

# AIRPROX *Insight*

## DIGEST

2021-22

UK AIRPROX BOARD

# AIRPROX *Insight*

DIRECTOR UKAB'S MONTHLY UPDATE

February 2022



**AIRPROX OF THE MONTH**

## Do you really know what lies ahead?

Who needs to carry a chart when you've got a tablet – maybe you don't?

This month's featured Airprox concerns a glider conducting a circuit detail and a military training aircraft in which the crew were conducting a mixed profile sortie including a navigational element. In the event there was some distraction in the cockpit of the Cirrus Perfect and a turning point was mis-identified, leading to the aircraft flying through the glider's stick circuit.

One of the main contributory factors to this Airprox (20211139) was the fact that the crew was relying solely on electronic charting and didn't carry a back-up chart. In this case the gliding site wasn't depicted on the electronic chart, and relies solely with respect to planning and navigation.

- Have you selected appropriate information?
- Do you know when to turn off the electronic chart?
- Have you piloted your aircraft in a way that is consistent with the charting?
- Have you checked the charting is correct?
- What about your equipment? Is it working?

Although the original plan called for the presence of the gliding site, once the student had misidentified the turning point, there was little chance that they could have assimilated the presence of the gliding site with enough time to avoid it.

There were several important lessons identified in this Airprox, not least planning, mentoring and distraction, and it is well worth a read:

[https://www.ukab.gov.uk/Content/Content/Standard/20220201/airprox\\_report\\_20220201\\_000001/airprox\\_report\\_20220201\\_000001.pdf](https://www.ukab.gov.uk/Content/Content/Standard/20220201/airprox_report_20220201_000001/airprox_report_20220201_000001.pdf)

Although this particular charting issue concerned a specific military system, there's a lesson here for everyone who plans and

UK AIRPROX BOARD

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May 2022



**AIRPROX OF THE MONTH**

## What does Long Final mean to the circuit pattern?

It can be a source of confusion, so ask for clarification if you are unsure of the position of other traffic

This month's Airprox (20211241) between a PA-28 and a TB10 is interesting because it's all about integration, communication, situational awareness and maintenance of the big picture, and rather really finishes my recent string of circuit related instances. We have often discussed the overhead join and its utility, even if it might not seem expeditious; we've also spoken about downward joins and even stated concerns regarding orbiting in order to increase separation, but I don't think we have specifically looked at an Airprox involving the integration of an aircraft directly from Final. In this case the TB10 pilot was conducting a long straight-in approach in an area where they noted that the Birmingham controlled airspace above would preclude a normal overhead join and that options were limited.

There was already a PA-28 in the circuit and the TB10 had called the AFISO and was to request turn. Up to this point it was for the TB10 to conform or avoid the pattern of traffic already formed in the circuit.

The board discussed the meaning of the down call and wished to emphasise that it is actually the equivalent of a downwind call and would be treated as such by the AFISO and should be understood to be as such by all other circuit traffic.

In this instance, the TB10 pilot made the down call before the PA-28 pilot made the downwind call and so would, at this point, be ahead of the PA-28. The PA-28 pilot took the decision to extend downward and communicated that they would fit in behind the TB10.

Following the downward extension the PA-28 pilot turned onto base leg, but was still not sighted with the TB10. Undoubtedly, they thought that the TB10 would have landed or be just about to land by this time and would be safely ahead – it was at this point that the two came into proximity.

So what can we learn from this? Ask for clarification if you are unsure of the position

UK AIRPROX BOARD

# AIRPROX *Insight*

DIRECTOR UKAB'S MONTHLY UPDATE

June 2022



**AIRPROX OF THE MONTH**

## on, tune in and don't out...

of reasons why transponders matter, but their value is stand-out

This chat highlights a few lessons on the value of having a fully serviceable transponder, and to gently remind everyone of the legal requirement to have it switched ON when fitted.

This Airprox occurred when a PA-28 controlled airspace in good weather. The SR22 came into proximity below the PA-28 and was carrying a transponder with modes A, C and S, plus it was fitted with additional electronic conspicuity equipment. Despite all of this, the pilot had to carry out an immediate steep climb to avoid a conflicting PA-28 and believed they wouldn't have seen it if they hadn't been warned by Farnborough. Under a Basic Service Farnborough wasn't required to give Traffic Information, but on this occasion they noticed an unidentified on the SSR22, which they had identified and verified so, thankfully, they were able to pass the information about the incoming contact.

The PA-28 reported having a transponder transmitting modes A and C, but the MTR radar did not detect the signals from the aircraft until well after the Airprox, when it was displaying a frequency monitoring code. Whether the transponder was on and functioning correctly or not is



# Welcome

## UK Airprox Board 2021 - 2022 digest

Welcome to this, my first, annual Airprox magazine. Firstly, I should probably provide a few words on my background – I first started flying in gliders as an Air Cadet back in the Seventies and have been in the air – on and off – pretty much ever since.

I joined the RAF at 21 and ended up as a navigator on Tornado GR1s and GR4s, with a brief period spent flying with the French on Mirage 2000Ds. Towards the end of my RAF career, I worked in the RAF Safety Centre where I had my first experience of the UK Airprox Board as a Board member (it went with the job...). I was a Board member for about five years and so it seemed a natural progression to become an Airprox Inspector after I left the RAF.

After a couple of years gathering the data that forms the basis for the Board's assessment of each event, the opportunity arose for me to step into the shoes of my predecessor, and here I am.

Last year's magazine was a combination of a few of the monthly Insight newsletters that we published throughout 2021 and a summary of the statistics for 2020 (the latest complete year for statistics). This year's magazine will follow a similar format but, while the data is really useful, I thought that this year I'd try to keep away from publishing too many numbers and concentrate more on what the numbers are telling us.

That said, I will start with a number or two to justify unashamedly focusing more on the General Aviation community than other areas of aviation with which we all share the airspace (for those readers that want to see all the data behind what follows, the full Annual Report for 2021 can be found [here](#)).

SIMON OLDFIELD  
Director UKAB

# What UK aviation can learn from GA's close encounters

Analysis of Airprox incidents  
highlight weaker points  
throughout the flying world





The headline figures for aircraft-to-aircraft Airprox in 2021 might come as a bit of a surprise — 92 percent involved a General Aviation sports and recreational light aircraft while 97 percent of all risk bearing aircraft-to-aircraft events also involved a GA sports and recreational light aircraft.

But first, a word of warning — while these headline figures (which include unknown/untraced aircraft whose description fitted the GA category) show that the influence of General Aviation over the complete Airprox picture is such that the lessons drawn from GA Airprox are highly likely to be applicable across the wider UK aviation community, they should be taken in the context of the thousands of GA flights that take place in the UK every year and do not result in an Airprox being reported.

So, from the relatively low number of Airprox reports across the calendar year, what kind of things are we seeing most often and, more importantly, what can you do to reduce the likelihood of having an Airprox?

In last year's magazine my predecessor introduced a concept that we at the UKAB have been working with for the last few years – safety barriers. As with many things, the concept has evolved over the past year and I've included a graphic simply to illustrate the relative influence and interaction that each of the barriers has in terms of mid-air collision prevention.

