

# BRISBANE VALLEY FLYER

FEBRUARY- 2020



Watts Bridge Memorial Airfield, Cressbrook-Caboonbah Road, Toogoolawah, Q'ld 4313.

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Pipestrel Alpha Electro – the First Certified LSA Electric Trainer.  
See page 10 for Electric Aircraft Training

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## VFR Into IMC Won't Go

By Rob Knight

VFR into IMC won't go. Just as 2 into 1 won't go if we are talking whole units and, let's face it, we all want to remain as healthy, whole units.

Weather related accidents are almost inevitably fatal because of the very nature of the incident. A pilot loses the horizon and is unable to substitute it with a workable alternative. Without the horizon to reference aircraft attitude, the pilot is unaware that a roll begins, and the roll slowly reduces the vertical component of lift. With the reducing vertical component of lift to balance the weight as is required for level flight, the aircraft begins a spiral descent and the airspeed begins to rise. With no horizon datum to enable attitude recognition the pilot cannot return to wings level or to have the nose anywhere near an appropriate pitch attitude. Unless aileron is applied, the act of turning creates further roll and a further nose pitch down, all unrecognized by the pilot. This generates greater speed, greater roll rate, greater nose pitch down, and greater rate of height loss - all with no direction from the pilot. The aircraft is now established in an unrecognized increasingly violent spiral dive.

Alarm morphs into panic. The pilot senses the fast rising airspeed; is distracted by the rising noises of engine and airspeed. The G loading is slamming their mass into the seat and he/she becomes completely disoriented, their minds devoid of a recovery plan. The altimeter unwinds in a blur and the ASI reading exceeds the VNE and pegs out. The aircraft is diving so pull the stick back. But this only aggravates it because of the now extreme bank angle. Pulling the stick back only tightens the turn and increases the G loading. The altimeter needle is even harder to see spinning around the dial. The VSI needle is on its stop. Pull the stick back more, this situation must stop. But any chance of a regaining of control has been lost, somewhere back up the spiral.

And it does stop. Either the wings come off as the aircraft comes apart in the air, or the aircraft strikes the ground in an unsurvivable, near vertical dive. Sometimes the pile of wreckage doesn't reach even 60 cm in height.

Less than 2 minutes ago, this was a fully functioning and airworthy aircraft with a pilot in full control, yet another life (or lives if there was more than one on board) has been lost and the statistics board adds another tick to its tally.

Why, why, why is this state of affairs repeated so frequently in our skies.

This scenario has been played out since mankind began to fly, and I fear that it will continue because humans will be humans. The issue is not simple, because, like a Hydra, it has many heads and any one of these can lead to this unhappy and tragic ending

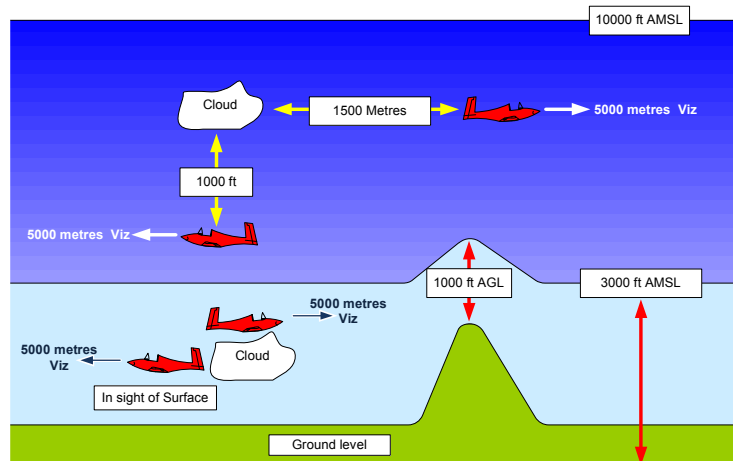
First, let me say that it is impossible for this scenario to play out if the VFR rules are complied with. In other words, the rules are there designed to help pilots and passengers avoid the issue and stay alive. So, what are those rules, again?

Generally, a pilot operating an aircraft under VFR above 3000 feet AMSL but below 10,000 feet AMSL in uncontrolled airspace:

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- May not fly closer than 1000 feet vertically from cloud (that's either above OR below).
- May not fly closer horizontally than 1500 metres (1.5 km) from cloud in any direction.
- May not continue to fly if the flight visibility is reduced to below 5000 metres (5 km).

However, flying at or below 3000 feet AMSL, or below 1000 feet above the surface, whichever is the higher, the minima changes.



In this situation, whilst the 5000 metres visibility is retained, an aircraft must only remain clear of cloud, there is no longer a horizontal or vertical barrier to remain outside.

It's not as though there aren't enough examples of fatalities to use as object lessons, so what is going wrong? Why do apparently otherwise intelligent and competent pilots fall victim to this situation? The simplest answer is that deteriorating weather to below VFR minimums is a trap and we as humans as well as pilots, are very specifically set up to fall right into it.

