOARD

AIRPROX Insight

DIRECTOR UKAB'S MONTHLY UPDATE April 2025

AIRPROX OF THE MONTH

Inside or outside?

Circuit patterns – one of the most likely places to have an Airprox...


UK AIRPROX BOARD

AIRPROX Insight

DIRECTOR UKAB'S MONTHLY UPDATE May 2025

AIRPROX OF THE MONTH

Do you plan for 'what-ifs'?

You might think it won't happen to you, but experience shows that no one is immune to left-field surprises

UK AIRPROX BOARD

AIRPROX Insight

DIRECTOR UKAB'S MONTHLY UPDATE June 2025

AIRPROX OF THE MONTH

Watch out for the wire

Gliders worked well in bringing down aircraft during the wars, so why would you fly near them?

UK AIRPROX BOARD

AIRPROX Insight

DIRECTOR UKAB'S MONTHLY UPDATE July 2025

AIRPROX OF THE MONTH

Drone dilemma

Are UAV flight operations predictable?

UK AIRPROX BOARD

AIRPROX Insight

DIRECTOR UKAB'S MONTHLY UPDATE November 2025

AIRPROX OF THE MONTH

Close to the edge

Instrument Approach Procedures outside controlled airspace – could they catch you unawares...?

Welcome

to this year's annual Airprox magazine

After a bumper year for incidents in 2024, last year was a little more subdued with a total of 181 aircraft-to-aircraft incidents being reported to the UKAB — a reduction of around 13% over the previous year.

While this fall in numbers is extremely welcome, 2024 was the highest-ever total of reported aircraft-to-aircraft Airprox, so the 2025 figure signals a return to a more 'normal' year.

The reasons for the reduction are almost impossible to pin down – is it because the weather was particularly poor (there's nothing to indicate that 2025 had noticeably fewer 'flyable' days than previous years), or is it because fewer people can afford what is, after all, a pretty expensive pastime?

We hear much in the news regarding the current cost of living, so perhaps this is having a greater impact on General Aviation flying hours than it has in the past.

Although we cannot unequivocally say why Airprox numbers are lower than in 2024, I do hope the work of the UKAB has in some way contributed to this reduction – after all, our primary objective is to enhance air safety in the UK, in respect of lessons learned and applied from Airprox occurrences reported within UK airspace.

As with previous years' Airprox magazines, we've again included this year a number of our monthly Airprox INSIGHT newsletters published throughout 2025.

While you'll see a few statistics in this year's main article, I haven't included all of the data the UKAB gathers, so if you're interested in delving deeper you'll find plenty more of interest on the **UKAB website**, and you'll also find previous editions of this magazine plus plenty of INSIGHT newsletters for those days where we find ourselves in the clubhouse or crew-room with a few spare minutes. So do pay it a **visit**, it's all actually quite thought-provoking.

SIMON OLDFIELD
Director UKAB

Cover Image: Iakov Filimonov (Shutterstock)

Photo for illustrative purposes : Shutterstock: CatherineLProd

Barrier relief

There's a lot more than the Mk1 eyeball that can help to prevent an Airprox

There's an old saying about barriers which states that *'The only person who can stop you, is you'*, which might well be true in normal life, but when it comes to avoiding an Airprox while flying there are a few other barriers apart from you that definitely do help.

So what follows might seem a little dense at first, but bear with me – it isn't and it might even surprise you.

What, then, could be a barrier to a mid-air collision — lookout is obvious, but there are actually eight other barriers in total used by the UKAB – four for what's called the *'The Ground Elements'* and five (including lookout) for *'The Flight Elements'*.

A quick word on that nomenclature will help a bit here – *Ground Elements* refers to air traffic controllers, (A)FISOs, AGOs, launch controllers or other elements that support flying operations. While it mostly relates to 'the person on the ground on the other end of the radio', it's not exclusively that.

Flight Elements usually refers to the crew of the aircraft – but while we all know about the responsibilities of the Pilot in Command, it doesn't always follow that they are the ones with the most complete situational awareness or sight of the other aircraft (think of the example where a helicopter crewman has seen an aircraft from the side door or ramp at the rear of the aircraft).

So the barriers are comprised as follows:

Ground Elements (GE)

- Regulations, Processes and Procedures (GE-RPP).
- Manning and Equipment (GE-M+E).
- Situational Awareness (GE-SA).
- Electronic Warning Systems (GE-EWS).

Flight Elements (FE)

- Regulations, Processes and Procedures (FE-RPP).
- Tactical Planning and Execution (FE-TPE).
- Situational Awareness (FE-SA).
- Electronic Warning Systems (FE-EWS).
- See and Avoid (FE-S&A).

Each of these barriers is given a weighting related to how much it contributes to the overall avoidance of a mid-air collision, and these weightings change for encounters inside or outside controlled airspace.

The simplest way to explain this, as with many things, is a visual representation — in the diagrams that follow, the *Flight Elements* are coloured blue, and the *Ground Elements* are coloured green.

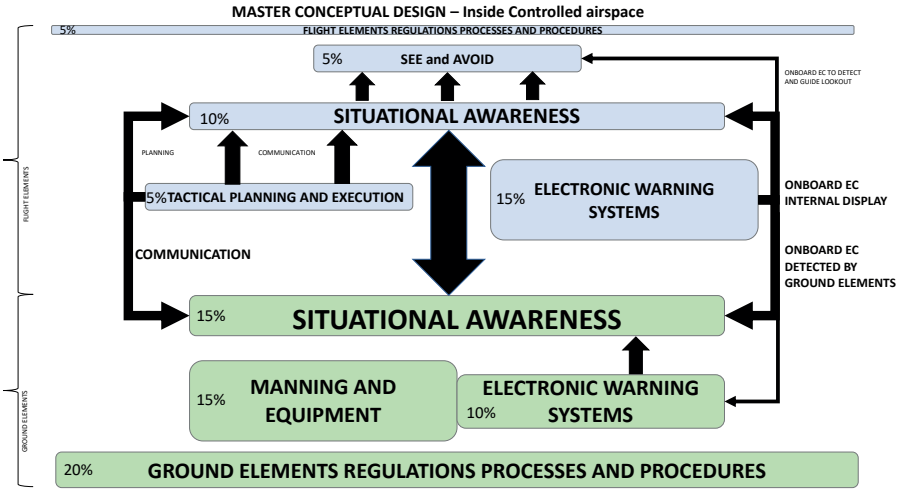
For encounters **inside** controlled airspace, 60% of the defence against mid-air collision resides with the *Ground Elements*.

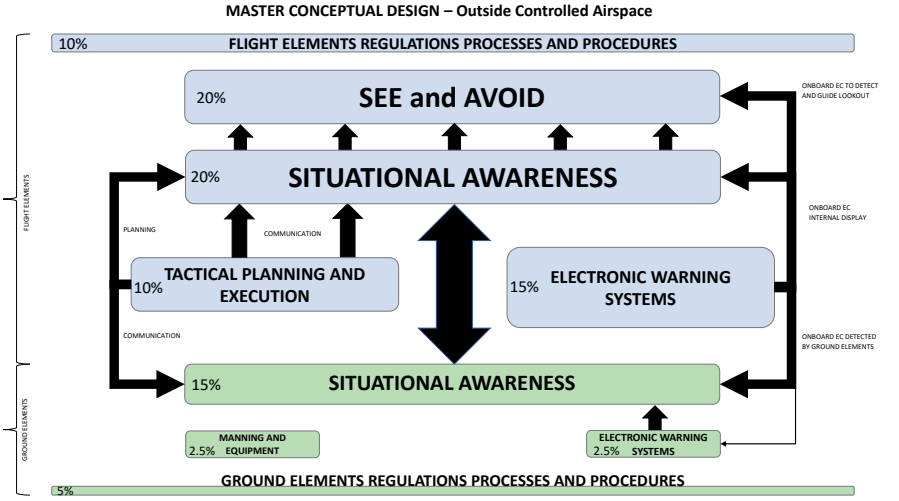
This shouldn't really come as a surprise, because much of what happens inside controlled airspace is at the behest of an air traffic controller, and the rules and procedures are very clear and widely understood.

That doesn't mean, though, that the pilots don't or can't have an input, but you'll notice that the largest part of the *Flight Elements* defence is the Electronic Warning Systems barrier (essentially, TCAS II or other, comparable systems) and the See & Avoid barrier makes the joint-smallest contribution (but still a contribution...).

For encounters **outside** controlled airspace (where the vast majority of Airprox events in the UK occur) the barriers are exactly the same, but the weighting is markedly different.

Here we can see that there's much more of a contribution from the Flight Elements (75% in total) and much less of a contribution from the Ground Elements. However, and this is important to note, the Ground Elements do still make a contribution for flights outside controlled airspace, so if we decide not to seek a service from a LARS unit (or similar) we are immediately losing a quarter of our defence against a mid-air collision.





Now that we've established what the barriers to mid-air collision are, and how much each contributes, let's take a look at some of the data that the UKAB gathers.