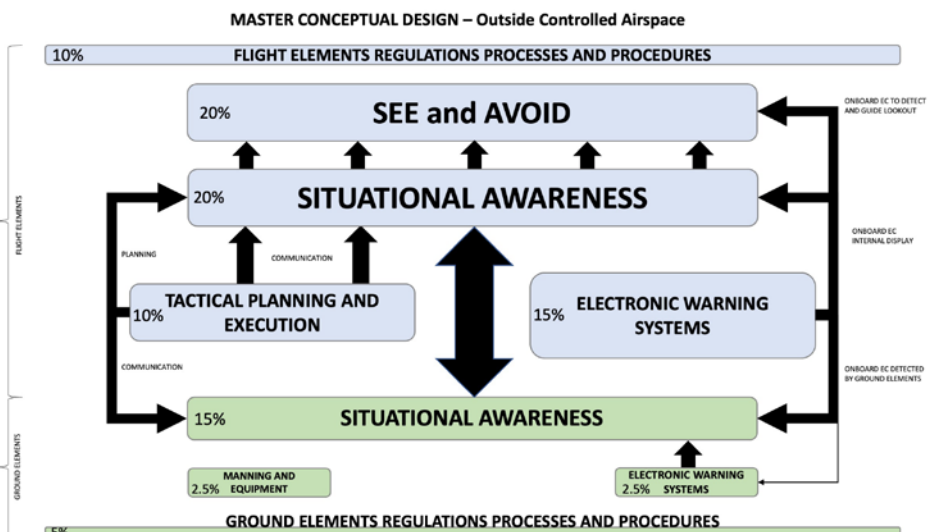
There are two models – inside controlled airspace and outside controlled airspace; only the latter is included as it's the one we most often deal with. The size of each barrier is directly related to its proportional effect on the whole picture (the astute will note that the percentages add up to 100%) and, when outside controlled airspace, the emphasis is very much on the 'Flight Elements' — the pilot and the equipment they have in their aircraft.

Although there is a 75/25 (Flight Elements/Ground Elements) split in terms of barrier influence outside controlled airspace, for the sake of completeness I should mention that this emphasis shifts to 40/60 for flight within controlled airspace.

### For risk bearing Airprox in 2021, the Flight Elements Situational Awareness barrier was NEVER FULLY EFFECTIVE

I'd like to draw your attention to the two most influential barriers for the Flight Elements – Situational Awareness and See and Avoid. You'll note that they are interlinked and other barriers also contribute to the performance of each of these, so it's logical to ask how we can best ensure or improve the effectiveness of these two barriers. But before continuing, here's another statistic for you:

The most common reason, by a considerable margin, for the reduced effectiveness of the Situational Awareness barrier is that 'the pilot had no, late, inaccurate, or only generic Situational Awareness'. However, that's not necessarily the full story. If you consider that this barrier is 'fed' by information from the Ground Elements Situational Awareness barrier and the Flight Elements Tactical Planning and Execution and Electronic Warning Systems





barriers, we can start to understand why this barrier performs so poorly.

Let's think of a couple of examples. In the cases that follow in the second part of this magazine (all of which have been previously published as one of my monthly Insight updates), all of them include – to some degree – a degradation in the Situational Awareness barrier.

There are occasions where pilots have either not been receiving an Air Traffic Service (when one was available) or have agreed a Basic Service with a controller when a higher level of service could have been requested. It's important to note that, under a Basic Service, there's no obligation on the part of the controller to monitor the progress of your aircraft.

What this usually means in practice is that the controller will devote their attention to other aircraft on a higher level of service, or to other higher priority tasks. In our barrier model above, this means that the pilot's situational awareness is not provided with any information from the controller's situational awareness, and so we have potentially lost the benefit of speaking to ATC when it comes to detecting the presence of nearby aircraft.

That is not to say that pilots under a Basic Service will never receive information on traffic from the controller, just that

it is only likely to occur if the controller happens to notice a potential conflict in your vicinity and has time to pass the information to you.

Of course, if the controller has no surveillance equipment then a Basic Service is probably the best you can hope for, but then any information on the

### ***'We might be passing near parachute sites or minor airfields'***

position of other traffic will be based on what the controller has been told by other pilots, and might not be very accurate as it depends on accurate and timely position reports from other pilots (how often do you report your position, heading and level to a controller when you are under a non-surveillance Basic Service?).

The second major input to our pilot Situational Awareness Barrier is the Tactical Planning and Execution barrier. This encompasses everything from pre-flight planning to the tactical execution, to coin a phrase, as the flight progresses – including what a pilot does with the information that

they receive as the flight continues.

It might sound a little odd that actions taken pre-flight contribute to the Situational Awareness barrier in-flight, but let's stop and think for a minute about what we're doing when planning. We take account of the weather, wind, NOTAMs and a myriad of other inputs, all of which could give us a clue as to where we might be most likely to encounter other aircraft.

Gliders, for example, are likely to be encountered anywhere up to cloudbase, while paragliders and other soaring activity might be more likely on a certain side of a hill. We might be passing near parachute sites or minor airfields, or there might be controlled airspace either side of our intended route which could mean that others are using similar routing to remain clear of that airspace.

All of this information can start to build a picture of how busy the airspace is likely to be on our intended route. Pre-flight activity also gives us the opportunity to consider contingencies, such as noting radio frequencies that we intend to use, as well as having others to hand 'just in case'.

Once airborne, the Tactical Planning and Execution barrier is used as we react to information we receive or perceive in flight – perhaps the weather isn't quite as forecast, or the wind isn't having the

effect we'd planned for and so we need to be aware of things around our route that might become more of a consideration than we first thought. All of this adds to our situational awareness as the flight progresses.

Something that's become more of a consideration in recent years has been the Electronic Warning System barrier as more and more pilots use equipment capable of detecting other aircraft. Of course, we should all know what our equipment can and, importantly, cannot detect (and display), but electronic conspicuity equipment is a vital ingredient to bolstering the performance of the situational awareness barrier, particularly when it comes to keeping a safe distance from other aircraft.

Unless or until there is a common protocol mandated for all air vehicles (aircraft, gliders, drones etc) information provided by electronic conspicuity equipment can never give us a picture of everything around us, but if compatible equipment is carried by another aircraft then it can be a really useful tool in avoiding an Airprox (or worse). Indications of the whereabouts of other aircraft means that we can make earlier decisions (the Tactical Planning and Execution barrier) as how best to avoid those aircraft, as either a cue to the area in which to look or even as a guide to maintain a safe distance from other aircraft without, or before, seeing them.

This leads me rather neatly on to the See and Avoid barrier. This is without doubt one of the most important barriers of all, not least because it is usually the last barrier we employ to avoid getting too close to another aircraft. But, of course, the human eye has many weaknesses and our brains are also 'programmed' to cater for some of these weaknesses which might mean that we will not see something that is a potential threat.

Many, if not most pilots, are aware that a lack of relative motion – a 'dead ringer' for two aircraft on a collision course – means that there's an increased likelihood that the eye/brain combination won't detect the other aircraft. This is why we always need to work hard at our lookout and keep our eyes out of the cockpit for as much time as possible.