When ag pilots are engaged in 1080 rabbit poison bait dropping, the diced carrots (or other bait used) are distributed over the target area twice before poison is applied to the baits for the last trip. This lowers the suspicion levels of the rabbits and on the third trip, the one where the dice is loaded and the baits are coated with 1080, their acceptance of the baits is much higher. This makes the exercise far more effective and the kill rate is significantly higher.

In the VFR into IMC situation, we are the rabbits. Even when we know that we shouldn't be pushing the weather, having got away with it in the past strengthens our belief that we can get away with it again. But when the unthinkable happens, and we don't get away with it, we are playing with our lives and if we lose we die, we are DEAD! This is not a space-invaders game where we have five lives and can press a button and start again, this is for real man, it's like playing Russian roulette with three of the six chambers loaded: succeed and win, or lose and die. And what does the winner get – nothing, except to get to the destination. There's no other reward. What would you say about a sport where the losers were summarily executed, on the spot, in front of anyone watching? Do ya wanna play? When put like that, who realistically would? BUT THEY DO. Every year someone else challenges the elements and loses and dies.

In defense of pilots encountering inclement enroute weather, they are under considerable pressure to continue. Externally, how does one judge when they are 1500 metres from cloud? Or 1000 feet vertically, for that matter. For nearly 60 years I have sought an answer to that but have yet to come up with a workable means of doing so that has even reasonable accuracy. Also, many pilots are unaware of how quickly the atmosphere can change from VMC to IMC where VFR pilots should fear to tread. A classic cause of a superfast change occurs when cold rain falls into a warm, near saturated air-mass below. The rain cools the near saturated air to below its dew point so cloud

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forms. You don't fly into the cloud, it forms around you and envelopes the aircraft in its sticky white clinging fingers. But you now have no alternative: you have used up all your lives – this is not a space invader computer game where you get five lives before the game is over. In real life the game is over NOW because, unless the aircraft is equipped with the minimum instruments for instrument flight AND YOU are sufficiently skilled to fly on the instruments on the panel, you cannot correct your situation. For those that enter the white shroud, there is no way out – you are already too late to correct your position and it's too late to correct because of the impending loss of control as I previously depicted. It's all down-hill and the bleak future is more filled with doom and gloom.

From within, the pressure to avoid making an early decision to avoid the situation comes from several very powerful sources, all locked within the pilot's personality.

- Pride – who wants to admit failure by turning back? *This is an ego thing.*
- Expediency – we will have to land somewhere we don't want to. And maybe there's no accommodation – *an inconvenience thing.*
- Loss of face – I told my passengers (or people waiting ahead) that I'll be there – another *ego thing.*
- Historical - In all my years of past flying I have always got to my destination –another *ego thing.*
- Expediency – I must get there because I don't want to change my plans – another *inconvenience thing.*

And there are more, as many more *reasons to continue* as there are pilots that fly. And what's the common thread that binds the whole morbid matrix together – the fact that if you are dead, not one of them matters at all.

I know these pressures personally. I admit to failing to maintain VFR because the minimums fell quicker than I could change my airspace. I also must confess that it was not good flying that saved my bacon in the first instance, just pure good luck, and that it was my instrument training and experience that got me out of the pooh in the latter ones. In every case I did not expect the visibility would drop quicker than I could vacate the area I was flying in and therein lay the issues for me.

Also, consider the pressure and stress problems that go hand in hand with low visibility. At 60 knots, an average cruise speed for ultralights or bad-weather configuration flight in many GA lighties, a 5000 metre flight visibility range will be covered in about 2.5 minutes. Anything that you can now see at your maximum visual range will be with you in 2.5 minutes. Now that is not a hellava long time to operate the aircraft, identify hazards and decide on avoidance options, navigate, and maintain your orientation with your locale etc.

Some will ask what instruments are required for emergency operation to escape an inadvertent entry into IMC. The question is simple – enough instruments to be able to ascertain movement about the three axes of the aircraft.

- Pitch (can be covered by altimeter and ASI interpretation),
- Roll (needs an AH for direct reading but can be covered by turn coordinator or even an old Slip/Skid/Ball instrument on a limited panel), and
- Yaw on compass or gyro direction indicator.

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But this is only HALF the equation for resolving this calamity. YOU must also be able to interpret the instrument readings AND implement timely and appropriate control inputs whilst NOT over-controlling the aircraft, AND whilst ignoring your own panic and overloading false sensations the spiral dive will have on your brain. Simple, eh! But then again, you will ALSO have the sound and speed increase vibrations and rising G loads the situation will add to your confusion. In thirty years of instructing I have never had a student that coped on their first attempt at flight without a horizon. Without exception they all fell into a spiral dive, usually to the left. These students varied right across the spectrum of IQ and education. NO-ONE succeeded in maintaining controlled flight. What chance have YOU? The most important instrument that you have in your cockpit is your windscreen. If YOU allow it to become filled and unreadable with white – you only have yourself to blame.

