The RAF Safety Magazine

Issue 50

# AirClues


## Air Clues Celebrates Issue 50!

## HIRTAs Explained
## Loss of Safe Separation
## AI in Aviation Safety

ROYAL AIR FORCE
Safety Centre







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# Foreword

By Air Commodore David Cooper, Inspector of Safety (RAF)

Air Commodore David Cooper

**I owe my predecessor a huge vote of thanks as I took over the Inspector of Safety role in early March this year. Thankfully, Air Cdre Sam Sansome is still embedded in the Defence safety world, working in MSHQ. I look forward to collaborating with him as we continue to improve Defence safety performance.**

To make an obvious point, I am an Inspector of Safety and not [just] Flight Safety. The Royal Air Force's safety enterprise covers all our activity with 13 separate safety Inspectorates working alongside you. In terms of AirClues, I would encourage readers to contribute safety related matters from across all activity. We have a great deal to learn, we must maintain an active approach to improvement, and we should share lessons widely. Each of you plays a part in our safety effort in the way you conduct your activity, the way you make safety-related decisions, and the way you react when things do not go to plan. You could take time to refresh yourself on Just Culture; how does that frame your individual actions, set the way you work within your team, and guide how you manage your people?

There is strength in learning from situations that did not, or could not have, gone to plan. Reporting is a fundamental element of our safety culture. I encourage you to offer Air Clues your open and honest accounts of near misses. Your experience will very likely make a positive difference to someone else.

> "We need your 'I learned about flying/ engineering / air traffic from that' articles. Please write to Wg Cdr Spry with your open and honest stories."

# Safety Awards

### Mr Simon Carder – RAF Northolt – Merit

On 6 August 2025, at RAF Northolt, Mr Simon Carder was a Babcock aircraft handler tasked to carry out a departure on a Bombardier Challenger aircraft on the southern ASP.
The aircraft was closed up and the starboard engine was started normally. As the pilot indicated to start the port engine Mr Carder noticed that the port side access panel for raising and closing the main crew door was open. He notified the aircraft captain, the panel was secured and the aircraft departed safely.

### Mr David Garmory – RAF Northolt – Merit

On 4 October 2025, at RAF Northolt, Mr David Garmory was conducting a refuel on the main ASP and observed a red item on one of the airfield surface intersections. Mr Garmory promptly informed ATC who quickly recovered the item which was found to be an aircraft engine blank, containing substantial metal parts. There were very high winds due to Storm Amy with gusts up to 40kts. Due to flying restrictions limited other airfield users it was highly likely that, if Mr Garmory had not reported the item, it would not have been found prior to the departure of an Envoy aircraft.

### Mr Alex Wonsowski – RAF Northolt – Merit

On 11 February 2026, while conducting a routine Fire Risk Assessment within Building 329, home to the Airfield Wildlife Control Unit (AWCU) and Airfield Electricians, Mr Alex Wonsowski observed several ammunition boxes stored in an unlocked room. Recognising that this appeared unusual and potentially unsafe, he raised the matter with the Explosive Safety Rep (ESR), querying whether it was normal to encounter ammunition tins unsecured inside the building. His timely intervention prompted immediate follow up action.





### Squadron Leader Douglas – RAF Lossiemouth – Distinction

On 11 December 2025, during an overseas night operational sortie in poor weather, Squadron Leader Douglas experienced a critical failure of the Air Refuelling (AAR) system during the second AAR bracket, generating in cockpit failure indications. While positioned on the tanker's wing in night close formation, and with limited fuel remaining to reach the nearest nominated diversion airfield, he commenced the appropriate emergency drills. Anticipating that the fault might not be recoverable, he directed the tanker to begin diversion procedures. This decisive action preserved valuable time and maximised the available fuel margin as both the emergency handling and the diversion progressed simultaneously.
With the refuelling system confirmed as failed and fuel reserves depleting, Squadron Leader Douglas committed to the diversion airfield.

Upon arrival however, ATC informed him that the Instrument Landing System (ILS) - the only suitable approach aid for Typhoon there - was unserviceable, rendering a recovery there impossible. With fuel reserves becoming increasingly critical and no viable landing option available, the emergency escalated significantly. Squadron Leader Douglas declared a Mayday for fuel and requested access to a nearby military airfield normally unavailable for operational reasons.
He established a maximum-endurance holding pattern while ATC sought military approval for the landing. Squadron Leader Douglas assessed that the only other available airfield lay over 150nm away, and a diversion there would have placed the aircraft below recommended approach fuel minima. After ten minutes of holding, the necessary approval was granted, and he commenced recovery.

### Miss Chloe Gibbard – RAF Coningsby – Merit

During the August 2025 digital update for the Typhoon Advanced Mission Planning Aid system, Miss Chloe Gibbard, of RAF Coningsby's Air Ops Sqn, identified that the Low Flying Chart Night had not been updated and was still displaying data from the previous month. This meant that the chart in use was four weeks out of date, potentially omitting newly recorded obstacles in low-level night flying areas which Typhoon aircraft were planning to operate in later that same evening. Recognising the significant safety implications, Miss Gibbard investigated the source of the error, confirmed the data fault originated from the Military Flight Information Publication download, and raised the issue with the Aeronautical Information Document Unit.
At the same time, she issued a station-wide warning to all squadrons, ensuring no mission planning was conducted using the outdated information. Her swift intervention prompted the upload of the correct Low Flying Chart Night prior to the commencement of flying, with all squadrons informed once the issue had been rectified. Had Miss Gibbard not identified this error, the consequences could have been significant. Using outdated Low Flying Chart Night data would have resulted in an increased risk of collision with newly erected or modified obstacles.

**Flight Lieutenant Hughes – RAF Lossiemouth – Distinction**

On 14 November 2025, Flight Lieutenant Hughes was a newly qualified CR Typhoon pilot. On his first deployed operational sortie, he experienced air refuelling issues that required him to divert into a host nation air base to conduct his first aircrew turnaround. After several days, once A4 support had arrived and rectified the issue, he was required to recover the aircraft from the host nation air base to RAF Akrotiri. On departure it was apparent that ATC was unable to observe the aircraft's Mode 3 squawk and couldn't provide a radar service. His Diplomatic Clearances were also delayed, and he needed to orbit in the overhead of the air base for 20 minutes before being allowed to continue en-route by ATC. Now at minimum fuel to complete the transit, Flight Lieutenant Hughes was then denied entry to the Nicosia FIR mid-transit.

At this point, Flight Lieutenant Hughes made a quick decision to return to the host nation air base recognising that waiting for a possible entry clearance would leave him with no viable alternate airfield in Cyprus. Unfortunately, at this time, the air base was affected by a rapidly developing un-forecasted weather feature and an associated dust storm. With limited fuel Flight Lieutenant Hughes was denied a radar service and vectors by ATC approach due to the lack of Mode 3. He quickly organised an overhead visual recovery and focussed on remaining in sight of the landing surface as visibility rapidly deteriorated. Requesting max airfield lighting he was able to land successfully and expeditiously just prior to the full weather feature arriving.

**Sergeant Coward – RAF Coningsby – Merit**

On 11 June 2025, at RAF Coningsby, during a routine aircraft see-off procedure at Foxtrot dispersal, Sergeant Coward (Corporal at the time) was serving as an instructor for a student under Line Training in the Training Cell. While overseeing the training session, he observed a helium balloon drifting across the disposal area. The balloon, carried by the wind, was rapidly approaching the aircraft's main intake - a critical component of the engine system. Recognising the immediate risk of foreign object ingestion, Sergeant Coward promptly halted the training session to address the situation. Demonstrating both agility and determination, he pursued the balloon down the line, successfully intercepting it before it could reach the aircraft.





**Flight Lieutenant Whaley – RAF Waddington – Distinction**

During 12-16 January 2026, Flight Lieutenant Whaley was detached to an overseas airbase to support a specific weapons platform testing trials process for a host-nation aircraft. While observing engine-running nighttime source victim testing, he identified several safety concerns. Specifically, he noted inadequate lighting in the test and tow environment, the absence of high-visibility clothing for engineers, and unsecured head dress posing a Foreign Object Debris (FOD) hazard. Because the testing was being carried out in the vicinity of live propellors, this posed a serious risk to personnel safety.

Flight Lieutenant Whaley promptly highlighted these issues to the line crew and the leadership of the host-nation organisation, providing constructive feedback and practical solutions. His recommendations were swiftly implemented, significantly improving safety standards. To address the lighting deficiencies, a light cart was deployed to the aircraft and remained illuminated at all times during operations. Reflective tape was also installed to mark the aircraft tow path, ensuring safe movement in low-light conditions. To improve personnel visibility, Flight Lieutenant Whaley recommended the use of high-visibility belts and vests for all ground crew and personnel operating near the aircraft during low-light events; these were distributed and mandated for use. Additionally, to mitigate the FOD risk posed by unsecured headdress, Flight Lieutenant Whaley proposed the use of secured beanies or balaclavas and prohibited the use of baseball caps, a measure that was immediately adopted.

**Air Specialist (Class 1) Haywood (left) & Air Specialist (Class 2) Bacon (right) – RAF Coningsby – Merit**

On 4 February 2026, at RAF Coningsby, Air Specialist (Class 1) Haywood and Air Specialist (Class 2) Bacon were on duty in Flight Planning when an electronically issued NOTAM cancellation was received. The cancellation was intended to withdraw a danger area booked for Protector UAS flying; however, an incorrect NOTAM reference was included in the request. As a result, a neighbouring danger area - scheduled for use by the RAF Aerobatic Team (RAFAT) - was cancelled instead of the intended Protector danger area. Both individuals independently identified and verified the discrepancy and acted promptly to raise the concern. They demonstrated persistence and professionalism in challenging the issue, even when initially advised by the originator that no error had occurred. Once the mistake was acknowledged, corrective action was taken to reinstate the affected danger area. Had the error gone unnoticed, the RAFAT sortie may have been cancelled or, more critically, conducted without the protection of active danger area status, potentially exposing aircrew and aircraft to significant risk from other airspace users.

**RAF Officer Training Academy – RAF Cranwell – Team Commendation**
**Wing Commander Ford, Squadron Leader Lynch, Flight Sergeant Stanley, Flight Sergeant Sutton, Sergeant Gardner**

The RAF Officer Training Academy (RAFOTA) demonstrated outstanding commitment to Land Safety during assurance activities conducted by the Land Activity Safety Team (LAST). Achieving an overall Assurance Grading of Substantial (95%) throughout 2025, RAFOTA has embedded a robust safety culture and consistently high standard of safety management. Epitomising the commitment to engender a fully inclusive and engaged safety culture across their AoR, RAFOTA underpin their delivery output via the safety culture primary elements. Leadership at RAFOTA prioritises safety, evidenced through proactive governance, detailed planning and rigorous risk assessment. Innovative practices, such as 'last bound' meetings to assess climatic risks, exemplifies forward-thinking risk management. Land Environment Exercises and Live Firing activity, showcase the exceptional professionalism and diligence of RAFOTA personnel, with Exercise and Range Conducting Officers maintaining effective command and control, whilst fostering skill development and learning in realistic training environments, all the while encouraging critical thinking and situational awareness amongst their trainees.

RAFOTAs planning documentation, including Risk Assessments, Range Safety Documents, and Exercise Action Safety Plans, were fully aligned with Defence policy and regulation. Whenever minor omissions were identified, RAFOTAs action was swift and sure, demonstrating a proactive, responsive and maturity in safety delivery. Their stringent adherence to Land Safety policy, coupled with incorporating a comprehensive set of Standard Operating Instructions, reflects adaptability and operational excellence within the Land Environment.

RAFOTA's engagement with the assurance teams was exemplary, mirroring their attitude to both students and staff, where fairness and accountability are promoted. The Academy's internal validation processes and adoption of JSP815 methodology underlines its commitment to continuous improvement. This transparent, proactive attitude sets a benchmark for safety across its area of responsibility.





# New Inspector of Safety (RAF)

The RAF Safety Centre welcomed a new Inspector of Safety (RAF) following the departure of Air Commodore Sam Sansome in April 26.

Air Commodore David J E Cooper CBE MA BEng (Hons) RAF

Inspector of Safety, Royal Air Force

**Air Commodore David Cooper joined the Royal Air Force as a fast jet navigator and has accumulated over 1,500 flying hours on the Tornado GR1/GR4 and a range of training aircraft. His career spans front line operations, instructional appointments, and senior headquarters roles, alongside extensive operational deployments worldwide.**

During 32 years of service, he undertook operational tours in the Middle East, Africa, and Afghanistan. These included disaster relief operations following the 2004 Indian Ocean tsunami and evacuation missions in Africa. His formative command appointments include Officer Commanding 617 Squadron (The Dambusters) and Commanding Officer Royal Air Force Marham. In addition, he has held senior operational Command and Control roles within the Royal Air Force and in joint headquarters, working closely with Royal Navy and British Army colleagues in multinational environments.

In 2014, Air Commodore Cooper served as Director of Air Operations in Kabul where he oversaw NATO air activity across Afghanistan. This was followed by appointment as the United Kingdom's Joint Force Air Component Commander, subsequently completing the Higher Command and Staff Course in 2017. He successively served in the rank of Air Vice-Marshal as Air Officer Commanding Number 2 Group with responsibility for the Royal Air Force's air mobility and security forces.

From 2020, David worked with Nova Systems in UK industry as a General Manager, gaining over five years' commercial leadership and P&L experience. While employed in the Defence engineering and technology sector, David continued to serve in the Royal Air Force Reserve.

Air Commodore Cooper returned to the Royal Air Force in 2026 for a permanent appointment as Inspector of Safety (RAF) and Head of the Royal Air Force Safety Centre. In this role he leads independent assurance of the Royal Air Force Safety Management System across 13 domains. This strengthens safety governance, thus enabling the effective delivery of United Kingdom operational capability.

Air Commodore Cooper is a Trustee of the Royal Air Force Museum and President of the 617 Squadron Association.