With increased situational awareness of other aircraft likely to be in our vicinity, we can concentrate our lookout in the areas most likely to contain a threat, and thus increase the likelihood of visual detection.

With the proliferation of electronic flight

planning and navigation applications, with possibly the additional overlay of data from our electronic conspicuity devices, it's vital that we conduct our work cycles to take account of the different inputs to our senses. There's no point having a display of traffic that might be nearby if we're not going to take notice of that information, but, equally, we know that it won't show us everything so we still need to have our eyes out of the cockpit.

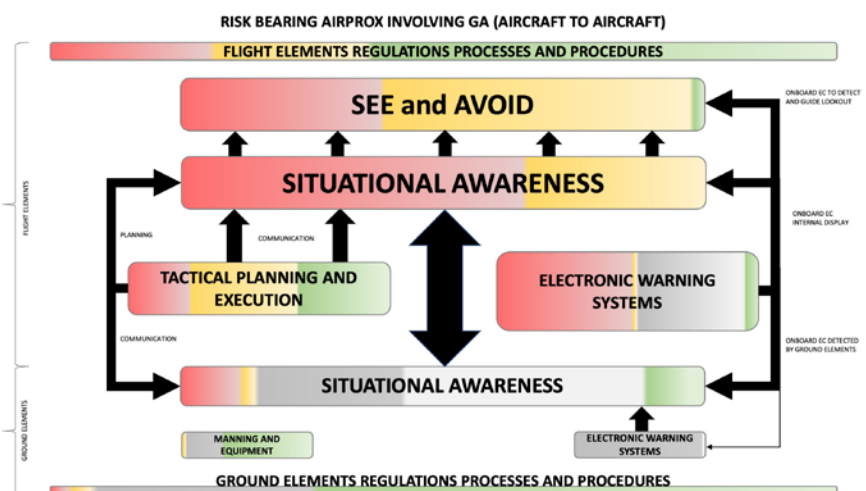
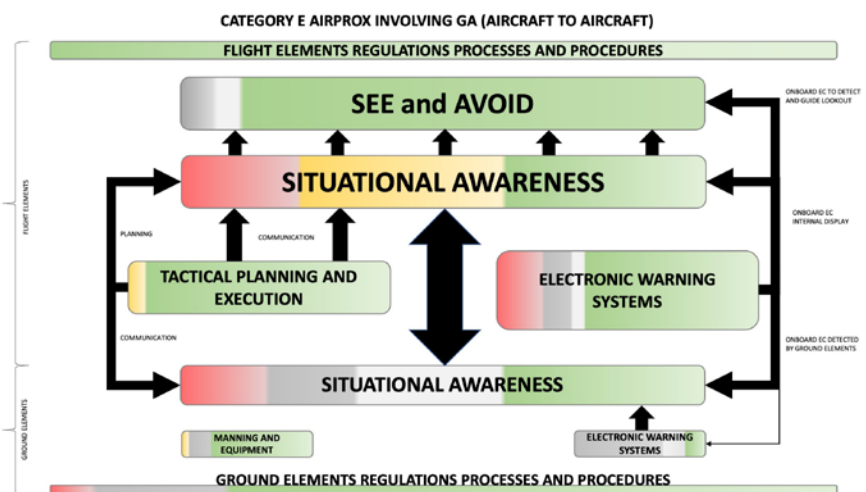
This balance of attention to lookout and in-cockpit information will vary by the situation, the weather, the phase of flight, and any other inputs that we might be receiving, such as Traffic Information from a controller or what we can hear on frequency, even if we haven't yet spoken to – or do not intend to speak to – a controller.

So, here are a few things to consider when it comes to enhancing the performance of our own, personal, Situational Awareness and See and Avoid barriers. Don't forget that time spent in pre-flight preparation is seldom – if ever

– wasted, and this too can strengthen the safety barriers before even getting into our aircraft. Consider what you can do to increase your own chances of detecting and avoiding threats and remember, there are other barriers to Airprox/mid-air collision that can be used before and in conjunction with the See and Avoid barrier.

As a final note, I thought I'd include two graphics from the data collected from the 2021 Airprox events. The first is the barrier performance from all 2021 Airprox assessed by the Board as Risk Category E, ie no risk of collision or degradation of safety. The second is the barrier performance from all 2021 Airprox assessed by the Board as Risk Categories A and B, where safety was much reduced or providential with a risk/serious risk of collision.

You'll note there's far more green in the first graphic than in the second. I should add that green indicates a fully effective barrier, yellow a partially effective barrier and red an ineffective barrier. More detail is available in the 2021 Annual Report [here](#).





# Beware the unknown!

Photo for illustration purposes only: Brian Barr/Simon Finlay Photography

## Even when everything is on your side, sometimes someone does something totally unexpected...

The particular case I want to highlight this month focuses again on circuit interactions – if it seems I’m paying too much attention to events within ATZs and/or in the circuit that’s because I feel it’s important — and in this case there was the ‘unknown’, or surprise if you prefer, factor.

Everyone has to fly in a circuit, whether there’s an ATZ or not, if only to take off and land again. It’s also the place where one is almost certain to encounter other traffic and where one will often encounter students, or those with lower levels experience than you might have.

Sometimes, though, there’s little that can be done and that’s why I’m featuring a circuit encounter with an unknown aircraft — in fact there were two Airprox filed as a result of it. I don’t normally do this, but

I wanted to make the point that even when all is on your side, sometimes someone can do something completely unexpected and the only way to mitigate against it is to be as sharp and diligent with lookout as the pilot was on this occasion.

The reporting pilot in this incident ([Airprox 2021069](#)) was on an instructional first circuit sortie with a student and accurately flying the base leg when they saw traffic coming from the opposite direction approximately 100ft above and clearly well within the ATZ. The instructor took control, rolled to 45 degrees angle of bank and increased their rate of descent, they also called the confliction on the radio and a traffic announcement was re-broadcast by the ground supervisor.

The conflicting aircraft could not be traced as it was neither talking on the

radio (either to Halton or to anybody else!) nor did it seem to be fitted with a transponder because the only indications of its presence were the ‘primary only’ radar returns visible on NATS radar.

There was also a PA-28 in the circuit and, unsurprisingly, they were also unaware of the presence of this unknown aircraft until it was called by the first pilot. This information was critical as it raised awareness of the danger immediately and allowed the pilot of the second aircraft to visually acquire the unknown aircraft and take action to avoid it as well (Airprox 2021070). This in-circuit collaboration and timely and accurate relay of the conflicting aircraft’s position was key in preventing a more serious encounter with the other circuit traffic as the intruding aircraft blundered through the ATZ.

**UKAB MONTHLY ROUND-UP**

The Board considered 19 Airprox this month, including six UA/Other events and 13 aircraft-to-aircraft occurrences. Four of the latter were considered as risk-bearing, with two classified as Category A and two as Category B. Three of these occurred inside ATZ with a further two Category C events also occurring inside an ATZ.

The chart, right, shows the monthly distribution of reported Airprox and it can be seen that, worryingly, the recent monthly distributions are above the five-year average.

One of the main themes discussed by the board was that of discipline, both in terms of flying and radio, especially when working with an Air/Ground Operator, or in more generic terms, when not in receipt of a surveillance-based service.