With nine logbooks in a box under my bed, I have left scud-running way back in my history. There is no chance of my re-engaging in any battle with the weather Gods. I will make a precautionary landing whilst I can still make the decisions that give me control, and not suffer those given out by fate or luck after I lose control.

To illustrate the difficulty of instrument flight, try this exercise. It comes from my years of teaching flight on instruments. I regularly gave it to my students to let them experience the removal of the normal abilities of our brain and muscles to determine which way up is.

1. Standing upright, then
2. Fold your arms. AND still upright AND with folded arms
3. Stand on one leg, AND, still upright, arms folded, on one leg, then
4. Stand on tip toe, AND, still upright, arms folded, on one leg, on tip-toe, then
5. Close your eyes.

Hey, you have now fallen over. This is because we have removed, one by one, your normal faculties determining your attitude. Welcome to the club! Just imagine this feeling with your hand on the stick of a gyrating aircraft, there's nothing outside the cockpit but white, with passenger(s) screaming and throwing up (perhaps worse) and waiting for the BANG. Not a nice thought is it?

If you scud run, and push on below the published VFR minimums, you never succeed, you just get lucky if you get through. You aren't a success because the reaching of your destination is merely the good luck result of a stupid act; your very survival is only the fateful conclusion of being fortunate on that day. It is not the measured result of being a safe, intelligent, and prudent pilot, which is what you foolishly imagine that you are.

Take heed, luck is a very transient co-pilot, and those that put their faith in it are doomed in the long run; the law of averages will see to that. If scud-running is your habit, better let your friends know what sort of flowers you would like at your funeral so they can order them in advance. If you really want to push on into less than VFR minimums, then to survive you will need to get an instrument rating and just fly aircraft equipped appropriately for operations in IMC. That is your ONLY chance of survival long term.

I contend that pilots that practice scud-running are stupid - devoid of common sense and the level of responsibility that is the recognised duty of any Pilot in Command. This is magnified fifty-fold if passengers are carried.



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In conclusion, also consider that that it is not just weather that can hide a horizon and cause spatial disorientation (the official name of the issue). It has also been demonstrated to me in flight at night when a high overcast eliminates stars and there are no lights on the surface to rely on as a datum. VFR flight at night, heading south from Wellington (in New Zealand) is an absolute classic, the city lights are behind and there are none in front over Cook Strait or the southern Pacific Ocean, so nothing illuminates either above or below. Exactly the same conditions can exist over any desert area in Australia.

The most disappointing thing about writing these articles is that I know some readers will ask aloud what the hell I know about it. Who does he think he is, they ask themselves. We are all competent and safe pilots? That last phrase will ring to those who have read my last four articles in the BVSAC Flyer. Everyone thinks they are a safe pilot until they kill themselves.

Note well that within twelve months, using the law of averages, someone who has read this piece will have failed to maintain VFR met minima and will be dead. They will be no more. And there is nothing that I can do about it except to write about the folly of attempting it.

I have experience on all sides of this topic. I've taught people to fly from ab-initio to CPL and beyond so I am very aware of training requirements. I've personally flown way outside VFR minimums (and written about it) and admit to luck being my companion at that time, and I've flown IFR in IMC with the required rating and the required instrument panel and radio nav gear. I've also had to identify bodies of people that I knew, and help the recovery ambulance and police load the bodies of others that I didn't, lying cold and pale on lonely, windswept hillsides after pilots made this fundamental and fatal error of not maintaining VMC. Maintaining VMC is not an option, it's mandatory. It's not a matter of life; it's a matter of death because if you get it wrong, the grim reaper is right on your wingtip waiting, scythe in hand, smiling patiently.

If there's anyone around who writes AND who knows what they are talking in regard to this topic, it's ME. I've been there, done it, got the T shirt, and seen the movie as well as the sequel. You don't have to, just take my word for it - PLEASE.

Below is a key to the nomenclature that I have used in this piece. I want no misunderstandings about the seriousness of this topic to every VFR pilot

AH	Artificial Horizon instrument
AMSL	Above Mean Sea Level
ASI	Airspeed Indicator Instrument
Flight visibility	Is the visibility forward (in the direction of flight) from the cockpit of an aircraft in flight; usually expressed in metres / or kilometres.
IFR	Instrument Flight Rules. A set of regulations under which a pilot operates an aircraft in weather conditions that are not clear enough to allow the pilot to see where the aircraft is going
IMC	Instrument Meteorological Conditions: The alternative to VMC – the aviation flight category in which instrument flight rules flight is required—that is, <i>conditions</i> in which pilots do NOT have sufficient visibility to fly the aircraft and maintain <i>visual</i> separation from terrain and other aircraft.
Scud-running	Continuing to press on towards a destination when weather conditions fall below minimums for the operation (VFR/IFR).
VFR	Visual Flight Rules. A set of regulations under which a pilot operates an aircraft in weather conditions generally clear enough to allow the pilot to see where the aircraft is going