Part of the evaluation process the Board undertakes for each Airprox is to decide how the barriers performed. The (somewhat self-explanatory) possible conditions for each of the barriers are:

- Fully Effective
- Partially Effective
- Ineffective
- Not Present or Not Assessable
- Not Used

Perhaps the simplest barrier to use as an example of what might constitute each of the above conditions is the Flight Elements – See & Avoid barrier, so the table explains what influences the assessment for each of the conditions for the See & Avoid barrier:

Fully Effective		**At least one** of the pilots sees the other aircraft **and** avoids it *in good time*, that is, without having to take late or emergency avoiding action whilst preserving or increasing the existing separation between the 2 aircraft.
Partially Effective		**Neither** of the pilots involved saw the other aircraft early enough to take timely and effective action (i.e. sighted the other aircraft late) and therefore had to take late or emergency avoiding action, **and/or** neither pilot took early enough action on sighting the other aircraft to prevent the separation decreasing.
Ineffective		**Neither** of the pilots involved saw the other aircraft in time to materially increase the separation, **and/or** neither pilot takes any effective action to increase separation.
Not Present/Not Assessable		Self-explanatory
Not Used		The pilots are not expected to maintain separation visually, e.g. the aircraft are too far apart or at least one of the aircraft is in cloud.

So, now that we have looked at the performance of each barrier, let's take a look at what leads to a barrier being weakened or breached – the contributory factors.

Each barrier has a number of pre-determined contributory factors, and if the Board does not assign any contributory factors to a particular barrier, then that barrier – if present and assessable – is considered to have been Fully Effective. However, the reverse is not necessarily true – a Fully Effective barrier can have contributory factors assigned.

By way of explanation, let's look at the Flight Elements – See & Avoid barrier again; referring to the table above, the barrier will be assessed as Fully Effective if at least one of the pilots involved sees the other aircraft and avoids it in good time.

However, if the pilot of the other aircraft did not see the first aircraft at all, this will be considered to be a 'non-sighting', and the Board usually judges that this would have contributed to the Airprox because, had the pilot of the second aircraft seen the first aircraft, they may well have taken action sooner such that the pilot of the first aircraft would not have been concerned about the proximity of the second aircraft and would not have reported the encounter as an Airprox.

Another example, and to show I am not partisan towards the side of the pilots, would be the Ground Elements – Situational Awareness barrier.

Imagine that the pilots of both aircraft involved are each receiving a Traffic Service, but from different providers. One of the controllers notices the impending conflict and passes Traffic Information to the pilot of their aircraft, which the pilot acknowledges – this would make the barrier Fully Effective. However, the controller of the other aircraft is engaged in another task and does not have the opportunity to pass Traffic Information to the pilot of their aircraft – this would be deemed as contributory to the Airprox even though the barrier was Fully Effective because of the actions of the first controller.

It's extremely important to make the distinction between factors that contributed to an Airprox and any measures of compliance or performance of a pilot or controller – the UKAB exists purely to contribute to the enhancement of flight safety in the UK and there is no question of apportioning blame or responsibility for an Airprox; the contributory factors do not indicate that there is a doubt over a pilot's or controller's performance, they simply try to explain why any particular barrier did not perform as expected.

Now that we understand barrier performance and contributory factors, what insights can we gain from the data that's gathered? This is probably best explained with a few graphics.

We aggregate the performance of each of the barriers from each Airprox over the year in order to build a picture of how each barrier is performing.

On the Ground Elements side (four barriers), we mostly see that, where the barriers are present (i.e. there are Ground Elements involved – not always the case), the Rules, Regulations and Procedures barrier, along with the Manning and Equipment barrier, perform well. What does this mean? Well, it means that, on the whole, the Ground Elements rules and procedures are fit for purpose and are applied consistently, and that there is sufficient resource that is using any equipment they have to its fullest capability.

However, the Situational Awareness barrier performs markedly less well, and the Electronic Warning Systems barrier is almost non-existent.

Let me explain – the Electronic Warning Systems barrier is really only a viable option inside controlled airspace (CAS). There are some exceptions, but for the most part this barrier is not mechanised for outside CAS and, since most Airprox occur in Class G airspace, this barrier does not come into play (Not Present on 85% of occasions).

For the Situational Awareness barrier, its performance is highly dependent on the type of service requested. For the barrier to work as intended, it's not enough that the Ground Element (often a controller) has Situational Awareness of the potential conflict – they must then pass that Situational Awareness on to the pilot.

Photo for illustrative purposes : Shutterstock: Gorodenkoff

In this pie chart, we can see that this barrier is either Not Present or Not Used for half of all Airprox. This means that pilots were either not speaking to anybody, had only requested a Basic Service (where a controller or FISO has no requirement to monitor the flight) or a Basic Service was all that was available.

When the barrier is 'active' we can see that its performance is actually quite variable; this can be for a number of reasons, which I won't go in to here, but it's clear that this barrier is significantly under-utilised.

Looking at the Flight Elements – Situational Awareness barrier, this is fed from a number of places, including pre-flight preparation, reference to published aeronautical information, in-flight communication, information from electronic conspicuity (EC) equipment etc.

It not only includes the gathering of information, but also the pilot's reactions to that information, for example, manoeuvring the aircraft on receipt of a warning from EC equipment. Importantly, it does not include actions when an aircraft is sighted – that falls into the Flight Elements – See and Avoid barrier.

It's evident that this barrier performs extremely poorly – for the most part, this is because pilots do not receive any information regarding the presence of another aircraft. However, it's also because when pilots do receive that information they tend to wait until they sight the other aircraft before manoeuvring to break any possible conflict.

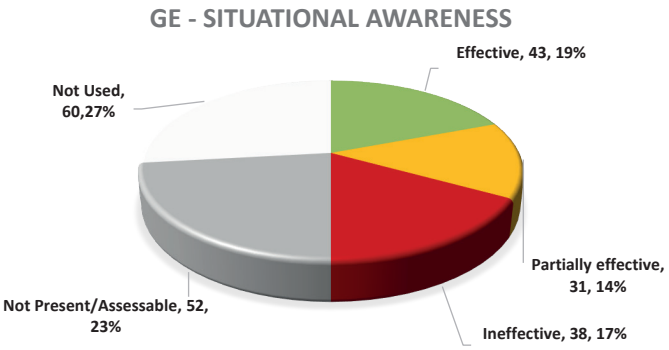
Finally, let's take a look at the performance of the Flight Elements – See & Avoid barrier.

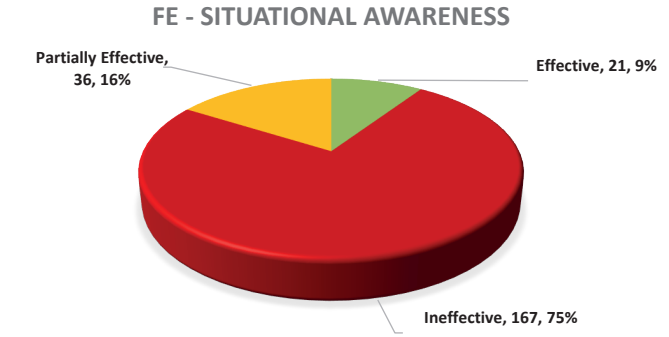
In the majority of Airprox encounters this is the final barrier to be employed. Now, the weaknesses of the 'See' element of this barrier are well-known, particularly the effect of there being no relative movement of the threat aircraft, so we're already battling our own eyes and brains when trying to detect the most dangerous geometry.

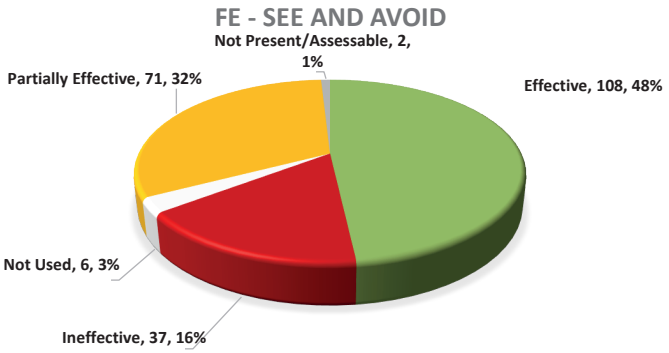
UKAB data does show that the most likely reason for this barrier to be weakened or fail is a late sighting or a non-sighting of the other aircraft. However, it's also not uncommon for pilots to sight an aircraft at an early-ish stage but then wait to see what happens or if the other pilot takes action.

Notwithstanding the (UK)SERA rules on right-of-way, it's worth remembering that, just because you have seen the other aircraft, it does not mean that the other pilot has seen your aircraft.

The pie chart shows that the See & Avoid barrier is only Fully Effective for just under half of the time, so it is really important not to put all your eggs in one basket and rely on seeing and avoiding any threats…







I hope this article has provided some insight into the work of the UK Airprox Board and how we build the data to support improvements in flight safety in the UK. Obviously, we are only concerned with minimising the risk of a mid-air collision, and there are many other threats that pilots have to deal with every time they fly, so this is just one part of the flight safety puzzle. However, our data do show that some barriers are significantly weaker than others, so why not have a think about how you can improve the performance of your own, personal barriers?

Each Airprox reported to the UKAB is presented to a Board of 17 voting members and a number of non-voting advisors. Members and advisors have a wide variety of aviation experience which covers pretty much every aircraft type that we encounter. We also have an assortment of members with air traffic controller, (A)FISO or AGO experience as well.

The Board members analyse each event using a systematic application of recognised safety practices, namely the identification of applicable barriers to mid-air collision and the attribution of factors that contributed to the event.