Moving on to those Airprox inside ATZs, the board commented several times on the importance of visually acquiring all traffic and re-emphasised the point that if one is not sure of the relative positions of others then it's sensible to ask for clarification; furthermore, and especially if one is joining though the overhead and one is not confident about the exact positions of that other traffic, the best course of action might be to remain in the overhead until clarification can be sought and the traffic spotted.

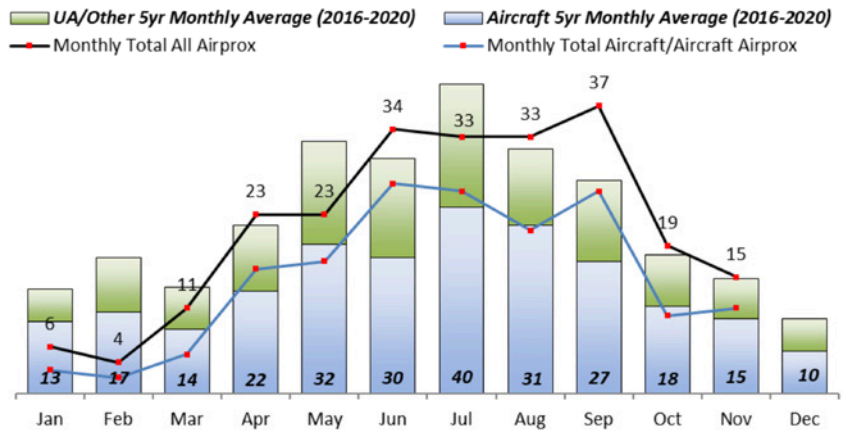
All of these points have been raised several times before and have even been the subject of dedicated INSIGHTS in the recent past, and it's a little worrying that the same conditions appear to be recurring time and time again.

I crafted this advice back in September, but I feel it might be wise to repeat it as we move into a period of probable bad weather and reduced flying practice, which is normally the case entering winter:

*"In order to join safely or operate safely in the circuit it is imperative that one understands where all the other traffic is. Flying in the circuit is always an activity that's conducted in VMC under VFR and hence lookout is the primary means of deconfliction, however, as we know lookout can be unreliable and it is very easy to misjudge the dynamics of the situation when attempting to integrate with other traffic which may have a different performance – or indeed to integrate with pilots who might be flying an unusual shaped or sized circuit pattern for some reason. So what can we do to make it safer?"*

*"The first thing is to be absolutely sure you establish who is there already and exactly*

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where they are in the pattern. You can do this visually of course, but that requires you to be close and therefore possibly already in a dangerous situation, so you need to work this out beforehand.

*"You'll normally have established contact with ATC or an Air/Ground operator prior to arriving in the circuit, either to gain permission to enter the ATZ, permission to join or, where permission is not required, to establish the airfield details and gain an appreciation of other traffic.*

*"With this information you must be diligent in building your mental model so that you can work out how best, and where, to join. If you are unsure – ask for*

*clarification. Secondly – make sure that you have studied the relevant documentation so that you understand what is expected, but more importantly what is not allowed! Thirdly, be accurate and predictable, and if you intend to do something unusual (but permitted) ensure that you have clearly articulated and conveyed your intentions over the radio."*

And, finally, expect the unexpected as my Airprox of the Month demonstrates.

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# Do you really know what lies ahead?

## Who needs to carry a chart when you've got a tablet — maybe you...

**T**his month's featured Airprox concerns a glider conducting a circuit detail and a military training aircraft in which the crew were conducting a mixed profile sortie including a navigational element.

In the event there was some distraction in the cockpit of the Grob Prefect and a turning point was mis-identified, leading to the aircraft flying through the gliding site's circuit.

One of the main contributory factors to this **Airprox (2021139)** was the fact that the crew was relying solely on electronic charting and didn't carry a back-up chart.

In this case the gliding site wasn't depicted on the electronic chart, and

although the original plan catered for the presence of the gliding site, once the student had misidentified the turning point, there was little chance that they could have assimilated the presence of the gliding site with enough time to avoid it.

There were several important lessons identified in this Airprox, not least planning, mentoring and distraction, and it is well worth a read:

[https://www.airproxboard.org.uk/uploadedFiles/Content/Standard\\_content/Airprox\\_report\\_files/2021/Airprox%20Report%202021139.pdf](https://www.airproxboard.org.uk/uploadedFiles/Content/Standard_content/Airprox_report_files/2021/Airprox%20Report%202021139.pdf)

Although this particular charting issue concerned a specific military system, there's a lesson here for everyone who plans and

flies solely with reference to electronic planning and navigation aids.

- **Have you selected all the appropriate layers?**
- **Do you know what is and what isn't shown on your device?**
- **Have you planned the flight, or have you simply just input a route in the hope that it would do it all for you?**
- **Have you studied the route well enough to use your tablet as a reference or are you using it as crutch?**
- **What about needing to change the plan? Are you familiar enough with your equipment to make changes without getting distracted?**



In-cockpit aids are designed to release capacity, the amount of information available at one's fingertips is immense, they allow rapid plan and rapid replan and can certainly get you out of a pickle — however, they can also get you into a pickle if used improperly; poor placement in the cockpit can cause an obscuration issue, unfamiliarity with menus and selections can cause confusion and distraction, but most importantly one can be lulled into a false sense of security with the assumption that everything you need is available, selected and correctly configured for your needs.

Suppose it's not receiving power from the aircraft — what do you do if the battery runs out? You don't need to carry much with you but I'd say that an appropriate chart is the bare minimum and it may just be the thing that keeps you out of trouble one day.

**UKAB MONTHLY ROUND-UP**

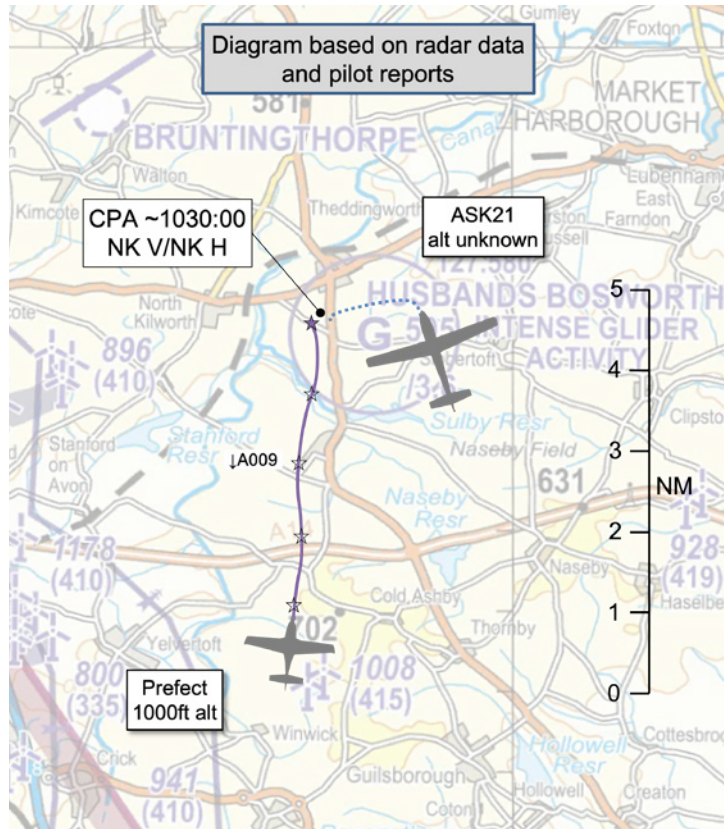
The year has got off to a steady start with the numbers of aircraft-to-aircraft reports sitting at or around the five-year average. But, as has been historically the case, as we move into Spring and Summer and the weather gets better, the days get longer and the opportunities for flying increase, so do the numbers of Airprox.

