

BRISBANE VALLEY FLYER

March 2024



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

Rob Knight (Editor) Tel: 0400 89 3632, Email kni.rob@bigpond.com



A helicopter by Cessna? - See page 18

Peter Ratcliffe (Pres.)
John Innes (Vice Pres.)

0418 159 429
0417 643610

Ian Ratcliffe (Treasurer) 0418 728 328
Acting Secretary 0418 159 429

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Our website - bvsav.com.au

Greetings Members,

Well, another month down and it is still raining.

With the rain, the grass keeps growing and growing and growing. We have been mowing every weekend this month just to try and keep up with it.

Not much else has happened around the airfield due to the wet weather.

Our last meeting was well attended and all had a very good day. Our next meeting will be on Saturday March 2, we invite you all to come and join in.

See you there.

Best wishes

Peter Ratcliffe
President BVSAC

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How to Pick Your Turbulence?

By Rob Knight M23-095

All pilots know about turbulence, we experience it on virtually every flight. In fact, when we don't, we remark on it. So, what causes it, and how can we cure those ups and downs, or, at least, dodge the worst of them.

Atmospheric turbulence varies from the most-gentle of undulations in an aeroplane's flight path to movements so savagely extreme they can destroy an airframe with tragic consequences. If turbulence could be seen, it would be easier to avoid but, alas, as air is an invisible fluid, turbulence within it is also invisible. For the VFR pilot flying below 10000 feet, the sky (cloud types and formations), and reading the terrain whilst factoring in the current wind conditions, an appreciation of likely turbulence circumstances is readily available.

The causes of turbulence are many, ranging from atmospheric instability¹ in steep atmospheric pressure and temperature gradients (including warm and cold fronts and thunderstorms) in weather systems, through jet streams, to airflows around obstacles (geographic or man-made). Turbulence can occur when the sky is completely overcast, or when its 8/8ths blue. However, whilst turbulence itself may not be visible, many of its causes and results in the lower atmosphere are, and pilots knowledgeable in causes and agents may easily predict and anticipate many of its occurrences.

While turbulence is normal and frequent, it can be dangerous. Its aggressiveness can cause aircraft occupants not wearing seat belts to be thrown around without warning. In cabin aircraft, injuries can occur, some serious, but being tossed from an open cockpit aircraft provides little chance of survival. For this reason, CASA have promulgated seatbelt and safety harness laws designed to minimise the chances of injury or death.

Note that, in Australia and in all Australian registered aircraft, seatbelts/safety harnesses must be worn:

1. At all times by at least one flight crew member.
2. At all times during take-offs and landings.
3. At all times below 1000 feet AGL.
4. At all times during aerobatic flight.
5. Whenever the pilot-in-command directs you to do so.

Following these rules provides a level of protection for crew and passengers in the event of encountering turbulence of sufficient magnitude to cause injury.

There are five specific causes of turbulence.

1. Jetstream (high altitude – seldom lower than about 26000 feet).
2. Frontal.
3. Thermal (Convective) Turbulence. ...
4. Mechanical Turbulence. Friction between the air and the ground, especially irregular terrain and man-made obstacles, causes eddies and therefore turbulence in the lower levels. ...
5. Wind Shear.

As a VFR pilot operating below 10,000 feet, we can eliminate items 1 and 2 from our list as jet streams and frontal turbulence issues are more applicable to IFR and airline operations at higher altitudes. However, because frontal turbulence is often associated with thunderstorms (Cb), and these are prevalent along the lines of active fronts, Cb can have an effect on lower-level VFR

¹ Atmospheric stability – the tendency in nature for air to resist vertical motion.

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operations. Simply be aware that active fronts are often associated with turbulence from thunderstorms which can be severe in the clear air below and around such storm formations.

Thermal (aka convective) turbulence can vary from gentle lumps and soft bumps, to violent updrafts and downdrafts that can cause injuries even when occupants are harnessed in. Generally, this turbulence is initiated by temperature variations of the earth's surface, heating some areas more than others and generating vertical convective currents, which can then be aggravated or otherwise by atmospheric stability factors. In the case of an unstable atmosphere, the effect of a simple thermal updraft (caused by an obstacle such as a hill, perhaps) can be magnified into a rising column of warmer air that develops into a thunderstorm, its internal and surrounding air currents capable of damaging or even destroying a light aircraft. However, as thunderstorms have a very large and often threatening visual presence, pilots can see them and take avoiding actions.

The hotter the day, the greater the amount of turbulence that will be generated thermally, and the more humid the day, the greater the chance of instability aggravating the levels of turbulence



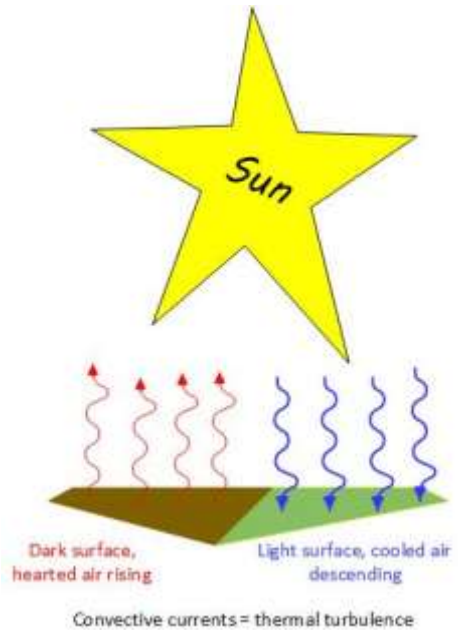
Cu, Cumulus clouds, each one caused by a single thermal column of air.



Water flowing over and downstream of rocky bottom. Air flows in the same manner providing turbulent flow for a considerable distance downstream from the obstacle.

flying over dark areas to avoid the updrafts. However, these are seldom vertical, instead being deflected by horizontal wind currents resulting in a sloping column of rising air.

Mechanical turbulence at altitude is simply disturbed airflows crossing the landscape over which we are flying. The airflows are disturbed by the underlying earth's surface in the form of the terrain contours including hills, mountains etc, and especially ranges of mountains. The more rugged the terrain, the greater the likelihood of roughened airflows extending downwind of the rougher terrain areas. Air behaves exactly as does the water flowing in the image on the left. It can be a handy habit for a pilot to imagine how water would flow across the landscape and use the mental image generated to assess the locations of areas of mechanical turbulence.

