



**SAFETY**

# Too close for comfort

The number of airproxes in the UK has been rising every year, says Chloe Eriksen

AIRPROXES have been steadily rising year on year for a while, according to the UK Airprox Board.

This worrying trend could in part be down to increased detection and reporting, but also reflects our increasingly congested airspace and is an issue which we all need to address. Ultimately all efforts to prevent airprox will help to avoid the far more catastrophic mid-air collision.

Analysis from UKAB of airprox investigations (*Analysis of Airprox in UK Airspace: January to December 2021 (Blue Book 37)*) has consistently highlighted these key areas:

- Compatibility of EC
- Appropriate use of ATC services
- Planning, including choice of routes, Notams, predominant weather, etc
- Understanding the value and use of Basic Service, listening squawks, and responsibilities when flying VFR in Class D airspace and/or flying IFR in Class G

- Threat and error management in general
- Lack of familiarity with circuit procedures and/or services provided by and responsibilities of air-ground operations, FIS officers and controllers
- Quality of lookout.

UKAB models the contributory factors of an airprox in order to examine their interaction.

The tactical planning and execution, communication with ground elements and on-board electronic warning systems all feed into our situational awareness and ultimately our ability to see and avoid other aircraft.

No one of these factors can eliminate the chance of airprox in isolation. We must maximise the potential of each of them and together they will reduce the chances of an airprox.

Situational awareness is key and there are many ways in which we can work to improve this.



UKAB's poster, warning how easy it is to come a cropper

## Electronic Conspicuity

There are some who disapprove of what they believe to be the over-reliance on technology by the use of EC in the cockpit. In reality, the effective and efficient use of such systems can greatly augment our situational awareness, and is therefore worth considering.

EC is designed to be an aid to situational awareness, and like all systems, is not 100% effective. It should always be used in conjunction with other resources; in other words, sole reliance on EC devices is clearly not recommended.

The first results from the recent GASCo survey on the use of EC in GA, which canvassed over 2000 pilots, highlighted the disparity in our selection of EC devices and showed that GA pilots are using more than 10 different types of devices in the cockpit (*Electronic Conspicuity – GASCo research project, GASCo News, gasco.org.uk*).

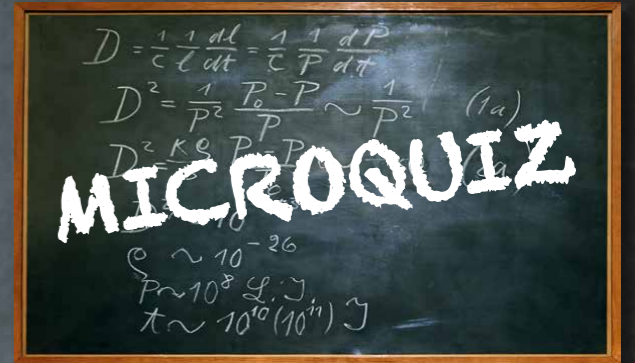
With this wide variation in technology, it is vital that we understand the limitations of compatibility and appreciate that these devices may or may not communicate effectively or consistently with each other.

One of the findings of UKAB in airprox investigations is that situational awareness has often been degraded due to incorrect fitment of such devices and/or incorrect use.

It is important to get the most from EC devices and make sure that, if fitted, they are functioning properly, and that we know how to interrogate the information and interpret any indications.

Time spent concentrating on devices within the cockpit reduces our ability to maintain an effective lookout, and for that reason it is essential that we are familiar with the operation of such devices in order to reduce time spent fiddling when in the air.

