



Edition 78 - February 2024

# Fly By

## One More Bounce

A Moment of Terror During a Sea Venom Landing

## The Liquidators

Four Men Who Lost Their Lives at Chernobyl

## Fly Like a Bird

Your Chance to Go Supersonic...At a Price!



# Editorial

By M.C. Peake - Editor, 'FlyBy' Magazine



As we ease into the second month of the year, those at the helm of the FAAAA face a recurrent annual problem - people forgetting to renew their membership. Last year we collectively spent hours sending out multiple emails, payment slips and letters and, finally, even resorted making dozens of personal phone calls to ask folk to pay.

This year most Divisions will be cancelling overdue memberships earlier than in the past, so, if you haven't paid yet and want to keep receiving this magazine (not to mention "Slipstream" and other member benefits) please help by paying your dues now. All of the details are on the back page of this edition or you can contact the Editor [here](#) if you are not sure if you are current and/or how to pay.

Enough on the domestics! As we slip into the second month of 2024, global tensions seem to be going from bad to worse. Russia, North Korea and China all seem hell bent on causing chaos, whilst the situation in the Red Sea and the Middle East is dire. And we won't even talk about what's going on in American politics and what that could mean for the future.

It seems that, almost in an instant, our defence strategy has been turned on its head. Our long-term procurement philosophy was founded on a belief that we would have ten years of warning before a major conflict, which is clearly a false premise. Whoever dreamed that one up?

Such complacency has Australia scrambling to arm itself with what could be called too little too late. Most recent purchases fall under the title of guided

weaponry, including Tomahawks for our Hobart air defence destroyers and future Virginia class submarines; HIMARS, which feature widely in the war in Ukraine, and JASS-EM/LRASM airborne land attack and anti-ship missiles. And the list goes on.

Defence is like a kid in a cookie shop, but its difficult to extract a coherent, integrated strategy out of this buying frenzy. Missiles are fine, but they must be underpinned by solid logistic, platform, personnel and training capabilities to ensure they are effective. I'm not sure those dots have been joined just yet.

And I'm not sure if Defence, which is probably the least nimble agency in Government, is up to the task. We have a leadership cohort which is 'old school', fettered by a command chain that creates a perfect bottleneck, and we're reliant on a procurement agency that has a patchy record by any measure. What is there to worry about?

Reacting to rapidly escalating global tensions is sensible, but it's time for a cupboard full of new brooms to allow change to be implemented quickly.

Sure, a nimble and empowered Defence structure would probably be imperfect - but would it be worse than the current, ponderous system so well accustomed to procrastination and risk adversity?

I doubt it.

mp

## THIS MONTH'S COVER PHOTO



A UH1-B Iroquois of HC723 Squadron at rest during a land-away somewhere to the west. We don't know the exact location - any ideas?

## REST IN PEACE

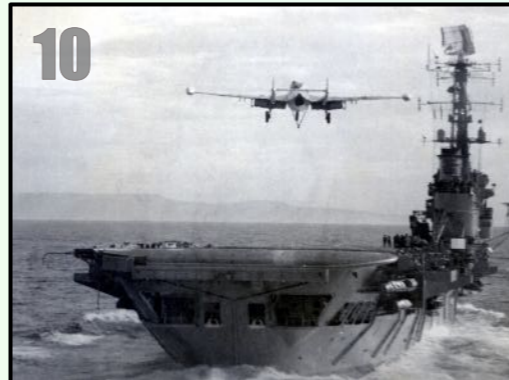
Since the last edition of FlyBy we have been advised that the following people have Crossed the Bar:



None reported this month.

You can find further details by clicking on the image of the candle. →

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You can still go supersonic in the UK - for a price.

*FLYBY is a periodical of the Fleet Air Arm Association. The views expressed within it are not necessarily endorsed by the Association or any of its agents.*

**Dear Editor,**

I refer to your snippet in the last edition on on 'over weight' brass. This isn't new as you probably remember from the 80s/90s.. I'd be interested to know how we compare to the army/ Air Force.

The culture of upping responsibility reminds me of when I took over as CO816 in 1980.

In 1979 there were several flight deck stuff-ups which resulted in the responsibility of moving Squadron Duty Officer, who didn't have a clue about the responsibilities. Morale was non existent.

I immediately reverted to the SOPs. I laid down the law and got a please explain from CO NAS and CAG. After much discussion he stated " on your head be it"

Wonder of wonders, every one was happy and we had no more prangs.

Moral of the story ' Let those who know do.' Those who don't, promote!!

Cheers, **Ball.** →

**Dear Editor,**

Your comments in last month's Editorial re the ADF suppressing the report on the MRH-90 Taipan, most definitely are deserving of your comments.

As you know from your own experience, in the realm of aviation, safety stands as an unshakable cornerstone. The industry's commitment to ensuring the utmost safety for passengers, crew, and aircraft is underpinned by a culture that values transparency, open communication and a no-culpability policy in reporting incidents and accidents. This approach, was first instigated by the CAA many years ago and isn't just a procedural guideline; it's a fundamental necessity that fosters trust, learning, and continuous improvement within the aviation sector.

At the heart of the matter lies the understanding that most incidents are not the result of a single mistake or individual error but rather a culmination of various factors. Blame-focused cultures stifle the flow of crucial information, impeding the industry's ability to comprehend the systemic issues that lead to mishaps.

An open reporting culture encourages pilots, maintenance crews, air traffic controllers, and all stakeholders to share their experiences without fear of repercussions. This collective sharing of information forms the bedrock of safety management systems (SMS), enabling organisations to proactively identify potential risks and take pre-emptive actions before they escalate into incidents or accidents.

Moreover, non-culpability reporting serves as a catalyst for continuous learning. Each reported incident or near-miss presents a valuable opportunity to analyse, learn, and enhance safety protocols. It allows the industry to develop proactive strategies, modify procedures, and refine training methods to mitigate potential risks effectively.

Whilst I understand that there are significant differences that exist between the Military and Civil aviation, a commitment to transparency extends beyond internal operations; it also encompasses the dissemination of information to regulatory bodies, industry peers, and the public. This open approach facilitates collaboration and knowledge-sharing, leading to collective advancements in aviation safety standards worldwide.

**Anson E (Ted) Goater.** →

**Dear Editor**

Re the latest FlyBy, missing is **Peter C. Ward** in the Instructors article. He began at RAF Ternhill, England, on 17 April 1967. Graduating QHI on 24 June 1967.

Your Editorial on the reporting of accidents was interesting. I've always wondered if it's our Westminster system that brings the attitude about. There has been much discussion in British military circles about airworthiness, or rather the lack of it: the 1994 Mull of Kintyre Chinook crash, and the Nimrod that suffered an in-flight fire and subsequently crashed in Kandahar, Afghanistan, killing all fourteen crew members on board are examples.

The more recent was Flight Lieutenant Sean Cunningham (1976 – 8 November 2011) a Royal Air Force pilot on the Red Arrows aerobatics display team, who died when his ejection seat

initiated whilst the aircraft he was in was stationary on the ground and he was conducting pre-flight checks. The incident occurred at the Red Arrows' home base, RAF Scampton in Lincolnshire, England. The initiation of the ejection seat was assumed to be by accident. The parachute on the seat did not deploy and Cunningham fell, still strapped to the seat, 220 feet (67 m) to his death 217 feet (66 m) away from the motionless aircraft. In January 2018, in the prosecution brought by the Health and Safety Executive, Martin-Baker, the manufacturers of the seat, pleaded guilty to a breach of health and safety law regarding Cunningham's death. On 23 February 2018, Martin-Baker were fined £1.1 million.

Although Martin Baker ended up carrying the can the rightful place is said to be the RAF, in all three cases senior officers were said to have lied under oath when giving evidence. [This link](#) makes for a read,

Many years ago I was searching for the report on a Vulcan accident, reply was it's still secret and wouldn't be released until some now forgotten date this century. Found a BOAC accident that had a secret status as well if memory serves.

Wishing you a Happy & Prosperous New Year and hope you both had a great Xmas.

**Brian Abraham.**

*Thanks Brian. I think Trevor Rieck, the author of the QHI article, has the omission in hand. Peter Ward was, of course, killed just a year after graduating from Instructors' course in a tragic Iroquois accident on Beecroft. POACMN Doug Sanderson and SAR diver NAM Ross Smith also lost their lives. You can read about it [here](#).* →

**Dear Editor,**

Last July you included in the Flyby newsletter for that month an article on artificial intelligence and posed several questions about its potential use in aviation.

I can only hope that if it is used it is better than part of a letter I recently received from my bank following a disputed transaction. I had been renewing the annual data charge for the SIM card in my iPad. During the update, the page crashed with no indication that it had been successful. I repeated the process with no problem, but a week or so later found my account had been debited twice for the \$160 charge. I disputed the transaction duplication.

The letter I have received from the bank says:

*"You have received a credit from the merchant of \$160.00 on 251223. Unfortunately, the outcome of this dispute for the remaining amount of \$0.00 has*

*been unsuccessful. We will send you further details regarding the investigation separately."*

I can only roll my eyes!

Yours, **Owen Nicholls**

**Dear Editor,**

The airship story in the latest FlyBy reminded me of the Swan Larger airship which was around (Melbourne and Sydney possibly other capitals) in the 1980s powered by a couple of Porsche engines which made it quite nimble. Not sure what happened to it but á ride was a popular birthday 'surprise'.

Cheers, **Kim Dunstan.** →

**Dear Editor,**

Interesting articles as usual. I received a surprise on seeing a photo that I took – the Hiller 12E on the bottom of page 42 – in the article that Trevor wrote on RAN QHIs.

The story behind the photo is this. On the 2<sup>nd</sup> August 1974 I was tasked with taking the Hiller from Culdrose to Portland to be our contribution to their Air Day (3<sup>rd</sup> and 4<sup>th</sup> August). This was duly carried out and on the 5<sup>th</sup> it was time to plod (the Hiller never sped) my way back to Culdrose – with a refuelling stop at Roborough).

About 40 minutes out of Roborough the most frightening vibration started. Numerous Australian slang and unprintable words were said. RAF St. Mawgan was about 30 miles directly ahead, so a Pan call and diversion were carried out. You can just about make out my "Mae West" on the right seat.

A check after landing showed a vibration damper spring had failed and the counterweight missing, fortunately doing no further damage. This damper was just a weight on a piece of spring steel which



vibrated back and forth over about 2 inches in an opposite harmonic to the rotor system.