There were five Airprox that the Board considered to be risk-bearing out of the 21 evaluated. Two occurred in the circuit where lack of integration in the circuit, poor plan adaption and poor situational awareness were all factors.

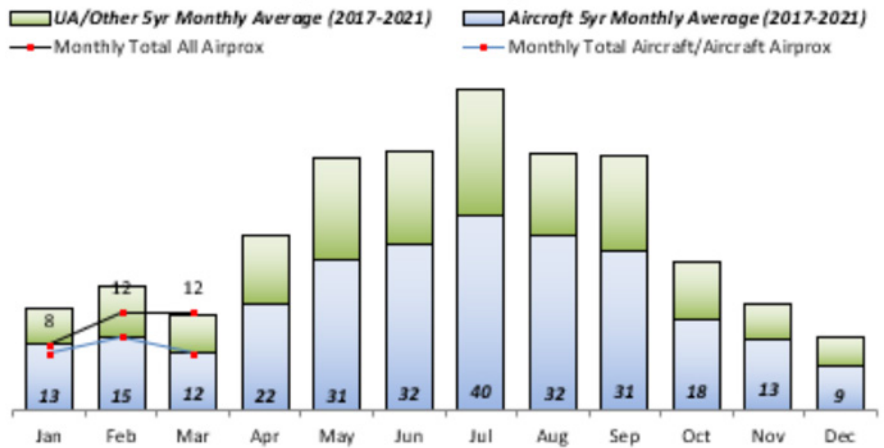
For the three risk-bearing Airprox which occurred in Class G Airspace, the aircraft involved were not communicating at all with an ATSU, apart from on one occasion where the pilot had chosen to take a FIS from London Information.

We have discussed in the past the criticality of the Situational Awareness barrier and it's worth mentioning it again with specific relation to the influence of communication on its performance: Of the 96 occasions where pilots were not communicating at all, had requested only a Basic Service or were in the circuit with an AGO, the Flight Elements Situational Awareness barrier was effective only twice and the barrier was ineffective 71% of the time.

Although I commented last month on communications, I think it's worth highlighting that there are even differences within the type of Service that you may request depending on the provider. Have you ever considered whether the Basic



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Service you have requested is being provided by a unit with a surveillance monitoring capability (radar) or is it just based on pilots' communications like London Information, for example?

However, regardless of where the Service is coming from we often see comments regarding the 'lack of Traffic Information' or 'ATC should have told me about...'. This is concerning as it a common observation which arises in most Airprox at every Board.

Unless you have requested a Traffic Service or better you should *never expect* to receive Traffic Information, and even if

you are receiving a Traffic Service it's still your responsibility to avoid other users. You should listen out for others on your frequency and in your vicinity, request to upgrade your Service if you need detailed Traffic Information, use all of those inputs to build your own mental model (your Situational Awareness) and combine this with a really strong lookout.

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EGBG

LEICESTER

469ft AMSL

N52 36.47 W001 01.92

4 nm ESE of Leicester.

HON 113.65 057 27.7

DTY 116.40 007 25.9

c/s Leicester Radio 122.130 A/G NDB 'LE' 383.50 (On A/D range 10 nm)

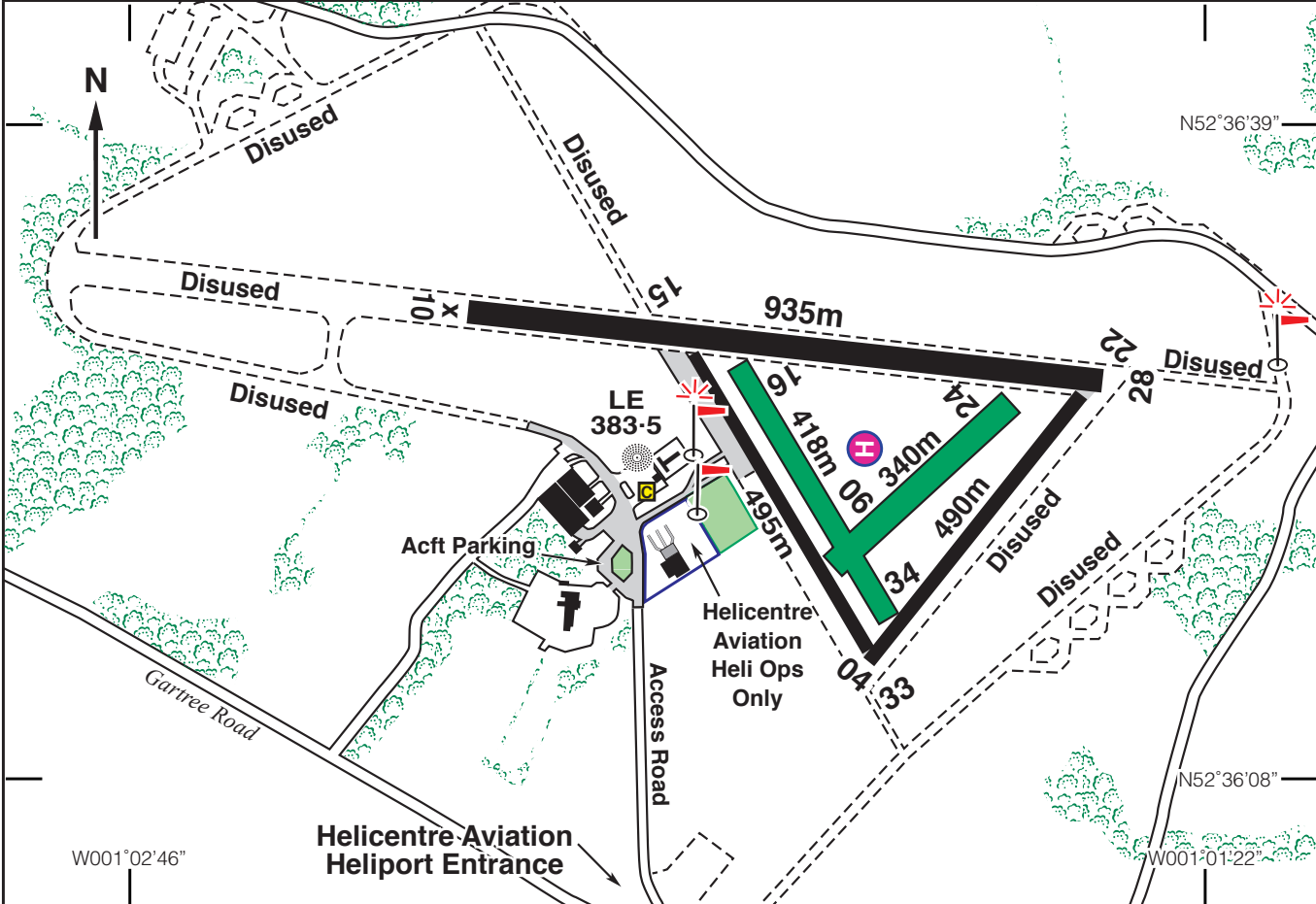


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# Multiple causes for Confusion

It can be a potent mix for trouble when different types use a number of runways at the same time

One of the most difficult scenarios we deal with while flying in the circuit is different aircraft operating from different runways at the same time.