It's important to note that contributory factors assigned to an event in no way suggest that anybody did anything wrong or is blameworthy – they are simply a statement of what, in the Board's view, influenced the event and contributed to there being a loss of safe separation.

The prime reason for our work is to contribute towards improving flight safety in the UK.

Inside or outside?

Photo for illustrative purposes: Shutterstock: Mountainpix

Circuit patterns – one of the most likely places to have an Airprox…

This might — or might not — surprise you, but every month Airprox Board members always discuss at least one Airprox in the visual circuit and April was no different.

Which is why I've chosen **Airprox 2024275** between a Cessna 152 and a Robin DR400 at Stapleford to, hopefully, illustrate a few points that we can all think about (nearly all of us fly, or will have flown, in the visual circuit, after all…).

The Cessna pilot had joined for RW03 from the deadside, crossed the upwind end of the runway at circuit height and turned onto the downwind leg as per the depiction of the circuit pattern published on Stapleford Flight Centre's website (and in other popular flight guides).

Meanwhile, the Robin pilot had joined from the West at 2000ft, descended on the deadside of RW03, crossed the climbout lane over the M25 (about half-a-mile from the upwind threshold) at about 1200ft and then turned downwind, tracking closer to the runway than the Cessna.

When the Robin pilot was about halfway downwind, they spotted the Cessna tracking from right-to-left in front of them and were uncertain whether the Cessna was on base leg or just transiting the ATZ; the Cessna was, indeed, on base leg and flying pretty much the base leg track as depicted in the circuit diagrams previously mentioned.

As the aircraft closed, the Cessna pilot turned onto final at which point the Robin pilot realised that the Cessna was in the circuit, so they turned to pass behind it, extended downwind and out of the Stapleford ATZ before turning inbound to land from an extended final.

The Cessna pilot, having completed a standard overhead join, had heard the Robin pilot joining and, justifiably, had expected them to have been behind them on the downwind leg. They first saw the Robin as they turned on to final and assessed it to have been almost head-on, so they rolled to the right to avoid it. The aircraft passed each other with no vertical separation and about 0.1nm horizontal separation.

In my December 2024 INSIGHT article I discussed considerations for the visual circuit. That particular incident, although occurring at a different airfield, has many similarities with this one – the two aircraft involved flew dissimilar circuit patterns, the circuit traffic was not always contained within the ATZ, the pilot assumed the other aircraft was not circuit traffic and did not seek clarification of the other pilot's intentions.

Returning to this month's Airprox, during their discussions the UK Airprox Board members felt that the Robin pilot, by conducting a somewhat 'loose' overhead join, had not helped themselves from the outset. They had flown a wider than usual crosswind leg which may have led them to turning downwind far earlier than would have been expected.

Of course, the published circuit patterns are not exact tracks to be flown but, as we saw in the December article, if the pilot of an aircraft in the visual circuit flies a shorter ground track than the pilot of the preceding aircraft then, at some point, the aircraft are going to come closer to each other than would normally be the case. By flying a downwind leg closer to the runway than that flown by the Cessna, it was almost inevitable that the Robin pilot would get close to the preceding aircraft.

The second lesson here is all about communication. It's essential that pilots make accurate calls when joining and once in the circuit – it is how, primarily, other pilots build their situational awareness.

So, not only is it paramount to be as accurate as possible with position calls and to announce if flying a pattern different to that expected (such as flying a tighter downwind leg than would normally be

flown at that particular airfield), it is also really important to listen to the radio to gain an understanding of where other aircraft are in the circuit. If calls from other pilots are missed (it will happen) then don't be afraid to get on the radio and ask for clarification.

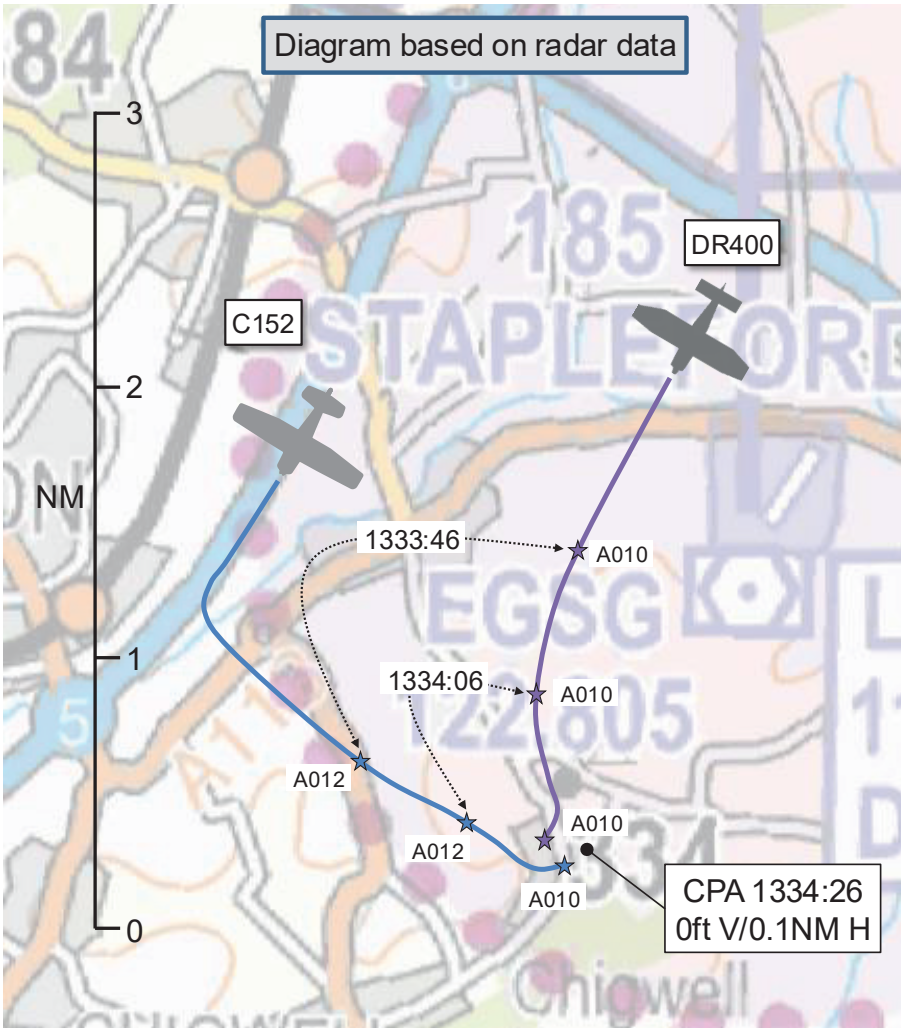
In this case, the Robin pilot wondered if the Cessna was in fact circuit traffic, perhaps because they assessed that the Cessna had been outside the Stapleford ATZ at the beginning of the base turn.

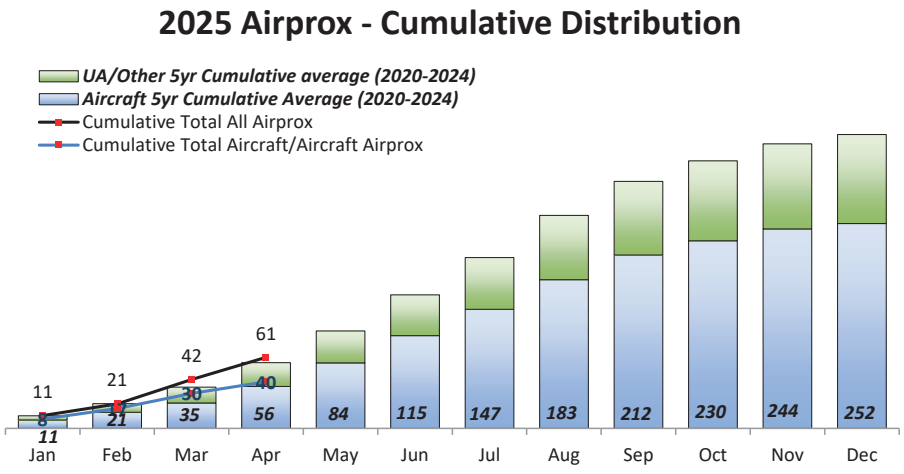
The published circuit pattern at Stapleford is flown near to the limits of the ATZ (due to noise abatement requirements) and does exit the ATZ at the end of the downwind leg/beginning of the base leg for RW03, so aircraft in the circuit pattern will look as if they are quite far from the airfield itself.

So if you are unsure whether an aircraft you have seen is circuit traffic or not, a simple call to ask the intentions of the pilot, or to confirm whether or not they are in the circuit, could save an awful lot of heartache.

The final thought I'd like to leave you with is the question of 'when' to manoeuvre to increase separation from another aircraft in the circuit that might be a potential conflict.

The answer to that question is actually quite simple – as early as possible. Given that the visual circuit at an airfield is flown visually, and that we are required to 'conform with or avoid the pattern of traffic formed….' ((UK)SERA.3225(b)), if we aren't following the aircraft ahead and conforming with its pattern then we need to avoid it, and don't forget that leaving the circuit and re-joining with better situational awareness is always an option.





BOARD SUMMARY

The Board evaluated 28 Airprox this month, including eight UA/Other events, seven of which were reported by the piloted aircraft and one by the drone operator. Of the 22 full evaluations, six were classified as risk-bearing – one as category A and five as category B. The Board did not make any Safety Recommendations this month.