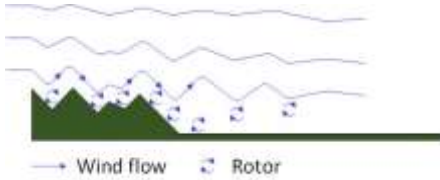


Cb, thunderstorm cloud. Easy to see and easy to avoid when viewed from a distance.

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The ruggedness of the terrain, and the inclusion of manmade obstacles, both cause surface friction, merely the scale of the problem is different. Both act as a boundary layer² to the full velocity of the free wind speed.

The troughs, peaks, humps, and hollows of rugged terrain, slow the wind speed across the surface and, just as happens in the turbulent flow in the water in the previous image, the turbulence in the airflow extends downwind. The distance or extent of the disturbance downwind depends on the windspeed in the atmospheric layers higher in the atmosphere, the magnitude of the reduction in windspeed by the friction, and the ambient stability of the atmosphere in that region. The higher the general wind flow speed, the greater will be the flow speed reduction by the friction and the more violent will be the turbulence (in the forms of choppiness, downdrafts, and rotors³), and the greater the degree of atmospheric instability, the further the disturbed air will extend beyond the end of the terrain roughness, particularly where the terrain descends into wide, relatively low-lying valleys.



Wind flows and rotors, downwind of rough terrain.

At low levels, say within 200 feet of the surface, obstacles have a similar effect, albeit more localised which manifests itself in several forms. It can be as turbulent flows of air, including gusts, swirls, and willi-willies, but also as a wind gradient.

Again, any person wishing to anticipate the less visible effects of wind around obstacles on the ground need only visualise how the obstacles would influence a water flow and the results should be easily imagined.



A willi-willi.

Gusts, swirls, and willi-willies often gather and pick up dust giving them a visibility factor that can be appreciated by pilots and avoidance action taken or allowed for. Wind gradient issues, on the other hand, are insidious and pilots will only see the results of the gradient in their changing airspeed and severe degradation in their approach angle until they take adequate corrective action

As aeroplanes normally land into the wind, the effects of a headwind wind gradient or sheer is to cause the airspeed to diminish without any initiating attitude change, and a steepening of the approach path not caused by a power reduction. These, not appropriately corrected, may see the aeroplane arrive short of the runway in a stalled or semi-stalled condition. However, an alert pilot, always vigilant for a potential wind gradient, will check the stick forward sufficiently to restore the desired airspeed, and apply sufficient additional power to reach the selected flare point. Then no issue will result. Note that, with a tailwind gradient, the reverse will occur: the airspeed will rise without a change in the nose attitude and the approach path will shallow, so the aeroplane will be too high compared with the planned approach. A go-around is the only wise option, it will always resolve this issue.

Happy Flying

----- ooOOoo -----

² The thin layer of air, adjacent to a surface, within which the full velocity of the free airflow is retarded by surface friction.

³ Small-scale overturning circulations that cause localised changes in wind direction and speed downwind of terrain or other obstacles to wind flow.

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That Time That Cessna Made a Helicopter

By Jason McDowell 023-043

In the 1950s, Cessna acquired Seibel Helicopter Co. and began work on the CH-1 Skyhook.

If you'd like to stump everyone at aviation trivia, simply ask them to name the Cessna with the shortest take-off-and-landing distances. More than likely, guesses would include the O-1 Birdog and possibly the 180 and 182. However, digging into the dustier corners of Cessna's history reveals the true winner—its one and only helicopter the company ever produced, the CH-1 Skyhook.

The idea of introducing a helicopter to the Cessna product line began to



One of the rarest and least-known Cessnas ever produced, the CH-1 helicopter. [Credit: Cessna]



Known as the YH-41 Seneca in U.S. Army service, the CH-1 was evaluated and ultimately rejected by the branch. This example is equipped with experimental strakes atop the cabin to address stability concerns. [Credit: Cessna]

the ground up, Cessna went shopping for existing options. Its search eventually took it to the Seibel Helicopter Co., conveniently located on the other side of Wichita, Kansas. In 1952, Cessna acquired Seibel and its S-4B helicopter design, and founder Charles Seibel was retained to lead the engineering team.

The S-4B, while functional, utilized an entirely utilitarian design devoid of any niceties, such as an enclosed fuselage, soundproofing, or a finished interior. Cessna wasted no time replacing the skeletal design with an aluminium monocoque fuselage and cabin that utilized many of the same design principles as its fixed-wing aircraft. Before long, the first CH-1 emerged from the factory and made its first flight in July 1953.

gain traction in the early 1950s. This was a time when the company's fixed-wing offerings were relatively modest but were on the brink of massive expansion. The lineup in the early part of the decade consisted of the 120/140, 170, 180, 190/195, O-1, and the 310/320 twins but by the following decade would more than double in size and encompass entirely new categories. A helicopter, Cessna thought, would be one more way to gain market share.

Rather than designing a helicopter from



Were it not for the central pillar that contained the drive shaft and control cables, the CH-1's cabin would have been able to seat three across. [Credit: FLYING archives]

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Equipped with its new fuselage that later expanded to incorporate four seats, the CH-1 was sleeker and more modern looking than existing designs, and it was updated beneath the skin, as well. The Siebel's original 125 hp piston engine was gone and in its place was a far more powerful alternative, ultimately a supercharged 6-cylinder Continental that produced 270 hp. This provided outstanding high-altitude performance, and the CH-1 went on to set several records. In addition to becoming the first helicopter to land on 14,000-foot Pikes Peak in Colorado, it set multiple altitude records by climbing to nearly 30,000 feet.

Cessna's marketing team pursued both the civilian and military markets, securing a U.S. Army contract for 10 examples that would become known as the YH-41 Seneca. The Army was ultimately unimpressed with the helicopter's performance, and Cessna bought back six, modifying some



Mounted in the nose, the CH-1's engine was supercharged, enabling record-breaking performance but suffering from a short TBO interval. [Credit: FLYING archives]



Short-range executive and business travel was a target market for the CH-1. [Credit: Cessna]

systems and converting them to civilian models.

The company had better luck with the civil model, pursuing the short-range executive market as well as the utility helicopter market. In many respects, the CH-1 was impressive. The cabin was massive, enabling passengers to easily move from one seat to another in flight. At 64 inches wide, it was within 2 inches of a Citation Excel business jet and incorporated 360-degree panoramic visibility.