# Take Care Around The Tanker!

By Squadron Leader Sam Martin, SO2 Flight Safety (FJ), RAF Safety Centre


**In the early morning of Dec. 6, 2018, two F/A-18s assigned to Marine All-Weather Fighter Attack Squadron 242 (callsign Profane 11 Flt), based in Iwakuni, Japan, met off the coast with a KC-130J from Marine Aerial Refueler Transport Squadron 152. After conducting Air-to-Air refuelling (AAR), one of the F/A-18s (Profane 12) collided with the KC-130J tanker. The WSO of Profane 12 was the only survivor, the pilot was killed along with the crew of the KC-130, after both aircraft crashed into the sea.**

The USMC investigation found that after refuelling Profane 12 moved to the Echelon Left position of the tanker, which was not iaw SOPs. The pilot then attempted to rejoin Profane 11, who was correctly positioned on the right echelon of the tanker. However, at some point during this crossover manoeuvre Profane 12 hit the KC-130J, causing catastrophic damage to both aircraft. The report found that challenging met conditions low light levels and disorientation were likely contributing factors to the accident.

Then in Sept 2020, another USMC KC-130J was involved in a mid-air collision during AAR, this time with a USMC F-35B aircraft. The F-35 hit the right wing of the KC-130 causing massive damage to both RH engines and an uncontrolled fuel leak. The F-35 pilot ejected safely but due to some exceptional flying skills and teamwork, the crew of the KC-130 managed to crash land in a field and walk away without injury.
The report found that a failure to follow SOPs by the F-35B pilot contributed to the accident.

And let's remember that we, the RAF, have also suffered our own mishaps and near-misses around the tanker:

In 1994 four RAF GR1s were in company with a RAF Tristar on a tanker trail transiting to RCAF Goose Bay from an exercise in Alaska when the formation number 4 collided with the number 3 aircraft. The number 4 landed safely at La Grande Riviere airport in Canada, while the #3 crew had to eject and





KC-130J – Image courtesy of Military_Material, Pixabay

spent several hours in their dinghies, having landed in a large lake in the Canadian wilderness.

In 2013 the pilot of a Tornado GR4 became badly disorientated whilst trying to conduct AAR from a USAF KC-10 over Afghanistan. The GR4 ended up inverted, losing over 2000' in altitude, and only a timely warning call from the other aircraft in the formation prevented a worse outcome. (DASOR 5 April 2013).

In 2022 a report (20210803-1Gp AAR Review-Final-OS) by HQ 1 Gp Safety staff studied several incidents occurring between Jan 18 and Jan 21 which involved Fast Jet incidents around the Tanker where there was a potential for Loss of Safe Separation (LoSS). This report found common factors in many of the reported incidents included: a lack of currency, failure to follow SOPs; a failure to recognise disorientation.

**Could it happen again?**
Spry has been perusing the long list of DASORs and a search of ASIMS points to an uptick in the number of tanker-related incidents in recent months; as an example, there were 4 such reports in 2024 and 8 in 2025. The table below summarises some of the noteworthy ones:

| DASOR | Title | Detail | Context | | |
|---|---|---|---|---|---|
| | | | Phase | LoSS | Day/Night |
| Typhoon 24\10476 | LoSS between receivers | #2 and #3 lose SA of relative position, (during #2's mvr the estimated separation between 2 and 3 was less than 5') | Movement around tanker | Ty v Ty (Same formation) | Day VMC |
| Typhoon 24\12823 | LoSS between Typh and Tanker | Closure on tanker whilst in Echelon (separation less than 1 x Ty wingspan) | Formation with Tanker | Ty v Voy | Dusk (Low Light) VMC |
| Typhoon 25\2534 | Disorientation during AAR | Typhoon pilot became disoriented at Night (no horizon, Voy turned during AAR). | Formation with Tanker | Potential Ty v Voy | Night. NVG |
| Typhoon 25\4411 | Disorientation while in formation with tanker | Severe Disorientation while in Echelon Left on Voy during LH turn. | Formation with Tanker | Potential Ty v Voy | Dusk IMC |
| Typhoon 25\8592 | Clearance to elevate to tanker altitude. | C2 cleared Ty co-alt with Voy. | Join | Potential Ty v Voy | Day |
| Typhoon 25\13670 | LoSS between receivers while transitioning astern | Movement around the tanker. (estimated separation less than 6') | Movement around tanker | Ty v Ty (Same formation) | Day, VMC |
| Ltng 26\1209 | Descent through tanker block on departure from AAR. | Lightning slowed and descended through Voyager's level. | Departure | Ltng v Voy | Day, VMC |
| Ltng 26\1586 | Inadvertent climb through tanker's level. | Level bust during visual stern conversion. | Join | Ltng v Voy | Night |

Of course, statistics can be misleading, and it's true that the Typhoon Force has conducted more AAR in recent years than previously, which would naturally lead to more incidents. But, the three rows highlighted in red describe three relatively recent incidents where separation between either receiver aircraft, or receivers and the tanker, was SEVERELY degraded (less than 6 feet in 2 cases), and only lady luck prevented a repeat of the USMC accidents mentioned at the beginning of this article. It important to stress that the aircrew involved in these incidents ranged from OCU students all the way through to experienced 4 ship-lead pilots. These were all Human Factor incidents involving distraction, poor communication and loss of SA, where small lapses could have had disproportionately catastrophic consequences. All these incidents reinforce the need for extreme care and rigid adherence to SOPs to minimise the risk to all involved; AAR is a high technical merit exercise which must be taught properly and practiced frequently to maintain proficiency.

**So, what is being done about it?**

The fact that AAR cannot yet be realistically trained in any of the current Fast Jet Synthetic Trg Devices means that the early 'live' Tanker sorties must be approached with a healthy degree of caution; but more than that, as an overriding principle, AAR must never be seen as routine. HQ Staff are re-prioritising sorties where possible to increase Tanker availability to allow for more live practice, which should help improve proficiency.

The Combat Air and Voyager StanEval teams, as Subject Matter Experts, have recently worked together to ensure that the Front Line have been re-briefed through a series of Flight Safety Day presentations; they have discussed recent events, encouraged healthy sharing of experiences amongst aircrew, and have updated briefing material to show 'what good looks like'- if you haven't done any AAR for a while then approach your friendly StanEval for a quick refresh. They have also stressed the need to strictly follow the correct SOPs when joining and manoeuvring around the tanker, and the importance of knowing who has collision responsibility on whom at any given moment. They have warned of the risks

of an incorrect mental model and have championed the use of SA-enhancing comm to help avert incorrect assumptions. Most importantly they have stressed the one thing that will keep all aircrew from hopefully hitting other aircraft – **DON'T MOVE UNLESS YOU CAN SEE ALL THE OTHER AIRCRAFT THAT COULD BE A FACTOR.**

## Spry's Comment:

As my old Nav used to say to me during the Sport of Kings: "Up and left, Up and left…Miss- 11 o'clock". And his boast was that he had never missed!!
But seriously, it could be argued that all successful AAR involves a mid-air collision; the key difference is that these are deliberate contacts between aircraft, which occur in a controlled manner, and happen with the express approval of the Tanker crews.! While the steely-eyed Fast Jet types have the safety net of the old Nylon Letdown if things go awry, remember that the poor tanker folk have no such luxury. So, keep it safe, slow and deliberate; keep your wits about you, and if in doubt? Don't move, maintain your position and ask for clarification on the old radio box! Once you've departed the Tanker, don't forget they are still out there, possibly giving the old motion-lotion to someone else so stay clear of them - don't get distracted by post tanking trivia or the next stage of the sortie until you are safely clear. Ultimately, AAR is one of the key facets of military flying where we really earn our flying pay so let's take a pride in approaching it with the right degree of rigour. Safe prodding everyone!
(With grateful thanks to Typhoon Safety Cell and Combat Air Stanevals for their assistance in writing this article). ☐





# AirClues Celebrates its 50th (new) Issue

## Guardians of the Air: The Evolution of RAF Aviation Safety

**By the RAF Safety Centre**

RAF Bentley Priory – David Marsden / Bentley Priory / CC BY-SA 2.0

**For more than a century, the Royal Air Force has relied on a blend of discipline, innovation, and institutional memory to keep its people safe in the air. Yet the organisations responsible for that safety have changed dramatically over time — shaped by war, technology, tragedy, and reform. RAF aviation safety chronicles from the early Inspectorate era through DASC, DARS, the MAA, and the creation of today's RAF Safety Centre.**

**Early Years: The Inspectorate of Flight Safety**

The RAF's commitment to safety began almost as soon as the Service itself. By the 1930s, the RAF had established a formal Inspectorate of Flight Safety, led by senior officers charged with investigating accidents, analysing trends, and advising the Air Council. Its purpose was to: provide independent oversight of flying safety; investigate incidents and accidents; and promote safe operating practices across the Service.

**Bentley Priory: Post-War Home of RAF Safety**

After the Second World War, RAF Bentley Priory, formerly Fighter Command, transitioned into a quieter but no less important role. From the 1970s onward, it became home to the Inspectorate of Flight Safety, the Defence Aviation Safety Centre (DASC), and RAF safety training and policy teams. In May 2008, RAF Bentley Priory closed as an operational station. Its safety organisations relocated to RAF Northolt.

Military Aviation Authority
MAA

**Formation of the Military Aviation Authority (MAA)**

On 1 April 2010, the Military Aviation Authority (MAA) was formed. It absorbed DASC, the Directorate of Aviation Regulation & Safety (DARS), and much of the RAF's central safety and airworthiness machinery and people. When the MAA stood up, the RAF's long-standing Inspectorate of Flight Safety was not carried forward. Its regulatory and investigative functions were absorbed into the MAA, and its RAF-specific safety-assurance role was not immediately replaced. It soon became clear that the MAA could not run the RAF's internal safety culture, training, or assurance processes. The RAF Safety Centre was established to fill this gap. But, the Safety Centre was not just established for air safety; it was recognised that

RAF Safety Centre, HQ Air Command, RAF High Wycombe

all aspects of safety other than aviation safety needed to be assured, so the term 'Functional Safety' became known and CESO (RAF) was born, in parallel to the long-standing Inspector of Flight Safety (IFS). In fact, this evolution continued to mature, such that we now have no less than 13 Inspectors monitoring all aspects of safety including: Fuels and Gases; Sport; Land Safety; CESO; Adventurous Training; Airworthiness; Battlespace Management; Flight Safety; Medical Safety; Movement & Transport; Ordnance, Munitions and Explosives; Land Systems Safety; and Fire. All of this is headed up by a 1-star Inspector of Safety (RAF) – currently Air Commodore David Cooper.

From the early Inspectorate of Flight Safety to the halls of Bentley Priory, from the upheaval of the Nimrod Review to the creation of the MAA and the RAF Safety Centre, the RAF's approach to safety has evolved constantly.

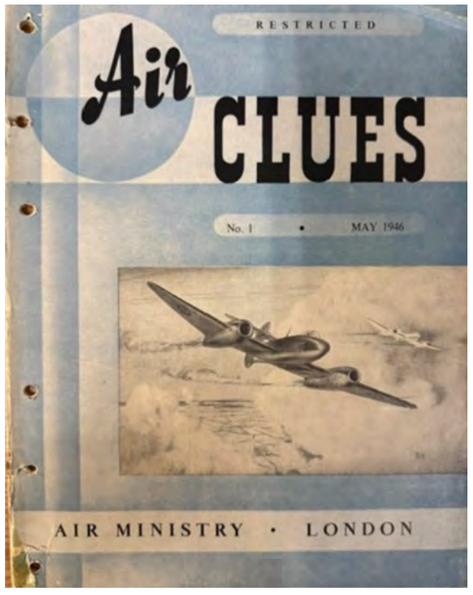
**AirClues & Wing Commander Spry: The RAF's Fictional Guardian of Flight Safety**

Wing Commander Spry was never a real officer, but he became one of the RAF's most recognisable voices. A fictional creation with a neatly trimmed moustache and a knack for turning near disasters into teachable moments, Spry served as the unofficial patron saint of RAF flight safety. His creator, Squadron Leader John Chapman, used Spry as a pseudonym to deliver safety lessons with charm, wit, and just enough self-deprecation to make even the most stubborn aviator pay attention.

**AirClues: Where Spry First Took Flight (1960s–1990s)**

The original 'AirClues' was the RAF's internal flight safety magazine from May 1946 (No.1) to the mid 1990s. It became a staple of crew rooms and flying training schools – a blend of cautionary tales, accident analyses, and the famous "I Learned About Flying from That" stories.

Spry became the magazine's beating heart. His commentary stitched together the serious and the silly, the tragic and the triumphant. He made safety human. He made it relatable. And he made it something aircrew actually wanted to read.




AirClues No. 1 – May 1946

Wing Commander Spry

Spry wasn't there to lecture. He was there to chuckle, shake his head, and say, ***"Well, that could have gone better, old boy."*** And somehow, that made the message stick.

***"Experience is simply the name we give our mistakes."***
Wing Commander Spry



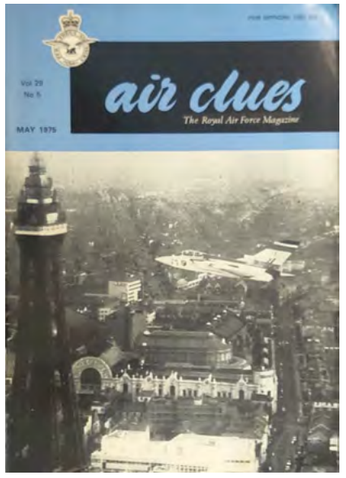


**Why Spry Worked**

He spoke like a real aviator, not a policy manual. He used humour to soften hard lessons. He normalised talking about mistakes long before "Just Culture" existed. He made safety feel like a shared responsibility, not a box ticking exercise.
Did You Know? Spry's moustache was so iconic that many readers assumed he was based on a real officer. In truth, he was simply the voice John Chapman wished every squadron had.

**The End of the First Era: AirClues Winds Down**

In the mid 1990s, during the restructuring that preceded the creation of DASC and later DARS, the original AirClues ceased publication. With it, Wing Commander Spry disappeared from RAF life. Many across the Service felt the loss. Without Spry – and without the magazine – safety communication became more formal, more procedural, and, some argued, less effective. Spry had been more than a character. He had been a cultural bridge between the rules and the people who lived by them.