After an underwear change, a phone call to the squadron was made. The maintenance contract was via Airwork Pty Ltd., so after some discussion I was advised to check if the only part missing was a vibration damper. If it was then they assessed the Hiller was safe (if uncomfortable) to fly back to Culdrose – about 20 miles South.

This was done with no further problems, except one badly vibrated QHI !

I have no idea how the photo escaped to the internet.

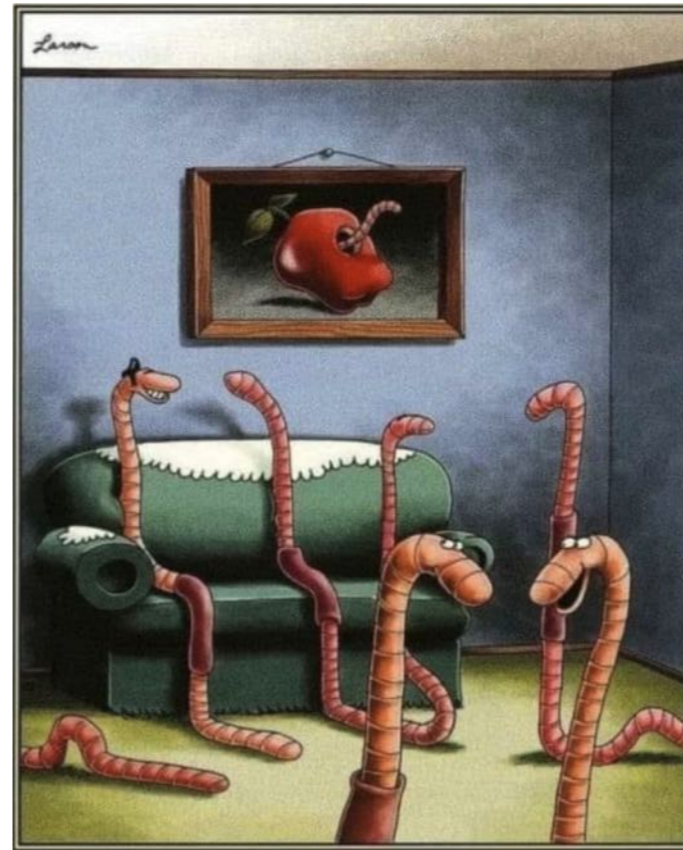
Cheers, **John (Bomber) Brown**. 705 NAS 1974-75. ➔

**Stan Jaruga**, an Australian Army veteran who flew with the RAN Helicopter Flight Vietnam as a door gunner, has passed away following a fall. He was 78.

Brought up in Barwon Heads and Chilwell, Stan was the son of Polish migrants John and Lena. He was drafted into the Army and shipped out to Vietnam aboard HMAS Sydney in May of 1968 to serve with 2 RAR. When the Regiment asked for volunteers to serve as door gunners he and eight others jumped at the chance. He was finally awarded 'Gunners' Wings' some 48 years later to recognise the extraordinary contribution he and his mates made, and was able to have his name included on the FAA Wall of Service. You can read about the 2 RAR Door Gunners [here](#), and a little more of Stan's personal story [here](#). Photo: Stan being awarded his Wings and Certificate by **CMDR Max Speedy**. Inset: Stan sitting in a Huey of the 135<sup>th</sup> EMUs. ➔



**2RAR EMU Veteran Crosses the Bar**



"You gotta check this out, Stuart. Vinnie's over on the couch, putting the move on Zelda Schwartz - but he's talkin' to the wrong end."

**Changes to 'Slipstream' and 'FlyBy' storage.**

When new editions of 'Slipstream' and 'FlyBy' magazines are first released, they are kept behind the firewall on our website. This ensures that only financial members (who have access to that area of the website) can access them.

In the past, however, we have been fairly quick to then move them to the open library on the website, which meant that anyone, anywhere in the world, could have free access to them.

This policy will now change. The most recent four editions of Slipstream and FlyBy will now only be available through the "Members Only" menu on our website. Editions older than this will be moved to the open library.

This will not affect members, other than they will need to log into the website to read copies held behind the firewall. ➔

**THIS MONTH'S MYSTERY PHOTO**



This unusual looking aircraft promised much but delivered little. What was it, who made it, and what was the story behind it? Send your answer [here](#). ➔

Have you paid your annual membership subscription yet? If not, you're more than a month overdue.

This year we'll be terminating access to "FlyBy" for non-financial members earlier than in the past, so please - if you want to keep receiving it, go to the back page of this edition to find out how to renew.

LAST MONTH'S  
**MYSTERY PHOTO**



The original S.1. design was then modified to become a target tug, designated TT2. This involved fitting a long nose to the aircraft that extended beyond the engines, containing a manned camera and winch station. The crew was reconfigured to a single pilot and a multi-purpose observer who navigated and operated the wireless, target winch and camera.

The modified aircraft entered service in 1951 mostly operating out of Hal Far with 728 Squadron. They didn't shine, but did the job.

In 1953, with the abandonment of throw-off target practice, the requirement for the camera nose disappeared and five TT2 were converted to TT3s with a nose profile similar to that of the original S1 models.

Last month's Mystery Photo was the **Short Sturgeon**. We're not 100% sure what happened to the particular aircraft in the picture above, but **Richard Kenderdine** did a bit of research and reports that it could have been TS475, built as an S.1 model, which landed with the undercarriage not locked down on 14 March 1955 at Hal Far, Malta.

The Sturgeon was one of those aircraft whose timing as all wrong. It was developed to meet a requirement for a twin engine naval reconnaissance aircraft that could also double as a torpedo bomber. Short produced its design in good time and received an order for three prototypes.

**[The H3] was a hapless and grotesque looking hybrid...**

Powered by two Rolls-Royce Merlin 140 engines each fitted with two fitted with contra-rotating Rotel propellers, the first aircraft made its maiden flight in early June of 1946. It was reported to have excellent handling characteristics, so Shorts received a contract to build 30 - just in time to coincide with the cancellation of the carriers from which it was to operate.

A third variant was then to appear, designated SB3. This was a prototype in response to the Air Ministry's requirement for an Anti Submarine Warfare platform, and it had the distinction of being a contender for the ugliest aircraft ever to come off the drawing board.

The aircraft had a deep nose and chin which housed both a surface search radar and two operators. The original Merlins were replaced by two Mamba turboprops, which, together with the substantial airframe modifications, changed the handling characteristics of the SB3. One report noted



*The Short Sturgeon TT2 with an elongated nose to carry the Observer, who navigated and operated the target winch and cameras.*



*The Short Sturgeon SB3, a rival for an ASW aircraft specification ultimately won by Fairey. It was arguably the ugliest aircraft ever designed, and handled as well as it looked.*

that "the efflux from the Mamba turboprops seriously destabilised the aircraft at some power setting and destroyed the good handling characteristics. It proved impossible to trim for safe flight on one engine, which was necessary for long endurance on antisubmarine patrols".

Other were, to say the least, not positive, with one

commentator remarking it was a "hapless and grotesque looking hybrid". Production was not approved and in 1951 the prototypes were scrapped.

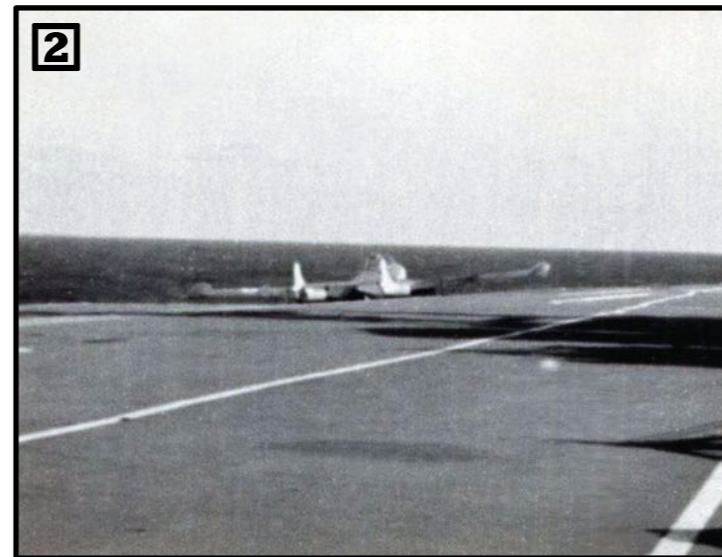
The ASW tender was subsequently won by Fairey, with its iconic Gannet. →

# One More Bounce

by Max Speedy



*Dramatic flight deck level footage of Barrie Daly and Max Speedy's arrival to HMAS Melbourne. The Venom entered funnel gasses on short finals and the speed decayed rapidly to just one knot above stall speed. The resulting heavy landing, bounce and float caused the aircraft to disappear below deck level before it stabilised a few feet above the sea to climb away.*



Very long time ago, there weren't any LSOs to "Bat" you in to the deck wires and safely away from the ramp or barrier. I'm speaking of the time between paddles on straight decks and today's proper angled decks on floating airfields three or four acres cruising around at 25 knots. I'm speaking of painted angled flight decks (5° or so) as opposed to the 10° off-set on vastly bigger modern platforms that in most weather didn't move more than a whisker up or down in anything up to the Beaufort 6 or 7!

My story is about one day in 1965 when I was the Observer in the right hand seat of a Sea Venom piloted by **Barrie Daly**. We had been crewed up for some months.

For deck landings or touch and goes, we made a 400 foot approach on the starboard side of MELBOURNE in close echelon right formation with the three other Sea Venoms to land. At about 250Kts and some four or so seconds past the ship, Leader would wave goodbye and break left into the downwind pattern, slowing down rapidly with gear and hook going down at about 170Kts. One at a time each aircraft would count off to four and break into the next slot to land.

Downwind, gear and hook down – four greens – slowing to about 130Kts by which time the first aircraft

was abeam the carrier. With a continuous turn, base through to finals, and crossing the ship's wake maybe a hundred or so yards out, the pilot would get his first glimpse of the mirror.

My job was relatively simple in this final landing phase. As Barrie adjusted his descent guided only by the "Meat Ball" in relation to the row of green lights either side of the mirror, it was for me to call out the airspeed and engine revs. Between 114 and 118 Kts was the ideal speed to arrive at the deck and the engine not below 7,800 RPM for a rapid spool up of the Ghost 105 should it be needed during a bolter.