Unfortunately, the CH-1 was hobbled by several issues that ultimately proved insurmountable. Engine and transmission reliability reportedly was well below par for the market, reflected by the woefully short



The mid-1950s Cessna lineage is evident in the panel design incorporating familiar plastic trim surrounding the instruments. [Credit: Cessna]



The CH-1's forward engine placement allowed for a more open cabin with better all-around visibility than comparable helicopters. [Credit: Cessna]

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engine TBO of only 600 hours. This was a fraction of comparable helicopter engines and would have increased hourly operating costs noticeably.

Additionally, the CH-1 was quite expensive to purchase. In 1960, the CH-1C was offered for \$79,960. The 1965 pricing for the Bell 47J and Brantley 305 was \$67,000 and \$54,000, respectively. While Cessna could justify a higher price for the nicer cabin and better high-altitude performance, it perhaps realized it would struggle to make a case against small turbine helicopters that would soon enter the market. Indeed, Hughes priced the 500 at \$95,000 nine years later.

Faced with reliability concerns and diminishing marketability, Cessna ended the CH-1 program and bought back nearly every example for scrapping, presumably to eliminate any product liability concerns. Today, of the 50 examples built, only one survives—a lone YH-41A Seneca in storage and awaiting restoration at the United States Army Aviation Museum at Fort Rucker, Alabama.

----- ooOOoo -----

Always make sure your
loved ones are buckled up.



I wonder how fast this ostrich
was going when he hit the fence!



I could swear he is doing it wrong,
but since I dont own a boat, Im
going to keep my opinion to myself!



SIGN OF THE TIMES



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Wheelbarrowing is a NO NO NO NO NO!

By Rob Knight M22-023

Scene 1: A fine day with a light wind blowing across the runway at about 5 knots. A light aircraft is on short finals, hot and high, with its airspeed a few knots fast and the aircraft too high to flare at the desired flare point. Ultimately the aircraft finally reaches the flare point further into the runway than the pilot likes so he decides to get the wheels onto the ground where he will have some braking.

Scene 2: Inside the cockpit the pilot hasn't allowed the aircraft to float as normal to wash the airspeed off. He flares just enough to let the aircraft touch down on the mains and nosewheel simultaneously.

Scene 3: From outside the aircraft the wheels rumble and the aircraft bounces gently. You can see the trailing edge of the elevator move down as the pilot pushes the stick forward to hold the aircraft on the ground. The nose is forced down onto the nosewheel wheel and the nosewheel suspension flexes as the leg shortens. The aircraft has begun to drift slightly across the runway with the crosswind

Scene 4: Inside the cockpit the pilot reaches for the brakes and applies them firmly. Too little of the runway remains in his windscreen so he firmly presses the stick full forward and applies even more pressure on the toe brakes.

Scene 5: The main wheel leg lengths extend as the tail rises and the nose pitches even further down. The main wheels stop rotating as the traction diminishes; the weight has come almost completely off the main wheels. Directional control is lost – falling airspeed has robbed the controls of their effectiveness and any chance of useful differential braking is gone- the braking wheels are virtually off the ground and, anyway, the pilot is too engaged to try to use them. The aircraft continues to drift further away from the runway centreline.

Final scene: The aircraft suddenly snaps and yaws violently, yawing into wind and pivoting around the point of contact of nosewheel with the runway. The nose leg fractures and collapses. The prop strikes the ground and bends backwards as the cowling crumples and tears away beneath engine. The tail and windward wing rise and the aircraft slowly topples tail over nose to lie upside down on the runway. There is silence except for the crackle of bending metal as the wreck settles. There is a strong smell of petrol in the air.....

Wheel-barrowing is a dangerous condition that occurs when the weight of an aircraft becomes concentrated on the nose wheel during a take-off or landing roll.

On take-off, the common cause is the pilot holding the airplane on the ground too long, particularly when a crosswind is present. When this flawed technique is used the forward stick that holds the airplane on the ground by pitching the nose down unloads the main-wheels, transferring the load to the nosewheel. This extra heavy nosewheel loading compresses the nose-wheel suspension and forces the nosewheel to remain in firm contact with the runway. This is *wheel-barrowing*.

In this condition, any yaw will set up a couple that will turn your airplane, and your very world, upside down. All directional control will be lost and the airplane will trip over its nose-wheel.

In reality, there is no cause to keep an airplane on the ground after it has reached its V_x (best angle of climb speed), indeed, there are very good reasons to be airborne before this figure is reached. If a pilot considers that he/she should hold their airplane down until attaining its V_x before lift-off, then the flight should be cancelled or postponed until better conditions exist.

Wheelbarrowing is more frequently an issue during the landing phase. Commonly, it results from approaching too fast and then touching-down too flat. As the rebound from the undercarriage tries to make it fly off again the pilot takes the stick forward to hold the aircraft on the ground. The

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applied forward stick will pitch the airplane nose down, unloading the main wheels and loading the nosewheel instead. With the aircraft main wheels on tip-toe braking will be lost because the wheels have insufficient weight on the tyres to provide traction for brakes to function. The nose wheel, still in firm contact with the runway, will suffer substantial drag, and any lateral movement will create a powerful couple that yaws the airplane and it will pivot violently about its nosewheel.

To get a grip on this topic, it is necessary to be clear on what a 'couple' is in this sense.

A Couple is a force acting about a point. The magnitude (power) of a couple varies with either a change in the power of the force applied, or a change in the arm of the force. A couple can ONLY be opposed by another couple.

In a 'normal' landing, when the main wheels (PW and SW) touch the runway with the nosewheel (NW) clear, two couples are generated by the contact the wheels have with the runway. The magnitude of each couple is determined by the drag force of the tire/wheel and the length of the couple arm - the distance between the point of application of the drag force and the aircraft Centre of Gravity.

Assuming the same drag applies to each

Using the correct take-off and landing techniques provides a directionally stable aircraft. Drag from the wheels in contact with the runway provides a directionally corrective force.