**The Gap Years: A Silent Cockpit (Late 1990s–2000s)**

For a time, the RAF had no centralised, narrative driven safety magazine. Safety messaging continued, of course – but without the storytelling, humour, and humanity that AirClues had provided. This gap became increasingly noticeable as the RAF moved toward modern Safety Management System principles. The Service needed a voice again – something recognisable, accessible, and distinctly RAF.

**The Revival: AirClues Returns (Modern Series)**

Recognising the need for a dedicated, service owned safety publication, the RAF Safety Centre revived AirClues as a new, second generation series. This modern version features contemporary design, updated editorial direction, and a strong alignment with the RAF Safety Management System. It continues the spirit – though not the style – of the original magazine. The current run is now at Issue 50, a milestone that firmly re establishes AirClues as central to RAF safety culture.


Issue 1 of the new AirClues – Oct 2009

**Spry's Legacy: Still Teaching, Still Smiling**

Spry's influence lingers. Modern RAF safety communication – including the revived AirClues – still echoes his core principles:

**Be honest about mistakes.** Spry's greatest gift was making it acceptable – even admirable – to admit when things didn't go to plan. He encouraged stories which showed that honesty isn't a confession; it's the first step toward keeping the next aviator alive.

**Make safety a conversation, not a command**. Spry never lectured. He chatted. He nudged. He invited aircrew into the discussion. That conversational tone remains the gold standard for modern safety communication – collaborative, human, and grounded in shared experience.

**Spry's Comment:**

Wing Commander Spry remains one of the most effective safety communicators the RAF ever had – real or imagined. His hard won wisdom made him unforgettable. And in an era where safety messaging can feel corporate or clinical, Spry reminds us that sometimes the best teacher is a good story told with a smile. You should become that legend; share your own *'I learned about flying from that'* stories. And they don't have to be about flying – they can be engineering mistakes, air traffic control, health & safety; all of the disciplines which now have an Inspector (see above). Send your stories to:

Air-SafetyCtre-WgCdrSpry@mod.gov.uk


airCLUES
Gut Feelings Could Be a Lifesaver


airCLUES
I learnt about Just Culture from that


airCLUES
Do you believe what your aircraft says?
Regulation 18 - Mythbusting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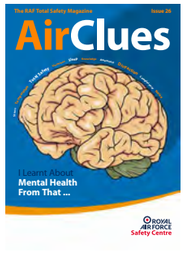
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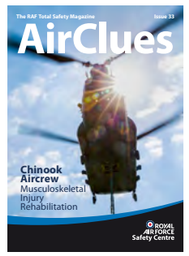
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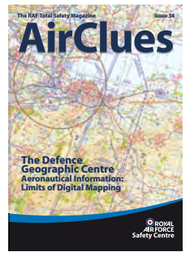
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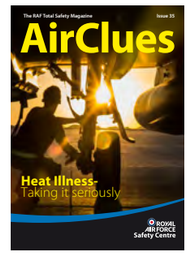
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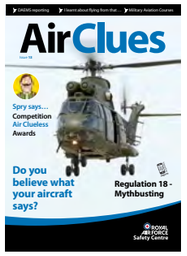
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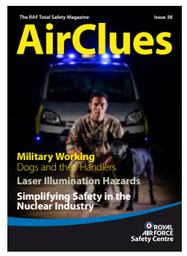
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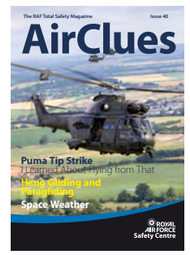
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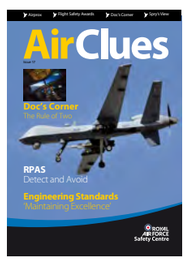
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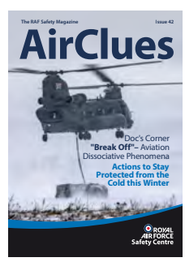
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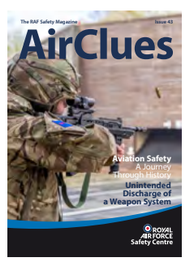
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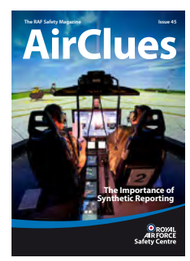
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# Protecting Capability Through Prevention:
## Reducing Injuries in RAF Regiment Trainee Gunner Training

By Squadron Leader John Liston, SO2 Safety, FP Safety Team

**The RAF Regiment Trainee Gunner course has always been demanding by design. Preparing personnel for operating in the Complex Air Ground Environment and Dismounted Close Combat requires physical robustness, mental resilience, and the ability to perform under sustained pressure. For many years, however, that same intensity carried an unacceptable cost: a persistent pattern of musculoskeletal injury that risked trainee health, course completion, and long-term career longevity.**

At RAF Honington, the RAF Regiment Training Wing (RRTW), supported by Physical Training Instructors (PTIs) and Rehabilitation staff, made a conscious decision to change course. The challenge was clear but difficult: how to reduce injuries without diluting standards or compromising operational readiness? The solution was not a single intervention, but a comprehensive, data-led redesign of Phase 2 training that placed safety, recovery, and resilience at the heart of performance.

**Understanding the Problem**

Historically, the Trainee Gunner (TG) course experienced high rates of musculoskeletal injury, particularly lower-limb soft tissue damage and stress fractures. These injuries were most commonly associated with loaded marching, accumulated fatigue, and insufficient recovery during high-intensity training periods. Beyond the immediate medical impact, the consequences were wider:

- Reduced first-time pass rates.
- Increased training wastage.
- Career disruption for trainees early in service life.

Injury data from multiple training years showed little variation, confirming that the problem was systemic rather than incidental. Accepting this as 'the cost of doing business' was no longer defensible.





**A Fundamental Change in Approach**

The redesigned 24-week TG course was built around a simple principle: trainees must be conditioned progressively, not broken prematurely. A structured review identified injury hotspots and mismatches between physical demand and physiological readiness. In response, RRTW implemented a series of mutually reinforcing controls rather than isolated fixes. Key changes included:

- Progressive physical conditioning, aligned to the actual outputs required by the Formal Training Statement.
- Structured recovery protocols, formally protected within the training programme.
- Enhanced coaching and mentoring, embedded across the cadre in line with AP 3379 principles.
- A 12-week reconditioning (Holding Flight) programme, allowing injured trainees time to build resilience safely.
- Construction of 54 x TG Physical Education Development lessons, targeting known injury mechanisms.

This was not about doing less physical training. It was about doing the right training at the right time.

**Looking Beyond the Parade Square**

Early analysis made it clear that physical training alone was not the full story. Two lifestyle factors were consistently undermining recovery and increasing fatigue-related injuries: Sleep hygiene and stimulant use. Poor-quality sleep reduced tissue recovery, cognitive function, and injury tolerance, particularly during periods of loaded marching and field exercises. Excessive reliance on caffeine and nicotine further degraded sleep quality while increasing dehydration and cardiovascular strain. Rather than treating these as individual discipline issues, RRTW addressed them as predictable safety risks.

**Targeted Safety Interventions**

**Sleep Hygiene Education:** Trainees were briefed on the effects of blue light exposure on melatonin suppression. A 'no electronic devices' policy one hour before lights out was enforced. Morning training staff reinforced consistent sleep routines throughout the course.

**Stimulant Reduction:** Education sessions addressed the risks associated with energy drinks, caffeine overuse, and tobacco. Smoking cessation support was coordinated through the Station Medical Centre. Healthy alternatives were actively promoted rather than merely advised.

These measures required leadership consistency and clear messaging. Importantly, they reinforced the idea that recovery is a training activity, not an optional extra.

**Safety as an Enabler of Performance:** The redesigned approach was carefully aligned with training outputs in the Formal Training Statement:

- Defensive Operations demand sustained alertness and physical endurance.
- Offensive Operations require cognitive clarity under fatigue and stress.
- Casualty Management relies on decision-making accuracy when under pressure.

By improving sleep quality, reducing fatigue, and strengthening physical resilience, trainees became better able to meet operational standards – not shielded from them.

**What Changed? The Results**

The impact has been significant. Analysis of Training Years 24/25 and 25/26 shows:

- A 62% reduction in overall injuries.
- Zero major injuries (a category previously associated with stress fractures or injuries requiring immediate medical discharge).
- Injury trends in 23/24 and early 24/25 remained consistent, confirming the reduction as a direct result of intervention.
- Improved first-time pass rates for ROFA assessments.
- Measurable improvements in 2 km run times, strength metrics, and overall fitness standards.

In Q3 2025, even after adjusting for non-course-related outliers, injury rates were markedly lower than the historical seasonal norm. These outcomes reinforce an important truth: protecting people protects capability.

**Culture Change on the Ground**

Perhaps the most enduring change has been cultural. Coaching and mentoring practices are now embedded and reinforced in partnership with Force Development Squadron staff. Monthly injury reviews foster transparency, encourage early reporting, and avoid normalising preventable harm. Importantly, trainees now see recovery, sleep, and conditioning as integral components of military professionalism—not signs of weakness.





**Lessons for Wider Defence Training**

Several transferable lessons emerge:

- Injury data matters – if you don't analyse it honestly, you can't fix the problem.
- Lifestyle factors are legitimate safety risks, not moral failures.
- Progressive conditioning preserves standards more effectively than acceptance of attrition.
- Leadership consistency is critical to embedding behavioural change.

Above all, this case demonstrates that safety interventions can – and should – enhance, not inhibit, operational effectiveness.

**Conclusion**

The injury reduction achieved by RAF Regiment Training Wing is more than a statistical success. It reflects a deliberate shift in how training risk is understood, managed, and owned.
sBy prioritising trainee safety at every stage of the Phase 2 course, RRTW has safeguarded health, preserved careers, and set a new benchmark for injury prevention within Defence training. Accordingly, the RAF Regiment Gunner Trainee Gunner Course Training Staff was awarded a Royal Air Force Safety Centre Team Commendation.

**RAF Regiment Gunner Training Staff – RAF Honington – Team Commendation**

The result is a fitter, more resilient, and more capable force–ready for the demands of modern operations, without unnecessary harm along the way.

# Managing the Moment After:
## Aircraft Post-Crash and Incident Management

**By Squadron Leader Paul Griffin, SO2 APCIM, DAIB**

**When an aircraft accident or serious incident occurs, the public focus is often on the aircraft and the immediate cause. For those on the ground, however, the flying has already ended, and a far more complex challenge begins. Aircraft Post-Crash and Incident Management, better known as APCIM, exists to control the critical period that follows an accident, ensuring safety, accountability and professionalism at a time when scrutiny is intense and margins for error are slim.**

APCIM encompasses all activity triggered by a significant aircraft occurrence. In practical terms, it is about keeping people safe, protecting the environment, preserving evidence for investigators, managing communications with compassion and clarity, and restoring the site so that life and business can resume. Each of these tasks pulls in a different direction, and success depends on balancing urgency with care, and decisiveness with restraint.

Despite the complexity, every APCIM response is anchored by a small number of clear priorities that shape decision-making on the ground:

- Protecting the health and safety of the public, emergency responders and military personnel.
- Minimisation of environmental impact and measures taken to undo damage.
- Preserving evidence so investigators can establish what happened and why.
- Maintaining the reputation and public confidence of the Armed Forces.
- Restoring the accident or incident site to a satisfactory condition as soon as practicable.

These principles are reinforced by a well-established policy framework. The Manual of Aircraft Post-Crash and Incident Management, its Aide Memoire and associated regulatory articles ensure that APCIM is planned, trained and rehearsed rather than improvised.

For most units, an APCIM response will be highly visible. If an incident occurs on or near a station, personnel can expect to see rapid changes to their normal working environment.






Areas may be quickly cordoned off, access routes altered or closed, and additional vehicles and personnel arriving at pace. Control posts will be established, senior officers and specialist teams will appear on site, and movement in specific areas may be restricted for safety or evidential reasons.

If an aircraft incident occurs away from a unit, the response may look different but will be no less coordinated.
Local police will usually be the most visible authority early on, often supported by emergency services and the military's own blue-light aircraft incident response capability; the RAF Mountain Rescue Service (MRS). Further military involvement builds more gradually, with specialist teams arriving once called forward.

At the heart of the military response is the Air Post-Crash and Incident Management Officer, or APCIMO. Dispatched from the designated lead unit, the APCIMO becomes the senior MOD representative on site and the focal point for coordination. Although not usually a technical specialist, their role is pivotal: organising the space, setting the conditions and ensuring specialists can work safely and effectively.
APCIMOs are expected to deploy quickly, often within hours of notification.
On arrival they integrate with any onsite emergency services and military agencies including MRS. From there, attention turns to taking over control points and cordons, managing entry and exit, and coordinating the growing number of agencies involved.

APCIM is inherently multi-agency. The Defence Crisis Management Centre acts as the initial coordination hub, receiving reports and activating the appropriate military responses. Over time, personnel on site may see contributions from a wide range of specialist organisations, each focused on a specific aspect of the response:

- Search, rescue and initial security of the site.
- Aircraft recovery and controlled movement of wreckage.
- Explosive ordnance disposal and escape system safety.
- Medical, scientific and environmental hazard assessment.
- Engineering, infrastructure and logistical support.
- Defence investigation and safety input.

Understanding who is in charge at each stage is critical. Civil police have initial primacy at all crash sites, including responsibility for criminal investigation and next-of-kin notifications, with the latter carried out in conjunction with the respective military chain-of-command. Coroners hold authority over human remains. The military assumes defined responsibilities only when police are content, with investigative leadership passing to Defence accident investigators where appropriate.

Modern aircraft bring additional layers of complexity. Advanced platforms, sensitive technologies and evolving national security legislation mean that some incidents will involve enhanced security measures, extended cordons and restrictions on access or photography.

Preparation remains the decisive factor. Effective APCIM relies on exercised plans, established relationships with civil partners and realistic multi-agency training. Here the RAF's Regional Liaison Officers play an essential role, maintaining enduring connections between the lead Stations and the local emergency service hierarchy, helping facilitate effective inter-operability onsite should an incident occur. Units that understand what an APCIM response looks like – both on and off station – are better prepared to support it calmly and professionally when it happens for real.