Landings were arrivals – no flare – the aircraft was driven into the deck following the mirror all the way. With the hook down, there was no doubt about whether you had a wire or not – you would be thrown into the shoulder straps no matter how hard they had been done up and bruises were a common occupational hazard. Barrie learnt the hard way some months earlier on his first arrested deck landing, and though warned, his straps weren't tight and he ended up with his head under the gun sight!

On this particular day, it was touch and goes (hook up) in reasonably rough seas and very gusty winds. All went well right through to very late finals when at 115Kts, we went into the ship's hot funnel gasses.

In an instant, airspeed dropped to 105Kts. The Sea Venom at full flap stalled at 104Kts. We dropped like a rock onto the deck with what seemed like an almighty thump, bounced then began to float. I was able to think that if we didn't touch down again before going over the angle we would have too high a sink rate that would put us into the waves. So I was going to eject. It was my job anyway to unlatch the canopy and as it flew off, our Martin Baker seats (zero altitude and 90 kts) were then armed and ready.

Well thinking about it must have taken a long time because we didn't touch down on the deck again and we sailed over the edge. The ship's anchor was only about 15 feet off the water and I saw it go past level with us. By this time my hand had just got to the canopy release, Barrie got some power on and we climbed away to a "Don't do that again!" from FLYCO.

A week or so later we were able to get the movie of all this from the Photos who took 16mm film from deck level of every landing and catapult shot. If there was an incident/accident, there would be some film evidence.

The last five photos on this page are prints off about three seconds of that movie.

**Max Speedy.** January 2024. →

# Phantom

*Although the McDonnell-Douglas F-4 never served in the RAN, it was highly regarded by both the Royal Navy and the USN.*

*In this article, Robert James, a former Top Gun graduate, tells us a little about what it was like to fly.*



The F-8 Crusader was the aircraft I flew the most, but I did fly several variations of the Phantom including several Navy models as well as the F-4E, (an Air Force variant). The F-4 was easy to fly, particularly during carrier approaches. It was strong and could withstand hard landings and in-flight over-stress abuse without problems. It was fast with pretty good take off and landing performance although the brakes were perhaps not as good as they could have been and most field landings required the use of a drag chute. It had a pair of J-79 engines which had variable stator blades and that resulted in very good throttle response. In other words, when you needed a touch of additional thrust to adjust your sink rate, you had it right now and without delay. That was not true of most other airplanes at the time. The Phantom had plenty of power too. All in all, it was not very challenging when it came to basic flying. Two exceptions were how it took a cat shot and how to achieve the best rate of turn during Air Combat Manoeuvring. The nose strut had to be over inflated to cock the airplane up to increase the angle of attack during the cat stroke. Even so, it was always a little bit sketchy on the cat. Most other aircraft of the time took great cat shots but were more challenging to land. The other thing which took some time to master was finding just the right amount of back stick to achieve the best rate of turn.

On many aircraft, you will experience the onset of airframe buffet, called the “nibble” as you are

producing the best turn rate. It’s when you pull back stick just to the point where you can feel the airframe begin to shake a tiny bit. That kind of physical feedback is nice. The F-4 doesn’t have that characteristic. It’s best rate of turn is achieved at an angle of attack lower than that required to achieve that “nibble”; i.e. airframe buffet. You can use the angle of attack indicator to help learn the best AOA for max turn rate, but it takes a little getting used to and looking into the cockpit during a dog fight is likely to compromise your fighting ability. Beginners practicing ACM (air combat manoeuvring) in the F-4 typically don’t win their first few fights. But after a while, you develop a feel for it and the Phantom can perform quite well in the ACM role. The idea that it’s some sort of “flying brick” is a myth perpetuated mostly by people who have never flown it.

Unfortunately, many of the systems which made the F-4 perform well also added complexity and with increasing complexity comes reduced reliability. For instance, in order to make the approach speed as slow as possible for carrier ops, they used boundary layer control on the wing. Hot engine air is piped through tubes inside the wing and when these tubes leaked a little bit you got a warning which required an immediate mission abort and possibly an emergency landing. If the hot air leak was a bit more serious, your wing burst into flames and you jumped out. Boundary layer duct hot air leaks and/or warnings were not uncommon and a nasty wing fire was

always a possibility. Most other aircraft at the time didn’t have BLC ducting in the wings so they didn’t have that fire potential. And those other airplanes with BLC featured systems which were better designed than that of the F-4 so that they didn’t suffer from the same problems.

I’ve already mentioned the drag chute for landing. It was something of a PITA for everyone involved and many would argue the design choice to go with the chute was a poor decision in the long run.

The variable stator blades in the engine which make the throttle response so nice also were complicated. The linkage required for this system is a thing of beauty, but not simple at all. They say the old J-57 could eat a bowling ball and hardly burp. But a good sized humming bird would completely trash the much more delicate J-79 in the Phantom. That’s an overstatement of course, but you get the point. And since the engines were close together, often a failure of one engine meant the adjacent engine was damaged when the first one started coming apart, negating much of the theoretical advantage of a twin engine aircraft.

Finally, the F-4 had the worst flight control system ever put in an airplane. It had addition after addition piled on patch after patch in order to make the system work. A failure of one of the many components in the pitch feel system could lead to loss of the airplane. In other airplanes of the same era, it was usually just an

irritation to have a single failure of the pitch feel system. During a low level high speed record attempt in the F-4, the pitch damper failed and the airplane went into a violent uncontrolled pitch oscillation which instantly turned the airplane into confetti after about one and a half cycles. The dramatic film shows the engines separating from a cloud of aluminium and continuing on their own out over the horizon all because of a simple failure of one secondary system; pitch feel. And in spite of all the flight control gimmicks, they never did get the feel system just right and the F-4 was not a great formation airplane. It felt something like a worn out dump truck in formation when compared with the sweetest formation airplane I ever flew, the F-11 Tiger.

I think most people would agree that the F-4 was not an elegant design. After a lot of work by a lot of designers they finally came up with an airplane which could be MADE to fly even though it didn’t have much natural flying ability built into it, if you get what I’m trying to say. It’s as if the designers used a crayon rather than a drafting pen when they did the initial drawings.

Overall though, it was certainly not a failure and the Phantom went on to become a real work horse for the Air Force, the Navy, the Marines, and many foreign air forces. Flown properly, it could hold it’s own in a dog fight

*Continued on page 21.*

# Around The Traps



**Kim Dunstan** found this image of Sycamore XA221, taken by **Roy Cotterill**. A caption says it was taken 'weeks after the crash', so we're guessing subsiding flood waters finally revealed its resting place.

The crash occurred in early 1995 during the Maitland floods. The RAN deployed Sycamores at short notice, including this one. Flown by LCDR **Gordon McPhee** and **LEUT Hill**, the helicopter was winching two men trapped on a railway signal box. They managed to grab the rescue stop but almost immediately fell to their deaths. The Sycamore lost control and ditched (left). McPhee and Hill were swept downstream some five miles before being rescued. Up to now, we had no idea the wreckage had ever been found. →



## Facial Recognition (FR)

Last month we asked if anyone could identify the two people in the front of this Tracker. Just about every response (and there were a lot) suggested it was LCDR **Jonathan (Jon) W Jones** (O) in the Tacco's seat.

Not many could ID the pilot, though. Suggestions included: **Garry Criddle**, **Preston King** (USN) or **Ron Pelton** (also USN). We think it is likely to be an exchange pilot as the RAN didn't wear helmets of that colour/design.

Owen Nicholls recalls spending some time filming for the ABC TV series "Patrol Boat" in mid '78. He was acting as Liaison Officer for the film crew. The camera team came down to Nowra to do some Tracker shots, including an on the ground set up outside H hangar, filming through the windscreen. Jon was in the TACCO seat for that. In the end, the Trackers were not featured in the Patrol Boat episode. →



This photo, although rather bland on first appearance, has history which some readers might remember. It was copied from a small and rather vague, misty 'happy snap' **Kim Dunstan** took back in '59 showing the old dummy deck at NAS Nowra which at the time was home for many of the delisted Sea Fury aircraft that were later sold for scrap metal. The building on the LHS on stilts was one of the old workshop buildings awaiting relocation. The building on the far LHS amid the trees is/was the Department of Works workshop. We don't see many shots like this and wonder if it brings back memories for any readers? Let us know [here](#). →



## Kümmere dich um deine Knackers!

In these litigious times where people refuse to take responsibility for anything (even when it's their fault), you need a warning sign on everything.

Didn't realise French/German was so easy. →



**Bob's job at Lockheed was everything he had ever dreamed of.**





**In The Past 1**

Ron Batchelor, Taffy Hughes and Don Hogarth. Taffy is fleecing some poor sucker at chess. Phot Section, 1976. ➔

**Crappy Flights of the Future?**

A UK-based company is thinking out of the box when it comes to materials used to make Sustainable Aviation Fuel (SAF).

Firefly Green Fuels has estimated that each person on this planet produces enough raw waste to make one gallon of SAF per year. That isn't enough to power every flight in the world, but if adopted as a viable

process, it will make a significant impact towards reducing the aviation industry's dependency on fossil fuels.

Processed sewage leaves a final product known as sewage sludge or biosolids, which are tricky to dispose of. Utility companies would love to have an industry to take this problematic waste off their hands, and some are in talks with Firefly to see what is possible.

Using a new process, Firefly has successfully produced samples of SAF from sewage sludge and expects to start the process of certification sometime this year. If approved, it will be necessary to then scale up production to make the product economically viable. Firefly expects that its first commercial plant will come on line before the end of the decade. ➔



Sewage sludge, or "septage" is the residual, semi-solid material left over from sewage treatment. A British company has found how to turn it into Sustainable Aviation Fuel. ➔

**In The Past 2**

Here's another photo that might bring back some memories. it was taken from the flight deck of HMAS Melbourne in 1960 showing some Sea Venoms firing rockets at a splash target towed by a Tribal Class destroyer, about 200 yards behind (we think) HMAS Anzac, with another Tribal Class in the distance most likely HMAS Tobruk.

The splash target was a cruciform piece of timber with a piece on top that, when towed through the water, simulated the wake of a submarine periscope. In this instance it appears that the rockets have made a direct hit (or very close by). You will notice some puffs of white smoke showing the path of the rockets. Two Sea Venoms are in plain view, two others are visible making their firing approach but look like tiny black specks.