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VMC	Visual Meteorological Conditions: An aviation flight category in which <i>visual</i> flight rules flight is permitted—that is, <i>conditions</i> in which pilots have sufficient visibility to fly the aircraft maintaining <i>visual</i> separation from terrain and other aircraft.
VFR Minima	The worst weather in which a pilot may operate an aircraft under VFR (See VFRG provided by Airservices in Australia for actual details relating to minima appropriate to the various airspace categories).
VSI	Vertical Speed Indicator

Go save yourself: I have done what I can.

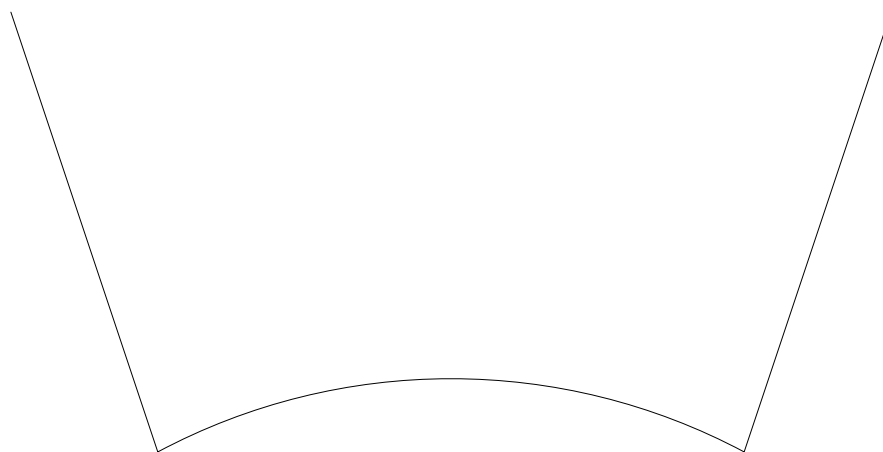
Rob Knight

Note:

*“Laws are meant for the guidance of wise men and the obedience of fools.”* (Brickhill 1954, p. 44.)

Happy Flying

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The world – to a VFR pilot in IMC

## WRITTEN OR MEMORIZED COCKPIT CHECKS

By Kevin B. Walters

Pilots who fly single engine light aircraft under 5700 kg do not need to have written cockpit checks. There seems to be a bit of confusion with the regulations regarding CASA approved Flight Check Systems. CAR 232,

“requires all operators to establish and use a CASA approved FCS.”

Some operators have interpreted that as meaning that all aircraft must have a written cockpit check. This is not correct. CASA Exemption 38/2004 states that, in part,

“single engine aircraft below 5700kg and not engaged in RPT are exempt from requiring a CASA approved FCS.”

Learning to fly in 1962 we never had such things. And in the years up to 2020 I still haven't needed one. I am still here and still flying safely. (I think, maybe, perhaps) Minor adaptation has seen me through about 102 single engine aircraft endorsements from the Skycraft Scout with 8bhp to AT402 Airtractors with 600bhp and de Havilland DHC-2 Beavers to Cessna 210.

So what's the Hokey Pokey about written checklists? Once the mental checklist is stencilled into your brain you will never forget it. It carries through to all the different single engine aircraft that you will fly. As an instructor it is a valuable cross check when conducting tests and Aeroplane Flight Reviews where a candidate may have a different format.

In R.A.Aus we like to follow the example of the Airlines and especially the RAAF. Sure it makes sense to follow the safety culture of these organizations. Let's take the RAAF. They do not have written cockpit checks. The older pilots from the Air Force will tell you that in Tiger Moths, Wirraways, Winjeels, Vampires, Mustangs, Dakotas and Lincoln Bombers they did not have written checklists. Are we convinced yet? Imagine 2 Hornets taxiing out to scramble and on the radio comes “Sorry boss I just wiped off your port wingtip- I was consulting my written checklist” or “Sorry boss I have to turn back- I forgot to collect my written checklist”. Don't laugh, ATSB has





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come up with several accidents on the ground where written checklists were the causal factor of distraction and subsequent accidents. One accident cited a single engine aircraft hitting another, wingtip to rudder.

There is no question that written checklists are appropriate for complex, multi engine and multi-crew operations where there are four, sometimes six sets of eyes. In addition they normally have another pair of eyes in the form of ATC. There is more to go wrong if something is forgotten. Pilots in RA-Aus fly aircraft up to 600kg. The Airlines and Air Force fly aircraft up to 600,000kg. A bit of a difference.