The final stage of APCIM involves restoration of the site to its former condition, here the Joint Aircraft Recovery & Transportation Sqn (JARTS) will work with a range of agencies including DIO to undo any damage and compensate inhabitants affected by the incident. The land reconstitution period can be lengthy, and it is only when all parties are satisfied that a Site Clearance Certificate is signed and the military finally leaves the location.

Although the APCIM process itself is now complete, enduring effort remains to understand the circumstances that led to the incident so that we may introduce measures to prevent its recurrence. Here investigators from the Defence Accident Investigation Branch (DAIB) will analyse evidence gathered from People, Physical items, Documentary items and Data to conduct an independent investigation and determine causal factors. Safety recommendations are then generated and tracked to implementation to enhance Defence wide safety.

Ultimately, APCIM is about professionalism under scrutiny. It is about doing the right things in the right order, often in difficult and emotionally charged circumstances. Long after the aircraft has been removed and normality returns, the quality of the APCIM response is what endures.





# Being Seen to Be Safer:
## Young Rider Champions Visibility Through RAF Campaign

**By RAF Safety Centre**

**On a quiet Buckinghamshire riding track, a flash of fluorescent colour cuts through the winter greys. Astride her pony, 'Dilly', young rider Elizabeth is hard to miss – and that is exactly the point.**

Elizabeth is helping to spread an important safety message as part of the Royal Air Force Safety Centre's Bright Eyes – Be Seen, Be Safer campaign, an initiative designed to improve visibility for horse riders in areas where military aircraft may operate at low-level. By wearing high visibility riding equipment, Elizabeth is playing a small but significant role in keeping both riders and aircrew safe.

As part of the campaign, Elizabeth recently received a set of high visibility kit for Dilly, transforming pony and rider into a clearly identifiable presence in the countryside. The striking colours are not just eye catching – they are practical. Improved visibility allows aircrew to spot riders earlier, giving pilots more time to take avoiding action and reducing the risk of startling horses during essential training flights.

Led by Gillian McGlinchey, SO3 Safety Promotion at the RAF Safety Centre, the Bright Eyes campaign focuses on a simple but powerful principle: prevention through awareness. By encouraging riders to "Be Seen to Be Safer", the initiative highlights how shared responsibility and small behavioural changes can significantly reduce risk.

"Visibility is a key factor in preventing incidents before they happen," explains Gillian. "High visibility clothing and horse equipment help aircrew identify riders earlier, which benefits everyone using the airspace and countryside."

Images from the campaign clearly show the difference high visibility equipment makes. A comparison of riders wearing fluorescent kit alongside those without demonstrates just how much easier it is to spot a horse and rider from a distance — a vital consideration when aircraft are moving at speed. Beyond safety, the campaign also reflects the RAF's commitment to positive engagement with rural and equestrian communities. By working with riders like Elizabeth, the RAF Safety Centre reinforces the message that operational flying and countryside activities can coexist safely when everyone plays their part.

Elizabeth on 'Dilly'

Elizabeth and Dilly's involvement is a compelling example of how straightforward, practical measures can have a real impact. By choosing to ride in high visibility equipment, Elizabeth is not only protecting herself and her pony but also supporting the safety of RAF aircrew – perfectly capturing the spirit of the Bright Eyes campaign.

The RAF Safety Centre continues to encourage horse riders across the UK to consider wearing high visibility clothing and equipment whenever riding outdoors, particularly in areas where low flying aircraft may be encountered. As Elizabeth's story shows, being seen really does help everyone stay safer.

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10

# Artificial Intelligence:
## Aviation Safety's Next Evolution

By Pete Hibbert MRAeS, Senior Consultant, Baines Simmons

**Aviation safety rarely stays still for long. Each generation faces a major shift. Early aviators battled unreliable engines and navigation that was sometimes little more than "that coastline looks familiar". Later came jets, radar, digital systems and largely autonomous flight. Each delivered clear benefits but also brought new risks that were not fully understood at the time.**

In my previous AirClues article, Aviation Safety: A Journey Through History (issue 43), I finished by suggesting that the next major age of aviation safety would probably be shaped by Artificial Intelligence (AI). At the time, if I am honest, I thought we still had a bit of time.

What has caught me off guard is how quickly it has arrived. Aviation usually manages to turn even relatively simple technological change into several years of committees, policy papers and heated arguments about terminology, usually followed by at least one meeting about whether the acronym should be changed, so the pace of this shift has been noticeable.

The question is no longer whether AI will change aviation safety. It already has. The real question is whether the humans and organisations around it will keep pace.

AI has gone from being something discussed at conferences and in strategy papers to something already influencing day-to-day aviation activity. In some places it is obvious and in others it is happening quietly in the background, almost unnoticed. Either way, it is already affecting engineering and operations in many organisations. And aviation being aviation, it is probably worth remembering that major leaps forward rarely arrive on their own.

The jet engine transformed aviation but also massively increased accident energy. Digital systems improved situational awareness whilst also increasing complexity. Automation reduced workload but introduced automation surprise and dependency. AI feels very much like the next version of that same story.

**What AI is Already Doing**

Aviation already produces more information than people can realistically process. Flight data, maintenance trends, meteorological information, fatigue modelling, occurrence reporting, threat intelligence, airspace activity... the list goes on. There is an enormous amount of information available, and this is where AI starts becoming genuinely useful. Not because it replaces people, but because it can process huge volumes of information quickly and identify relationships and emerging issues that may not be apparent when information is viewed in isolation.

One example is TrustFlight's Centrik platform, which uses AI to identify potentially duplicate occurrence reports by analysing the content of the reports rather than simply matching keywords. For example, a ground handler and a pilot may independently submit reports about the same event using very different language. The system can recognise the relationship between the reports and flag them as describing the same occurrence, helping safety teams develop a more complete understanding of what happened.

AI is also being applied outside the safety office and directly into live operational environments. At Heathrow Airport, British Airways and Assaia have deployed the ApronAI system, which uses cameras positioned around aircraft stands to monitor aircraft turnarounds in real time.

The system continuously monitors activity around the aircraft and compares what it observes against predefined operating requirements. If chocks are not fitted correctly, cones are missing, a vehicle enters an exclusion zone, or equipment is left in an unsafe position, it can generate an alert almost immediately.

The potential benefits are clear. Ramp operations are busy, time-pressured environments where distraction and workload can quickly erode performance, particularly during short turnarounds or bad weather. Humans miss things. Fatigue, familiarity and operational pressure all play their part. The consequences are not only safety-related but also financially significant. Airline industry estimates suggest ramp accidents and aircraft ground damage cost global aviation billions each year, with the International Air Transport Association estimating the annual cost of ground damage alone at around $5 billion.

But the ApronAI example also illustrates a wider point about AI in aviation. The technology is not replacing people. In many cases, it is simply becoming another system that people must interact with within an already complex environment. The challenge then becomes how humans perceive, interpret and respond to its outputs. Ultimately, the success or failure of these systems may depend as much on humans as the technology itself.

**The Human Factors Problem**

If operators begin assuming the system will always spot problems, vigilance can degrade surprisingly quickly. Equally, excessive alerts or false alarms can result in people simply starting to ignore them. The technology itself is only part of the story.

Aviation has seen this pattern before. Automation undoubtedly improved safety in many areas, but investigators also started seeing new accident pathways emerge around degraded situational awareness, loss of skills and crews becoming uncertain about exactly what the aircraft was doing. AI may well create similar challenges, and nowhere does this feel more obvious at the moment than within uncrewed aviation systems.

**The Uncrewed Aviation Challenge**

Both military and civilian organisations are scaling uncrewed capability at pace, and understandably much of the focus sits on the platform and technology itself. From a flight safety perspective, however, the more significant question may actually be what happens to the humans around the system.

Future operating environments are likely to contain crewed aircraft, multiple uncrewed air systems, loitering munitions, autonomous systems and counter-UAS capability, all operating in increasingly congested airspace and potentially hostile electromagnetic environments.

Concepts such as crewed-uncrewed teaming, autonomous collaborative systems and AI-assisted battlespace management are already moving from theory to practice. The capability upside is clear enough. The awkward bit is what this does to workload, supervision, decision-making and accountability once real operational complexity arrives.

Traditional deconfliction through geography, timing and altitude separation may struggle to keep pace, and many will understandably look to AI as part of the answer. The danger is assuming that a technical solution removes the human problem. Aviation has always been good at fixing technical problems. Human and system problems are usually much messier.

Technology evolves quickly. Doctrine, regulation, training and organisational learning generally do not. Despite the name, "uncrewed" absolutely does not mean "human-free".

The human has not disappeared from the system, they have simply moved further away from the aircraft and into a supervisory role over increasingly automated systems.

Rather than physically controlling a single aircraft, operators already find themselves monitoring multiple systems, managing sensor data, dealing with communication latency and maintaining situational awareness through screens rather than direct cues. Add AI-generated recommendations into that environment and the risk is not that humans become irrelevant, but that they become disconnected. Authority bias, over-trust and automation surprise remain very real concerns. The uncomfortable reality is that as technology becomes more capable, the Human Factors challenges do not disappear. They simply change shape.

**The Underload Risk**

Ironically, one of the future risks may actually be underload rather than overload. Humans are not especially good at passive monitoring for extended periods. After all, how many pilots have woken up on a long flight only to discover the other pilot had nodded off as well?

The paradox is that supervising highly automated systems can be deceptively demanding. Effective monitoring requires sustained attention, critical thinking and the ability to recognise subtle signs that something is starting to go wrong. The problem is that humans are generally far better at active problem-solving than maintaining vigilance during long periods where very little appears to be happening.

Aviation has already seen aspects of this within highly automated flight decks, and there is no obvious reason why AI-enabled systems would avoid the same trap. In fact, the article 'The Problem of Mental Underload' in RAF AirClues issue 49 highlighted exactly this issue as systems become increasingly automated, humans can drift from active operators into passive monitors, leaving them poorly positioned to intervene when things go wrong.

Although no doubt somebody somewhere is already building an AI tool to monitor whether humans are paying attention to the other AI tools.

**Accountability and Investigation**

Investigators and regulators are also likely to face some difficult questions over the coming years. Traditional investigations usually focus on why a human made a particular decision within a given context. Future investigations may increasingly need to examine why an AI system produced a recommendation, why a human accepted it, and whether the organisation itself fully understood the limitations of the technology it was operating.

But the opposite scenario may become equally challenging. What happens when the human does not follow the AI recommendation and the outcome is poor? Does the system remain advisory guidance with the human still ultimately responsible for the decision, or does it gradually evolve into something closer to a Traffic Collision Avoidance System (TCAS) Resolution Advisory where deviation itself demands justification?

That distinction matters because it fundamentally changes the relationship between humans, automation and accountability.

Who is accountable when flawed algorithmic advice contributes to an accident? How do Just Culture principles apply where decision-making becomes increasingly shared between humans and intelligent systems? How do operators maintain confidence in systems whose internal logic may not always be fully transparent?

Those discussions are no longer theoretical.

There is a genuine danger that capability starts outpacing the safety architecture intended to manage it. AI systems are not magic. They are still designed by humans, trained on historical data and shaped by assumptions and limitations. An algorithm may be excellent at spotting patterns, but understanding ambiguity, operational nuance or intent is considerably harder. "The computer says it's fine" has historically not always been the reassuring phrase people hoped it would be.

**The Future Professional**

None of this means AI should be feared or resisted. Aviation has always embraced technology, and many of the safety improvements we now take completely for granted were once viewed with suspicion themselves. AI may well become one of the most significant safety tools aviation has ever developed. But technology alone has never made aviation safe.

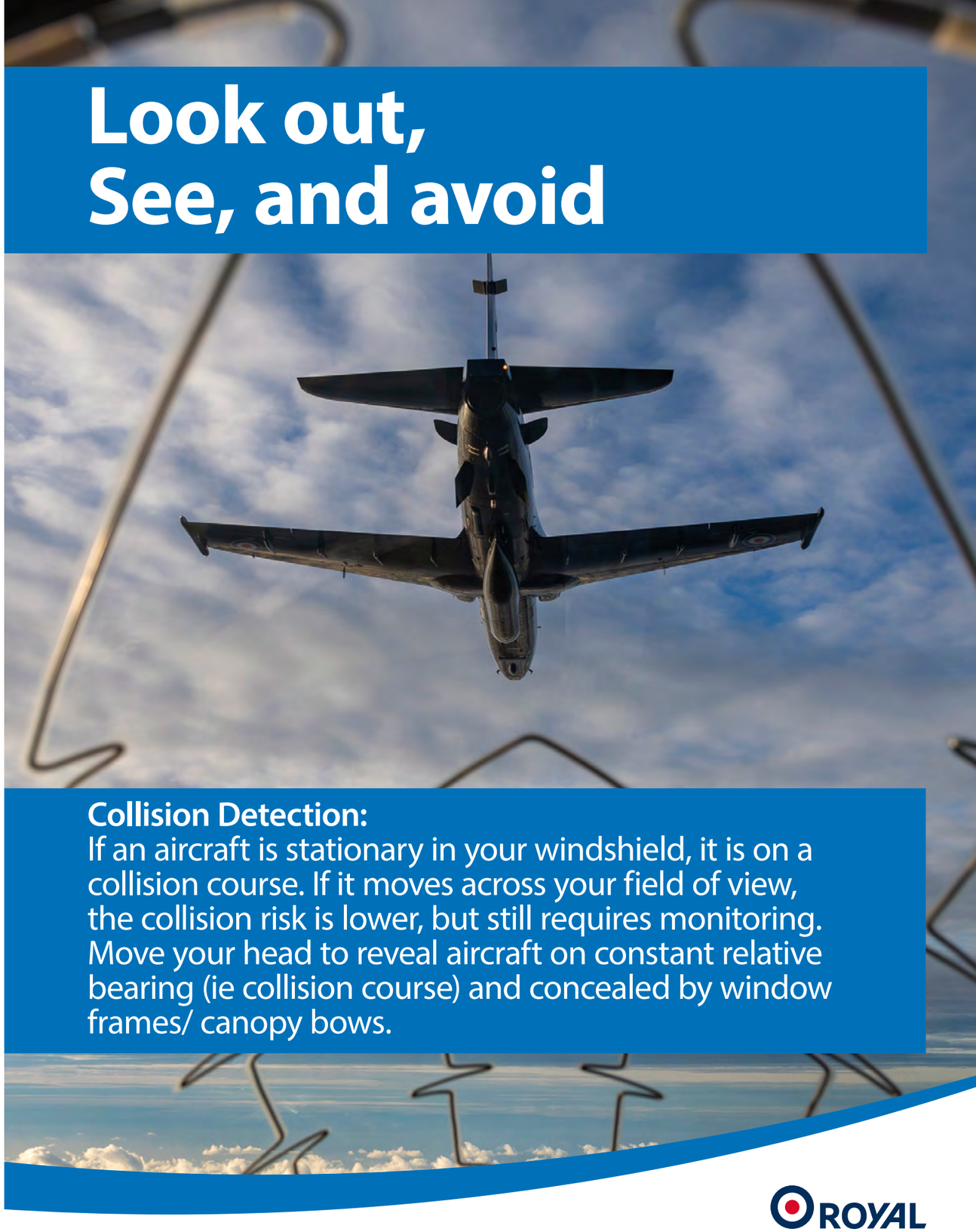
The next generation of aviation professionals will not simply need to know how to operate aircraft, manage engineering or oversee safety systems. Increasingly, they may also need to understand when to trust technology, when to challenge it and, perhaps most importantly, when to recognise its limitations. Technical competence will still matter enormously, but so will the ability to supervise automation effectively, recognise degraded system behaviour and maintain enough critical thinking to intervene when something does not feel right.