Take some time to familiarise yourself with your equipment on the ground before flight. This will save capacity and time in the air. The successful combination of an effective lookout and correctly functioning EC equipment will be our best defence against airproxes. ▶



- 1 Which of the following indicates severe turbulence when found in a weather report or forecast?
  - a TCU
  - b SC
  - c NSC
- 2 An aircraft has a groundspeed of 106kt and will cover a distance of 216nm. What is the total flight time?
  - a Two hours and two minutes
  - b 29 minutes
  - c Two hours and 56 minutes
- 3 What causes anabatic and katabatic winds?
  - a Diurnal heating and cooling of the air on a mountain slope
  - b Air moving from a low-pressure system to a high-pressure system
  - c The air over the land heating up more than the air over the sea by day, causing convection and advection
- 4 In order for an aircraft to maintain level flight the lift force must be ..... the weight force.
  - a greater than
  - b equal to
  - c less than
- 5 If permitted by the pilot operating handbook, which of the following should be used to ensure clearance when departing a runway with an obstacle at the end?
  - a best rate of climb (V<sub>y</sub>)
  - b best angle of climb (V<sub>x</sub>)
  - c minimum flight speed



MF's quizmaster Lawrence Bell is the developer of QuizAero, the online groundschool for microlight student pilots, [quizaero.co.uk](http://quizaero.co.uk).

Answers overleaf

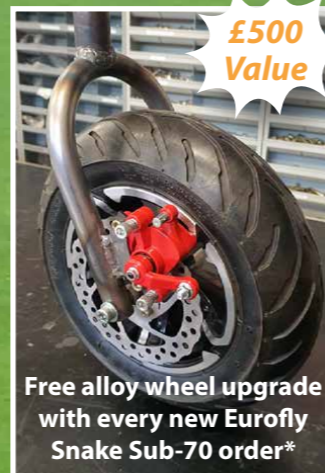


GASCo, the General Aviation Safety Council, is a charity whose members are aviation organisations. Its aim is to make aviation safer through education. It presents the CAA safety evenings, runs seminars and provides safety information through its magazine and website, [gasco.org.uk](http://gasco.org.uk).



CHIRP, the Confidential Human Incident Reporting Programme, reviews and analyses reports from pilots, then publishes them so others can learn. Get the app at [chirp.co.uk](http://chirp.co.uk).

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## SAFETY

### ▷ ATC services

While some in the past may have relied upon the “big sky principle” to avoid other aircraft, the best way to actually see and avoid other aircraft in the sky is to utilise every resource available to us, and one of those key resources is ATC.

A thorough understanding of the benefits and limitations of such services is vital to maintaining a high level of situational awareness and allowing us to build a mental picture of the traffic situation around us.

For example, a Basic Service will not necessarily provide any information on other traffic, and it is worth remembering that when in receipt of a Basic Service “the avoidance of other traffic is solely the pilot’s responsibility.” (CAP 774 Sect. 2.1, pg. 23).

UKAB cites many airprox examples where the aircraft involved were operating on different frequencies, despite flying in the same area.

During the planning phase, it’s important to consider our planned proximity to airfields and the likely traffic pattern for arrivals and departures, to guard against potential conflicts.

If flying near an airfield, consider speaking to it or maintaining a listening watch. This is particularly pertinent in the south of the UK, where the airspace can be very congested.

With an ever-increasing trend of military versus civil aviation airprox below 2000ft, the VHF Low Level (LL) common frequency (130.490MHz) has been permanently introduced in the UK.

It was published by NATS on 1 June this year, and the aim of the frequency is to mitigate the chance of mid-air-collision in the UK Low Flying System. Designed for use when an air traffic service cannot be received, blind calls should be transmitted stating your intentions in order to improve the situational awareness of other pilots operating in the vicinity.

Details of the LL common frequency can be found in [AIC P 047/2023](#).

## MICROQUIZ ANSWERS

- 1a TCU
- 2a Two hours and two minutes
- 3a Diurnal heating and cooling of the air on a mountain slope
- 4b Equal to
- 5b Best angle of climb ( $V_x$ )



Airproxes are an issue we all need to address

### Effective lookout

Our ability to see other aircraft is greatly improved by the use of on-board systems and ground services to guide us where to look out, but we must of course, also maintain our own lookout.