The graphic above shows that it continues to be a pretty 'normal' start to the year in terms of numbers of Airprox reports received. However, in recent weeks we've seen a distinct increase in the number of reports coming through, no doubt largely due to some exceptional weather conditions leading to more of us taking to the skies during April.

With increased activity it follows that there's likely to be increased reporting, and I'd be delighted if this turned out not to be the case!

Of course, as the new season finally gets underway, we can all be a little 'rusty' from not having flown much, if at all, over the winter. We should all be mindful that we will probably be a bit slower at everything, including recognising and processing potential conflicts while airborne. So do take some time to look back at a few of these Insight articles and ask yourself what you can do to be better prepared to deal with (or avoid) an Airprox situation.

Do you plan for 'what-ifs'?

You might think it won't happen to you, but experience shows that no-one is immune to left-field surprises

Photo for illustrative purposes: Shutterstock: Adam Bartosik

After highlighting in last month's Insight considerations to reduce the likelihood of an Airprox in the circuit, I thought it would be useful to expand on that this month by looking at some of the situations the Airprox Board sees just outside — or sometimes inadvertently inside! — the circuit.

For example, at least three events that occurred either near to the ATZ boundary or, where there was no ATZ, within two miles of the aerodrome, were discussed at the Board's recent May meeting.

I've chosen **Airprox 2024281** to draw a few lessons from, but I could equally have chosen **Airprox 2024284** or **Airprox 2024295**. This particular example (**2024281**) involved an R44 helicopter and a Beech 33 just to the south of Biggin Hill's ATZ.

The R44 pilot was conducting a pipeline inspection flight in and around the Biggin Hill ATZ, so was in contact with the Biggin Hill controller and in receipt of a Basic Service (the highest level of service that Biggin Hill can provide). The Beech 33 pilot, meanwhile, was transiting south of the ATZ, VFR, but in fairly challenging weather; they were in receipt of a Basic Service from Farnborough LARS East.

The pilots of both aircraft received Traffic Information about the other from their respective controllers (more on that later…) and the Beech 33 pilot stated that they were visual with the R44, however the R44 pilot was looking for the Beech 33 but hadn't sighted it.

The R44 pilot was also manoeuvring in accordance with the requirements of their task, which had presented a bit of a 'moving target' for the Beech 33 pilot. As the Beech 33 passed the R44, the helicopter turned towards the Beech and, at their closest point, a separation of 0ft vertically and less than 0.1NM horizontally was recorded.

There are a number of lessons to draw out of this Airprox. Firstly, route planning: the Beech pilot had chosen to route to the south of the Biggin Hill ATZ and was actually flying quite close to the ATZ boundary – so much so that they were concerned about it when overtaking the R44.

There is a narrow corridor of Class G airspace between the Biggin Hill ATZ and the Gatwick CTR (where the base of Class D controlled airspace is 1500ft). When routeing close to an ATZ, it's advisable to contact that unit as it is quite likely that they will have a better understanding of the local traffic picture than a LARS provider (more on that later, too…).

However, we aren't obliged to do so and, if we don't contact the controller/AFISO/AGO who has responsibility for the ATZ, then we will have to avoid it. Therefore, think about whether or not your lateral distance from the ATZ boundary gives you enough room to react to the unforeseen – if we route too close to airspace that we can't (shouldn't?) go into then that limits our options.

That leads nicely into the second lesson – frequency selection. Nobody wants to spend the entire flight changing frequency on the radio and talking to a new controller/AFISO etc every few miles. Then again, talking to the right person at the right time can really help.

In this case, had the Beech 33 pilot been on the Biggin Hill frequency then they could have immediately requested permission to enter the ATZ for traffic avoidance. The UK Airprox Board does recommend receiving a surveillance-based air traffic service (ATS) (a Basic Service is NOT a surveillance-based ATS) wherever possible, but acknowledges that this is not always the best solution for every situation.

In this case, although neither controller was required to pass Traffic Information to either pilot, they both did. But don't let this fool you into thinking that you'll get Traffic Information under a Basic Service – on the day in question both controllers had the time and capacity to pass the information; on another day they might well have been busy with other aircraft.

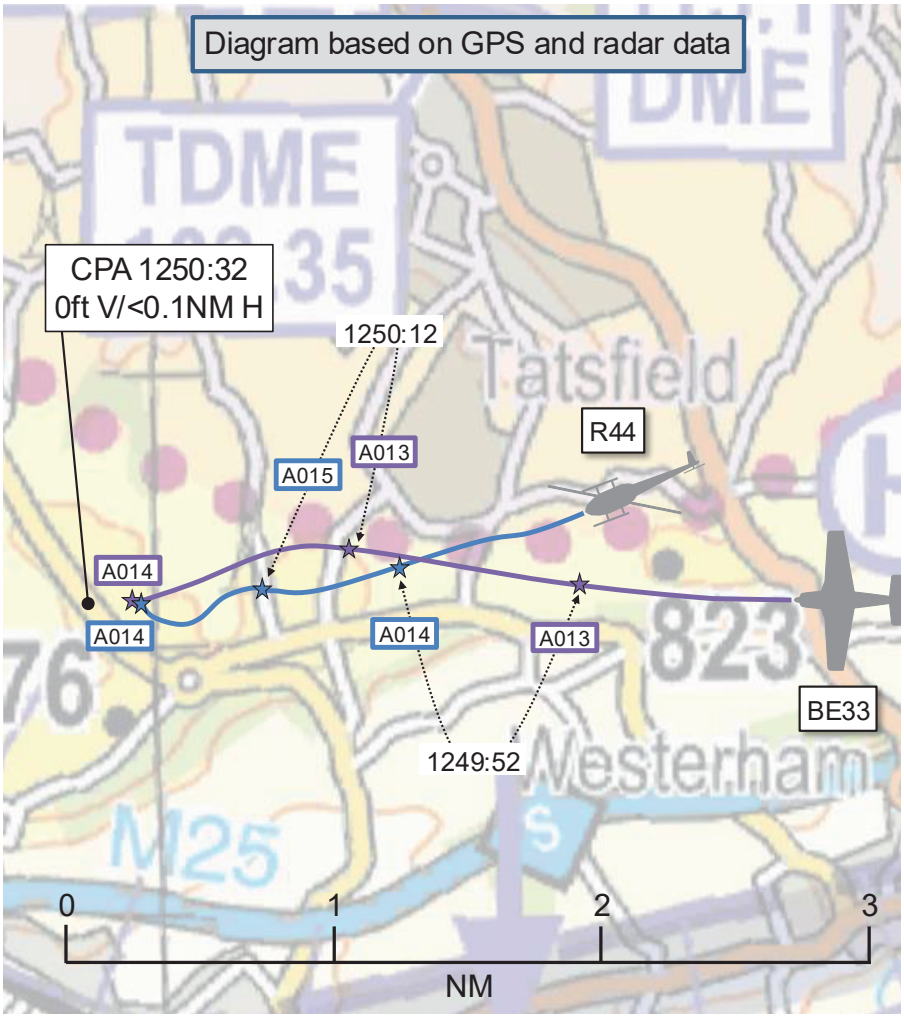
It's useful to have the frequencies of airfields along your route 'up your sleeve' even if you don't plan to use them. Things can happen quickly in the air so it's quite likely that we won't have time to find the

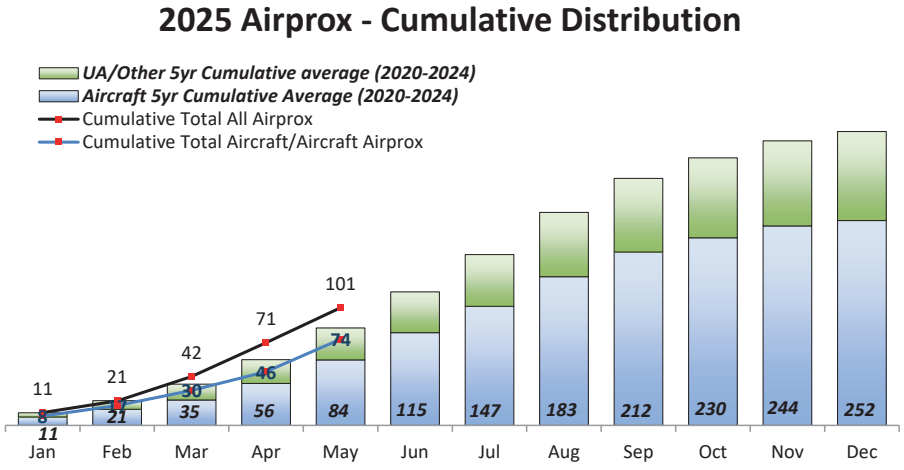
frequency we need if it's not already on the PLOG (or similar).

Although there's plenty to talk about with this Airprox, the last thing I want to specifically draw out is the weather on the day. Although the Biggin Hill METAR issued at around the time of the Airprox (EGKB 181250Z VRB02KT 9999 FEW030 07/05 Q1012=) suggests that the cloudbase wasn't too low, both pilots reported a lowering cloudbase and reduced visibility at times.