Put simply, AI is probably not going to replace aviation professionals any time soon. It is, however, likely to change what good aviation professionals need to be good at. Throughout aviation history, every major advance has created new risks alongside new opportunities. AI is unlikely to be any different. The challenge is not whether we adopt the technology. The challenge is ensuring that human judgement remains the captain, not the passenger.

*And before anyone asks, no, AI did not write this article. It did help draft it, and I then checked and rewrote a good deal of it. Which, in fairness, is probably exactly how aviation should be using AI in the first place.*



# Look out, See, and avoid



**Collision Detection:**
If an aircraft is stationary in your windshield, it is on a collision course. If it moves across your field of view, the collision risk is lower, but still requires monitoring. Move your head to reveal aircraft on constant relative bearing (ie collision course) and concealed by window frames/ canopy bows.

ROYAL AIR FORCE Safety Centre

SC234

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Insights from the UK Flight Safety Committee

# What Has the UKFSC Ever Done for Us?

**By Rob Holliday, FRAeS, Chief Executive, UK Flight Safety Committee**

Anyone familiar with Monty Python's Life of Brian will recall that immortal rant:

"All right, but apart from the sanitation, the medicine, education, wine, irrigation, roads, freshwater system, and public order… what have the Romans ever done for us?" It's one of the greatest comedic summaries of unrecognised achievement ever written and came to mind when asked talk about the work of the UK Flight Safety Committee (UKFSC) in this article. So, let's answer the question, "What has the UKFSC ever done for us?"

Well… apart from being a national hub for aviation safety collaboration, and providing a unique cross industry network, and running an award programme and hosting safety exchange and building digital libraries and creating ambassador opportunities and producing weekly and quarterly safety publications and safety management training…what has the UKFSC ever done for us? Let's take a look.

One of the biggest misconceptions embedded in our very name is this idea that we're just another aviation committee, a group of well meaning people sat around a long table, producing minutes that fewer than six humans ever read voluntarily.

But the UKFSC isn't a committee. It's a community. A living, breathing, sharing, occasionally caffeinated ecosystem of aviation professionals who bring knowledge, experience and curiosity from every corner of the industry. Airports, airlines, ANSPs, regulators, manufacturers, training providers, ground handling organisations, helicopter operators, business aviation, military partners, emergency services, all in one place, all learning together.

That's not a committee. That's a force multiplier for safety. At the heart of the UKFSC is a simple belief: When the industry shares, the industry improves. Just as President John F. Kennedy urged a nation to look beyond what it could receive and instead focus on what it could give, the same principle guides the UKFSC. We don't just ask members to show up. We ask them to share, to be proactive, to bring forward experiences, hazards, lessons, trends, questions, concerns, even mistakes.

Because safety doesn't happen by hiding our embarrassing moments; it happens by holding them up to the light so someone else doesn't repeat them. And in return? Members learn from each other and from the global safety ecosystem that feeds into our network. This reciprocity is the UKFSC's oldest superpower. A kind of aviation karma: give something useful, receive something even more useful.

Established in 1959 by the Ministry of Transport at a time when commercial aviation was rapidly expanding and regulatory oversight was still in its infancy. By 1961 the flight safety committee, was fully independent, continuing its mission to strengthen safety across the industry. Moving into the 21st century with thriving well attended in person meetings. Then the world changed.

Let's be honest, COVID did a number on in person attendance across the entire industry. Work patterns changed. Budgets got tighter. People became accustomed to the convenience of joining from a desk chair in pyjama bottoms. But instead of lamenting the decline of physical attendance, we looked for the bright side.

The silver lining? COVID accelerated digital adoption. So, the UKFSC seized the opportunity: more online focus groups, more virtual Safety Information Exchanges, more webinars, and more on demand access to digital content. Rather than trying to drag the world back to 2019, we embraced the digital world: hybrid, flexible, accessible, and globally connected.

One of our greatest industry contributions is our wide ranging stakeholder network. If aviation safety were the Monty Python universe, we would be the organisation that somehow manages to get the Judean People's Front, the People's Front of Judea, and the Judean Popular People's Front into the same room and have them actually agree on things. The UKFSC network is aviation's "bring everyone together" machine.

The UKFSC brings together: airlines and airports, ANSPs, regulators, ground handlers, manufacturers, business aviation, rotary wing operators, training and academia, consultants, service providers, safety investigators and industry bodies. Everyone, in one place, talking openly. To make this network functional, the UKFSC runs operational area specific focus groups, each dedicated to domains of aviation. Fixed Wing, Rotary Wing, Cabin Crew, Ground Handling, Engineering, ANSPs and Airports. These groups are not talking shops, they are high value knowledge engines, feeding real issues from real operations into actionable safety understanding. It's where "I wonder if anyone else has seen this…" becomes "Here's what three other organisations learned about that exact issue."

Our quarterly Safety Information Exchanges (SIE) are the beating heart of sharing. Four times a year, the entire UKFSC community gathers, in person and online, for the SIE. These meetings are consistently cited as the most valuable cross industry safety forum in the UK, the easiest way to stay plugged into emerging risks, and one of the few places where managers, front line teams and safety leaders hear from each other without filters. SIEs are where members bring their insights, incidents, trends and experiences, swap safety intelligence and walk away with lessons richer.

We realise that not everything needs to be said in a meeting. Sometimes you just want to go online, type a keyword, and find a best practice, example procedure or guidance document immediately. So, we created a digital SMS Library, a growing repository of templates, guidance, case studies, process maps, risk assessments and good practice examples. A "safety brain" available 24/7. To further the digital availability of safety knowledge, we built two searchable online libraries. The Focus magazine library, with decades of safety magazine issues, the weekly safety news library, our widely respected weekly publication archived and available to members. Both fully searchable. This means no more digging through email inboxes or trying to remember who saved Issue #47, it's all there.

As part of the commitment to developing the next generation of safety professionals the UKFSC Safety Officer SMS Course delivers a focused, three day introduction to aviation safety, blending expert instruction with practical scenarios and principles applicable across all operational domains. With contributions from guest speakers and an always popular Air Accident Investigation Branch (AAIB) tour, the course equips safety professionals from any discipline with the essential skills and insight needed to strengthen safety performance. The course is open to all; places can be booked here: https://buytickets.at/ukflightsafetycommittee

Captain Mike Griffin was the UKFSC Chairman between 1988 and 1992, representing Bristow Helicopters, making a significant contribution to the shape of the committee in the early days of safety management. The Mike Griffin

Award is named in his honour, historically recognising individuals for making extraordinary contributions to safety. We changed that in 2025 from a trophy for past achievements to an investment in the next generation of safety leaders. The Mike Griffin Award is now given to help individuals on their safety career journey, the winner receives a Cranfield University short course, fully funded. A genuine career accelerator.

New for 2026, the ambassador programme and expanding digital capability through webinars. The UKFSC is regularly represented at global safety conferences, the Ambassador Programme offers an opportunity for members to take that role with expenses paid to represent the UKFSC at major industry safety conferences. Ambassadors will promote the UKFSC and bring back insights, intelligence and connections that feed directly into the wider community. Adding webinars to our portfolio is a natural move in the digital revolution, attend from anywhere, replay anytime and engage in real time. This is the UKFSC adapting to how people learn today, while keeping the quality that members expect.

Traditionally, the UKFSC has been an organisation level membership body, representing companies rather than individuals. But something interesting has happened. As our online presence has grown, through digital publications and LinkedIn activity, more individuals have come forward asking "How do I be part of this?"

Interesting that this mirrors wider academic research on how digital communities reshape societal models, from politics to membership associations. Various academics have shown that the internet transforms knowledge sharing from hierarchical to networked (Benkler, 2006) and demonstrated that online collaboration lowers the barrier for individuals to participate in traditionally institution centred communities (Shirky, 2008).

It appears that the internet democratises knowledge and knowledge-seekers are finding us. While UKFSC remains an organisation based membership community, it is clear that the future is expanding, and individuals increasingly want to be part of the safety conversation. Shared knowledge commons thrive when individuals, not just institutions, can contribute (Ostrom & Hess, 2011).

So… what has the UKFSC ever done for us? Well… apart from: being a cross industry safety community, enabling proactive sharing, providing unparalleled networking, running operational focus groups, hosting quarterly Safety Information Exchanges, offering digital SMS resources, maintaining searchable libraries of publications, supporting careers through the Mike Griffin Award, funding members as UKFSC ambassadors, delivering webinars on essential safety topics, providing safety management training and democratising safety knowledge through online presence. Actually, quite a lot.

Join our growing digital community, follow the UKFSC on LinkedIn because the UKFSC is more than a committee. It's a community, and you're invited.






# I Learnt About Flying from That.... **"Blinded"** (Temporarily)

**By Hugh Thompson, ATPL (retired)**

**After nearly 56 years of flying over 50 different single engined and mainly Twin Turbine type aircraft, I experienced a frightening incident which could have had a nasty outcome.**

One very hot and humid summer evening in 2024, I took a passenger, with possibly no previous flying experience, on a pleasure flight in a 2-seater Cessna 152. Due to the hot humid air, I had fuelled the aircraft to no more than half tanks and used the full length of the available into wind hard runway applying carburettor heat once again prior to commencing the take-off role as I lined up. Both the passenger and I were sweating with perspiration due to the hot temperature.

As I rotated at a safe airspeed and became airborne, sweat on my forehead suddenly ran down into BOTH my eyes and blinded me. Desperately blinking my eyes to try and regain my sight which I am glad to say, gradually returned, I maintained an almost level pitch attitude to maintain a safe airspeed with the wings level; as I could hardly ask my in-experienced passenger with no flying knowledge to take control!

This had never happened to me before and as I considered it a flight safety risk decided to write up an Air Safety Report for my local flying club; as required by their Pilots Order Book. For that I got a rebuke and some hostility from the club management which in my view was the incorrect attitude to take. I am not sure whether this incident was ever promulgated to other club pilot members, but I submitted it to warn others that it could easily happen to them during the hot summer weather conditions. I wonder if this has ever happened to any of your readers? I certainly learnt about flying that day!


Hugh Thompson is the author of 'Unfit to Fly? A Civil Pilot's Lucky Career' - a book about the determination to succeed against the odds, overcoming several periods of redundancy

# Gliding Activity –

## some FAQs asked of the British Gliding Association

**Reproduced from a BGA training publication by kind permission of The British Gliding Association**

**The gliding community advocates safe shared airspace. Glider pilots are regularly reminded of their obligations. The British Gliding Association (BGA) and BGA clubs routinely engage with Regional Airspace User Working Groups (RAUWGs) and other local and national airspace safety initiatives. The BGA routinely advises clubs and glider pilots on how to contribute to safe shared airspace, including awareness of other airspace users.**

**What is a glider?**
A glider is more correctly defined as a sailplane – a sailplane or self-launching sailplane (e.g. with retractable powerplant/propeller) cannot generate an electrical charge to top up batteries. This influences use of transponders where equipped. Some sailplanes can self-launch but more often a winch-cable is used. A typical glide angle is 40:1 and some sailplanes glide at 60:1. It might surprise you to know that a typical cross-country glide cruising speed is 80kts. A soaring flight is often between 3 and 5 hours in duration. If flying a very long distance, e.g. 1,000kms, the sailplane could be airborne for 10 hours.

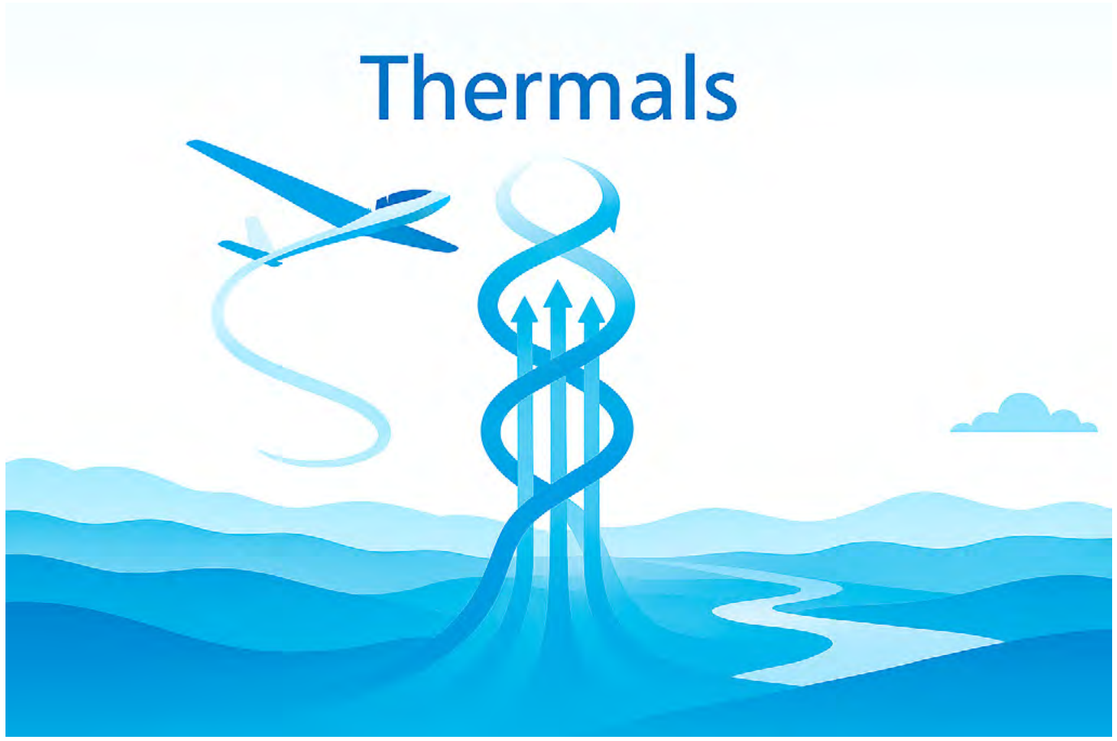
A Touring Motor Glider is a type of powered sailplane that can operate similarly to a touring aeroplane. Almost all sailplanes are equipped with FLARM and radio.