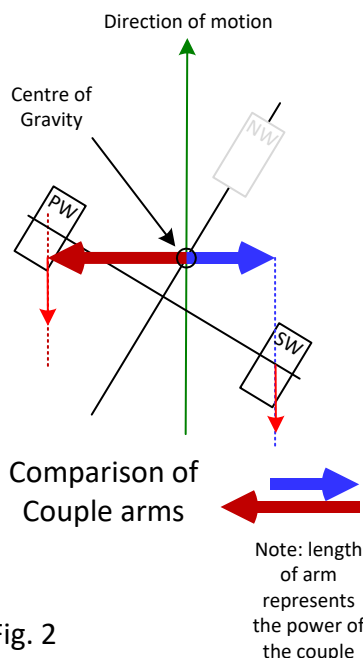


Fig. 2

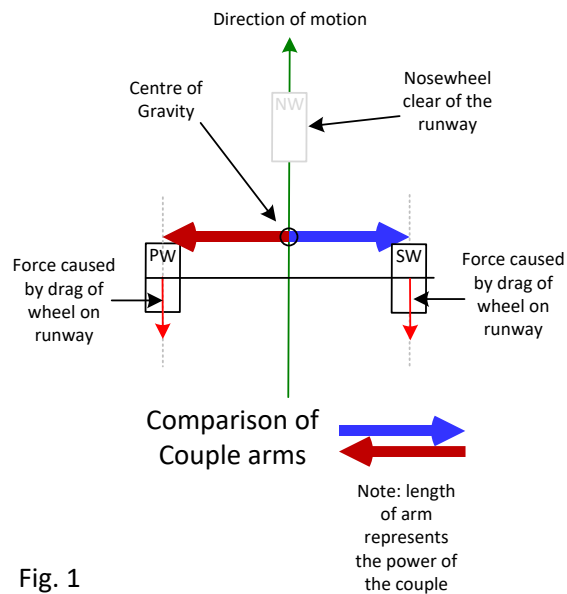


Fig. 1

wheel, when the aircraft is pointing in the same direction as it is travelling the couples are equal (red and blue couple arms are the same length) and no yaw will be caused by this interaction. This makes a nosewheel equipped aircraft easy to control on the runway because it is directionally stable and its forces try to keep its nose aligned with its direction of movement without pilot input. See Fig. 1.

As Fig. 2 illustrates, this is a STABLE action because it yaws the aircraft back towards its direction of motion and as it does so the couple arm shortens, diminishing the force as the alignment completes. In other words – the airplane WANTS to move in a straight line. The weight and drag forces tend to keep the airplane moving straight

However, this will ONLY be the case while the main wheels are on the runway and have traction with it. If

the main wheels are not in contact with the runway and the load is on the nosewheel, an entirely different situation exists.

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If, whilst the aircraft has weight on the main wheels, the nosewheel is clear BUT the aircraft nose is NOT pointing in the same direction as the aircraft is moving, then the couples will not be equal – the leading main wheel will have a greater arm and therefore more powerful couple. This, the red couple as illustrated, is more powerful than the blue couple, and the imbalance provides a force to yaw the aircraft's nose and align it with the direction of motion.

However, when the nosewheel is on the runway and the main wheels aren't, the situation becomes critical.

Fig. 3. If, in this state, the drag generated by the nose-wheel is directly aligned with the centre of gravity and the direction of motion, no couple is formed and there is no yaw force generated.

However, immediately the nosewheel diverges from its alignment with the centre of gravity it will instantly create a couple that generates the unstable yawing moment. For example- See Fig's 4, 5, & 6.

Fig. 4. If the nosewheel has moved to the right, the drag force caused by nose wheel contact with the runway is now no longer aligned with the centre of gravity and direction of motion. A couple is formed.

Yaw creates an unstable condition that that can quickly become an out-of-control situation.

Fig. 5. The grey force of the aircraft's mass acting through the aircraft centre of gravity is moving forward while the red drag force created by the drag on the nose-wheel's contact with the runway acts rearwards. This will savagely yank the aircraft into a right yaw state and, as the yaw takes effect and the angle change increases, the arm gets longer and thus very quickly more powerful.

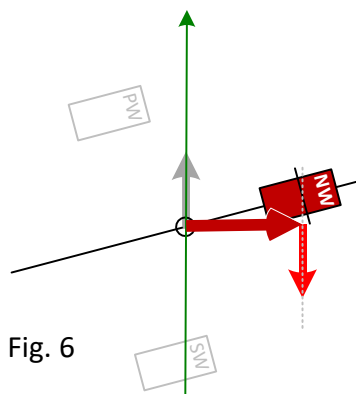


Fig. 6

Fig. 6. The magnitude of the couple has increased greatly with the changing angle. Not only is the arm longer, but the front wheel has less rolling ability and the now scuffing tire has greater drag than it initially had.

The situation is now serious. The aircraft still has just the nosewheel on the runway and the yaw forces are now beyond correction by the rudder. Removing forward pressure on the stick and then adding full power may allow the aircraft to fly off but as curative action it is doubtful at best. Effective control is

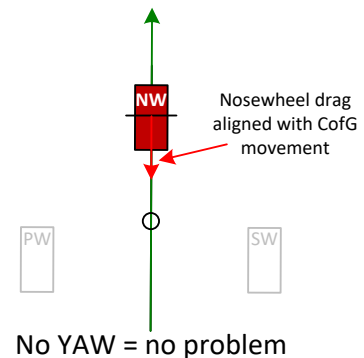


Fig. 3

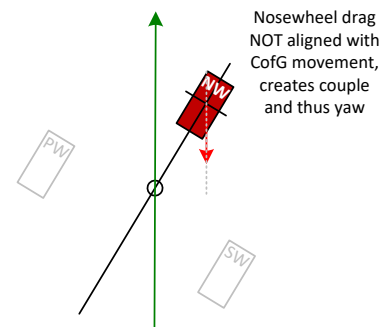


Fig. 4

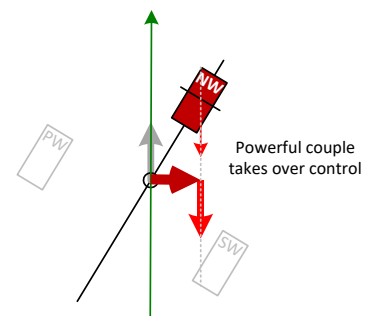


Fig. 5

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lost and there are no remedial options available to the pilot at this late stage.

This is, in effect, a ground loop condition and the side loads on the nose wheel assembly will quickly exceed their design limits. The nose leg will fail. The prop may strike the ground and disintegrate. Parts of the propeller may enter the cockpit with fatal consequences. This can ruin your WHOLE day. However, on the bright side, the landing will be short!

While the best correction is to never get into this condition in the first place, an immediate go-around before substantial yaw is experienced can resolve the problem – but early recognition of the pending problem is paramount. The correct landing technique has the main wheels touching first and the nose wheel settling only in such a manner that a positive load is retained on the main wheels as the speed washes off.

As you can now see, there are very good reasons for this.