A look at the Biggin Hill TAF valid over the period tells a different story - EGKB 181104Z 1812/1821 07004KT 9999 SCT018 PROB30 TEMPO 1812/1815 BKN009 BECMG 1815/1818 BKN008… A 30% probability of poor weather usually means it will almost certainly impact our flight at the most inopportune moment ('Murphy's Law')! That's why it's always worth looking at the TAFs and the METARs and thinking about possible courses of action should the weather be less favourable than we were hoping for (it usually is). Think about track deviations, entry into controlled airspace, traffic avoidance etc and have a back-up plan – with information that is needed to execute it – during the pre-flight planning stage.

A final thought on the Rules of the Air Regulations and who gives way to whom. In this example, the Beech 33 was undoubtedly overtaking the R44 helicopter. Although the R44 pilot turned towards the Beech 33, it is worth remembering that the pilot of the overtaking aircraft is required to keep out of the way of the other aircraft throughout the manoeuvre '… and no subsequent change in the relative positions of the two aircraft shall absolve the overtaking aircraft from this obligation until they are entirely past and clear' ((UK) SERA.3210 Right-of-way (c)(3) Overtaking).





BOARD SUMMARY

This month the Board evaluated 28 Airprox, including 11 UA/Other events, seven of which were reported by the piloted aircraft and four by the drone operator.

Of the 22 full evaluations, six were classified as risk-bearing – one as category A and five as category B. The Board assessed the last of the 2024 Airprox reports this month (hurrah!) and made two Safety Recommendations, both regarding operations at Sandtoft – one to ensure that known unusual air activity within the ATZ/FRZ is promulgated, and one to align published hours of AGCS provision to what is actually being provided.

The graphic above right indicates that the number of reports we are receiving is on the up. While it's well ahead of the five-year average, those five years do include the period of the COVID-19 pandemic and its restrictions on recreational flying, so I'm not overly concerned at this stage.

As expected, the warm and dry Spring has meant that more flying has taken place and, therefore, more Airprox are being reported in the early part of the year than has historically been the case. That said, numbers this year are only very slightly ahead of last year's, so we'll keep an eye on reporting rates and see whether there are any particular trends.

It looks like the 'flying season' is now in full swing, so I wish you all a safe and enjoyable summer. If the unpredictable British summer weather does scupper your plans to go flying, please do use that time to take a look back at some of these articles and ponder the lessons I have tried to draw out.

Watch out for the wire

Cables worked well in bringing down aircraft during the wars, so why would you fly near them?

Photo for illustrative purposes: Shutterstock: Deef Smits

Way back in February 2023 I wrote an Insight newsletter highlighting, among other things, the risks involved in flying over a glider site that conducts winch-launching (most do) below the maximum winch-launch height.

That newsletter was followed by a CAA podcast on the subject and advice to pilots on the CAA's website regarding flight in the vicinity of gliding sites (https://www.caa.co.uk/glidingsites).

Since then we have seen fewer reports of such direct overflights, but they do still happen. Take this event, **Airprox 2025011**, which I can honestly say is one of the most alarming I have come across in 12 years of working for the UK Airprox Board.

It involved an SZD-51 Junior glider and a PA-28 over the Long Mynd gliding site. The glider was winch-launching and had a nose-up attitude of about 45°, restricting the pilot's ability to lookout in all directions. What's more, the launch phase is a particularly busy time for any pilot, so they were also concentrating on that.

The PA-28 pilot was approaching the area from the north-west at an altitude of about 3000ft and was receiving a Basic Service from Shawbury Zone, however, the glider was not equipped with a transponder and actually didn't show at all on radar until about 5-10 seconds before the closest point of approach between the two, so there was no opportunity for the Shawbury controller to warn the PA-28 pilot about the glider.

The Piper pilot had an electronic conspicuity device that could have detected the FLARM-equipped glider, but it seems that there was no alert from that device to warn of the glider's proximity; the FLARM on the glider would not have detected anything emitting from the PA-28, so there was no warning to the glider pilot of its presence either.

Worryingly, the last line of defence – see and avoid – didn't work either because neither pilot sighted the other aircraft at the time. This Airprox was reported by the glider pilot after they had been told what had been seen by the launch crew on the ground.

The closest the aircraft actually were to each other was recorded as about 400ft vertically, with the PA-28 below the glider, and 0.15 miles horizontally.

The reason I find this Airprox so alarming is not just because the aircraft got particularly close, but because there were two cables attached to the glider at the time the PA-28 passed below it — one for the launch and one to retrieve the cable back to the launch point when it was on the ground.

It's a salutary lesson that flight in the vicinity of glider sites needs to be carefully thought through during pre-flight planning. Of course, gliding sites are, usually, in Class G airspace and do not have any 'protection' around them (such as an ATZ), so there is definitely no requirement to avoid them. However, flying close to a glider site increases the likelihood of encountering gliders, and transiting below the maximum winch-launch altitude adds a further hazard – the cable (or, in this case, cables).

On the CAA 1:500,000 and 1:250,000 VFR charts glider sites are depicted by a 'G' symbol surrounded by a circle of 1nm radius. The circle does not signify any airspace associated with the site – it is simply there to draw attention to the presence of it. If the symbol is accompanied by a number in the bottom right-hand corner, this signifies that winch-launching takes place and the maximum altitude of the winch-launch – simply put, the potential height of the cable at the top of the launch, *plus* the airfield elevation.

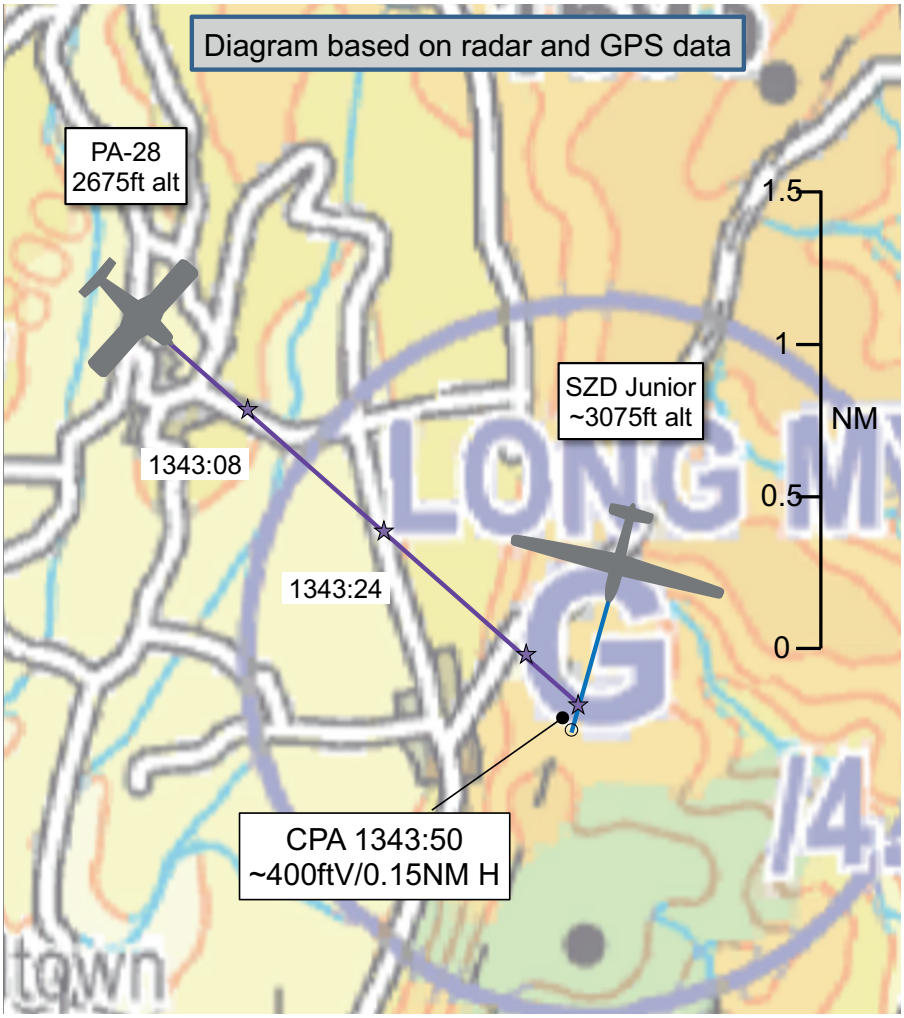
This information is also available on most aircraft navigation applications (e.g. SkyDemon, ForeFlight etc) but often the information needs to be selected to be displayed. This is why pre-flight planning is so important, because if the site isn't displayed to us in-flight then how are we supposed to remember that it's there? It follows, then, that if we're using apps for our route planning, we also need to be cautious about what is, and is not, displayed to us.