We have spoken before about the vital importance of integrating safely into the circuit and of accurately communicating

your intentions and position, and we've also looked into circuit joining procedures and the advantages of the overhead join. We have also discussed the criticality of planning and preparation and revising the procedures (especially if you don't go there often), but another area that needs to highlighting is the added complexity pilots potentially face

when joining the circuit at an airfield with multiple runways in use — and what about mixing rotary- and fixed-wing traffic? How important is your situational awareness?

In this case (Airprox **2021086**) the Cabri pilot had joined the rotary circuit for the duty runway (RW28) in the recommended manner at Leicester, which is an uncontrolled airfield

where all runways are available at all times. They had joined the RW28LH (rotary) circuit and established appropriate situational awareness on the other traffic operating. Indeed, they were aware of the presence of the Escapade, which was departing from RW24 Grass, but they were probably not aware of its exact intentions which were, in the event, to make a left turn and depart to the east.

The Escapade pilot had been aware of a helicopter operating from the 'H', however this helicopter was not the one with which the Airprox took place. This led the Board to conclude that the Escapade pilot had not fully assimilated the complexity of the operating environment and had therefore not been able to adequately judge the effect of their chosen departure runway and subsequent departure profile on any other traffic.

In the event, the See-and-Avoid barrier prevailed and the Cabri pilot made an orbit to increase separation. The full report can be found [here](#) and there is a lot more detail in there concerning the complexities of flying from airfields with multiple runways, but especially where there is no controller to help out.

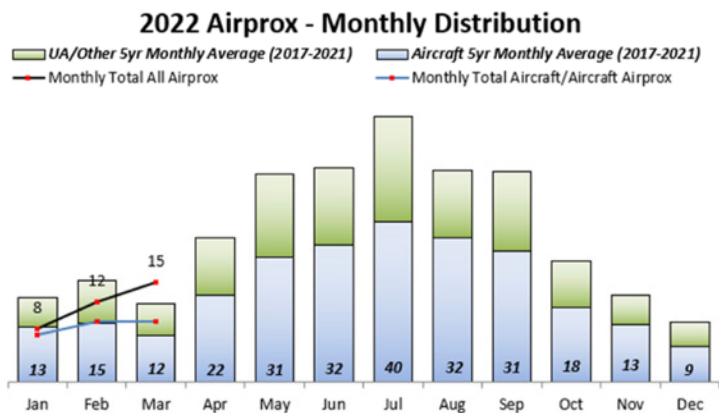
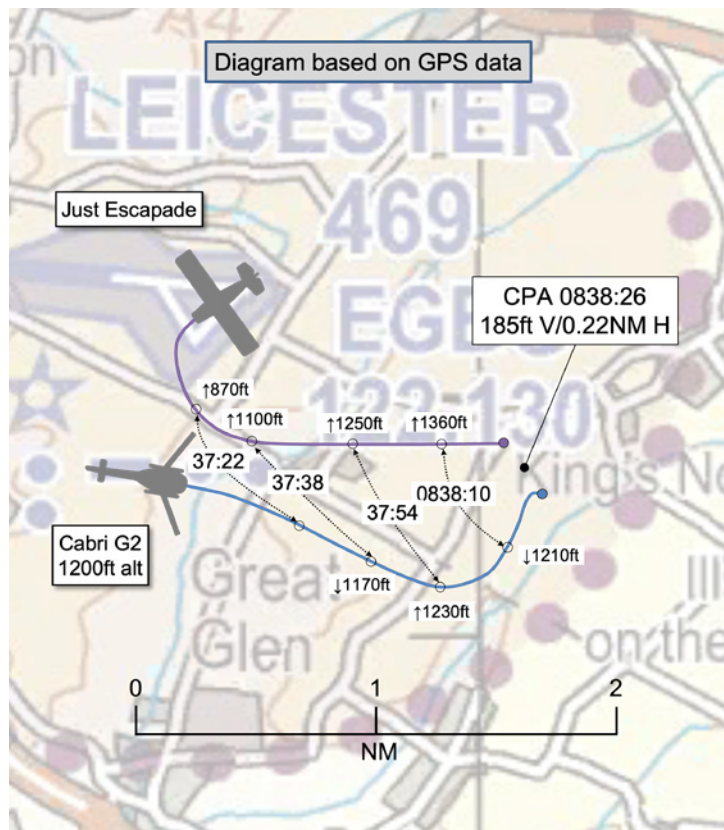
I have chosen this Airprox to illustrate just how tricky it can be. In the event, the Board classified it as a Category C risk, which means that safety was degraded, however there was no risk of collision.

**UKAB MONTHLY ROUND-UP**

There were seven Airprox this month which the Board designated as risk-bearing, with two being Category A. Examining the barrier performance it was apparent that situational awareness was never fully effective for the pilots and the Electronic Warning System barrier was only effective once.

Additionally, the Board reviewed several Airprox involving aircraft on survey tasks. In all cases the Board determined that the crews carrying out the survey could have completely mitigated the situation if they had taken action when they realised that there was a potential proximity issue. There seemed to be a tendency to press on until the last minute before taking action — possibly to complete the survey run because breaking it off usually means a voided result and requires the run to be redone.

On several occasions this observed action has resulted in a risk-bearing occurrence with the pilot effectively flying the aircraft into conflict for no reason.



Airprox	Aircraft 1 (Type)	Aircraft 2 (Type)	Airspace (Class)	ICAO Risk
2021197	PA-25 (Civ FW)	C172 (Civ FW)	London FIR (G)	A
2021208	C152 (Civ FW)	Decathlon (Civ FW)	Tatenhill ATZ (G)	A
2021182	DA40 (Civ FW)	Rallye (Civ FW)	London FIR (G)	B
2021184	C182 (Civ FW)	DA40 (Civ FW)	London FIR (G)	B
2021194	C150 (Civ FW)	P68 (Civ Comm)	London FIR (G)	B
2021199	C42 (Civ FW)	Tecnam Sierra (Civ FW)	Shobdon ATZ (G)	B
2021201	P68 (Civ Comm)	C172 (Civ FW)	London FIR (G)	B

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Photo for illustration purposes: Brian Barr/Simon Finlay.

# What does Long Final mean to the circuit pattern?

## It can be a source of confusion, so ask for clarification if you are unsure of the position of other traffic

**T**his month's Airprox (2021241) between a PA-28 and a TB10 is interesting because it's all about integration, communication, situational awareness and maintenance of the big picture, and rather neatly finishes my recent string of circuit related instances.