I first published this article in early 2014, but now re-produced it at the request of a reader who didn't see it at that time and has recently experienced such an event, He was fortunate in that the aircraft was not damaged, but his ego needs panel beating and his adult daughter, who was with him, has refused to subsequently fly in a light aircraft because of the fright that she got. Note that my depiction in the article above is not what happened in this case, but what the potential and frequent result is likely to be.

Happy flying

----- ooOOoo -----

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Wishing to make contact

I would like to discuss with anyone that has already installed Liquid Cooled Heads on a Jabiru motor their experiences, and any pros, cons, and advice.

Clive Ryan -Tel: 04 0303 8239 or Email: cfryan50@yahoo.com.au

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What was it Like to Fly the Concorde

From article by Mark Saunokonoko • Oct, 2023

Faster than a speeding bullet, so high you could see the curvature of the earth: when Concorde flew - people watched.

Casual onlooker, avid plane spotter or experienced 747 pilot? It didn't matter. Concorde's long, slender body coupled with its fabled supersonic speed thrust it into the imagination of anyone watching.

An everyday moment on the tarmac at London Heathrow in the late 90s has long stuck with now-retired Concorde pilot John Tye, and perfectly encapsulated, he said, the magnetic appeal of Concorde, the wondrous aircraft that was decommissioned 20 plus years ago.



The Concorde aircraft were retired in 2003, 27 years after commercial operations had begun. (Photo by Ian Waldie / Getty Images)

With close to 100 passengers onboard, Tye was sat inside in the cockpit of BA001, the scheduled British Airways Concorde service to New York, leaving each morning at 10:30.

"Taxiing out was always an incredible experience," Tye said. "You knew the eyes of the world were on you."

Tye's Concorde joined an orderly queue of planes ambling down runway 28, and pulled in behind an American Airlines 747 jet.

"They were clear to run up and take off, and then this American voice (comes on the radio, speaking to the control tower) and says something like, 'Gee, do you mind if we hold for a bit. Can we wait and watch the Concorde go first?'"



John Tye was one of only 134 British Airways pilots. (Courtesy of John Tye).

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At that time, British Airways and Air France had been flying Concorde for almost 20 years. Concorde wasn't new. Its magic never got old.

"It really brought it home to me how special Concorde was," Tye said. Special was right.

Concorde's four Rolls Royce Olympus turbojet engines powered it to speeds of Mach 2 - twice the speed of sound - or a thundering 2450 kilometres an hour. It had a signature supersonic boom.

That kind of propulsion - flying faster than a bullet - saw Concorde set a record for the fastest flight by a commercial airline between the two great cities; taking off from New York and landing in London in just two hours, 52 minutes and 59 seconds.

Flying Concorde was an all-round sensory experience.

From a rarefied cruising altitude of 18,300 metres, almost in space, passengers could see the curvature of Earth while sipping French champagne and dining on fine foods. It was no wonder a line of stars flocked to ride Concorde, along with the high-flying business executives the plane was built to cater for.

Dame Joan Collins loved Concorde, and was a frequent flyer. The "Dynasty" star always sat near the front. She made sure she was onboard Concorde's final flight, on October 24, 2003.



John Tye said piloting Concorde was 'the best job in the world. (Courtesy of John Tye).

Collins called Concorde's decommissioning a "travesty of civilisation".

Also a regular, Beatle Paul McCartney was "everybody's favourite passenger", Tye said. Queen Elizabeth II had a soft spot for the iconic jet, and sometimes used it to make official trips and Aussie pop star Kylie Minogue was no stranger to Concorde, Tye said, and Mick Jagger "used to come on, sit down the back quietly and read his book".

Travelling pre-9/11 meant passengers were allowed inside the tight confines of the Concorde cockpit for a look, and Tye would often walk the aisle and chat with celebrities and other travellers as the plane soared over the Atlantic.

"It was the best job in the world," Tye said. He has written a book, *Life of a Concorde Pilot*, which documents his life journey from an orphanage to flying the most prestigious plane on the planet.

A typical day at work for Tye meant leaving his house around 7.30 in the morning.

His young daughters would be rushing around getting ready for school. He'd get in the car and head for Heathrow, "driving past people walking down the street with their briefcases, rushing to the station to catch the 7.40 train into London".

"And I'd drive to Heathrow knowing that I was going to be flying Concorde across the Atlantic Ocean. It was such a different feeling."

At Heathrow, Tye would meet another pilot, a flight engineer and the six cabin crew. By 10.30am they'd all be pushing off the gate at Terminal 4, to "launch down the runway and fly across the Atlantic in not much more than three hours".

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Having left Heathrow at 10.30 in the morning, the Concorde would whistle westward and touch down in New York at 9.30am local time.

So Tye and the crew had "all day in New York for lunch or a bit of shopping ... it was absolutely marvellous." They would stay overnight in New York and fly back in the morning.

"Literally I'd be home by 5.30 in the evening, the following day." Concorde was all about speed.

Tye said his first takeoff in a Concorde "was like nothing on earth".

"We practiced it over and over again in the simulator, but the simulator can't prepare you for the real noise, the vibration and the bouncing of the flight deck because you're actually sitting 37 feet (11 metres) in front of the nose wheel. "Every slight bump in the runway is amplified. You get the smell of the kerosene coming through the air conditioning every now and again. It can't prepare you being thrust back into your seat. The acceleration is absolutely phenomenal. "It went like a rocket."

Because of its shape, Concorde was small. There was only room for 90-100 passengers, so ticket prices were steep.

British journalist Richard Quest flew Concorde five times. "It had more like office chairs, bucket seats, and very small windows," he told CNN. "It was noisy, extremely noisy, but I challenge anybody not to have a smile from ear to ear when they got on it."

Concorde's only accident came in July 2000 when an Air France plane crashed just after take-off from Paris. All 109 people onboard and four on the ground were killed.

Concorde returned to service in 2001, but the clock was ticking.

After almost 30 years in the air, in 2003 BA and Air France decided to decommission Concorde.

The supersonic jet had long been known to divide airline executives. Both airlines blamed falling passenger numbers in the aftermath of the Paris crash and rising operating costs. There was no doubt Concorde was an engineering triumph, but commercial success had proved more elusive.



Concorde was an engineering marvel. (Bettmann Archive).