On this occasion the Sea Venoms also used their 20mm cannons (on a separate pass, but the photos don't look much) so by the end of the day the splash target was given a fair hiding. (Photo Kim Dunstan). ➔

**Do you have any old photos? We'd love to see them. Scan to a resolution of at least 300 dpi and send to the Editor [here](#), or email him at that link to ask his advice.**



**Alaskan Woes...**

The recent in-flight departure of a door plug from an Alaskan B737 Max 9 was of concern, particularly to those passengers who were seated near it.

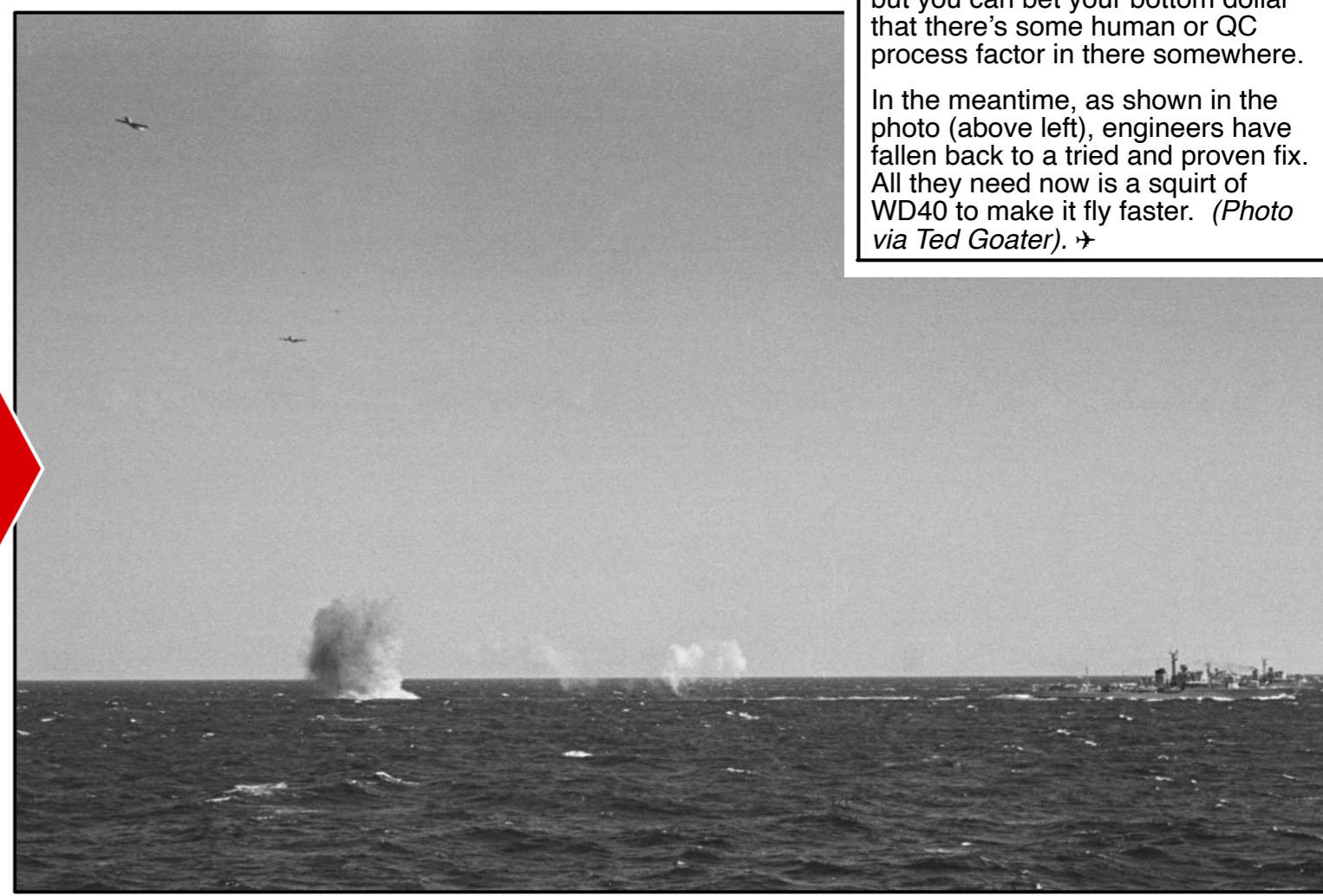
The 'door plug' is used to fill an unneeded emergency exit. To remove the plug, four lockwired bolts must first be removed. The door can then be lifted about 5cm, moving it clear of the 12 'stop pads' which hold it in place.

Post flight inspection revealed that all 12 of the stop pads were intact, which indicates the door was free to move upwards before its departure. The four securing bolts are missing and yet to be recovered, so it is not clear if the bolts were in place, or somehow undid themselves during flight. The matching door on the opposite side of the aircraft was found to be completely secure.

The investigation is still ongoing, but you can bet your bottom dollar that there's some human or QC process factor in there somewhere.

In the meantime, as shown in the photo (above left), engineers have fallen back to a tried and proven fix. All they need now is a squirt of WD40 to make it fly faster. (Photo via Ted Goater). ➔

See update to this story on p.43





**HARS Keeping Mum**

**Andrew "Mum" Davis**, whose reminiscences on his flying career appeared in last month's *FlyBy*, has paid a flying visit to HARS (bad pun!).

Andrew is the Chief Pilot for Navy Wings, which is the UK equivalent of HARS (sort of), so he's used to flying old military aircraft. In the image above he's fourth from the left, posing with (L-R) pilot **Steve McMahon**, LAMEs **Keith Boundy** and **Don Maclean**, pilot **Owen Nicholls** and (behind) LAME **Garry Holloway** in hi-vis vests. Right: Mum gives a thumbs up from the Tracker's LH seat. Photos by **Howard Mitchell**, courtesy of HARS. →



Left. Not a setting you'll see very often: Tracker 844 of HARS nestling under the wing of their 747. It was taken by **Howard Mitchell** who, with his normal skill, has captured both the Spirit of Australia and the spirit of a wonderful old military veteran. (Photo courtesy of HARS). →

See a stunning [video](#) of the recent HARS Tarmac Day featuring many of the beautiful old aircraft *FlyBy* readers would remember. →

**Five Grand, Not \$5K**

Did you know that the 5,000<sup>th</sup> B-17 built in the States carried the signatures of all the people who built her?

She was never repainted and went into action over Germany with the unique look - apparently attracting the attention of German fighters.

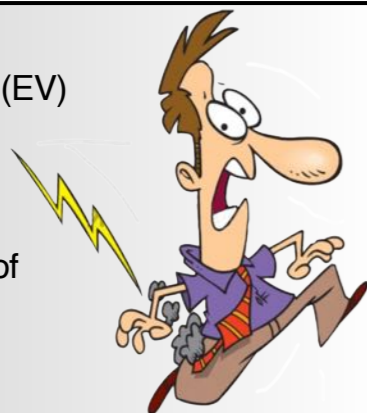
5 Grand completed 78 missions with the 96<sup>th</sup> Bomb Group, two food supply missions and two POW flights during its tour of in Europe.

She was flown back to the USA and was finally scrapped in 1946. (Boeing images). →



**Say Again?**

An Electric Vehicle (EV) like a Tesla 3 typically has a 50 kWh battery, which means that it will take 50 kWh of energy to charge it from 0-100%.



To put this in perspective, the average Australian home of three people uses around 19 kWh of energy in a day, so, when you charge your car you'd be more than doubling your consumption for that day if you use the Grid.

Even more surprising is the energy demanded during a fast charge.

When you plug an EV into a fast charging station it will typically draw around 130 kW (although it can demand more depending on the circumstances). By contrast, a typical Oz house draws about 0.8 kW (averaged over a day).

For a six-vehicle charging station being fully utilised, the energy demand could therefore be equivalent to about 980 homes at any point in time.

Imagine how much copper is required to supply 980 homes! No wonder Utility Companies have so much difficulty supplying that amount of energy to just one fast charging station. And is all that energy green?

And imagine what's going on in that EV's battery! No wonder fires occur from time to time.

Still thinking of buying one? →

With great power comes

- great responsibility
- huge electricity bill



**Routine is Never Routine**

Oops! This expensive little accident happened at Sydney airport on 22 Jan, when an airport security contractor employee collided with VH-FGJ, a JetStar A320, which was being towed to a gate at the time.

Just goes to show that working routinely around aircraft of any time should never be taken as a routine.

The driver, who was trapped in his seat, was released and taken to PoW hospital for - well, routine tests. →



**Bunnings Tops Qantas - Shame!**

Qantas topped the 'strongest brand' list in 2019, which determines which company is best recognised for its strength, visibility and value.

Less than five years later it has slipped to 41<sup>st</sup> on the list, which puts it far behind Bunnings, which is now in top spot. JetStar is 46<sup>th</sup> on the list.

Qantas' demise is attributed to a succession of PR disasters under the former CEO, Alan Joyce, whose philosophy was largely regarded as 'profit above service' - a singularly myopic view. Having dismantled the company's reputation, Joyce resigned from his position last year and was replaced by former Board Member Vanessa Hudson.

In an impassioned speech not long after taking on the position, Hudson promised that Qantas 'would do better', and that '...it had failed to strike the right balance between managing the expectations of passengers and investors.' For a while she flew economy class in an effort to demonstrate the more humble attitude of the executive, but recently she's been at the pointy end again.