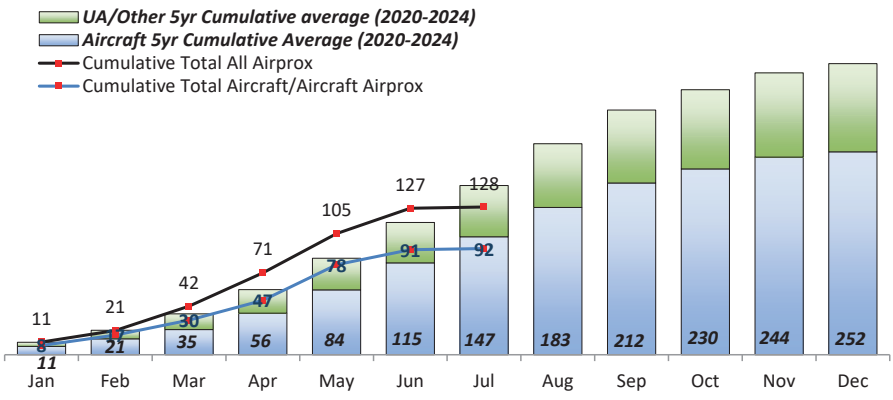
So, if planning to fly near, or over, such a site we should be considering what altitude we want to fly at. If we can't (or don't want to) fly above the maximum altitude of the winch launch, then we should consider either giving the site a wider berth (about two miles should normally be enough, but the greater the distance from the site, the greater the likelihood that we won't encounter traffic departing, arriving or in the circuit). At the very least it's worth giving the site a call on the radio to let them know that we are there.

A word of caution here, though; glider pilots are not required to hold a Flight Radiotelephony Operator's Licence (FRTOL) and it is very rare that there is an Air/Ground Radio Operator at a glider site, so don't necessarily expect an answer to any calls you make – *but it does not* mean that the site isn't active!

Another point worth mentioning is that, in this case, the PA-28 pilot had a couple of issues with their on-board equipment. Nothing dramatic, but it did mean that their attention was divided between trying to resolve the issues and lookout. There is obviously little choice if we are flying on our own but, if you do have company in the aircraft, consider dividing the tasks so that at least one person is looking out at all times.

Finally, I'd like to offer something for all those involved in gliding activity to think about. I'm reliably informed that it takes roughly 1-1.5 minutes for the full process of a winch-launch. During this time, a GA aircraft flying at a 'normal' airspeed will cover around two miles. A trial conducted by GASCo and Jarvis-Bagshaw found that it is unlikely that a GA aircraft will be seen beyond a range of about two miles. This means that, at the point of visually clearing the airspace for a glider launch, it is unlikely than any aircraft that might present a threat to the launch will be within visual range. Food for thought…





BOARD SUMMARY

This month the Board evaluated 28 Airprox, including seven UA/Other events, six of which were reported by the piloted aircraft and one by the drone operator. Of the 22 full evaluations, ten were classified as risk-bearing – two as category A and eight as category B.

During the meeting, the Board assessed the first of the 2025 aircraft-to-aircraft Airprox reports, covering all reports submitted in January and February this year. This is fairly common because there are far fewer Airprox reports submitted in the early months; reporting increases significantly from the end of March every year. No Safety Recommendations were made.

The graphic above shows that it has been a steady start to the year – broadly in line with our expectations. At the time of writing, reporting in June is lower than the same period in each of the last four years (post-COVID), and I wonder whether this is because the message is 'getting out there' with respect to reducing the likelihood of having an Airprox?

There are many factors that influence Airprox reporting, so it is impossible to say with any certainty what might be having the greatest effect on reporting rates, but I can be optimistic if the data shows that fewer Airprox are being reported, no matter what the reason for that reduction.

Photo for illustrative purposes: Shutterstock: MarekuliaSZ

Drone dilemma

Are UAV flight operations predictable?

The answer to that question is, for the most part, 'yes'. Drones operating in the Open Category are required to keep below 400ft AGL – if flight above this height is required then specific authorisation (Specific Category) is necessary and a NOTAM will have to be issued, thus informing other air users about the activity.

However, there are a couple of issues to this – firstly, the 400ft AGL will be measured from where the drone is flying, so we may find that the drone is higher than 400ft above the ground that we are flying over (think about flying over a valley floor with a drone flying on or near the ridgeline).

The second issue is that crewed aviation, quite legitimately, can fly below 400ft AGL; take-off and landing are, rather obviously, 2 such occasions but there is also regulation – in the form of ORS4 No 1496 – that permits flight below 400ft AGL under certain circumstances (more on that later).

This quite neatly leads into this month's Airprox for discussion – **2025065**. This involved a DJI M350 drone and a PA-28 over the former Boreham airfield just northeast of Chelmsford. The site is a former NPAS (National Police Air Service) helicopter base (they have since moved) but is still marked with an 'H' on the CAA VFR charts because, as I am reliably informed, helicopters do still use the site.

On the day of the Airprox, however, the site was being used by Essex Police for training on a new drone. The training was restricted to below 400ft AGL (so no NOTAM of the activity was required) but NPAS had been informed. The PA-28 pilot was on an instructional flight and practising PFLs; the pilot had selected the former airfield at Boreham as a suitable landing site. The drone operator received a warning on their equipment of an aircraft approaching, shortly followed by their observer sighting the aircraft and instructing the drone operator to descend the drone.

The PA-28 was equipped with a transponder, but was not carrying any supplementary electronic conspicuity (EC) equipment. Although it's unlikely that any extra EC equipment would have helped the PA-28 pilot in this case (the drone was not emitting anything that would have been detected by popular EC equipment) the Board does encourage pilots to strongly consider carrying additional EC equipment on every flight.

The drone pilot undoubtedly did exactly what they are required to do should their *'…operation pose a risk to [another] aircraft…'* by descending the drone and moving it out of the way of the piloted aircraft. Equally, the PA-28 pilot was operating in compliance with ORS4 No 1496, which permits (at paragraph 5) pilots flying by day under VFR to be flown at a height of less than 500ft AGL provided they do not fly *'…closer than 500ft to any person, vessel, vehicle or structure…'*.

It further authorises (at paragraph 8) *'…aircraft to be flown below the minimum height requirements specified in SERA.5005 and SERA.5015 if it is flown in accordance with normal aviation practice and is […] practising approaches to forced landings […] and it is not flown closer than 500ft to any person, vessel, vehicle or structure…..'*

In the event, we were unable to establish the actual minimum separation between the drone and the aircraft, but the drone operator reported it as 240ft vertically and 200m horizontally. The PA-28 pilot never saw the drone.

In theory, requiring pilots of crewed aircraft to remain at least 500ft away from 'any person, vessel, vehicle or structure' and drone pilots to operate (unnotified) to a maximum height of 400ft AGL should keep crewed aviation and drone operations separated in most scenarios. But what we see from this Airprox is that this is not always the case and that it doesn't need somebody to be operating outside the rules and regulations for these encounters to happen.

There are a number of barriers to mid-air collision that were either of no use or failed in this case.

Firstly, there was no involvement from ATC but, even if the PA-28 pilot had sought a service from Southend (the Airprox location was well within the coverage of Southend's LARS) the drone operator hadn't let Southend ATC know about their operation so this could not have been passed on to the PA-28 pilot.

Secondly, there was no opportunity for either pilot to have 'planned to avoid'

because the drone activity had not been advised by NOTAM and the PA-28 pilot was operating on a VFR 'flightplan'.

Thirdly, the PA-28 pilot had no way of detecting the drone (unless they saw it, which they didn't).

This realistically only left the See and Avoid barrier to work, and that relied on the drone operator sighting the aircraft in enough time to ensure that separation could be maintained, which they did.

This Airprox highlights how difficult it is for pilots of crewed aviation to avoid legitimate drone activity. While most drone activity will occur below 400ft AGL, and that which does not will be NOTAMed, pilots of crewed aviation can still fly in the same height band as drones quite lawfully.

It 's impractical to NOTAM all drone activity, but it might be worth a look on applications such as Drone Assist (others are available) because many drone operators – but by no means all – do submit their activity on applications such as these.

For drone operators, there is some merit in considering highlighting your activity to the nearest Air Traffic Control (ATC) unit, even when not required to do so – this is all about sharing knowledge such that ATC can pass the activity to pilots that may be talking to them.

Drones, even larger ones such as the one involved in this Airprox, are extremely difficult to see – analysis conducted by the UKAB shows that the pilot of the crewed aircraft very rarely sights the drone, but that the drone operator almost always sees the aircraft.

This has worked historically because operators have been required to maintain line-of-sight to their drone. In the future, this will not always be the case. It also demonstrates the importance of checking NOTAMs thoroughly before flight. If drone activity is NOTAMed, then it makes sense to plan to avoid it – it's extremely unlikely that a drone will be seen in time to take any meaningful action to increase separation and, if the drone operator hasn't seen or heard the aircraft, then that leaves us very poorly placed.

Finally, the drone operation involved in this Airprox was located at a site used regularly for training. It occurred to the Board that it would be useful if known drone training sites were listed in the UK AIP and so the Board made a Safety Recommendation to the CAA in this regard.