We have often discussed the overhead join and its utility, even if it might not seem expeditious; we've also spoken about downwind joins and even raised concerns regarding orbiting in order to increase separation, but I don't think we have specifically looked at an Airprox involving the integration of an aircraft directly from Final. In this case The TB10

pilot was conducting a long straight-in approach in an area where they noted that the Birmingham controlled airspace above would preclude a normal overhead join and that options were limited.

There was already a PA-28 in the circuit and the TB10 had called the AFISO and was to report 4nm. Up to this point it was for the TB10 to conform or avoid the pattern of traffic already formed in the circuit.

The board discussed the meaning of the 4nm call and wished to emphasise that it is actually the equivalent of a downwind call and would be treated as such by the AFISO and should be understood to be as such by all other circuit traffic.

In this instance, the TB10 pilot made the 4nm call before the PA-28 pilot made the downwind call and so would, at this point, be ahead of the PA-28. The PA-28 pilot took the decision to extend downwind and communicated that they would fit in behind the TB10.

Following the downwind extension the PA-28 pilot turned onto base leg, but was still not sighted with the TB10. Undoubtedly, they thought that the TB10 would have landed or be just about to land by this time and would be safely ahead — it was at this point that the two came into proximity.

So what can we learn from this? Ask for clarification if you are unsure of the position

of other traffic, be accurate at all times when making calls and employ defensive flying techniques whenever possible.

In this case the PA-28 pilot could have made an early go-around if they were unsure of the position of the other traffic. Don't assume that something must have gone past you just because you didn't see it and you felt that enough time had elapsed. The circuit is a busy place — you have to integrate with it at the beginning and at the end of every flight, even if your intention is just to depart or to make an approach to land.

It's critical that everyone is as diligent as possible and makes every effort to ensure that they know where everybody else is in relation to them. Always fly defensively, communicate effectively, and lookout assiduously.

Finally, Board Members noted that neither aircraft was fitted with any additional electronic conspicuity equipment which, on this occasion, might have provided some additional information to aid visual acquisition. It's for pilots to decide on their own requirements for additional equipment according to their needs, and the Board wished to highlight to pilots that additional funding has been made available for electronic conspicuity devices through the CAA's Electronic Conspicuity Rebate Scheme, which has been extended until March 31, 2023.

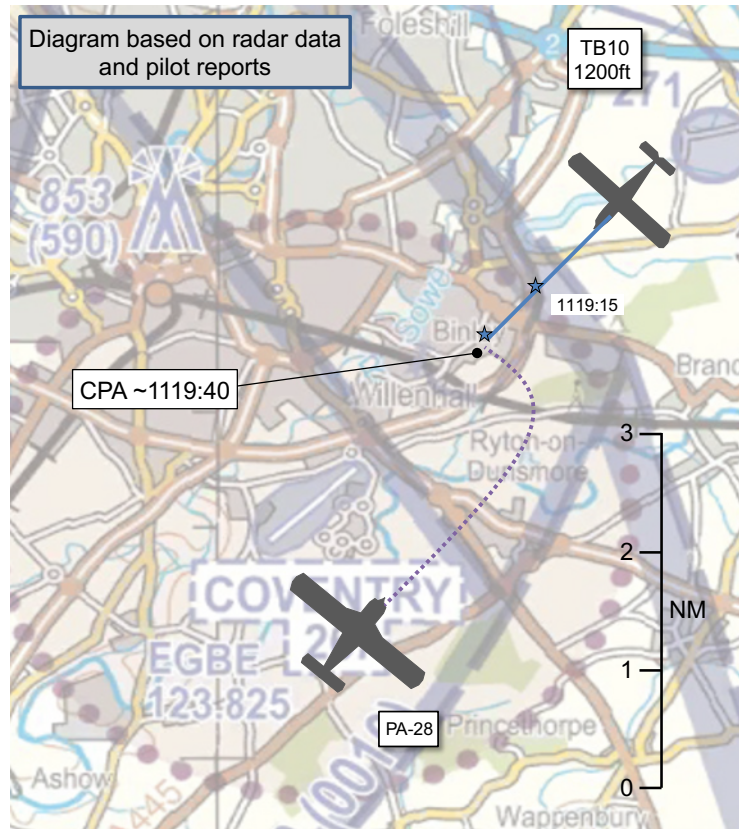
<https://www.caa.co.uk/general-aviation/aircraft-ownership-and-maintenance/electronic-conspicuity-devices/>

**UKAB MONTHLY ROUND-UP**

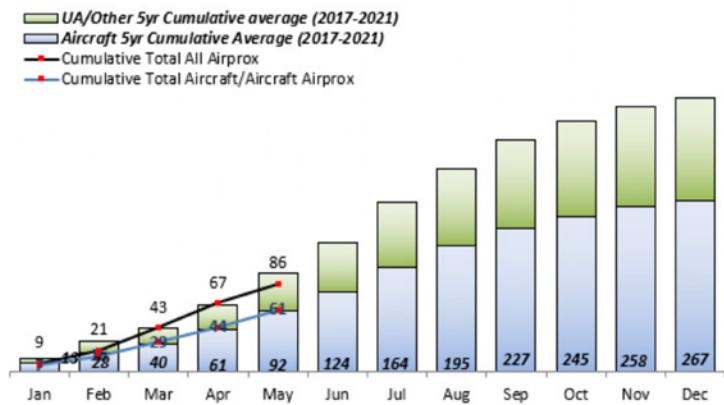
Happily, the May Board contained the last of the 2021 Airprox. Overall, it's been an incredibly busy year which started off slowly and then leaped back to historic norms once the Covid restrictions were lifted fully.

We evaluated 172 aircraft-to-aircraft events, of which 92% involved a GA aircraft. The themes are common and the observations are consistent. Firstly, the Situational Awareness barrier is extremely weak; secondly, lookout is poor, procedures are not known or misunderstood and finally electronic conspicuity equipment is misused, misunderstood or misemployed.

We must remember, though, that when we are looking at Airprox, we are looking at the circumstances surrounding a bad outcome — not all flights end in an Airprox, but by understanding where things do go wrong, we can hopefully highlight them, talk about them and mitigate them with a view to making our flying more enjoyable and ultimately safer.



**2022 Airprox - Cumulative Distribution**



FLIGHT ELEMENTS CONTRIBUTORY FACTORS	
Situational Awareness and sensory events	— pilot had no, late or only generic, Situational Awareness
Monitoring of other aircraft, non-sighting or effectively a non-sighting by one or both pilots	
Identification/recognition, late sighting by one or both pilots	
Perception of visual information	— pilot was concerned by the proximity of the other aircraft
Use of policy/procedures	— regulations and/or procedures not complied with
ACAS/TCAS system failure	— incompatible CWS equipment

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Photo for illustration purposes: Brian Barr/Simon Finlay.

# Turn on, tune in and don't drop out...

**There are all sorts of reasons why transponders might not be transmitting, but their value is stand-out**

**T**here's generally a lot of chit-chat at safety events, fly-ins and in the 'crewroom' about the use of transponders. This small talk tends to be a mixed bag of anecdotes, ranging from people not switching them on in case they fly into controlled airspace and attract the attention of the CAA's Infringement team, to individuals who had upgraded equipment without ensuring it was fully functional, to the understanding of the purpose of a frequency monitoring code, to times of pure forgetfulness where it inadvertently remains in its useless state of OFF for the flight's duration.