We should aim to have our eyes looking out around 80% of the time. An effective lookout is achieved by employing a methodical scan, and this can be done by dividing the sky into equal sections – left, right and centre – and switching between each one in turn to ensure an even spread of concentration.

The UKAB webpage lists a series of short video clips, under “*topical issues and themes*”, which look at scan technique and the limitations of the human eye.

For example, it’s far easier to spot an object moving laterally across our field of view than it is to spot something moving directly towards us.

Depending on closure speed, aircraft moving directly towards us may not be detected until a few seconds before impact.

The *Safety Sense 13* leaflet describes how the human eye, and consequently vision, is vulnerable to a whole host of things including dust, fatigue, emotion and age.

For all of the above reasons, we must not rely upon the human eye alone to detect any threats.

### Conclusions

UKAB sums this all up perfectly in the most recent yearly review from 2021 (2022 due to be published later this year).

“Take every opportunity to augment situational awareness: plan, revise, communicate, fit and understand your EC equipment.

“Preparation will increase capacity, and all of the above will contribute to your ability to concentrate on a robust and accurate lookout, which is ultimately the key to a safe and successful flight in Class G airspace.”

My investigations have merely scratched the surface of the considerations and strategies we can employ to prevent airprox incidents.

Please check out the UKAB director’s monthly updates (Airprox Insights) published under “Topical issues and themes” on its webpage.

It’s regularly full of valuable hints and tips to guard against airproxes, and with numbers on the rise, it’s essential that we all play our part. □

## IN THE COCKPIT

# I could have been a train driver, but...

David “Kav” Kavanagh spent his working life in the back of a Nimrod, then moved to the front seat of a EuroFox

I’VE been married to Cathy for 36 years, and we live smack-bang in the middle of Wiltshire.

I spent most of my working life after 11 years in the RAF (aircraft sparky and Nimrod rear crew) in the IT industry, selling software I didn’t (and still don’t) fully understand.

Plans to retire at 60 didn’t come to fruition, but work’s interesting, and I’m on a contract at present recruiting alliance partners in Europe, the Middle East and Africa for a Canadian software company.

Flying’s always been one of my interests, and once I’d relieved myself of most of the domestic overheads, I started flying training about six years ago and haven’t looked back.

### What did you want to be when you grew up?

I’ve got an old picture of me somewhere sitting in the driver’s seat of a train, so that could give you some idea. That said, I’ve got another picture of me at the Lord Mayor of London’s Christmas bash when I was much younger dressed in a

cowboy’s outfit. No aspirations in that direction, so go figure (no Village People gags please).

### Best and worst subjects at school?

I peaked academically when I passed the 11+ a year early, and things went downhill from there.

My French was above average, but a teacher’s comment on one of my school reports sums my academic prowess perfectly: “cheerfully incompetent”.

### Favourite book?

That’s a tough one, but probably *Papillon* by Henri Charriere. Later in life, I was somewhat disappointed to learn that the book was, in fact, largely a work of fiction. Nonetheless, a cracking read.

### Favourite film?

Another tough one! I’ll nominate three, if I may – *The Shawshank Redemption*, *The Sixth Sense* and *The Blues Brothers*.

### Favourite country?

Laos. Visited there as part of a tour to Indochina for our 30th wedding anniversary, and we shall return.

### Which two people have been most important in your life so far?

My wife Cathy and daughter Louise (stated freely without fear of retribution).

### Vices and virtues?

I can be a bit judgmental (usually get it right, to be fair), and friends tell me I’m fun to be around, generous and loyal.

### When were you happiest?

On loads of occasions, but when I got married 36 years ago or at the birth of our daughter 32 years ago.

### Saddest?

About 13 years ago, we lost both of our dogs to poison, and they suffered hideous lingering deaths. Some lowlife had laced a rabbit carcass with Paraquat with the aim of killing, we assumed, raptors. Sadly, our girls got to it first. ▷



David glad he’s not paying the fuel bills for this Extra 300. A pal at White Waltham has a quarter share in it