If you are at a set of traffic lights in your car and you pick up your mobile phone. Why do you think you might get a fine of some \$350. Think about it.

Kevin Walters

Pilot Examiner.

In support of Kevin's excellent article above, my views are absolutely parallel with Kevin's in regard to the now common use of written cockpit checks in ultralight and light single engine aircraft.

I, too, have been employed as a flight examiner (for NZ-CAA across the ditch) *where checklists were not approved in any form for single engine aircraft for basic flying operations*. Any pilot candidate for PPL, CPL, Instrument Rating, or Instructor Rating, that consulted a written cockpit checklist during the flight test was immediately deemed to have an inadequate knowledge of the aeroplane and failed the test at that point. All checklists had to be memorized and their recitation was examined as part of the test.

A brain surgeon is not a GP, and a brain surgeon would not use the same checklist for setting up a surgical operation in a theatre to repair a serious problem requiring his/her skills in their specialist field, as a GP when setting up the surgery to repair an ingrown toe nail. Written checklists, though necessary in airliner because of their complexity AND having the staff present to use them without compromising safety, have no place in light and ultralight aircraft for pilots proficient in operating their class of aircraft.

Rob Knight

CFI and Flight Examiner (Ret)

# Electric Aircraft Pilot Training Is Arriving

January 15th, 2020 by [Nicolas Zart](#)

Quantum Air and OSM Aviation Group just announced an electric aircraft pilot training partnership. OSM Aviation Academy will conduct the Quantum-branded pilot training program according to FAA commercial standards. Electric urban air mobility (UAM) is taking shape one step at a time.



Bye Aerospace eFlyer & Quantum OSM branded pilot training.

Photo courtesy Bye Aerospace

Quantum Air is another company I've been speaking with for some time. It came out of the woodwork a few months ago with a team of highly trained aviation professionals and advisers, including FBI pilots and FAA seasoned veterans. The company is eyeing 3 routes: urban, commuter, and weekend routes.

As Tony Thompson, founder and CEO of Quantum, told me, Quantum wants to provide a realistic alternative to automobile travel away from congestion and delays. If you live in Los Angeles you can understand why going for a weekend trip easily means 2 to 4 hours of highway congestion just to get to the deserts. And Quantum Air seems serious about it, as it says it is committed to providing tuition reimbursement for select OSM cadets.

OSM Aviation and Quantum have both placed substantial electric aircraft orders for the Bye Aerospace eFlyer. Based in Denver, Colorado, Bye Aerospace already has a 2-seat eFlyer and is working on a 4-seat variant. The eFlyer is already flying and I spent some time speaking with George Bye on how he is managing the company. More to follow on that. With significantly lower noise signature and enhanced altitude performance, the eFlyers will be delivered to the two companies starting at the end of next year.

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Bye Aerospace eFlyer & Quantum OSM branded pilot training.  
Photo courtesy Bye Aerospace



OSM offering the Quantum-branded training program with access to the Bye Aerospace eFlyer aircraft is one of the missing key ingredients in today's burgeoning UAM industry. Pilot training and electric aircraft schools need to deploy quickly if we are to hit the 2023 mark.

Thompson told us: "Quantum's partnership with OSM means that Quantum pilots will fly commercially in essentially the same aircraft in which they trained. Quantum commercial pilots will be intimately familiar with their aircraft, setting a new standard for safety."

This was followed by Espen Høiby, CEO of OSM Aviation Group, saying: "Air travel is instrumental in bringing people together both regionally and internationally. Since humans will always have the urge to explore this world, we need to find sustainable solutions to meet that need. Therefore, OSM Aviation is excited to join forces with Quantum Air to shape a greener and safer aviation industry in the years to come."

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According to Scott Akina, Quantum's Vice President and Chief Pilot, whom I last spoke with at the NBAA in Las Vegas: "I expect to receive pilots from OSM who will already know Quantum's aircraft systems inside and out. And this will be no small part of the reason why Quantum will run the safest operation in the airline industry."



Finally, George Bye, CEO of Bye Aerospace said: "Electric aviation, including our eFlyer family of electric aircraft, is the springboard for a movement that we believe will breathe new life into the aviation industry. That includes implementing creative ways to improve effectiveness, economic access to pilot training. The OSM-Quantum model, which focuses foremost on new professional pilot training safety, aligns perfectly with Bye Aerospace's principles."

Thompson says he wants Quantum Air to become the world's first all-electric aircraft company that provides a viable alternative to the automobile. Its partnership with OSM Aviation shows it is putting the accent on infrastructure. As to OSM Aviation, it is a global aviation employment, technician training, and administration company with 6000 pilots and crew members across the globe. The company was founded in 1963 and will now provide the future of electric aviation education needed for the industry's pilots.

Quantum Air targets urban hops with electric and hybrid-electric vertical takeoff & landing (eVTOL) aircraft and somewhat longer commuter hops with electric and hybrid-eVTOL as well as electric fixed-wing aircraft. As far as weekend hops, hybrid-eVTOL and electric fixed-wing aircraft will be used.