We have yet to see Qantas climb back up the Brand rankings again, but live in hope, however slim. In the meantime, Bunnings has nailed Qantas. →

**Phantom**

*Continued from Page 13*

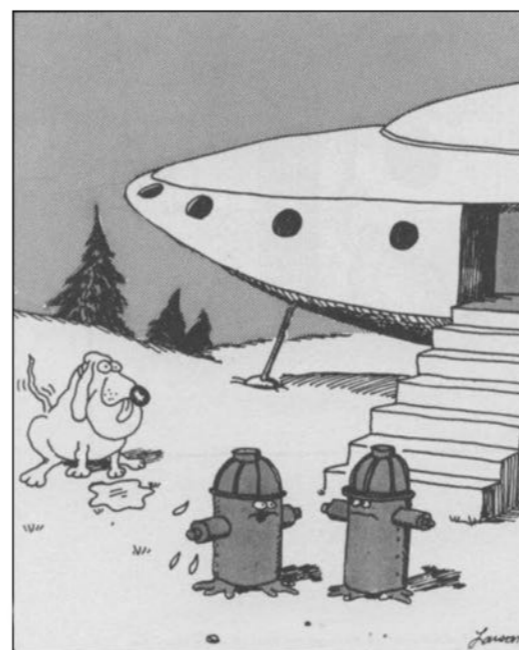


and was really the only game in town when it came to having a genuine head-on capability against enemy bombers and fighters back in the day. Plus it could haul bombs pretty well too. It was versatile and could do almost everything but it didn't do anything in a nice or natural way. Both the Blue Angels and the Thunder-birds tried it as a flight demonstration airplane but it proved to be too expensive, too unreliable and rather dangerous in that mission and they didn't last long in that role. In the F-4 days you didn't have

to go to too many air shows before you got to see an F-4 wind up in a big ball or fire.

Bottom line: The overall design of the F-4 was quite complicated and not executed well by McDonnell Douglas. It suffered to some degree because of that; however, it turned out to be quite a good airplane when it was all said and done. Having said that, imagine how great the F-4 would have been had Grumman won the contract.

*Extracted from "Quora" →*



*"Take me to your leader," I said...and then the most hideous thing happened."*

**Veterans and Families Hub for ACT**

RSL Lifecare in partnership with RSL NSW has announced development of a new, multi-million 'Veterans' Hub' to be built in Queanbeyan.

The new hub will provide coordinated services to veterans, such as health care, advocacy and employment. It will connect to 10 RSL sub-branches in the ACT and NSW to provide outreach services to veterans and their families.

Veterans' Affairs Minister Matt Keogh said it was one of 10 hubs around the country, built where there were high concentrations of veterans.

RSL LifeCare veteran services executive general manager David Anderson explained the facility will have three key areas: meeting rooms, a multi-function space and a social connectivity space. It will have four RSL LifeCare staff as well as volunteers, to draw together a 'one stop' approach to providing advice and assistance.

The new facility is expected to open in mid 2026. →



# the liquidators

by Marcus Peake

Just after 0100 on the morning of 26 April 1986, No. 4 reactor of the Chernobyl nuclear power plant exploded.

The emergency response and subsequent mitigation efforts involved more than 50,000 people, some of whom became known as ‘the liquidators’ - the men who worked as human bio-robots to clear the site, suppress the radiation and eventually build a sarcophagus over the reactor.

This is the story of just four of them: the crew of helicopter “Cup 2” whose job it was to dump material from their Mil-8 helicopter to help make the reactor core safer.

Captain Vladimir Vorobyov was already a seasoned helicopter pilot when he first set eyes on the nuclear reactor at Chernobyl in September of 1986.

The youngest member of a large family from Yaroslavl, a city north-east of Moscow, the 30 year old was a veteran of Afghanistan. He had been shot down by rebels in that conflict and, with his crew dead had managed to evade capture although wounded: a feat which earned him an Order of the Red Star.

In 1986 he was stationed in Siberia but, like many other helicopter crews, was called to assist in the effort to contain the

catastrophic accident at the Chernobyl power plant in the Ukraine. Since the explosion on the 26<sup>th</sup> of April of that year, Soviet authorities had been making frantic efforts to contain the open reactor, and had taken to using helicopters to seal the open wound whilst a sarcophagus was being built.

The task, on paper, was relatively straightforward. The giant Mil-8 helicopters were working in pairs. The first dumped a mixture of sand and boron onto the open core - the sand to stifle the fire and contain the release of radioactive material, and the boron to prevent additional nuclear reactions.

The second helicopter immediately sprayed a mixture of polyvinyl acetate onto the dumped material to bind it, preventing dust and dispersion.

In practice, it was far more difficult. The material had to be dropped from as low as possible to prevent dispersion in the wind and rotor downwash, which meant exposing the aircraft and crew to radiation. Additionally, the target was surrounded by obstacles, including cranes which were engaged in building the sarcophagus. The heavily laden helicopters had to thread their way through these hazards, flying as low as they dared at the right speed but without lingering.

The Mil-8 helicopters they were flying were of tried and proven design. Introduced into the Soviet Air Force in 1968 they were amongst the world’s most widely produced helicopters, used by over 50 countries.

Reportedly, the Mil-8 came about because Nikita Khrushchev had taken a flight in the Presidential S-58 during his visit to the US in September of 1959, and to save face, had ordered the creation of a similar helicopter to be ready for the return visit of the American President. Up to then, soviet helicopters were single turbine and used engines adapted from fixed-wing aircraft, so the directive gave Mikhail Mil the authority to build an original twin engine craft using purpose-designed engines and an entirely new main rotor gearbox. The first prototype with the new engines flew in August of 1962.

Initially, the Soviet military had little interest in the aircraft, but the Bell Iroquois’ involvement in Vietnam graphically demonstrated the value of battlefield helicopters and orders for a soviet troop-carrying variant of the Mil-8 were rushed through.

At Chernobyl Captain Vorobyov was crewed with Senior Lieutenant Alexander Yundkind, a navigator. He had also been drafted to Afghanistan but his posting had been delayed due to illness. He was the father of one child and, shortly before leaving for Chernobyl, his wife had proudly informed him that she was pregnant with their second.

In the back of his aircraft Senior Flight Lieutenant Leonid

Khristich busied himself with duties as flight engineer. He too was a veteran of Afghanistan and had been nearly shot down when militia fire tore through his helicopter's fuel tanks. The rate of leakage meant an imminent landing in enemy territory, but Khristich covered the holes with his hands until they could land safely.

A last minute addition to Vorobyov's crew was Warrant Officer Nikolai Ganzhuk, who was an experienced mechanic but also also qualified in air dispatch. His duty was to supervise the loading of the adhesive mixture into the underslung bucket for each flight, and to ensure the machinery releasing it on demand was working correctly. All four men were highly experienced and competent professionals.

The day before the accident, the crews of both helicopters had been invited by an authorised journalist to pose before their aircraft. The captain of Cup 1 refused, believing it would be a bad omen, but Vorobyov agreed. It was to be the final image that the four families would ever see of their loved ones.

The morning of 2<sup>nd</sup> October dawned much as the preceding days of their work had done. Rising early, they dined in the canteen and then checked over their aircraft before the 0600 take-off.

The flight regime was repetitive. With a full load of sand and adhesive, the two aircraft would make the 20-minute transit to the power station, drop their loads and then return to refuel and reload. This had been their routine on previous days and it was the same on that Thursday.

The principal hazard the crews had to contend with were the steel cables of nearby construction cranes. Most were marked with flags, but one in particular was not. It's position was noted, however, and the crews of both helicopters assisted one another with advice each time they approached the drop zone.



**Previous page:** A broken doll on the floor of an abandoned house in the nuclear exclusion zone. **Above.** The Mil-8s flown by the Liquidators would have been stripped-down versions of the military variant, with weaponry and armour removed to give greater lifting capacity.

With an underslung load capacity of about 3 tonnes, the helicopter was normally operated by a crew of three: a pilot, navigator and flight engineer, although for the Chernobyl task they carried a loadmaster as well.

Originally designed as a civil machine, the Mil-8 was rushed into military production when the Vietnam war showed the value of battlefield helicopters. It is the third most produced military helicopter in the world. **Far left:** the last photograph of the four crew members (on the right), together with three support staff. **Middle.** The cockpit of the Mil-8. It was as you would expect of 60s-era soviet machinery.

The task proceeded thought the day, with the light over the target area changing as the sun tracked to the west. The crews of the two aircraft were finding it increasingly difficult to see the flags on the cables and, although they knew where they were, it was hard to judge the fine approach line they needed to drop their materials.

At 1700 the two aircraft approached the reactor on what was to be the last flight of the day. By chance, a newsreel photographer named Victor Grebenyuk had arrived on the ground, tasked with filming the heroic efforts of the soviet workers battling to contain the fire and build the sarcophagus.

Cup 1 approached the drop zone but was unable to see the cables, and so relied on his wingman, who was hovering at a different angle, to direct him. "Come a little to right," Vorobyov directed, "You still have three metres to the wall. Go ahead. Go ahead. Stop. I see the foot of the crane."

He manoeuvred to the exact spot and released his load onto the burning reactor core below. The pilot was later to remark "the cables were so close I felt I could have reached out and touched them": but he dispatched his load and

carefully extracted his aircraft from the hazards.

It was now the turn of Cup 2. Vorobyov, without the detailed guidance of the other helicopter, chose an approach slightly angled from the marked cables, hoping it would make them more visible in the evening light.

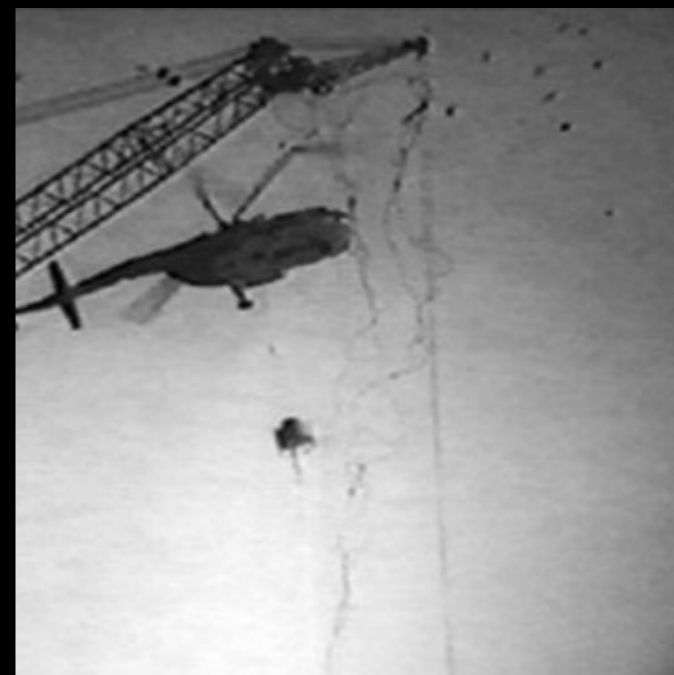
But he had lost sight of the unmarked cable and before he could fully discharge his load the main rotor blades touched it, instantly shattering them. The still spinning tail rotor, with no torque to counteract, fractured the tail boom and the helicopter turned upside down and plunged into the void below. The whole event lasted just seven seconds.