**Where do gliders fly?**
Usually, they are concentrated around their home airfields, and in any airspace that is both legally and practically accessible. The better the soaring weather, the further sailplanes fly. It's worth noting that training sailplanes tend to operate immediately UPWIND of their launch site. Where the wind is blowing against the terrain, sailplanes can soar along ridges below.

**How do gliders fly cross-country?**
Unless soaring along lee waves, they usually fly above the hillier parts of the UK; sailplanes fly from thermal to thermal ideally between 2,500' and below cloud base, stopping occasionally to circle and climb in thermals before cruising on. Flying in a straight line for an extended time-period is unusual. Most cross country flying takes place on suitable days between March and October, midday until around 6pm.



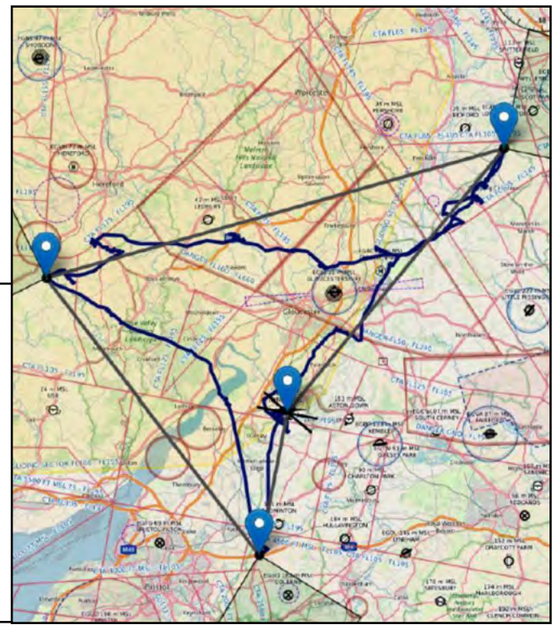





**What instruments are used?**
As a minimum, a typical sailplane will have ASI, altimeter, compass and variometer (which is a bit like a very sensitive VSI with audio output to support lookout). Almost all are equipped with FLARM (see previous slide) and radio. Increasing numbers are equipped with other forms of EC, e.g. SkyEcho, PilotAware, transponder, etc.

**Are glider pilots licensed?**
Glider pilots qualify for an Sailplane Pilot Licence following training and skill tests. Glider pilots are not required to hold a Flight Radiotelephony Operator's Licence (FRTOL). However, many glider pilots complete FRTOL training as this facilitates contact with non-gliding frequencies.

**Why do glider pilots limit their use of radio?**
Remaining airborne in a glider requires the pilot to fly in rising air, i.e. soaring. At 3,000' agl, a glider pilot is potentially less than 10 minutes from a field landing. Talking on the radio while soaring is as distracting as using a phone when driving. Soaring requires the pilot to be constantly looking out for and



**A typical cross-country flight.**
This glider flew a typical pre-planned and declared 200km A-B-C-A flight in March.

Deviations from track to find rising air (or to avoid sinking air/bad weather) are normal. The better the soaring weather, the less deviations are needed.
The spiralling bits of the trace are where the sailplane was climbing in thermals and drifting with the wind.

flying in thermals or lee waves, which are commonly marked by weather phenomena. For example, cumulus clouds or lines of cumulus mark the tops of thermals. Of course, thermals also occur on the 'blue' sky days i.e. without cumulus. Very accurate control is required to effectively utilise rising air. Concentrating on staying airborne in a tight and moving band of rising air, maintaining a good lookout AND talking to ATC can be challenging.

**How can I increase my awareness of gliding activity?**

- You can use your phone or tablet or PC – please refer to one of the many free applications that show FLARM equipped activity, e.g. www.glideandseek.com.
- Particularly helpful for towers, airfields, training organisations, or military, use available low-cost technology, e.g. www.pilotaware.com/atom.
- And / or incorporate FLARM into a Flight Information Display.
- Read AIC Y 023/2023'.

Aeronautical Information Circular Yellow 027/2023 describes gliding activity in the UK.

Images supplied by the British Gliding Association, Reproduced by kind permission.

**How can I contribute to safe shared airspace?**

- When sharing airspace with VFR traffic, please always maintain effective lookout.
- Be aware of when and where sailplanes are likely to be operating.
- Try not to descend through cumulus clouds, as sailplanes congregate in the thermals that are under the cloud. Instead, descend in gaps between clouds.
- Operate at heights that can reduce the chance of meeting a glider, e.g. above cumulus clouds. Please avoid cruising close to cumulus cloud base.
- If you are an ATC unit, airfield operator, or flying club/strut, please engage with nearby gliding clubs. You can contact the British Gliding Association for more information.

AIC for United Kingdom
NATS
Aeronautical Information Service

**GLIDING ACTIVITY IN THE UK**

British Gliding Association



# Heat Illness

Recognise the signs and symptoms, **lives depend on it!**

**Heat illness symptoms include:**

- Agitation
- Nausea or vomiting
- Loss of Balance
- Cramps
- Disturbed vision
- Confusion
- Collapse
- Dizziness

Act quickly and **cool** now, this is a medical emergency!

SC201
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ROYAL AIR FORCE
Safety Centre

# HIRTAs –

## What They Are, Where to Find Them, and Why They Matter

By Squadron Leader Peter Kennedy (56 Sqn)


High Intensity Radio Transmission Areas (HIRTAs) are locations where radio transmitters operate at power levels that may affect aircraft systems. They are not new, and they are not rare. They are simply part of the electromagnetic environment in which we operate. For aircrew, the relevance of HIRTAs is straightforward: every aircraft type has approved susceptibility limits. If those limits are exceeded, the aircraft is outside its cleared operating envelope. In principle, infringing a HIRTA is no different from exceeding a flap limit — it is an exceedance of the Release-To-Service (RTS).

### Where the Information Lives

The information required to assess HIRTA exposure already exists. It is just not co-located.

- Aircraft susceptibility limits are contained in Chapter B9 of an aircraft's RTS. These define the radius and height associated with susceptibility bands (Very Low, Low, Medium, High — and in some cases SEVERE).

- HIRTA locations, geometry and band classifications are published in the UK Military Low Flying Handbook (UKMLFHB).

Aircrew therefore need to bring together two separate sources of information: what the transmitter does, and what the aircraft can tolerate. A nuance worth highlighting is the handling of SEVERE susceptibility. In several RTS, SEVERE is not published as a separate set of radii and heights. Instead, crews are required to multiply the HIGH radius and height by a





specified factor. This requires manual calculation before determining whether a HIRTA region is penetrable.

### Outside the UK

All RTS I have reviewed contain a WARNING (implying potential injury, loss of life, or damage to the aircraft) which instructs crews to consult national Aeronautical Information Publications (AIP) for HIRTA information outside the UK. However, in practice, equivalent structured HIRTA information is difficult to locate in other national AIPs. The UKMLFHB remains the only consolidated, routinely accessible source most crews will encounter. If a limit cannot be found, it cannot be observed.

### Why This Came to My Attention

This subject came into sharper focus when an aircraft was planned to operate into an aerodrome and pre-flight planning indicated that a HIRTA adjacent to the aerodrome effectively "wiped out" the runway due to the aircraft's susceptibility limits. This prompted engagement with the aerodrome operator and regulator. It transpired that the power figures published in the UKMLFHB reflect maximum theoretical transmission capability, whereas the regulator (Ofcom) had imposed lower operational limits. Once this was clarified and the geometry recalculated, the aircraft was able to operate as planned. The short-term effect was uncomfortable.
The longer-term effect was positive: a previously invisible risk had surfaced and been resolved through analysis and dialogue.

### Over-rides and Aircraft-Specific Differences

It is also worth noting that several RTS contain aircraft-specific overrides to particular HIRTAs. These may upgrade or downgrade susceptibility at named sites. This reinforces the point that HIRTA consideration is aircraft-dependent and cannot be treated generically.

### The HIRTA Converter

HIRTA Converter is a small Electronic Flight Bag (EFB) application developed to bring together the two data sources described above. It combines the HIRTA locations from the UKMLFHB with the susceptibility limits from the relevant RTS and generates an aircraft-specific overlay that can be used for mission planning. It does not replace judgement. It does not introduce new data. It simply presents existing information in a usable form. The app can be downloaded from the Defence Digital Work Apps catalogue (for aircraft fleets using EFB on MM4D). An export function is also available to generate overlays for use in mission planning systems. If we cannot see a limit, we cannot observe it, but if we can see it clearly, we can manage it.

### Final Thoughts

HIRTAs are not new, and they are not inherently prohibitive. They are part of the operating environment. The key is awareness; the data exists, the limits exist; the challenge for aircrew is being able to bring them together in a practical way to identify genuine constraints early, challenge assumptions where appropriate, and operate within the bounds of the RTS with confidence. If your platform RTS allows you to use an EFB iaw RA 1340 then why not download the App from Defence Digital and equip yourself with an easy way to heighten your HIRTA awareness.

# Doc's Corner:
# **Presbyopia –**
# Age-Related Lens Hardening

**By Wing Commander Phil Lucas, Command Flight Medical Officer**


## “Doc, Why can’t I see as well as I could??”

First of all, relax. Youthful mis-spent excess cannot be connected to any subsequent loss of vision. However, I have some bad news for all eagle-eyed young aircrew. Your perfect eyesight is not going to last. At some point you are going to need glasses. It's not a question of 'if', it's a case of 'when'.

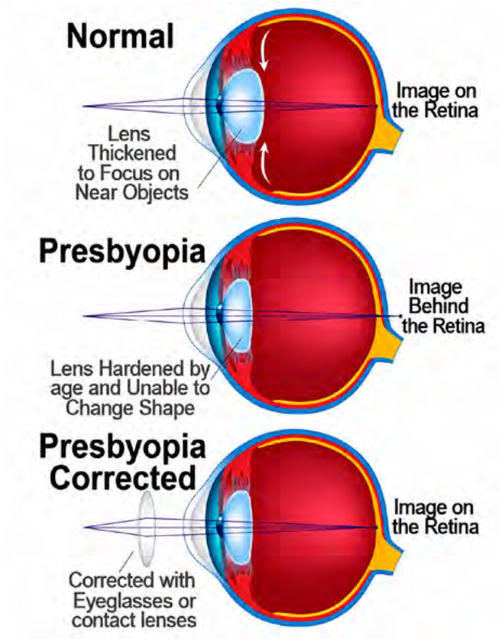
**So when does it become a problem?**

As a young 20-something, I was very proud of my excellent eyesight and have spent the first part of my life without needing any specs, apart from the need to look unnecessarily cool in an overpriced pair of whatever the fashionable shades were in vogue at the time (clearly Top Gun Ray-Bans for me!) Then it all went a little wrong. It was sometime in my early 40’s, and I remember the epiphany when I was (by now a doctor) asked to investigate the back of a throat for a stray fish bone. I realised when exploring the oral cavern presented to me that everything was blurred and I couldn't make out a thing. A little poking around and both patient and doctor eventually retreated satisfied. I noted that eardrums were also beginning to look a little hazy. Not very useful.

Clearly aircrew pride took precedent and I avoided the issue for several years until I realised that one was running out of arms-length in trying to focus on a screen. So I bit the bullet and went to the opticians, getting a prescription for some reading glasses. I continued to resist using them. They were good for adding gravitas for difficult clinical conversations, but pride still remained extant. Eventually, my blurred vision won and now in my 50's, I can barely do anything close-up without them. Reluctantly they are now an ever-present part of my day-to-day life. My story will be a familiar one to a lot of you who are now needing reading glasses.

**What's happening to your eyes?**

The term for losing your near vision as you age is called presbyopia and it is a normal part of the aging process (sadly). It comes from the Greek. 'Presby' meaning old man and 'opsis' meaning vision. So, as you age, you can legitimately be told you have old man's eyes. It is also known as long-armed sight. Ironically, aircrew tend towards being slightly long-sighted which means that you can find yourselves needing glasses before others. Inside the eye, what is happening is that your lens; a clear soft structure sitting behind the pupil, is controlled by muscles which tighten for near vision and relax for far vision. Hence when you look at objects close-up, you can feel your eyes working to bring your phone or text into focus. As you age, your previously soft lens begins to become more rigid and the weakening muscles can't change its shape anymore. Hence far vision is retained and near vision gets progressively harder.




**What does it mean for my day job?**

The good news is that your far vision is unaffected. So, your lookout is still good. Looking at your primary cockpit instruments is OK for most people, given they are at arm's length or further. What may get harder is looking at overhead panels. You will also note that it will get harder to see writing in low light. Furthermore, looking at charts, FRC's, kneeboards or your watch gets progressively more difficult, especially in low light and vibration. So, you need to be aware of your eyesight limitations and think about correcting the vision early.