## Before the Concorde, there was 'the Concordski'

From an article by Kent German - December 31, 2018 5:00 AM PST

The Russian-built Tupolev Tu-144 beat the Concorde into the air by two months. But the supersonic plane would enjoy a far less successful career.

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*The Tu-144 with its canards extended makes a low pass over the 1973 Paris Air Show shortly before crashing. Getty Images*

It had a sleek fuselage and broad delta-shaped wings, and it let ordinary passengers break the sound barrier. But barely anyone outside the former Soviet Union had a chance to see it fly overhead, let alone ride in it.

The aircraft wasn't the famous Concorde, but the Russian-built Tupolev Tu-144, the world's only other supersonic airliner. Fifty years ago it flew for the first time, beating the Concorde into the sky by two months.

For the Soviet Union, the Tu-144 was a notable achievement during the Cold War, when technological firsts, like Sputnik and the moon landing, were crucial battles. Five months later, the Tu-144 would also beat the Concorde to supersonic flight. But being first was the only success it would ever enjoy. A rushed development, serious design flaws and a fatal crash at the world's premiere aviation event in 1973 ultimately made the Tu-144 one of aviation's biggest failures. While the Concorde carried passengers for nearly 30 years, the Tu-144 was retired in 1978 after only six months of passenger service.



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### Going supersonic

The promise of commercial supersonic flight was taking off in the late 1960s, when the Tu-144 made its debut. The British Aircraft Corporation and France's Aérospatiale (later to become Airbus) were building the Concorde prototype, and in 1966 Boeing won a design competition from the US government to build the first American supersonic airliner. The jet age was a decade old, but the promise of rocketing around the world at faster-than-sound speeds appeared close to being a reality.

The Tu-144 was developed by the Tupolev Design Bureau and built by the Voronezh Aircraft Production Association. At the time, Tupolev was the Soviet Union's most important aircraft designer, having created the world's second jetliner, the Tu-104, the workhorse Tu-154 and the Tu-95 strategic bomber.

When the first Tu-144 emerged from the factory, it looked so much like the Concorde that Western observers dubbed it "the Concorde-ski." Charges of industrial espionage abounded, but the basic arrow-shaped design the aircraft shared was a characteristic of supersonic aircraft. Besides, the Tu-144 and the Concorde were radically different under the skin.



### Bigger, faster and less advanced

The Tu-144 was about 12 feet longer than the Concorde, and its wingspan was wider by 10 feet. With a passenger capacity of 140, it also carried 20 more seats than its rival and could fly higher and faster with a top speed of Mach 2.15. (Concorde's top speed was Mach 2.04).

Concorde, though, had the advantage when it came to technology. It had longer range, its design was more efficient aerodynamically and it was **22** tons lighter when empty, enabling it to burn less fuel just to get in the air (both aircraft were huge gas guzzlers). Thanks to highly advanced onboard computers (for the time), the shape of its engine intakes also constantly adjusted during flight to ensure that optimal airflows were retained.

The Tu-144 was more difficult to handle at low speeds, so much so that it needed small wings near the nose called canards that extended at take-off and landing. And because it lacked the Concorde's carbon-based brakes, parachutes extended from the tail to slow it down after landing.

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What's more, while afterburners made both the Tu-144 and the Concorde deafening at take-off, the Tu-144 was almost as noisy in the cabin during flight. Passengers seated next to each other reportedly had to shout to be heard, and those seated farther apart had to pass notes. The cause of the noise was not just the engines, but also the Tu-144's air-conditioning system, which was less advanced than the Concorde's. (Air conditioning is vital in any supersonic aircraft; otherwise the cabin would become dangerously hot from the air friction on the plane's skin generated during flight.)

### **A crash and a brief career**

Though the Tu-144 also suffered from other problems, like frequent engines failures and faults in its pressurization system, its biggest setback came on June 3, 1973 at the Paris Air Show. Spectacular aircraft fly bys are a hallmark of the event, and the Soviet delegation planned to show off the Tu-144's potential by besting the Concorde's demonstration flight earlier that morning.

The first part of the flight proceeded as planned, but after a low pass over the runway, the aircraft pulled up rapidly and appeared to stall. It then went into a steep dive before breaking apart and crashing into a nearby village. All six crew members onboard were killed, plus eight people on the ground.



A Tu-144 is on permanent display with a Concorde at Germany's Technik Museum Sinsheim.

Technik Museum Sinsheim

Following the crash, several theories emerged as to the cause. They ranged from the pilots pushing the Tu-144 beyond its capabilities to the pilots trying to avoid a collision with a French Mirage fighter jet. Whatever the cause, the disaster delayed the Tu-144 program by four years, letting the Concorde enter service first in 1976.