Appalled by what he had just witnessed, the Captain of Cup 1 requested an immediate landing to search for signs of life, but he was overruled and so flew the 20 minutes back to his base, contemplating what he had just seen.

It was midnight before he was allowed to return. He waited on the ground as the four bodies were extracted from just outside the reactor wall and were loaded into his aircraft. By then he and his crew had been exposed to significant radiation, so he flew directly to Kiev where specialists were waiting to decontaminate his



*The vehicle graveyard at Rassokha, on the outskirts of the Chernobyl zone, where radio-active vehicles are stored. Attempts to decontaminate them proved fruitless and they are now abandoned. Image credit: Sergei Supinsky. →*



aircraft as much as possible, and to take the fallen airmen away.

News of the helicopter crash was initially covered up to avoid any perception that the work on the burning reactor was not proceeding well.

The four crewmen all received Orders of the Red Star, but their death certificates simply cited multiple bone fractures as the cause of their demise.

None of the families received any financial benefits - in fact, it wasn't until the details of the accident became available in the 1990s that they were paid.



Knowledge of the events of that day allowed a simple memorial to then be erected at the helipad where Cup 2 had last taken off. It is the only surviving piece of wreckage - a blade thrown clear when the impact occurred, bearing a brass plaque carrying the names of the four victims.

On 6 December 2017 men working on the old sarcophagus uncovered the wreckage of Cup 2's tail which had been thrown from the helicopter as it crashed to the ground. It is intended to place the remains in a museum once it had been decontaminated.

The crew members of Cup 2 were not the only victims of the Chernobyl disaster. Some were killed in the initial explosion or from the immediate effects of radiation. Others, like the human robots tasked to pick up radioactive rubble flung onto nearby roofs, died later. Yet more, including the hundreds of helicopter crews, workmen and firefighters, survived the clean up and re-construction, but had their lives shortened.

Today, Chernobyl stands empty and unused, although battles rage around it. The surrounding exclusion zone is devoid of human life and the towns and villages within it are deserted. Nobody will live there again.

Until recently, tours were conducted in the town of Priprat, ten miles north west from the ruined power station. Your time there was limited by the radiation hazard, but you could see tragic reminders of that event and remember the events that happened there nearly fifty years ago. →

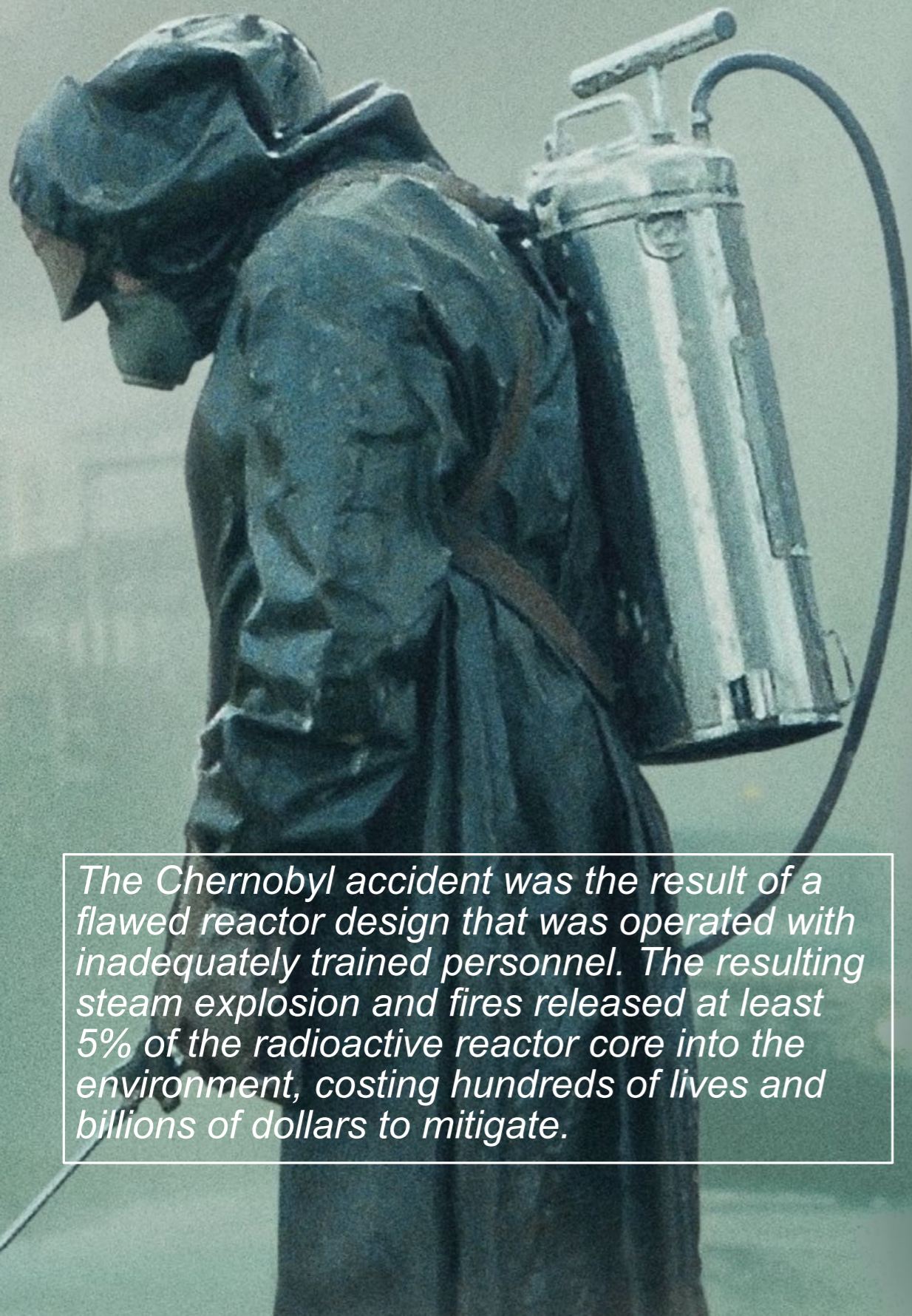


**Above.** Tours could be taken through the town of Priprat, about ten miles to the north west of Chernobyl, which was evacuated in the days following the disaster and which is now slowly rotting into decay. Everywhere you looked poignant reminders could be found of the lives of the people who lived there, and of their hasty departure - including this wrecked television set framing a doll dressed in a gas mask, probably the work of a tourist. (Sean Gallup, Getty Images).

**Left upper.** The Cup-2 memorial on the landing area from which the aircraft made its last take off. Only one piece of wreckage could be found at the time: a piece of a rotor blade flung off during the impact. A brass plaque is fastened to it with the names of the four victims and the date of their demise. The monument was not erected until knowledge of the accident became known, some years later.

**Left lower.** In the 90's the wreckage of the tail section of Cup 2 was found by men working on the sarcophagus. It was intended to move it to a museum - possibly the National Chernobyl Museum in Kyiv, but it remains too radioactive and war has also disrupted the plan. Perhaps it will rest there one day. →

# What Caused The Nuclear Accident?



*The Chernobyl accident was the result of a flawed reactor design that was operated with inadequately trained personnel. The resulting steam explosion and fires released at least 5% of the radioactive reactor core into the environment, costing hundreds of lives and billions of dollars to mitigate.*

The RBMK nuclear reactors at the Chernobyl site were of conventional design: that is, heat was generated by controlled nuclear fission in a chain reaction and this heat was used to produce high pressure steam which turned a turbine to generate electricity.

The intensity of the reaction was controlled by inserting or withdrawing 'control rods' into the reactor core. The process also required a constant and high volume of water to maintain it within specified limits.

It was therefore imperative that circulation of water was always assured to prevent core overheating, and this was achieved by electrically driven pumps.

In the event of a total electrical failure, a secondary means of powering the pumps was essential. Chernobyl had back-up diesel generators, but they took a minute or so to attain full load. Something had to power the pumps for that period of time to keep them running.

It had been theorised that the rotational inertia of the reactor's main steam turbine could be used to generate the required electrical power. The turbine's speed would obviously decay as energy was taken from it, but it was calculated that it could provide the majority of the power needed for that short period of time.

Three previous tests had been conducted in 1982, 1984 and again in 1985 to test this theory. Each showed the voltage of the turbine-generator to be insufficient, so the system was modified and a fourth test was scheduled to take place in late April of 1986, during a planned maintenance outage of reactor four.

A test procedure had been written, but its authors were unaware of an unusual behaviour characteristic of this type of reactor. The process was also complicated by the fact that, instead of being completed by the day shift, who were better briefed and prepared, it extended into the night shift, who were not.

During the procedure extreme difficulty was experienced in sustaining the 700 mW minimum voltage necessary to conduct the test, as the reactor had been 'poisoned' by leaving it at a low power setting during the day. Now, the output dropped to 30 mW, accompanied by unstable core temperatures and coolant flow.

In response, the reactor staff withdrew numerous control rods from the reactor, which allowed a higher rate of fission. The output of the reactor increased to around 200mW, still far below the prescribed minimum, but despite this the test was continued.

As part of the procedure, two additional coolant pumps

were then activated. This increased the coolant flow and lowered the core temperature. The operators responded by withdrawing still more control rods, until, unbeknown to them, they dropped below the minimum required number of fifteen.

The combined effect of these actions was an extremely unstable reactor configuration. Nearly all of the 211 control rods had been withdrawn and excessively high coolant rates through the core meant that coolant was entering the reactor at very close to boiling point.

Unlike most other designs, the RBMK reactors had a positive void coefficient at low power levels, which meant that the formation of steam bubbles *increased* the nuclear chain reaction, as the bubbles had lower neutron absorption than water. This meant that any increase in boiling would produce yet more steam which in turn intensified the chain reaction - a positive reaction loop. The reactor was now highly sensitive to any further effect of steam bubbles.

Not long afterwards an emergency shutdown of the reactor was initiated as the operators began to lose control of the process. This caused the automatic insertion of all control rods into the reactor core. But there was a design fault in the RBMK reactors: the tips of the control rods were made a graphite instead of boron, which essentially meant that an emergency shutdown would initially cause a sharp *increase* in the reaction rate. This design fault had been suppressed in an earlier report.