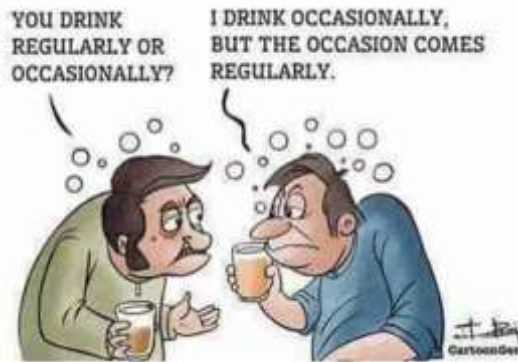
The Concorde's front office.

----- ooOOoo -----

- Brisbane Valley Flyer -

FLY-IN Invites Looming

WHERE	EVENT	WHEN
Murgon (Angelfield) (YMRG)	Burnett Flyers Breakfast Fly-in	See website for next planned event". Confirm details at: http://www.burnettflyers.org/?p=508
Watts Bridge (YWSG)	Watts for Breakfast	Keep March 03 rd to come abdd join the Watts for Breakfast group. Starts 0730 'til 0930. Come and EAT. See https://watsbridge.com.au



When a man says he'll do anything for a woman, he means fight bad guys and kill dragons, not vacuum or wash dishes.



SOMETIMES YOU MEET SOMEONE AND YOU KNOW FROM THE FIRST MOMENT THAT YOU WANT TO SPEND YOUR WHOLE LIFE WITHOUT THEM.

Instead of a sign that says, "Do not disturb" I need one that says, "Already disturbed, Proceed with caution"

Brisbane Valley Flyer -

The Days of Our Lives (From a Flying Instructor's perspective).

By Rob Knight [M23-143.17 Me&DLU](#)

In the 1970s the western world experienced a fad called "the Telethon". These were simply a charity drive utilising TV and viewers participation in a televised event that included dares, challenges, and other activities to raise money. My employer, at one stage, included themselves in one such event where they offered the club aircraft at a slightly reduced cost and then donated a percentage of the income to the telethon organisers. Obviously, there was an advertising spin-off as well.

On the day the weather was markedly less than ideal, and restrictions had to be made for safety reasons. All flights, even those for night-rated pilots had to carry a night rated instructor, as either a safety pilot, or as the pilot in command. and most of the night-local flights had to be reduced to circuits as the visibility was below night VFR requirements outside of that.

0230 hours saw me in DLU, the Club's T3, with my fourth student doing my fourth hour of circuits. Showers of rain were passing through but it was safe enough withing the circuit area, and keeping the flare-lit runway in clear sight. The student was doing the flying and all I was doing, really, was riding shotgun. Then he said that he was getting bored – he hadn't realised just how long an hour could be. We looked at each other, we had been flying a fair bit recently as he was doing an aerobatic rating, The two rows of runway lights were perfectly visible, I reached out and took control. We couldn't be seen against the black night and the cloud build-up stopped reflected lights from Auckland city. There were just three aircraft in the circuit, the other two were ahead and I identified them positively.

At the circuit height of 1100 feet, the nose went down a bit, and the power went up to full throttle. The cloud base was not far above so it was a little tight. Then the nose came up, the left aileron went in, with forward sick added as we went inverted, and then we had completed a nice aileron roll to the left⁴. The student laughed out loud. "What about one to the right?", he challenged.

After one to the right, we were far enough downwind to give him back the controls, and he set us up for the approach.

Following the touch and go, we climbed back in the circuit and once again downwind, we did another roll.

"Delta Lima Uniform, Ardmore tower, do you have your navigation lights on?" It was Howard Monk, the Chief Air Traffic Controller at Ardmore, especially on duty for the Telethon night.

"Delta Lima Uniform, Yes, our nav lights are on," I replied, a little puzzled.

Lime Uniform, you appear to have a malfunction in your nav lights, the colours are supposed to be fixed but yours appear to be flashing red and green. I'd get them checked if I were you."

"Lima Uniform, thanks for that, I'll check them as soon as I get back to the club," I replied

After two more circuits, sans rolls, as we taxied back to the Club Howard called again. "Lima Uniform, the problem with your navigation lights appears to have fixed itself after my adv ice. But check them anyway, at your discretion."

The next time I saw Howard in the Club bar I bought him a beer. He gave me a wink!

----- ooOOoo -----

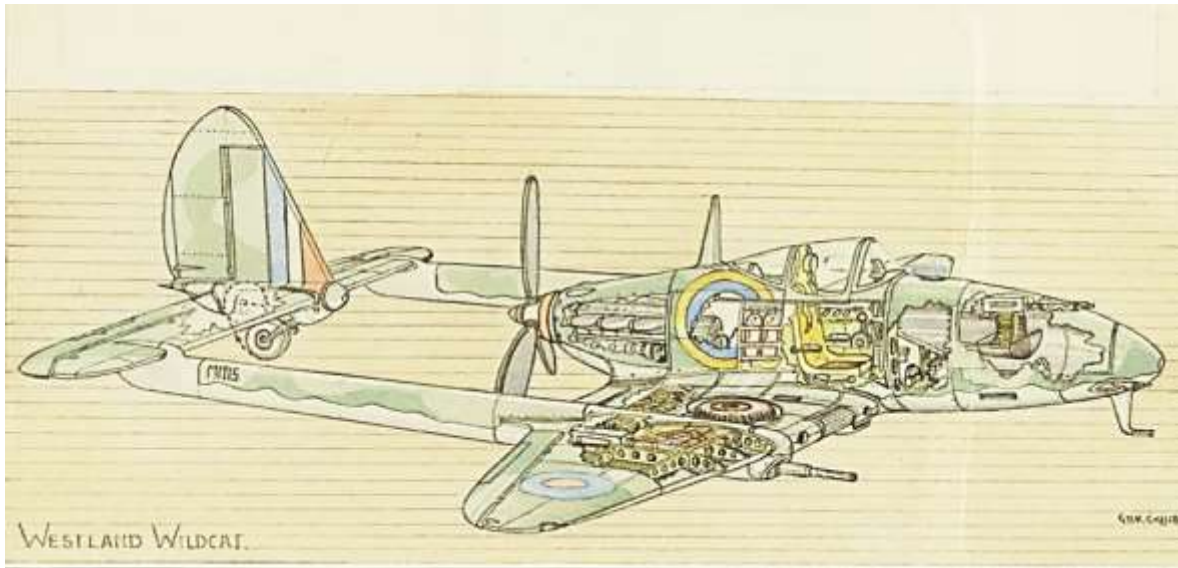
⁴ I held a valid low-level display aerobatic endorsement at that time but we shouldn't have been doing them at night, and in the circuit pattern at circuit height.