**So what can I do?**

Of course, corrective lenses are the answer. First of all, go to your local optometrist/optician an get an eye test. This is refundable by the MOD but is also good practice. In addition to assessing your vision, they can pick up early signs of other diseases; it’s recommended that all aviators have an annual eye test, but this is essential if you already have corrective flying spectacles.

It is tempting to head online and just get some cheap reading glasses. They will have a standard correction, graded in a scale of +0.5, +1, +1.5 etc. However, they will treat both eyes equally and your eyes are often adjusting at a different rate. So, lenses made to your own prescription is better and less fatiguing on the eyes. Anything you purchase and use is fine for flight planning, auth and going through the out brief. However, once all that is done, put them away in your flying suit pocket and they don't come out until once you have returned to the Sqn. The reason is that these specs will not be aircraft-safe. The last thing you want to be doing is buying a month's supply of biscuits to the engineers because somewhere under the cockpit floor there is a stray spectacle arm and an almost-invisible grub screw!

Any eyewear you use on the aircraft should be cleared for Air use. These have been integrated with AEA and have lenses and frames which minimise distortions and fogging and compatibility with helmets/ear defence. When you are talking to your optometrist about the best lens for you to use in the aircraft, have some idea beforehand how far the instrument panels are from you. Think of all the panels. Consider charts and at what distance you read any in-flight information. If your distance vision is still within spec, some 'executive' reading glasses which sit below the centre of your vision can give clear vision of panels/kneeboard without getting in the way of your lookout. Alternatively, bifocal lenses incorporate a reading segment at the bottom of the lens for close work, with a distance correction above it. If planning to use bifocals, it is useful to take an existing pair of glasses/sunglasses and sit in the cockpit. Look straight ahead and then mark the line where the instrument glareshield sits within the lens with a pen - just a couple of spots at the edge of each lens is fine. The optometrist can use this a reference for what height of bifocal segment is required. Trifocal lenses may even be needed if you have close overhead panels above you in the cockpit. Some aircrew prefer varifocal lenses (graduated focus points at different parts of the lens), however, they take a little time to adapt to. So, if you are using varifocals for the first time, there is a 4-week period of adjustment using them outside of the cockpit followed by a self-assessment cockpit check conducted in-flight or in the simulator. (See AP1269A 5-14 Annex B Appendix 3). Varifocal lenses have now been approved for use in all aircraft types operated by the UK. Multifocal contact lenses are not permitted for use when flying.

Any corrective spectacles for presbyopia is a compromise. One size doesn’t fit all vision requirements. For example, varifocal or bifocal use with NVGs or Helmet Mounted Displays (HMDs) can be tricky as you need to ensure the image is positioned in the distant part of the lens to avoid it being blurred. Bifocals with a small reading segment at the bottom may be a good solution for use with NVGs to not compromise vision on downward gaze if you need to look at the panels below the goggles. Flying with vision correction and NVG is always challenging as it's low-light and often subject to vibration, especially reading screens or charts. If you have questions about vision correction, see your MAME first and then you will likely be advised to seek the advice of a friendly local optometrist who is familiar with dealing with aircrew. If you believe we are not supplying the correct eyewear, there is a panel of experts which meets regularly to discuss visual standards and eye-related issues. You can contact them through myself. At the moment, they are working on updating the Defence eyewear contracts.

As I said, vision changes come as a part of getting older. Everyone is different and there are a number of options to help you out, one size doesn’t necessarily fit all. Just a little bit of thought about what best works for your eyes can really optimise your vision which will pay dividends, especially when you are tired and in low light. If you are unsure, speak to your friendly MO.

# RAF Crash Fire & Rescue Vehicles

By Sergeant Martin Whatley, Deputy Station Fire Officer, RAF Brize Norton

This is the second in the series of RAF Fire vehicles you might see on your unit.


The MPRV

**Overview**

**The MPRV (Multi-Purpose Response Vehicle) is extensively utilised across defence, designed to prioritise rapid intervention and crew safety. It delivers the performance and reliability required for ensuring safe flying operations and effective domestic firefighting. This 4×4 model features off-road capability and is equipped with a high-output pump, enabling swift Aircraft Rescue and Firefighting (ARFF) responses alongside domestic firefighting tasks.**

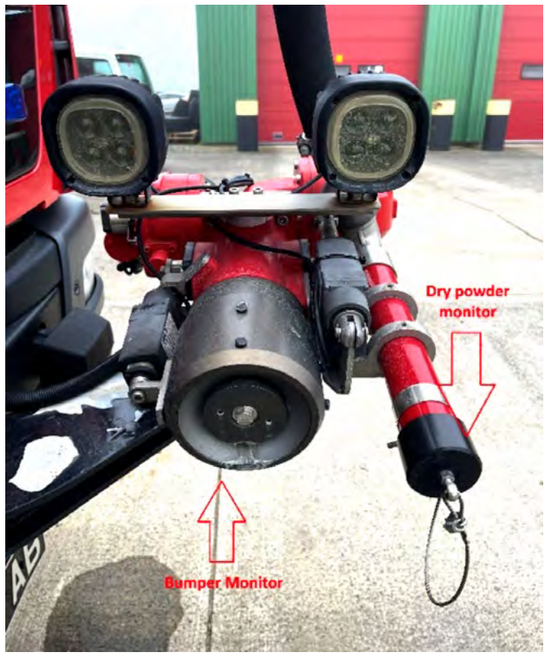
Depending on the variant, the vehicle can accommodate up to five firefighters, including the driver, though most configurations seat four. Combining speed, stability, and firefighting power, the MPRV meets the demands of modern aviation and domestic firefighting, excelling in both airfield and domestic emergency response scenarios.

| | |
|---|---|
| **Media Capacities** | |
| Water Tank: | 4,500 L capacity |
| Foam Tank: | 650 L capacity |
| Dry Powder: | 250kg dry powder chemical system |
| **Media Outlets** | |
| **FireDos Bumper Monitor** | 3,000L / 1,500L per min (Max 3,000L on 100% flow rate) 55metre throw range |
| **Dry Powder** | 7kg per second (Nitrogen propelled @12 bar pressure) |
| **2 Restricted Sidelines** | Max 7 Bar (Side of vehicle) |
| **2 Unrestricted Sidelines** | (rear of vehicle) |
| **High Pressure hose reel** | 150L per min @ 40 Bar (54-metre length) |
| **4 under vehicle body protection nozzles** | 300L per min |











| Tech Specs: | |
|---|---|
| **Firefighting Pump Capabilities:** | Ruberg EH30 Water Pump – 4,500L per min pump rating, 3,000L per min @ 10 bar (Low pressure) or 250L @ 40 bar (High pressure) |
| **Powerplant:** | MAN D0836 Euro 5, 6 -cylinder diesel engine mounted at the front |
| Gear Box | Allison 3000 automatic transmission and MAN G102 transfer box |
| Top speed | 100km/ph (minimum) |
| Height: | 3.3m |
| Width | 2.5m (without mirrors) |
| Width | 2.9m (including mirrors) |
| GVW | 18 tonne |

The RAF Fire and Rescue Service plays a central role in maintaining air safety across the Royal Air Force.
RAF Firefighters are there to provide 24/7 fire and crash rescue protection. A deployable Aerodrome & Rescue Firefighting capability to Defence in the UK and overseas. Trained to respond within seconds to aircraft incidents, ensuring aircrew survival and preventing minor events from becoming major accidents with highly specialised ARFF vehicles and equipment.

The work spans far more than crash response. Crews maybe called upon to handle structural fires, technical rescues, hazardous materials, emergency support for engineering and flying operations. Whether it's managing a fuel spill, securing munitions after an incident, or providing standby cover for flying activity forming a vital link in the air safety chain.

Prevention remains at the heart of the mission.
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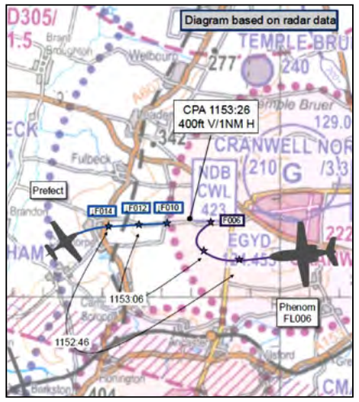
The RAF Fire and Rescue Service is essential safeguard for the people, aircraft, and missions that define the modern Royal Air Force.

# Airprox Highlights

**With Comments from Wing Commander Spry**




**Prefect v Phenom**
**12 Aug 25**
**Airprox No. 2025179**

**The Prefect Pilot** reported that they were the QFI and non-handling pilot on an instrument flying test. While the weather was good, the visibility was restricted by haze, but still VMC.
They were positioned for a PAR recovery to RW08 at Cranwell, with the intention of carrying out a missed approach procedure. While working Cranwell Approach, they were aware of the Phenom formation recovering to join through initials for a visual run-and-break. The Prefect changed to Cranwell Talkdown and commenced the PAR. They saw the Phenom formation execute the break, but lost sight of them as they turned downwind (the Prefect was at about 4.5NM on the PAR - on the centreline and on the glidepath). Their assumption was that the Phenom formation would extend downwind and turn final behind them [the Prefect]. At 3NM the PAR controller suddenly called "Prefect XX break off, go around, carry out the missed approach procedure"; the tone of their voice conveyed a sense of urgency so the QFI took control to execute a go around. As they did so, they saw a Phenom in front of them, slightly below in a right-hand turn and belly-up to them. In their peripheral vision they saw a second Phenom turning behind them. They lost sight of the first Phenom and reported the Airprox to the PAR controller.
The missed approach was flown without further incident and the sortie continued. They noted that, were it not for the timely intervention by the PAR controller, they may not have seen the Phenom at all, as it would have been in the blind-spot under the Prefect nose.

**The Phenom Pilot** reported that they were the captain and handling pilot of Phenom formation [C/S 2], leading back one other Phenom [C/S 1], on a visual recovery to Cranwell RW08. During the recovery they discussed the position of another aircraft in the instrument pattern, which they had picked up on the R/T, but were not aware of their exact position and there were several contacts on TCAS in the vicinity of the Cranwell radar pattern.

The recovery was flown through initial at 700ft 240kt, and they did not recall any calls being made of traffic on radar in response to their 'Initial' radio call. They were made aware of an aircraft joining overhead, which they could see they would be well ahead of and below, to break safely into the circuit. They broke downwind abeam the upwind threshold, and a call was made by the PM 'on the break, low, land, landing order 2, 1'. They did not recall any calls from ATC to advise of radar traffic ahead. They turned final in the normal place and, as they were about to call final, ATC called 'confirm visual with radar traffic'. The PM called ' 2 final' and they were cleared to land. Despite not being visual this time with the Prefect, they continued as they had been cleared to land. They (the QFI) attempted to gain visual contact as they turned, but were unable to do so, however, they had SA on the traffic from TCAS and their ADS-B iPad and could see that they were going to be ahead and below the Prefect, so they continued. They briefly mentioned that should a go-around be required, they would maintain runway centreline until they could assure separation from the Prefect which was now above and behind them. There were several calls at this time between [C/S] 1 and ATC as [C/S] 1 had elected to go around behind the Prefect, but they concentrated on their own final turn at this point, so they were unable to recall the exact details of the calls.

The event was discussed at in-brief and during formation debrief, and none of the crews (6 in total – 3 on each aircraft) could recall any calls to say there was radar traffic ahead. They called the ATC Supervisor to check if they had missed something and were made aware that the Prefect crew had filed an Airprox. They chatted the details through with the Prefect captain and advised that they would submit their own accounts to the Air Safety Team.





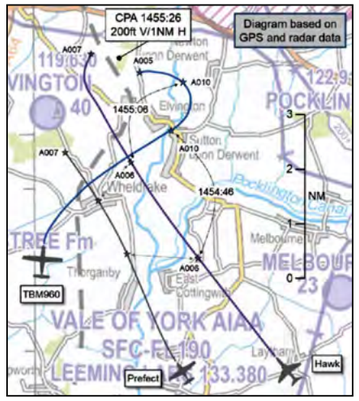
**The Cranwell PAR Approach Controller** reported that they were in the PAR position for their 3rd talkdown of the day, the handover from TATCC had been standard, as had the talk down, although the student had indicated that they were 'readability 3' which they addressed. Prior to taking the aircraft on, they had noticed the Phenom pair recovering for their standard VRIAB (Visual run in and break). The 7-mile call had been carried out iaw SOP, as had the gear check. When they went through for the clearance (at 3NM) they were told to break off the approach with aircraft ahead. They gave the instruction to break off the approach to which the Prefect Instructor replied 'I think I've had an Airprox with a Phenom', the controller immediately replied 'execute missed approach procedure' to ensure the best departure from the finals traffic as they only had one turning ahead visible on radar. The pilot then repeated that they had had an Airprox with a Phenom, before changing to Approach iaw SOP for [the] missed approach procedure.

**The Cranwell Aerodrome Controller** reported that Cranwell was operating on RW08RH and in BLU met conditions. They had been on position for almost 60min, following-on from a period on Talkdown, in what had been medium intensity with a busy departure wave post lunch, including several aircraft from all 3 station-based assets and 4 x AEF. Coningsby 'sterile' had become active during this session, with aircraft given the necessary restrictions accordingly. At the time of the incident, they had a formation of 2 x Phenoms on recovery, as well as 1 x AEF returning via the overhead and radar traffic at 7NM to low approach for further.
With the formation of Phenoms calling downwind to land, in the order 2 then 1, [the controller's] intentions were to give them priority and to continue the radar traffic visually if needed. This is why the Phenoms were not given [the call] 1 ahead on radar. The lead aircraft seemed to extend further downwind than anticipated and, knowing that they had heard the 7NM radar call from the controller, they thought there was the potential that the lead aircraft had decided to go around. When the first Phenom called finals gear down, having turned inside the radar traffic, they issued the clearance to land. Immediately, having continued with the plan of giving the Phenoms priority, they felt that the safest thing to do was then issue a break-off to the radar traffic. This was issued to the PAR controller and broadcast to the circuit traffic.
The 2nd Phenom pilot reported not being visual with the broken-off radar traffic and elected to go around.
The Tutor in the circuit landed with the 1st Phenom on the runway and the 2nd Phenom landed when the runway was clear.


For the full report see Airprox No. 2025179 on the Airprox Board website.