A few seconds into the shutdown the core overheated, causing some of the fuel rods to fracture. Within three seconds the reactor output rose above 530 mW leading to a very rapid increase in steam buildup and associated steam pressure. This caused the fuel cladding to fail. The reactor output jumped to at least 10 times its normal output and a steam explosion occurred. It destroyed the reactor casing, tearing off and blasting the upper biological shield through the roof of the reactor building.

The explosion ruptured more fuel channels and severed most of the coolant lines. The remaining coolant was instantly turned to steam and escaped the reactor core, further increasing the reactor's thermal power. This led to a second more powerful explosion that further compromised the reactor containment vessel and ejected hot lumps of graphite and other material which caught fire on exposure to the air.

The explosion was later estimated to have the power of about 225 tons of TNT, and mitigation to cost around \$5.2 billion in today's dollars. →





“A wonder then...that there should be any Man found so stupid and forsaken of reason as to persuade himself that this most beautiful and adorned world was or could be improved by the concourse of atoms.”

A maternity ward with rusting cots is a reminder of the human impact of the disaster, made even more stark by the doll resting in one of them - perhaps a prop from the photographer. (Chicago Tribune). Inset: Tourists walk in a symbolic alley flanked by signs bearing the names of villages and cities evacuated following the disaster. (Sergei Supinsky). †

# The Dirty Dozen

By Bill Walker. Slipstream 1994.



Here's one that few of you will remember: it revolves around the happy ship Sydney and the 20th Carrier Air Group; well, not really the CAG, just the Poms who kept the workshops aboard tidy for Captain's Rounds and ready for the 20th CAG ground crews to plunder when they came aboard.

We'd been through the work-up period around the Irish Sea, with so many tales to tell that a book must be written one day by someone who kept a log-book. Danny Buchanan had made that first spectacular landing with the CAG AEO in the back seat of a Firefly, which the RN must have felt sorry they had loaned to us after what he did to it. 'Red' Merson had spread-eagled himself on the after bulkhead of the Wardroom trying to break through to the WRNS who were stranded aboard by the weather off Milford Haven.

And then we were at the Tail of the Bank, the CAG were ashore saying "Goodbye" to all their Pommy mates, the ship empty, waiting to embark those lovely Fireflies and Furies and all the bits to keep 'em flying. Both watches were given five days leave - stand fast the FAA. The Commander wanted them aboard to stow all that new gear.

Now that was fine for the Ship's Company, mostly Aussies. One last fling in the Old Dart and then home to Oz, but the FAA was mostly (99.9%) ex-RN or RN Loan. I wasn't too worried because my wife and daughter were

already on their way to Australia, but for the others, this was their last chance to see their home town friends and families for years, perhaps. They weren't too happy.

It took me a while to persuade the Commander that, given a sea-plane crane driver and a dozen lusty sailors, I could get all our goodies aboard and stowed while the Poms went home on ten days leave. I think that he might have agreed just to get me out of his hair, and to have the pleasure of seeing this stropy RN Warrant Electrician fall flat on his face. I'd stood by the fitting out of Sydney in Plymouth and he knew me as a persistent bastard with little respect for authority other than my own.

Well, the rest of 'em dropped gleefully into the tender and steamed off to Blighty. The next morning the ship's company duty watch fell in as usual and were detailed for work. Here too the Commander must have been looking for revenge as from various divisions, in ones and twos, came the toughest looking dozen sailors the Navy ever had to cope with. They formed a ragged line in front of me and stood in various attitudes of boredom, it seemed to me that I was going to have my work cut out to get anything like a days work out of them.

"We've got to load about fifty planes and five lighter-loads of spare parts in the next ten days", I said. "The Commander thinks we can't do it! All I can promise is that you're mine for that period, and if there is any time left over you can go ashore 'til the ship sails." They perked up noticeably. "Where's the stuff you want us to load?" asked one of them. Down

the river from the Store Depot came a loaded barge. "There's the first instalment" I told them.

The Torpedo Party had the crane manned, with an EA standing by to help the antique machine work. As soon as the barge secured alongside, the crane driver set it in motion and very soon the first crate was lowered to the flight deck. From then on, the 'dirty dozen' heaved, pulled, lifted and fork-lifted box after box onto the after lift, from where it was moved to the hangar stowages, onto the deck-head, hangar walls and in 'C' hangar. Engines, props, oleos, spare wings, tails, control surfaces, you name it. All of it disappeared into the hole in the flight deck, hour after hour.

The second and third lighters came alongside and they in turn were emptied - the 'dirty dozen' never flagging, going below in twos and threes to eat when hungry - no one shouted orders or got his 'knickers in a twist'. The day ended at sunset with everything that had been brought aboard stowed away in its right place and lashed down for sea.

Next morning they took my "Well done, fellows", with a few grins and even called me "Sir" a couple of times, then...we waited, and waited, and waited. I got on the blower to the depot and found out that they only had the three lighters and were still reloading No.1. I took a boat ashore and explained to the boss-man, as tactfully as I was able to, that we had dealt with

three lighter loads on the day previous, and why were they taking so long? Maybe I could send my 'wharfies' ashore to give them a hand? Cries of horror! The Union would never agree to that!

My parting shot before I returned to the ship was to tell them that if my 'dirty dozen' were kept waiting much longer, they might take matters into their own hands and come ashore on a raid and seize our property!

The fourth barge finally arrived alongside and was emptied so fast they barely had time to

get the mooring lines secured. Another long wait and number five, the last, came down the river and received the same treatment. Hands secured early that day, for us at least, and the rested (and clean) 'dirty dozen' were on the flight deck next morning as the ship weighed anchor and eased up the river to the Store Depot wharf and moored alongside. The aircraft, cocooned and straight from the production lines, were towed under the sea-plane crane and hoisted aboard one by one, wheeled away, stowed, and lashed down ready for sea.

Next day, the same. Finally the flight deck, as well as the hangars were full of Fireflies and Furies. On day five the finishing touches were put to the stowing and lashing and I reported to a somewhat disbelieving Commander, that Sydney had its full load ready for the long sea-haul to home (as we call Australia, eh?) "Very good", was the reply. "Your hands can report back to port of ship tomorrow".

I remonstrated with him that the hands had been given to me for a full ten days and that I had already told them to clean up and carry on ashore if they wished to.

Well, to cut a long heated discussion short, the Commander and I finished up in front of the Skipper, Captain Dowling. He heard me out and gave judgement in my favour and the 'dirty dozen' went ashore for five days. The Commandeer never forgave me, nor even acknowledged my presence in the ship for my remaining year of Loan Service.

For the rest of my very happy time in the Sydney, odd sailors would grin and give me a "G'day, Sir", as our paths crossed. Although the faces and names escaped me, I knew they were from the 'dirty dozen', or friends of the same. At any rate, they all wore RAN cap ribbons - when they wore cap ribbons at all.

The ship worked like that, you knew your job and did it, and you helped the other bloke if he needed help. We, the 'dirty dozen' and I, didn't do it all alone, there were a couple of RAN Mechs/Tiffs in the hangars who acted as guides and experts in the placing and stowage of the bits and pieces. BUT - the 'dirty dozen' worked like Titans to get that shore leave and prove the Commander wrong. They could do anything they wanted to do, but they had to be convinced it needed to be done. ✨

**“The Commander and I finished up in front of the Skipper, Captain Dowling. He heard me out and gave judgement in my favour and the 'dirty dozen' went ashore for five days. The Commander never forgave me, nor even acknowledged my presence in the ship for my remaining year of Loan Service.”**



**W**hen British Airways ceased Concorde operations at the end of 2003, it decided to loan its Filton-based simulator to the Brooklands museum. Little did they know that, rather than just become a dusty exhibit, the simulator would be turned into a fully functional unit that is now the only operational Concorde simulator in the world.

The sim was originally built in 1975 at a cost of £3m (about £20m in today's money) and for 28 years had trained British Airways aircrew.

When it arrived at the museum it was in poor condition, in two pieces and with instruments missing. The easy option would indeed have been to bodge the two halves together, but Brooklands saw much greater potential.

In 2008 the simulator was moved into a fully refurbished room in a building next to the Museum's existing display Concorde, Delta Golf, and work got underway to bring it back to life in a joint venture between the University of Surrey and the Engineering and Physical Sciences Research Council.

The two halves of the existing sim were united, and its instrumentation integrated with modern flight simulation software.

As with other simulators of the time, the environment was projected onto a large screen in front of the cockpit windows and Concorde was 'flown' using its controls and systems. This included not only the control columns and trim switches, but rudder pedals, throttles, reheat switches, landing gear lever, toe brakes and the visor lever.

In 2012 British Airways gifted the original back projection screen and mirror, which it had kept in storage. Refitting these components was complex as it involved the partial dismantling of the simulator to remove the existing canvas projection screen and its frame, the relocation of the computer and equipment racks and moving the whole unit some feet to accommodate the original mirror.

### Why Brooklands?

Brooklands, not far from the M25 that circumnavigates the city of London, was the site of the initial meeting between French and British aircraft industries to discuss the launch of the Concorde project. Subsequently, 30% of the airframe was built at the BAC plant there (formerly Hawkers and Vickers facilities). The components were then transported either to Bristol Filton or Toulouse for integration into a production aircraft. ✈



It was worth the effort, as the original system featured a **collimated display**, which is designed so that the imagery appears at a distant focus. This means the two pilots, sitting side by side, can see the same out-of-the-window picture without angular errors or distortions. The projection screen installed by Brooklyn in 2008 didn't allow for that.

The refitting of the original projection system not only greatly improved the visuals, but restored the simulator to its original operational configuration.

Today, the projected images are generated by computer, but back in 1975 they were produced by a camera mounted on a bogie moving over a detailed map fastened to the whole of one wall. There was also a plan view of an airport with Concorde parked, which was used for taxiing simulation.

Two Concorde simulators were built: one for British Airways and one for Air France. Brooklyn now has the only functional one remaining - the other, originally located at Toulouse, appears to have been chopped up after Air France ceased operation of the type.

And the simulator is reaping rich rewards. A 'Silver' package, which buys you a tour of Concorde Delta Golf followed by an hour in the simulator (15 minutes at the controls) will set you back £300 (A\$580).