- Brisbane Valley Flyer -

The WWII Westland Wildcat

The super-fighter? design that was given to the Nazis

By Rob Knight M24-160



The hand-drawn image of the "Westland Wildcat", drawn during WWII captivity by Royal Marine PoW Guy Griffiths, 1945. Catalogue reference: WO 208/5440.

In 1938, the Westland aircraft company created the revolutionary Whirlwind fighter design which is commonly known and recognised. However, was the sketch evidence of another innovative fighter that never made it into production? The answer is "No". This "Wildcat" was simply an attempt at disinformation by an incarcerated British Royal Marine pilot in the early days of WWII.

According to the British National Archives, Guy 'Griff' Griffiths was a Royal Marine pilot, and one of the first naval officers to be captured by the Germans in WWII. As a captive, he enjoyed the distraction of dreaming up a scheme to feed misleading intelligence to the German authorities whilst caged in Dulag Luft by creating sketches of fake British aircraft which he deliberately discarded around the camp where the German guards were sure to discover them.⁵

But might this innovative design have actually worked? There is sufficient evidence in German archives that survived the war to indicate that they certainly suspected so.

"The Wildcat concept is a compact, single-engine, twin boom-design that shows classic Westland design philosophy and impressions in the condensed central fuselage nacelle, pusher engine and armament reminiscent of the Whirlwind design. The fuselage not only looks like the front end of the Whirlwind, it also appears to contain aspects of the fuselage of the 1931 Pterodactyl IV, and the projected Mk VI fighter. It looks like a logical attempt to deliver the punch of the Whirlwind but using a cheaper to manufacture and smaller airframe using a single Merlin engine.

This would be perfectly logical to those with a little knowledge of the Whirlwind and its problems. Firstly, the Whirlwind's Peregrine engine (developed from the RR Kestrel) had found its development cancelled by Rolls-Royce and its obvious replacement was the Merlin because so many other fighters

⁵ See note at end.

Brisbane Valley Flyer -

and RAF aircraft were using that powerplant. Secondly, with wartime constrictions on manufacture, moving to a single-engine would improve the chances of Air Ministry design approval than simply replacing the two Peregrines on the Whirlwind with two Merlin engines, given the pressing demand for those engines – you’d get two fighters instead of one for the same engines.

The proposed pod and boom layout offered both benefits and disadvantages. As in any aircraft design, there are trade-offs between desirable characteristics like range, manoeuvrability, and performance in terms of speed and handling. The most obvious attraction of the design is the likelihood of realising a small but heavily armed fighter, that had the potential to become a fast, manoeuvrable and effective fighter aircraft and gun platform.

But the design does hold some questionable aspects. Theoretically the undercarriage arrangement is doubtful. The tail-wheeled design would leave little propeller clearance, or require longer, heavier, and harder to retract undercarriage to give adequate clearance. This issue is then compounded by the locating of the fin and rudder above the tail-wheel, all mounted on the centre of the tailplane span. This must inevitably result in fin, rudder and landing loads all being carried by the tailplane, inevitably adding weight to the structure in providing the strength required to carry these loadings.

The complexity of the control runs for the empennage is heavily compounded by the twin boom and single rudder arrangement. Locating the fin and rudder at mid-tailplane has these surfaces being in the propeller slipstream (an advantage), but adds substantially to the complexity of the control cable/rod system, which has to pass from the cockpit, through the wing to the tail-booms, down the booms, and then across through the tailplane to the fin. This would be an ideal application for fly-by-wire, but, of course, that was 60 years into the future.

Pilot evacuation would definitely be another issue. Baling out, just ahead of the propeller might see escaping airmen served up sliced, so some sort of ejection seat system would have had to have been designed.

Another problematic issue encountered with rear or pusher engine installations is adequate cooling for the engine. Details relating to engine cooling are not entirely clear, the drawing shows the front of a belly radiator, similar to the Hurricane. This is certainly an area needing consideration in development.

With the small airframe as this is, the combat range would be a critical factor. The small airframe leaves little room for fuel tanks without degrading performance so a short-range interceptor role would be most likely its target. Timing is everything here – as a short-range interceptor fighter the design has some potential, but in the latter stages of the war, larger, longer-range escort fighters would likely have been a greater priority.

Guy Beresford Kerr “Griff” Griffiths (6 June 1915 – 12 July 1999) was a Skua pilot at the start of the war. Eleven days into the Second World War, three Skuas were dispatched from HMS Ark Royal to defend a merchant ship against a German submarine attack. This was the first British Naval bombing of the conflict, and one of the pilots was Griffith. Due to incorrect fuse arming, the Skuas bombs damaged the tails of two of the three aeroplanes, which crashed into the sea with the loss of both air observers. Griff, along with fellow pilot Thurstan, survived, becoming the first naval officers captured in the war. Griffiths’ spirit of defiance survived captivity and he used his artistic skills to create fake British warplane designs to confuse and waste the time of

- Brisbane Valley Flyer -

Nazi intelligence (he also forged documents to aid escape attempts). He was freed in 1945 and become the first Royal Marines officer to fly a helicopter. During the Korean War he visually identified the first downed MiG-15.

I'd like to meet him! (Ed.)

----- ooOOoo -----

Notice

Correction to Question 5 in February's Quiz

My thanks to the several members that have pointed out my error.

5. Whilst in flight, a side gust of wind causes the aeroplane to roll. How can a side force on the aeroplane produce a rolling motion?
- A. Because the side gust causes yaw about the vertical axis, which, in turn, increases the airspeed on one wing and decreases it on the other. Such a lift imbalance creates roll.
 - B. Because the side gust causes pitch about the normal axis and thus roll.
 - C. Because the wing's dihedral, the side of the aeroplane which suffers the gust then rises and so the aeroplane rolls.
 - D. Because the side of the aeroplane on which the gust acts, experiences a rise in air pressure which increases the lift on that side so producing roll.

Correct option to answer -

5. Option **A** is correct.

The gust will cause the aircraft to yaw about the vertical axis which will then cause an increase in the local airspeed on the outer wing and a reduction of local airspeed on the inner. Such a lift imbalance will create roll.

----- ooOOoo -----

Brisbane Valley Flyer -

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

1. Aeroplane overbank in a balanced descending turn is caused predominantly by which option(s) below?
 - A. Additional airspeed over the outer wing.
 - B. The inner wing being closer to the critical angle of attack.
 - C. A lack of appropriate pilot co-ordination.
 - D. A and B are correct.