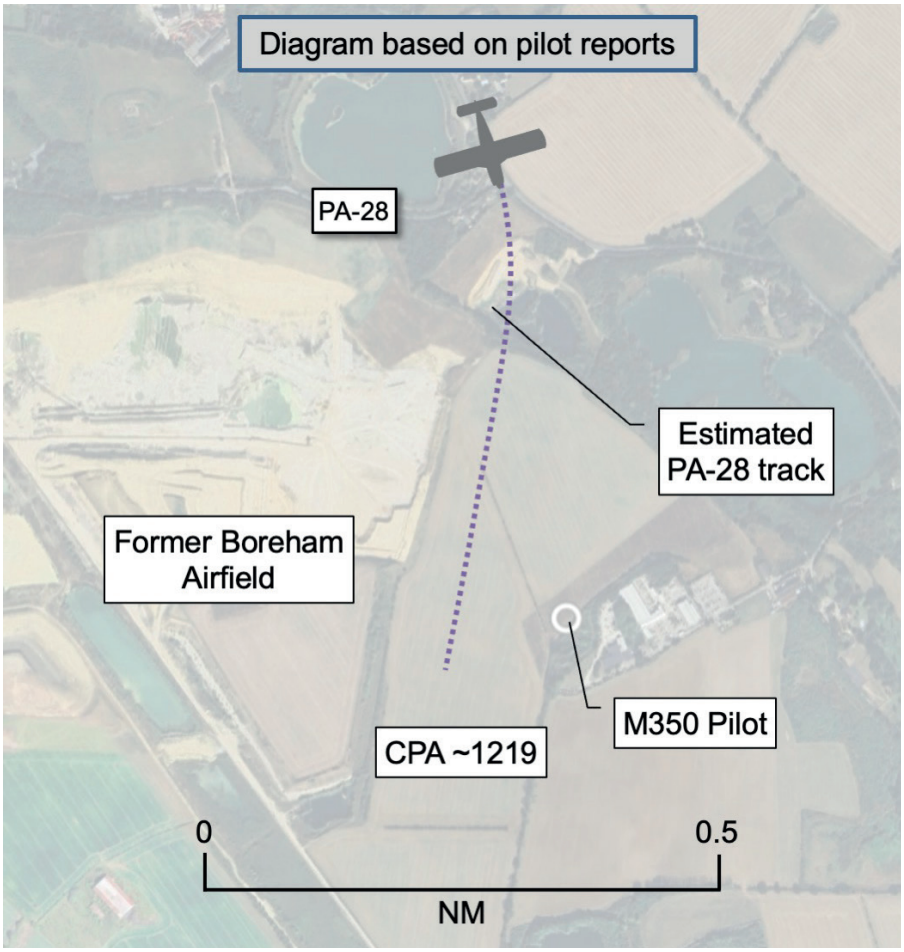
BOARD SUMMARY

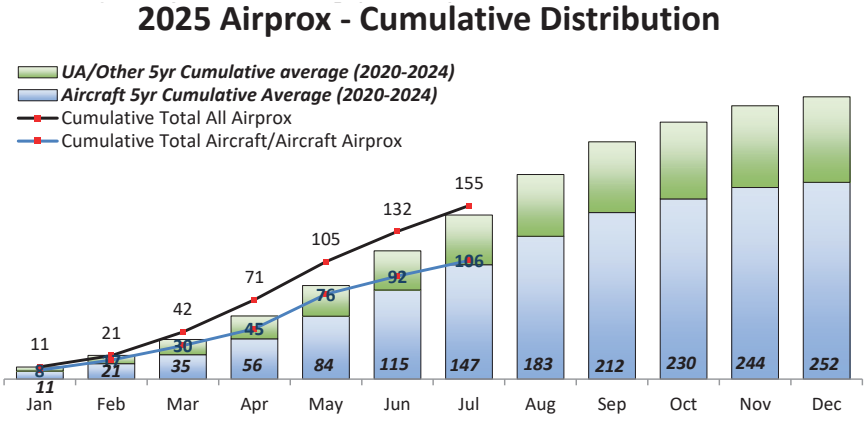
This month the Board evaluated 33 Airprox, including 12 UA/Other events, nine of which were reported by the piloted aircraft and three by the drone operator.

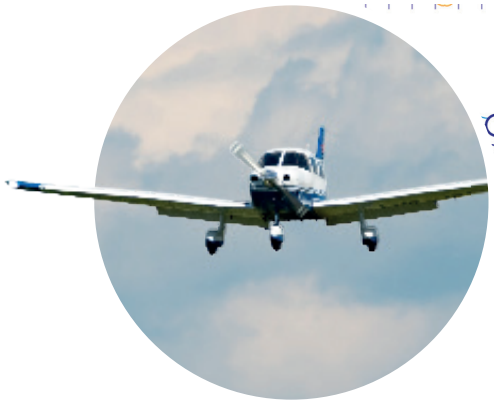
Of the 24 full evaluations, ten were classified as risk-bearing – five as category A and five as category B. The Board also made two Safety Recommendations at the July Board meeting, one of which I have already mentioned above. The other followed an Airprox involving a glider and a KC135 where the glider pilot had their transponder selected to 'off' (for a number of reasons). This essentially defeated the KC135's TCAS II equipment so the Board recommended to the CAA that the issuing of a discrete SSR conspicuity code for gliders be considered.

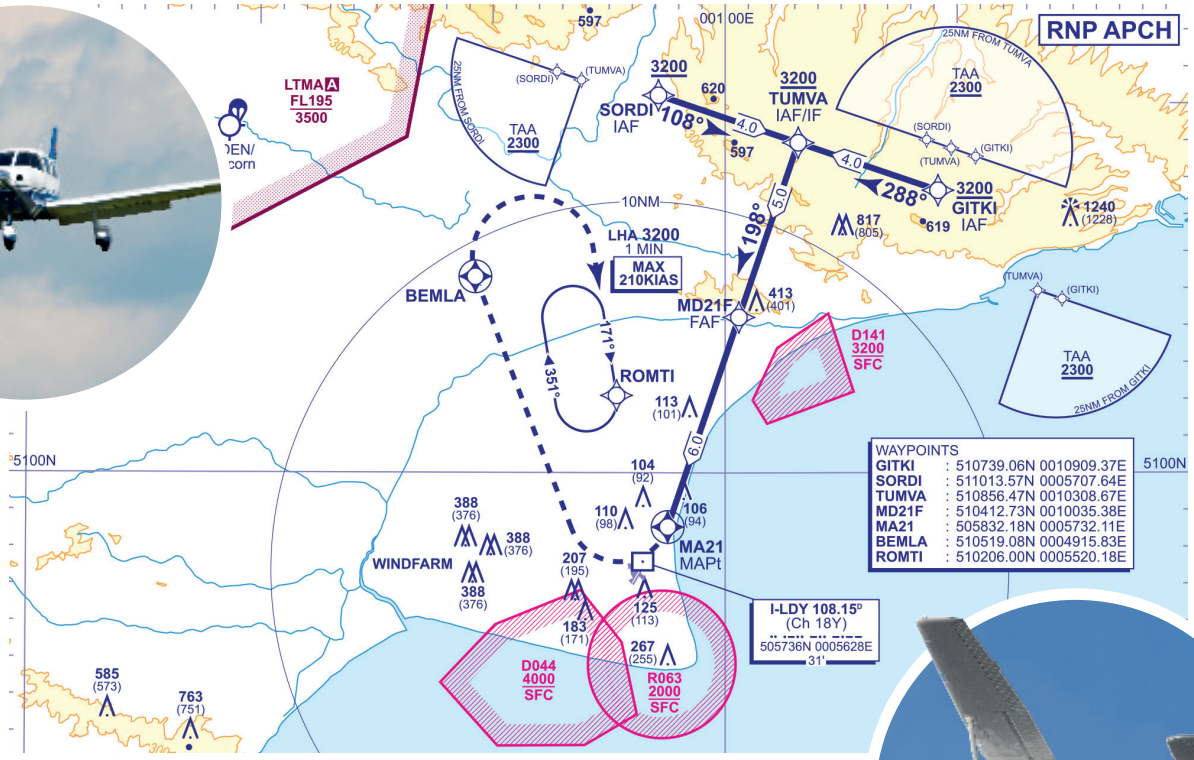
The graphic above shows that, after a bit of a 'bumper' start to the flying season, reporting has quietened down a fair amount. This is encouraging because it doesn't appear to be simply a matter of June being 'quiet month'.

I am not so naïve as to believe that every Airprox is reported to the UKAB, but I would hope that the reduction in numbers does not indicate a lack of willingness to report. Rather, it shows that we can all learn from others' experiences and take steps to make sure that we all reduce our individual risk.









Photos for illustrative purposes : Shutterstock - Robert Buche

Close to the edge

Instrument Approach Procedures outside controlled airspace – could they catch you unawares…?

If you think simply being clear of, but close to, instrument approach feathers is okay, you might want to think again — take this Airprox (**2025125**) which occurred about five miles east of Ashford, Kent, and about 12-13 miles north of Lydd airport.

The pilot of a PA-28 was flying an RNP approach procedure to RW21 at Lydd while a Cessna 182 was transiting the area. The Cessna pilot had reported flying under VFR, but actually without enough clearance from cloud to be considered as being in VMC (although the visibility was excellent).

Meanwhile, The PA-28 pilot was receiving a Procedural Service from Lydd Approach (there is no surveillance equipment – e.g. radar – at Lydd) and had additional electronic conspicuity (EC) equipment which picked-up the presence of the C182. The Cessna pilot wasn't receiving any kind of Air Traffic Service, but was equipped with integrated EC equipment which, apparently, did not register the PA-28's presence. Nevertheless, the pilot spotted the Piper in the cloud tops after its pilot had requested a descent from the Lydd controller to generate some vertical separation from the Cessna that had registered as being at the same altitude on its EC device. The closest point of approach between the two was recorded on radar as 0.3 miles laterally and 500ft vertically.