When it finally started carrying passenger for Aeroflot on Nov. 1, 1977, the Tu-144 flew only a two-hour route between Moscow and Alma-Ata (now Almaty) in present-day Kazakhstan. Low passenger counts and a fatal crash during a test flight in May 1978 prompted the airline to pull the Tu-144 from service permanently in June 1978. The Tu-144 had made 55 passenger flights.

Production officially continued until 1983, when it was phased out after 16 aircraft were built.

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Following passenger service, the Tu-144 made occasional test and scientific flights and was used to train Russian cosmonauts. Between 1996 and 1997, NASA used a Tu-144 as part of its effort to bring back supersonic commercial flight, a program that continues today.

Concorde, of course, would go on to have a glamorous career flying the rich, the famous and the lucky until 2003. On the whole, though, supersonic passenger flight didn't live up to those late 1960s dreams. Boeing cancelled its supersonic program in 1971 to concentrate on its 747 jumbo jet, and even the Concorde, hampered by opposition to sonic booms and by its massive operating costs, flew only two routes across the Atlantic for Air France and British Airways.

Today, several companies, as well as NASA, are working to let civilians fly faster than sound once again. In the meantime, if you'd like to see a Tu-144 in person, you'll need to visit one of a handful of museums in Russia, or the Technik Museum Sinsheim in Germany, where a Concorde is on display next to a former Air France Concorde.

### Don't Mix Your Meds!

Getting old is so hard at times.



Yesterday I got Preparation 'H' mixed up with Poli-Grip.

**NOW , I talk like an asshole .**

...but my gums don't itch

**Politicians** should wear **sponsor jackets** like Nascar drivers, then we know who owns them.

Robin Williams



THE MIND UNLEASHED

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### FLY-INS Looming

07 Feb 2020	YSHR Shute Harbour	Fortnight Dinner @ The Hangar Cafe & Bar
21 Feb 2020	YSHR Shute Harbour	Fortnight Dinner @ The Hangar Cafe & Bar
8 March 2020	YCFN Clifton	Clifton Fly In (or Drive in) See ad elsewhere in this issue

#### Mystery Aircraft (This Issue)

What's this?



#### Mystery Aircraft (Last Issue)



Above:

PZL M-15 Belphegor

The PZL M-15 was a jet-powered biplane manufactured by WSK PZL-Mielec in Poland for Soviet agricultural aviation. For its strange looks and noisy engine it was nicknamed Belphegor, after the noisy demon. [Wikipedia](#)

[Top speed:](#) 200 km/h

[Range:](#) 400 km

[Manufacturer:](#) [PZL Mielec](#)

[First flight:](#) 20 May 1973



## - Brisbane Valley Flyer -



### **2020 CLIFTON FLY IN**

On 8<sup>th</sup> March 2020 Lone Eagle Flying School invites you to Clifton Airfield to its Annual Fly-In at Clifton Airfield and to celebrate International Women In Aviation Week. This Fly In has become an iconic event in the region and is the premier attraction for all types of aviation in southern Queensland. See various types, shapes, sizes and models of recreational, ultralight and homebuilt aircraft including sport, vintage, general aviation and any other flying machine. Come late pm Saturday, 7<sup>th</sup> for sit down dinner, drinks and hangar talk. Fly or drive in, see ERSa. On field camping, bring your swag or caravan. Advise for catering. For more information follow us on

website : <http://www.loneeagleflyingschool.org.au>

facebook : <https://www.facebook.com/LoneEagleFlyingSchool/>

email : [admin@loneeagleflyingschool.org.au](mailto:admin@loneeagleflyingschool.org.au)

phone : Trevor Bange 0429 378 370

Everyone is welcome,

Trevor Bange,





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### Keeping up with the Play (Test yourself – how good are you, really?)

1. An aeroplane will stall when:
  - A. The stalling angle of attack is exceeded.
  - B. The load factor exceeds its critical limit.
  - C. Weight exceeds the lift produced
  - D. Insufficient power to maintain level flight is maintained.
  
2. The person ultimately responsible for ensuring that an aeroplane is safe to fly is:
  - A. The authorizing authority (RA-Aus or CASA).
  - B. The Pilot in Command.
  - C. The Certificate of registration holder.
  - D. The person that signs the last maintenance in the logbook.
  
3. An aeroplane is in a descending turn to port. The bank angle is constant, the balance ball is out to the right
  - A. The aeroplane is slipping.
  - B. The aeroplane is skidding.
  - C. The turn is unbalanced because the ball should be out to the left in a turn to port.
  - D. The pilot needs to press the left rudder pedal to correct the imbalance.
  
4. Which of the following options will improve take-off performance?
  - A. Using a longer runway.
  - B. A tailwind take-off.
  - C. Using a down slope.
  - D. A high pressure altitude.
  