## Spry's Comment:

RAF Cranwell Safety Cell conducted a very thorough investigation into this incident and has made a number of recommendations to change procedures which should reduce the risk of reoccurrence. They found that the formation of Phenoms joined the visual circuit at RAF Cranwell without full situational awareness of the traffic situation around them. Traffic Information provided by ATC regarding the position of the Prefect was not assimilated by the crew of the leading Phenom, and the Phenom pilot started their final turn without realising that they were turning to converge with the Prefect. The Prefect captain was monitoring the student's performance at conducting an instrument approach and would've expected priority over the visual circuit traffic; he got a bit of a shock when the Phenom pushed in front of him! ATC could've instructed the Phenom to "Go around at circuit height" but the PAR controller's instruction to the Prefect to "Break Off the Approach" was timely and probably increased the miss-distance between the Phenom and the Prefect. The lesson is clear: At airfields with mixed aircraft types (most of our training airfields), it's crucial that every attempt to enhance SA is used in order to integrate effectively, and if you are not sure of what's going on the circuit, then don't join the circuit!. ☐




## TBM960 v Hawk
## 8 Oct 25
## Airprox No. 2025219

**The TBM960 Pilot** reported that they had 'PPR'd' with Elvington to inform them that they would be arriving at 1500. They switched to the frequency published for Elvington on the CAA VFR chart of 119.63MHz and made a first blind-call at about 10NM out, informing Elvington Traffic that they would be positioning for a left-base for RW26, with no response. They could see some traffic on TCAS, north-west of the runway. There are a few airfields there, so they assumed it might have been a local school doing practice forced landings, but there was no-one on frequency. They made a blind-call when downwind, again with no response.

An aircraft, first sighted at 1NM in their 10 o'clock position, was to the south of the airfield (below them and heading north) as they turned base. They were now keeping a very good lookout outside. As they rolled onto final, a Hawk went across the final approach at a similar height. The pilot of the TBM960 was doing a flapless approach, as it was such a good place to practice, and had given themselves a long final. They had been aware of traffic nearby, so they were not concerned and took no avoiding action. However, they were surprised that there was no-one on the published frequency and that the location of the low pass was perpendicular to their final approach.

On subsequently examining the aircraft logs, they found that the traffic that they had seen on TCAS was not actually the Hawk but was instead a Grob trainer (the Prefect). The Hawk had gone between themselves and the Grob, parallel with the Grob, at a similar height. That was why they assessed that the risk of collision was low rather than none as they had initially thought.

**The Hawk Pilot** reported that, on a Continuation Training sortie, whilst at low level and approaching Elvington airfield, they became visual with a Prefect co-altitude with them on their left and a large civilian single-engine aircraft slightly above on their right that was carrying out an approach to Elvington (first sighted at a range of 4-5NM). They assessed that the separation distance between themselves and the two other aircraft was more than sufficient so they did not manoeuvre until they were clear of both. At no point did they assess that there was a risk of collision between any element.

**The Prefect Pilot** (as a witness) reported that they were the non-handling QFI conducting a low-level training exercise at 500ft AGL. With a road junction near York as the next turning point, the trainee was conducting pre-turn checks when they heard a Hawk transmitting on the Low-Level Common VHF frequency that they were in a similar position. That served as a good opportunity to practice 'picture building' communications, and the trainee relayed their own position and status on Low Level Common. TAS showed a concurrent contact approaching from their 5 o'clock and the trainee was able to establish visual contact from the right-hand seat confirming a single red Hawk overtaking on their right-hand side. Aware of Elvington airfield on the nose, but with no visual or electronic contacts other than the Hawk, they were content to allow the trainee to maintain heading, and they passed over the centre of Elvington at 500ft with the Hawk passing an estimated 0.5NM mile to their right. That seemed the best form of deconfliction with a sighted aircraft and the limited number of air movements known to operate from Elvington which is a minor aerodrome with no ATZ. They were unaware of the GA aircraft which, from the report, would have been positioning on final approach to the east of the Hawk, and probably masked from either visual or electronic contact. With the city of York on their left and the Hawk on their right, had they been aware of the GA traffic then exiting low-level would have been their other option. They believe their lookout, and monitoring of Low Level Common frequency, plus TAS/[EC device] would have been sufficient barriers had they come any closer to the GA traffic.

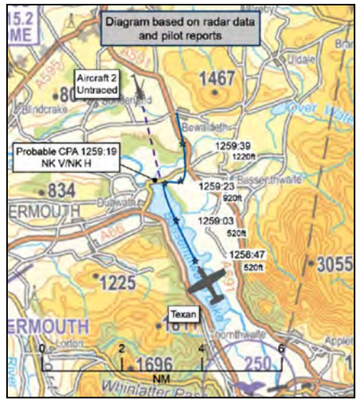
For the full report see Airprox No. 2025219 on the Airprox Board website.

### Spry's Comment:

"Ultimately, a good lookout by the Hawk pilot meant that he was never going to collide with the TBM960. But MAA RA 2307 requires military pilots to: "avoid an aerodrome unless they can confirm whether other aircraft are operating and can conform with the traffic pattern." Given that the pilot of the Hawk admits that they saw that the TBM960 pilot was "carrying out an approach to Elvington", then the Hawk pilot should've either avoided Elvington or followed the traffic pattern. Instead, they chose to continue on their flightpath as they deemed that there was no risk of collision, but this is not in compliance with MAA RA 2307. The lesson here is that we must abide by the Rules of the Air in order to reduce the risk of collision, and it is also probably prudent to plan to give ALL civilian aerodromes a wide berth when operating at Low-Level!" ■







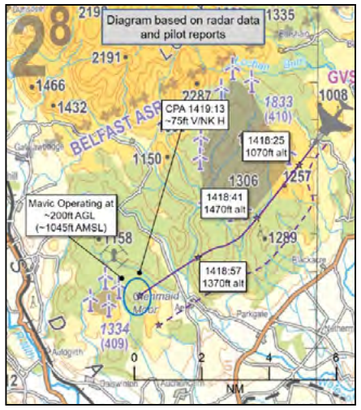

## Texan v Unknown Helicopter
## 26 Sep 2025
## Airprox No. 2025212

**The Texan Pilot** reported that, while flying in Low Flying Area (LFA) 17 north of Bassenthwaite, west of Carlisle, initiating a climb-out of low-level to cross the estuary heading north to LFA 20, they had encountered a co-altitude helicopter within 500ft [approaching] head-on, slightly to their left. The front cockpit pilot initiated a break to the right for visual traffic, at which point the rear cockpit pilot was visual with the helicopter. Neither pilot had seen the traffic prior to the break. There was no TCAS contact or alert, and no Low-Level Common frequency calls prior to seeing the traffic. After the break, the rear cockpit pilot put out a call on the Low-Level Common frequency and there had been no response.

For the full report see Airprox No. 2025212 on the Airprox Board website.

### Spry's Comment:

In this Airprox the Texan was pulling out of low-level at the end of Bassenthwaite Lake having followed the flow arrow north. Information regarding flow arrows is not available to the general public and the helicopter pilot was unlikely to be aware of its presence. The Texan crew did transmit their routing on LL-Common, but despite its use being promoted among the GA community it seems unlikely that the helicopter pilot was monitoring the frequency. The Texan crew received no warning from their TCAS which left 'See and Avoid' as the final barrier to a Mid-Air Collision. Fortunately, the crew were maintaining a robust lookout and became visual with the helicopter in sufficient time to manoeuvre to avoid it. Individual barriers are seldom fool proof, so it is important that we use a series of them to prevent accidents, even if it is the last one that saves us. ■




**Mavic 3M v Hawk**
**12 Nov 25**
**Airprox No. 2025237**

**The Mavic Pilot** reported that they had been performing an orthomosaic survey of the clear fell ground for work purposes. They were flying an automated flight set at 60m (196ft) to capture the area. Their observer was close to them and watching the sky and drone with them as well whilst performing the survey. They had good visibility of the sky and a good view of the area. They had made a risk assessment and checked NOTAMs in the morning prior to going out, and again prior to actually setting the drone in the sky with nothing shown as being in the area. While flying, and as the drone was on approach to the operating pilot, they suddenly heard a jet engine behind them and to their left (bearing NE/E). There was slightly raised ground obscuring their vision approximately 400-500m away and the jet appeared over it and was heading towards the drone work area. The jet was very low and travelling extremely fast. The drone pilot reported that they had limited seconds to react (around 3-4) and chose to leave the drone at its set height as they felt they were safe at 60m. The Mavic pilot estimated the jet to be at 100-120m, maybe slightly higher, but it was very hard to tell and perception may have made it appear closer than it was. They feel it was within the drone legal limits of 120m, however. The jet went above the drone and slightly further behind it, but it was quite difficult to tell as it was all over in a matter of seconds. The drone continued on the automated flight whilst the pilot was still in a bit of shock at the incident, and they had brought it back down after its next pass in case of another aircraft as well as low battery showing on the display. The Mavic pilot aborted the flight once landed and checked flight radar to see if they could identify the plane. They also checked NOTAMs again to see if anything was made visible that they hadn't been aware of. They did get the identity of the aircraft but nothing was visible on NOTAMs about any low flying in the area. The Mavic pilot went home and reported the incident to their line manager and proceeded to make an ECCAIRS report.

**The Hawk Operator's Safety Manager** reported that this DASOR narrative was being submitted on behalf of the handling pilot by the Air Safety Manager of 4FTS, for UK Airprox Board investigative purposes, after a drone operator reported an Airprox with a Hawk at low-level. The incident was reported in the vicinity of position 55°11'07N 003°38'16W (Dumfries and Galloway). The Hawk, operating at approximately 310ft AGL, 428kt, heading 233°M at the time of the report, was squawking 7001 Mode A, C, S and utilising TCAS. Weather was 10km+ visibility and cloudbase BKN 020 AGL. During the flight planning process, CADS was utilised and displayed no conflictions in that area. No drone was sighted at the time, nor was one evident when the [flight planning aid] replay tape from the Hawk was reviewed post flight.


For the full report see Airprox No. 2025237 on the Airprox Board website.

## Spry's Comment:

This incident is indicative of the growing number of Airprox between drones and crewed systems where both parties have been operating iaw the regulations but have come into conflict without any forewarning. It also highlights the limitations of 'See and Avoid' as the Hawk formation were unaware of the Mavic throughout the encounter and the Mavic operator had little time to react due to the height and speed of the Hawk. It is therefore vital that we use all available sources of information regarding drone activity and engage with the drone operating community to minimise the likelihood of a Mid-Air Collision with a drone.



# Safety Contacts:

| Group / Station / Unit | Flight Safety Contact | Health and Safety and Environmental Protection Advisors |
|---|---|---|
| 1 Gp | Air-1Gp-Star | |
| 2 Gp | Air-2Gp-Air Safety | |
| 11 Gp | Air-11Gp-Safety | |
| 22 Gp | 22Gp-DFT | |
| Air Support | Air-Support | |
| BM | Air-11Gp-BM | |
| JAC | JAC-Safety | |
| Test and Evaluation (ASWC) | ASWC-TEAirWg Air Safety | |
| 2 FTS | SYE-2FTS-DASOR | SYE-2FTS-HQ-SHSA |
| 3 FTS | 3FTS-HQ-ASM | 3FTS-HQ-Platform Safety |
| 4 FTS | 4FTS-Air Safety | |
| 6 FTS | 6FTS-HQ-AST | |
| Air Cadets (RAFAC) | RAFAC-HQ-SafetyCtr | |
| Air Mobility HQ | Air-1Gp AM | |
| Boulmer Station | BOU-STN-SHSO | |
| Air C2 Force | BOU-Reserves-Group-BRG12 | AirC2Force-AirSafety-Manager |
| Benson | Ben-Safety | |
| MOD Boscombe Down | ASWC-BSD | |
| Brize Norton | BZN-Air Safety | |
| Combat Air Force HQ | CAFHQ | |
| Coningsby | CON-OSW-SSC | |
| Cosford | COS-Stn Flt Safety | |
| Cranwell | CRN-TotalSafety | |
| Defence Geographic Centre | UKStratCom-DI-NCGI-DGC | |
| Fylingdales | FYL-Spt | |
| Halton | HAL-Ops-Airfield-Ops | HAL-SSHEA |
| Henlow | HLW-SHE | HLW-SHE Advisor |
| High Wycombe | HWY-Flight Safety | HWY-SSHEA |
| Honington | HON-Stn SHEA | |
| ISTAR Air Wing | Air-1Gp-ISTAR | |
| Leeming | LEE-ASMT-SFSO | |
| Leuchars | LOS-OSW-LEU SFSO | |
| Lossiemouth | LOS-SafetyCentre OC | LOS-P8ASafetyTeam |
| Marham | MRM-SAFETYANDASSURANCE | |
| No 1 AIDU | UKStratCom-DI-NCGI-AIDU-OpsCntr | |
| Northolt | NOR-Safety | |
| Odiham | ODI- AST | |
| Swanwick | SWK-78Sqn-Dep FSO | |
| Shawbury | SHY-ASMT-ASM | SHY-SHSA |
| Spadeadam | SPD-AirBase | SPD-AirBase-SHSO and EPO |
| St Mawgan | SMG-ENG- | SMG-SHEF |
| Syerston | SYE-2FTS-DASOR | |
| Tactical Supply Wing | TSW-Functional-Safety | |
| UK AWR | Air-2Gp-SUAM | |
| UK JFAC | Air-11Gp-JFAC | |
| Valley | VAL-OpsWg SFSO | |
| Waddington | WAD-SafetyCentre | |
| Wittering | WIT-GMB SHEA Dept (MULTIUSER) | |
| Woodvale | WDV-Aerodrome Manager | |
| Wyton | UKStratCom-DI-NCGI-Wyt-SHEA | |
| **Overseas Flight Safety Contacts** | | |
| Al Udeid | 83EAG-A3 Flight Safety | |
| Ascension | BFSAI-ASC Ops | |
| Akrotiri | BFC-AKI-Safety | |
| 83 EAG | 83EAG-FS | |
| Gibraltar | GIB-RAF-ASM | |
| MPA | BFSAI-AirOps | |
| Defence Safety Authority (DSA) | DSA -MAA | |

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