At this point it's worth saying that the proliferation of Required Navigation Performance (RNP) approach procedures outside controlled airspace is not just a subject for pilots flying under IFR – because they are situated in Class G airspace they can also affect pilots flying under VFR.

This is also a 'hot topic' at the Civil Aviation Authority, and regular meetings take place to understand the risk presented by some of these procedures when the activity is not 'protected' by the presence of controlled airspace.

The first thing to mention here is the PA-28 pilot's reaction to the contact on their EC device. Although no doubt driven partly by the weather conditions in which they found themselves, they analysed the information and formulated a plan to generate some separation between the aircraft before they had sighted the C182 (which they never did).

This is something that the UK Airprox Board encourages pilots to think about, but we do often see pilots relying on sighting the other aircraft before taking any action. In this case, both aircraft had been flying at the same altitude – the PA-28 pilot had little choice because that was the altitude specified for that part of the RNP procedure, but the C182 pilot was, on the face of it, free to choose their transit altitude.

This brings me to my second point – VFR flight above 3000ft amsl requires the aircraft to be at least 300m (1000ft) vertically clear of cloud; if it is not, then the aircraft is considered to be in IMC and the pilot then needs to fly under IFR.

This then brings another rule to bear – namely, (UK)SERA.5205 IFR — Rules Applicable to IFR flights outside controlled airspace. Paragraph (a) states that *'An IFR flight operating in level cruising flight outside of controlled airspace shall be flown at a cruising level appropriate to its track as specified in […], except when otherwise specified by the competent authority for flight at or below 900m (3000ft) above mean sea level.'*

In a nutshell, this means that 'the semicircular rule' applies — the pilot of an aircraft flying above 3000ft amsl and tracking from 360° to 179° should select an odd cruising level (eg, FL30, FL50, FL70 etc) and the pilot of an aircraft tracking from 180° to 359° should select an even cruising level (eg, FL40, FL60, FL80 etc).

Ironically, in this case had the C182 pilot selected FL40 or 4000ft as their cruising level/altitude, they would then have been at least 1000ft vertically clear of cloud and operating in VMC (and under VFR)! Nevertheless, it's noteworthy that the Cessna pilot had chosen to transit at 3200ft, the same altitude as applies to the initial portions of the RNP approach procedure at Lydd.

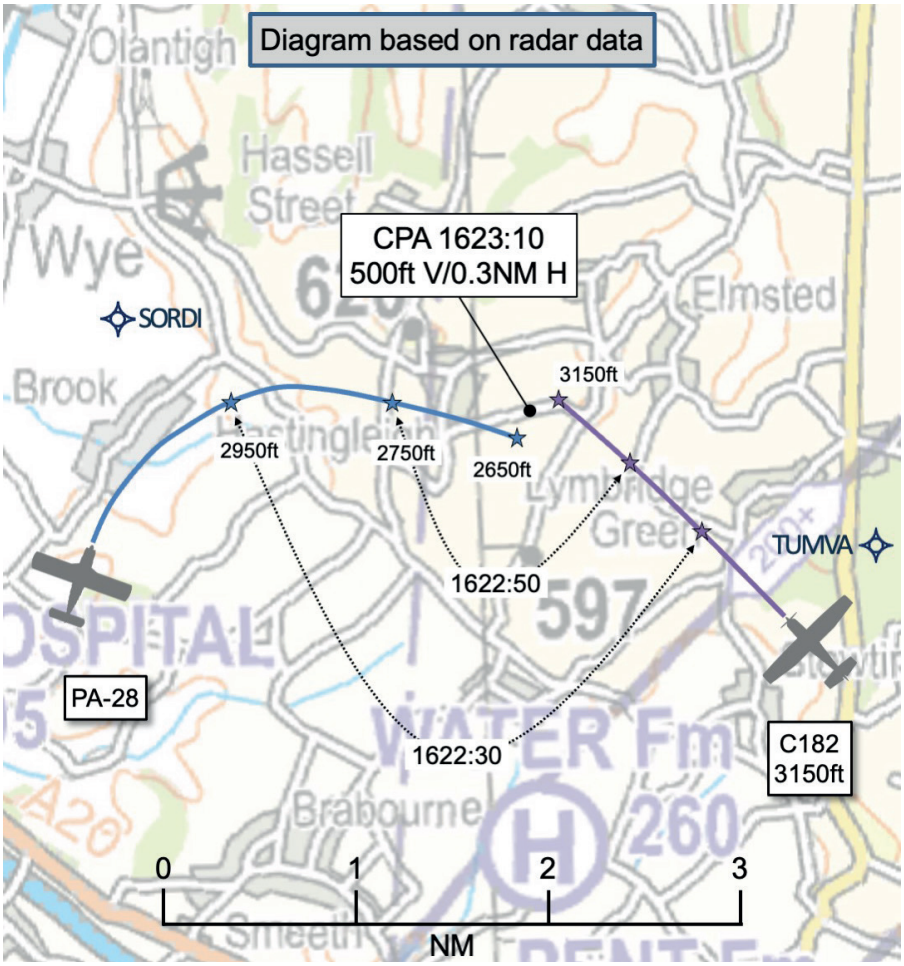
This brings me on to my third point. On CAA VFR 1:500,000 charts, those aerodromes with at least one instrument approach procedure (IAP) outside controlled airspace are marked with 'feathers'. There is also an accompanying note, stating that '*Pilots are strongly recommended to contact aerodrome ATSU before flying within 10nm of any aerodrome marked with instrument approach feathers.*'

The 'feathers' symbol only extends to about seven miles or so from the aerodrome, so it *does not* indicate the limit of the IAP. In this case, the Airprox took place about 13 miles from Lydd – beyond the recommended range.

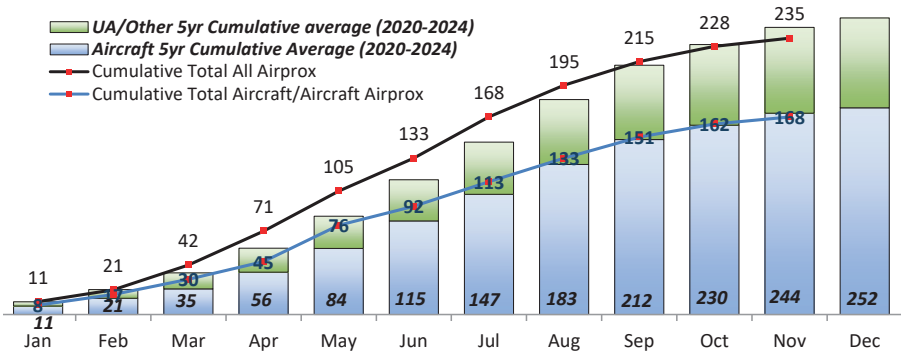
Therefore, and because there is no way of telling from the markings on the chart exactly what type of IAPs are available at any particular airfield, it would seem prudent to take the spirit of this recommendation to greater ranges – perhaps 15 miles would be a sensible figure?

It's also worth noting that, in this instance, the ATSU didn't have any access to surveillance equipment, meaning that the only way the Lydd controller could have known that the Cessna was where it was (and at the altitude it was at) would have been if its pilot had called Lydd. That's not to criticise the Cessna pilot's actions – they were not required to contact Lydd and so thought that it would be okay if they didn't.

However, and as I hope I have shown, there are some things that aren't marked on the CAA VFR charts that may need to be considered — pre-flight planning is where we should have the time and the information available to establish whether there are IAPs on our route we need to be aware of. A simple check of the UK AIP will provide the relevant charts, which will also tell us the altitudes at which pilots on those procedures will be expected to fly.



2025 Airprox - Cumulative Distribution



BOARD SUMMARY

This month, the Board evaluated 21 Airprox, including three UA/Other events, all of which were reported by the piloted aircraft. Of the 18 full evaluations, five were classified as risk-bearing – two as category A and three as category B.

The Board made one Safety Recommendation at this month's meeting, following an Airprox between a Ventus glider and a Cessna 182 in the vicinity of Sherburn-in-Elmet airfield (**Airprox 2025126**).

The Cessna pilot was inbound to the Initial Approach Fix for the RNP approach procedure to RW28 at Sherburn when they came close to the thermalling Ventus. While this is a good news story in terms of electronic conspicuity equipment – because the Cessna's EC equipment 'saw' the glider's transponder – our investigation revealed that the procedures for the use of the RNP approach at Sherburn are a bit unclear, with different documents suggesting different requirements for the RNP approach to be used.

Suffice to say that the Board recommended that Sherburn Aero Club tidy up the entries relating to this procedure in the UK AIP and on the Sherburn Aero Club website.

The reduction in reported Airprox over the year continues, which is really encouraging. As winter approaches, and the opportunities to go flying (under VFR) become constrained by the weather, take the time to have a look back over these Insight articles and see whether there is anything you would change for the next flying season.

VERSION 4

THE SKYWAY CODE

UK Civil Aviation Authority

Guide to private flying rules, regulations and best practice

Condensing 'must know' information into easy to navigate information and graphics The Skyway Code gives GA pilots a one stop shop for safety rules and advice.

www.caa.co.uk/skywaycode

SKYWISE

News, notifications and alerts from the CAA

SkyWise helps you to stay up-to-date with news, safety alerts, consultations, rule changes, airspace amendments and more.

View alerts online or subscribe to receive email notifications for the information that matters to you.

skywise.caa.co.uk