5. The angle between the longitudinal axis of an aeroplane and its aerofoil chord line is called
  - A. The angle of attack.
  - B. The angle of incidence.
  - C. Its longitudinal dihedral.
  - D. Rigger's angle of attack.

See answers overleaf

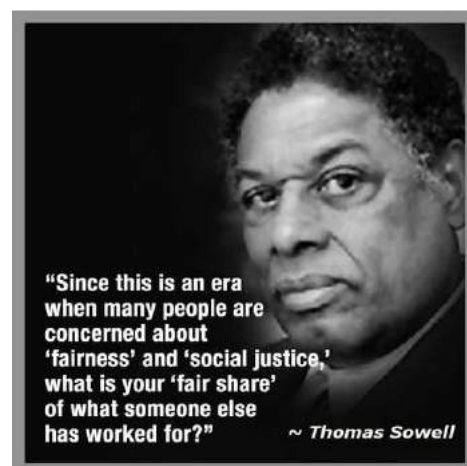
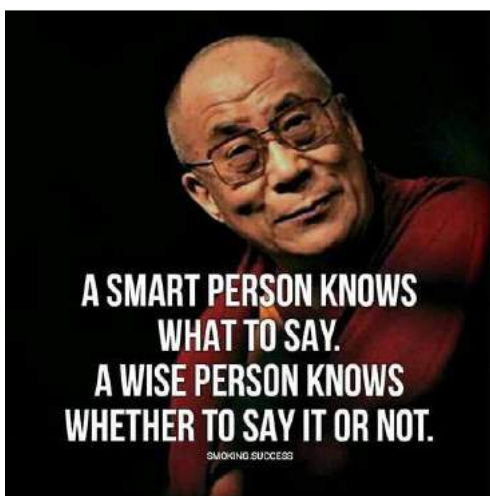
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Answers: 1, A, 2, B, 3, B, 4, C, 5, B

If you have any problems with these questions, See Notes BELOW or call me (in the evening) and let's discuss them. Rob Knight: 0400 89 3632.

1. .An aeroplane stalls when its aerofoil exceeds its critical or stalling angle of attack.
2. .The pilot in command is the person who must ensure an aeroplane is safe to fly
3. .If the aeroplane is banked left and the ball is out to the right, the rate of turn is too high for the bank angles o the aircraft is skidding
4. .A tailwind take off means the aircraft will have to accelerate to a higher ground speed to acquire the necessary airspeed so it will increase the distance required and diminish take-off performance.  
A higher pressure altitude means the air is less dense so all performance is reduced.
5. .Longitudinal dihedral is the angle between the chord lines of the main plane and the tail plane so is not relevant to the question.

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### Aircraft Parts and Tools

Item	Condition	Price
VDO Volt Readout instrument	Brand New	<b>\$70.00</b>
Skystrobe Strobe light for Ultralight	NEW – IN BOX	<b>\$75.00</b>
Altimeter – non-sensitive with subscale in “Hg.	Brand new	<b>\$50.00</b>
Brand New ¼ drive Torque Wrench (SCA)	Brand New	<b>\$60.00</b>

### Headsets

Lightspeed Headset. Stereo, recently re-wired	Excellent condition	<b>\$250.00</b>
AvCom headset. Functions perfectly	Excellent	<b>\$160.00</b>
Pilot (brand) headset in headset bag (Ideal spare)	Brand new condition	<b>\$100.00</b>

Contact Rob Knight at either [kni.rob@bigpond.com](mailto:kni.rob@bigpond.com), or call **0400 89 3632**.

### Pilot Equipment for Sale - **MUST SELL**

1 x used hand held Transceiver (Vertex VXA-220)    \$150.00

**Contact Julie Driver on Tel. 0421 369 328**

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### Aircraft for sale

¾ scale replica Spitfire

**\$60,000**



Powered by a 6 cylinder engine, this delightful aircraft has good performance and low hours. Available for immediate delivery.

It comes with a low flight time, excellent handling qualities, superb charisma, a brand new mechanical fuel pump and two jack stands.

For details contact Bill Watson. Tel., **0447 186 336**

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### 95-10 Shuttle Mk2 for Sale.

Not registered, and dismantled for storage.

Jabiru 1600 powered. Basic instruments & radio.

Sweet flying aircraft. Make a good project. \$4000.00 O.N.O.

Ph. **0488 422 156** (Clyde Howard)



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### 95-10 Colby Single seat aircraft for sale.

Airframe 202 hrs. Engine (503 SDCl) 37 hours on Rotax overhauled engine.

Instruments and radio. Registered and ready to fly away. Currently at Forest Hill. Could consider delivery for fuel cost.

**GREAT FOR HOURS BUILDING** - Ready to take home with you. Come and get it and see your logbook fill without draining your bank.

**\$5500.00 negotiable.** Ph Rob on **0400 89 3632** for details.



The Lockyer Valley from the Colby