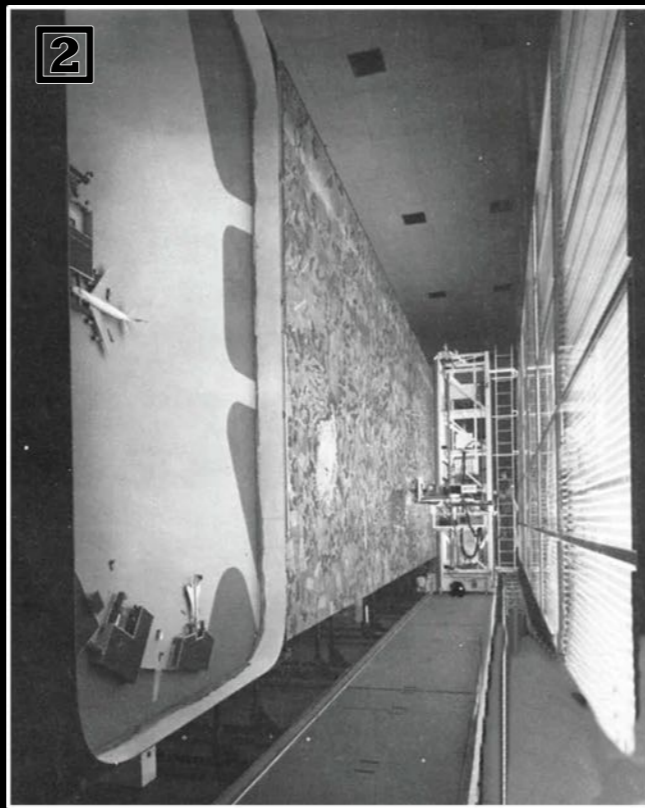
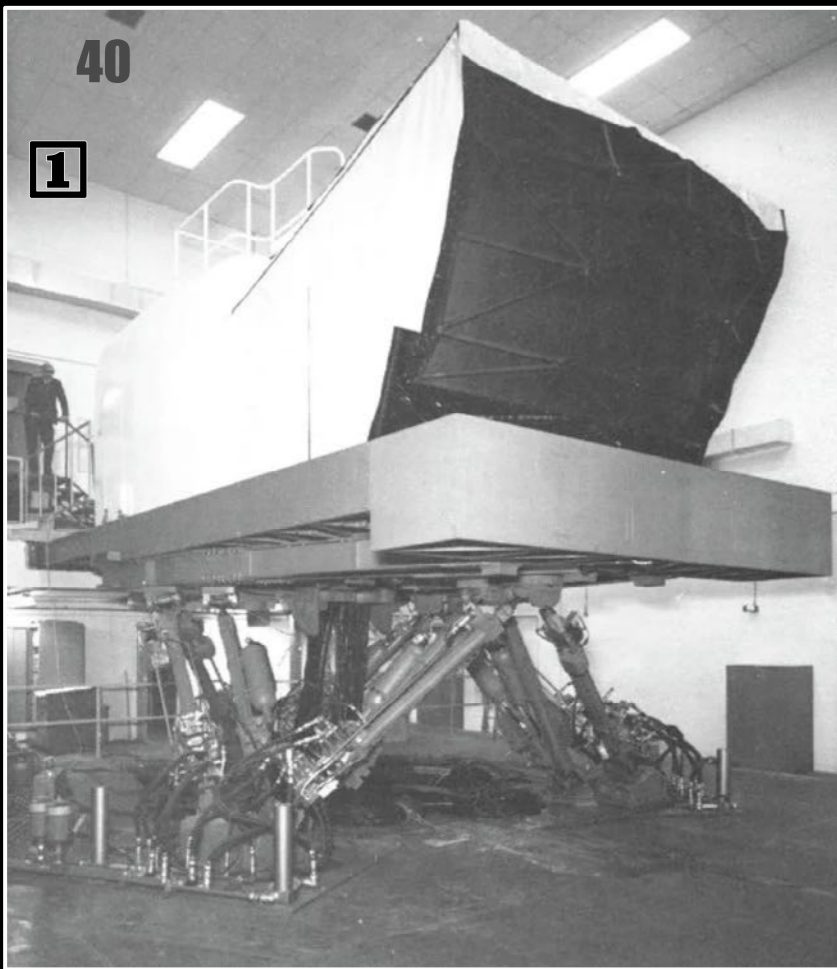
The 'Gold' package, which throws in champagne, a three course lunch and an extra hour in the simulator (30 minutes on the controls) will leave you no change out of £700 (A\$1,350).

Perhaps not for everyone, then. But as the number of people who remember Concorde diminishes, it is heartening to see that a group of dedicated volunteers has brought back the chance for newer generations to take her controls and marvel at the engineering masterpiece she was. ✈



*Main picture. The last Concorde flight was almost exactly 20 years ago, but images like this still evoke a sense of power and symmetry that few other designs have achieved.*






[1] The original simulator under construction at British Airways in 1975. [2] The projection generator: cameras mounted on a moving gantry which scanned over a detailed model of some topography or an image of an airport. [3] The cockpit module being moved to Brooklands. [4] Construction of the frame for the projection screen. [5] The frame was covered by white material, onto which the landscape image was projected [6]. ✈



Top. The Brooklands simulator today, with an experienced ex-Concorde pilot instructing a paying client in the LH front seat. Below. A technician checks out the instrumentation. Images by Neil Walker. ✈





## NOTICE OF ANNUAL GENERAL MEETING

The NSW Division of the Fleet Air Association of Australia will be conducting their Annual General Meeting next month.

When: Saturday 16<sup>th</sup> March 2024 at 1200 EST.

Where: White Ensign Club.  
(on the western side of the Fleet Air Museum at HMAS Albatross).

If you wish to nominate yourself or someone else to hold a position on the committee, please click [here](#) and complete the small form presented.

R.F. Martin  
NSW Divisional Secretary. 0467040077. Email [pincher@iprimus.com.au](mailto:pincher@iprimus.com.au)



Have you thought about getting your name put on the FAA Wall of Service?

It's a unique way to preserve the record of your Fleet Air Arm service in perpetuity, by means of a bronze plaque mounted on a custom-built wall just outside the FAA museum. The plaque has your name and brief details on it (see background of photo above).

There are over 1000 names on the Wall to date and, as far as we know, it is a unique facility unmatched anywhere else in the world. It is a really great way to have your service to Australia recorded.

It is easy to apply for a plaque and the cost is reasonable, and far less than the retail price of a similar plaque elsewhere. And, although it is not a Memorial Wall, you can also do it for a loved one to remember both them and their time in the Navy.

Simply click [here](#) for all details, and for the application form.

Current applications in Order No.53 are as follows:

- R.J. Cluley LS ATA S113325 Jul 72 - Jul 81.
- D.R. Hooper WO ATA S133260 Apr 82 - Apr 06.
- M.A. Sandberg ABATWL S125208 May78-May88.
- E.D. Sandberg LCDR(O) O1024 Apr50-Sep90.
- A. Clark CAF(A) R35828 Mar48-Mar63.
- A. Gillam CPO ATWO/ETW S118699 Jan76-Jan96
- B. Thompson LS ATC S128255 Mar80 - Jan93

We have to wait for a minimum order size before we can submit to the Foundry, so there will be a delay.



At the time of going to press, more information is coming out about the door plug failure on the Boeing 737-9 max of Alaska airlines. And, as we suspected, it appears to stem from human error rather than a structural failure.

The issue reportedly comes back to Quality Control (QC) processes, which may be of interest to our readers so we include it here.

As mentioned on page 17, the 'door plug' is used to fill an unneeded emergency exit. To open the plug, four lock-wired bolts must first be removed. The door can then be lifted about 5cm, dis-aligning the 12 peripheral 'stop pads' which hold it in place so it is then clear to move outwards from the fuselage.

The fuselage section of the 737 Max, which includes the door plug, is manufactured by Spirit AeroSystems, based in Wichita USA. The largely complete assembly is then taken to the Boeing plant.

According to inside sources, Boeing mechanics found 'damaged and improperly installed rivets' on the port door plug of the subject fuselage. The defect was written up in both of the QC processes that Boeing/Spirit use: that is, the Situation Action Tracker (SAT), which is an informal messaging board used by mechanics, engineers and management to flag issues, and the formal record of every job complete in the



building of the aircraft, which is called the Common Manufacturing Execution System or CMES (pronounced "sea-mass" by those who use it).

A SAT message thread shows that the Spirit team repaired the rivets and handed it back to a Boeing quality inspector. The inspector noted that the repair was not done properly, and the defect was reopened.

Looking at it for a second time, the Spirit team found that, in addition to the problematic rivets, the pressure seal that goes around the edge of the door plug was damaged and needed replacement.

A note in the SAT system shows that Boeing and Spirit teams discussed whether the door plug would have to be removed entirely, or just opened. Removal of the plug requires an entry into CMES, while simply opening it does not. Either way, however, the four bolts that prevent door movement must be removed, and then replaced after the work is complete.

An entry in CMES requires a formal sign off from a quality inspector, whilst a SAT entry does not.

In the event, someone decided that the door only needed to be opened to replace the seal, and so an entry in CMES was not required.

The door was subsequently opened, the repair made, and it was closed again, but the four crucial bolts that locked the door in place were missed. And as the work was not recorded in CMES no formal QC sign-off was undertaken, so the error was not picked up.

Internal sources imply it was a Boeing mistake, rather than Spirit's, but that is yet to be confirmed. Obviously there is a great deal of sensitivity in the ongoing investigation.

Other sources suggest that the Federal Aviation Authority (FAA), which is conducting the investigation, is 'extremely concerned' about the transparency of processes in the production of Boeing aircraft. The sixty-four thousand dollar question is, "if the system can miss mistakes as big as this one, what other defects are getting through?"

This is not something that will be resolved quickly" suggested one informed observer. "These problems are systemic, and it will take many months if not years to ensure they are mitigated."

In the meantime, airlines who have had to cancel thousands of flights are not impressed. "We will be looking at our future purchasing options," one is reportedly to have said. "It may be that the risk of buying Boeing is too high, or at least relying on a wholly Boeing fleet. You can't run a business when your aircraft are grounded through mistakes like this one."

Boeing was once regarded as a company with the very highest standards of safety compliance, but changes in its approach over the years whittled that philosophy away in favour of profitability. It would seem that not just the processes in the company need to change, but its culture - starting from the very top.

In the meantime, the old adage has been brutally reiterated: it takes years to build a brand reputation, but only a few minutes to tear it down. ✈

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