So I thought that **Airprox 2022009**

would highlight a few lessons on the value of having a fully serviceable transponder, and to gently remind everyone of the legal requirement to have it switched ON when fitted.

This Airprox occurred when a PA-28 and an SR22 came into proximity below controlled airspace in good weather. The SR22 was receiving a Basic Service from Farnborough LARS and was carrying a transponder with modes A, C and S, plus it was fitted with additional electronic conspicuity equipment. Despite all of this the pilot had to carry out an immediate steep climb to avoid a conflicting PA-28 and believed they wouldn't have seen it if

they hadn't been warned by Farnborough. Under a Basic Service Farnborough wasn't required to give Traffic Information, but on this occasion they noticed an unidentified primary radar contact closing quite quickly on the SR22, which they had identified and verified so, thankfully, they were able to pass the information about the oncoming contact.

The PA-28 reported having a transponder transmitting modes A and C, but the NATS radar did not detect the signals from the aircraft until well after the Airprox, when it was displaying a frequency monitoring code. Whether the transponder was on and functioning correctly or not is

not the point to consider here, it's the fact that, at the time, the aircraft was visible only as a primary contact. Furthermore, the PA-28 did not have any additional electronic conspicuity equipment fitted so there was no way that the pilot of the SR22 could have had any situational awareness apart from that passed (fortuitously) by the Farnborough controller.

Transponders augment the situational awareness of Air Traffic Controllers, they also play a part in the activation of electronic warning systems, so without a transponder and/or any additional electronic conspicuity equipment, the SR22 was entirely reliant on the See & Avoid barrier until they received information from the Farnborough controller. The message here is get the best transponder you can, make sure it is maintained properly, have it switched ON and ideally talk to someone.

It is, of course, for pilots to decide on their own requirements for additional equipment according to their needs, but the Board wants to highlight to pilots that additional funding has been made available for electronic conspicuity devices through the CAA's Electronic Conspicuity Rebate Scheme, which has been extended until March 31, 2023.

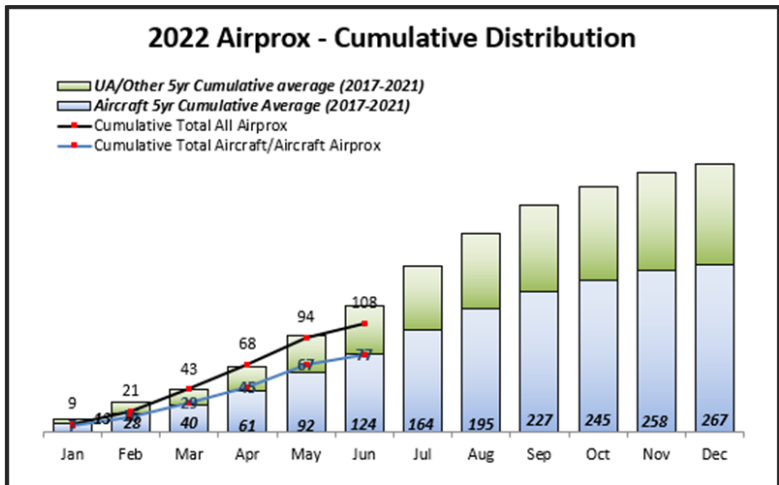
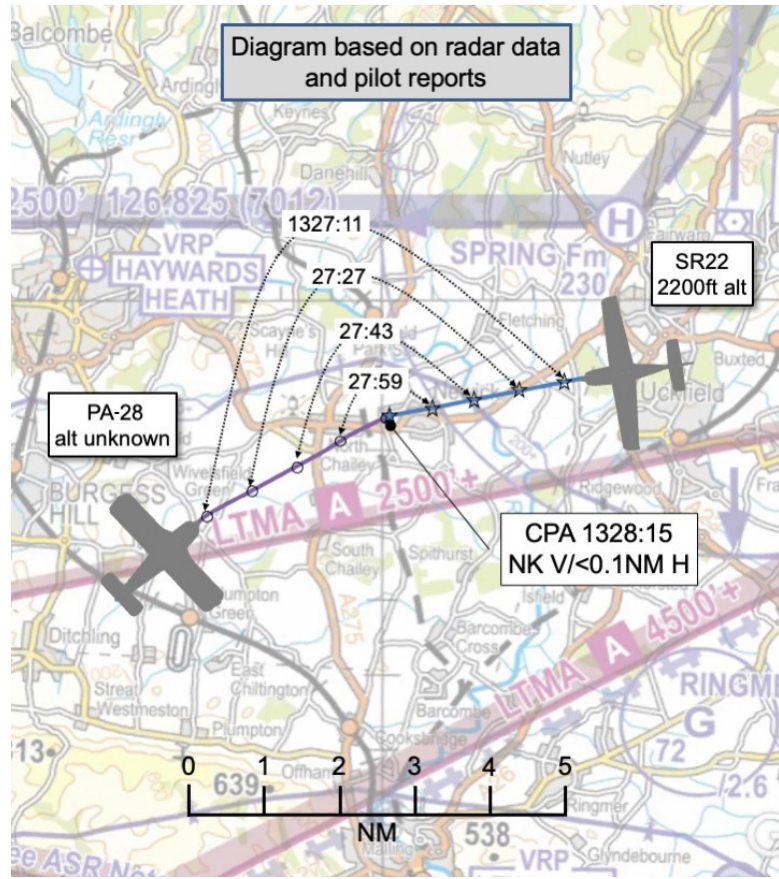
<https://www.caa.co.uk/general-aviation/aircraft-ownership-and-maintenance/electronic-conspicuity-devices/>

**UKAB MONTHLY ROUND-UP**

We evaluated 21 Airprox this month, including six Unmanned Aircraft/Other events; four of these were reported by the piloted aircraft with two reported by the UA operator. Of the 17 full evaluations, eight were classified as risk-bearing – one was category A and seven were category B. The Board also decided to raise a recommendation following the consideration of an Airprox between a military training aircraft at low level and a drone conducting research work.

There is a growing concern about the risk picture with drones, specifically below 400ft and the inherent conflict with low-flying military and others, such as emergency services' aircraft, who have exemptions to fly below 500ft.

But these are not the only potential conflicts; clearly, taking off and landing requires a descent to below 500ft so it's pretty obvious there's likely to be aircraft below 500ft at an airfield, however it could be more tricky if there's a private airstrip



or helicopter landing pad nearby – an airstrip could easily be hidden from view and a drone could cause a bit of startle if it happens to be in the vicinity when the strip or a landing pad is being used (**Airprox 2021156**).

I say this because there is potentially a misunderstanding in the Remotely Piloted Aircraft System (RPAS) community that aircraft do not operate below 500ft (more importantly 400ft which is the cap for routine recreational RPAS flying). Equally, there is a potential area of

misunderstanding by communities who do routinely operate below 500ft (according to their applicable exemptions) that RPAS flyers are obliged to NOTAM their activity – for the majority of RPAS operators, as I hope we all know, that is simply not the case.

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