2. Which of the following will cause an increase in the aeroplane's stall speed?
 - A. Climbing out excessively steeply after take-off.
 - B. Carrying out a steep climbing turn.
 - C. Approaching at too low an airspeed.
 - D. Carrying out a steady straight glide without power.
 - E. A and C are both correct

3. Which of the following will lower the stall speed of an aeroplane?
 - A. Flying straight and level after turning.
 - B. Levelling out after a steady and sustained straight dive
 - C. Flying with a high airspeed as in a steep dive.
 - D. Entering a steep dive.
 - E. A and B are correct.

4. Considering an aeroplane in a steady power-off glide:
 - A. Lift is less than weight.
 - B. Drag is less than apparent thrust.
 - C. Aircraft weight is reduced because some of the weight is acting rearwards.
 - D. Lift = Weight.

5. In the exit/recovery process from a wing-drop stall, how much rudder is required?
 - A. Sufficient to unstall the wings.
 - B. Sufficient to pull the nose back to the original reference point.
 - C. Only sufficient to stop any further yaw.
 - D. Sufficient to stop the wing dropping further.

See answers and explanations overleaf.

- Brisbane Valley Flyer -

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 (International +61 4 0089 3632), or email me at kni.rob@bigpond.com.

1. A is correct.

When an aeroplane is turning, the outer wing in the turn must have an increased airspeed because it follows a longer path (the distance it travels is greater.). As it does this in the same time the inner wing travels its path, the airspeed across the outer wing must be greater. Greater airspeed = increased lift = overturn (or over-bank) tendency.

2. B is correct.

Any nose-up change in an aeroplane's flight path will cause an increase in loading which will, inevitably, provide an increase in the stall speed. In a climbing turn. The climb part has no effect on the stall speed, but the turning factor sure will.

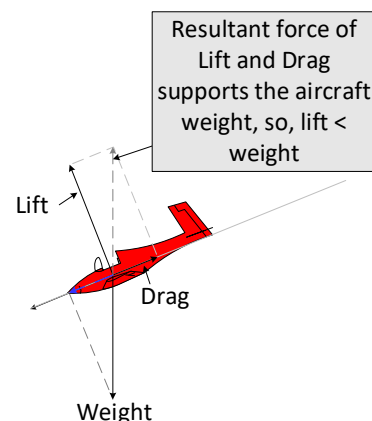
An approach at low airspeed has no effect on the loading so cannot increase the stall speed - the aircraft might be closer to the stall, but the speed at the stall will not be increased: and glide does not increase the loading so will not affect the stall speed either.

3. E is correct.

Neither entering a dive, nor whilst maintaining a dive will apply an increased positive loading on the aeroplane so the stall speed will not be increased.

4. A is correct.

In a steady glide, some of the weight is being supported by the drag generated by the aeroplane.



5. C is correct

In the wing-drop stall exit/recovery, only sufficient rudder should be used to **STOP** any further yaw after the wing has dropped.

Applying insufficient rudder to stop the yaw after the wing drop may slow or even prevent an exit or recovery, and excessive rudder at the wing drop may cause a yaw and wing-drop the other way.

----- ooOOoo -----

Brisbane Valley Flyer -


Aircraft Books, Parts, and Tools etc.

Contact Rob on mobile – 0400 89 3632

Tow Bars

Item	Condition	Price
Tailwheel tow bar.	Good condition	\$50.00

Aircraft Magnetic Compass (Selling on behalf)

Item		Price
Magnetic compass: Top panel mount, needs topping up with baby oil.		\$45.00

Propeller Parts

Item	Condition	Price
Propeller spacers, Assorted depths, all to fit Rotax 912 UL/ULS propeller flanges	Excellent	\$100.00 each
Spinner and propeller backing plate to suit a Kiev, 3 blade propeller, on a Rotax 912 engine flange.	Excellent	100.00

For all items, Contact me - on mobile – 0400 89 3632

Or email me at:

kni.rob@bigpond.com

- Brisbane Valley Flyer -

Aircraft for Sale

Kitset - Build it Yourself

\$1,780.00 neg

DESCRIPTION

All of the major components needed to build your own aircraft similar to a Thruster, Cricket or MW5.

- Basic plans are included, also
- Hard to obtain 4" x 3" box section, 2 @ 4.5 metres long.
- Wing spar & lift strut material - 6 tubes of 28 dia. x 2 wall.
- 20 fibreglass ribs plus the moulds,
- 16 spar webs plus the moulds,
- 2 fibreglass flat sheets for the leading edges - 4 metres long x 1.1 metres wide.
- All instruments including,
- A Navman flow meter,
- A Powermate rectifier regulator,
- A ballistic parachute,
- A 4-point harness,
- Set fibreglass wheel pants, and
- More.



Box sections and tubes



Flow Meter, Navman, Ballistic Chute, etc

**A very
comprehensive
kit of materials**



Ribs, tubes, spats, etc

Colin Thorpe. Tel: LL (07) 3200 1442,

Or Mob: 0419 758 125

Brisbane Valley Flyer -

Thruster T85 Single Seater for sale.

Beautiful classic ultralight single seater taildragger Thruster for sale; to good Pilot. Built in 1984, this is a reluctant sale as I inherited Skyranger V Max and two aeroplanes are too many for me.

\$9,750.00 NEG



The aircraft at Kentville



New Engine Rotax 503 Dual Ignition has only 10



Fuel tank



Instrument panel

Details

Built - 1991	Serial Number - 312
Model - Thruster 85 SG	Rego Number – 10-1312
TTIS Airframe - 638	Original logbooks - YES
Engine - *NEW* Rotax 503 DIUL	Next Annuals due – 05/11/2023
TTIS Engine – 10 hours	Propeller – Sweetapple, Wood, 2 Blades (as new)

Instruments - RPM, IAS, VSI, ALT, Hobbs meter, New Compass, CHTs, EGTs, Voltmeter & fuel pressure gauge

Avionics - Dittel Radio 720C and new David Clark H10-30

Aircraft is fitted with Hydraulic Brakes. Elevator Trim. Landing Light. Strobe Beacon. Auxiliary Electric Fuel Pump. is in excellent mechanical condition and the skins are "as new".

Offers considered. Call Tony on 0412 784 01

- Brisbane Valley Flyer -

Sky Dart Single Seat Ultralight for Sale.

\$4,500.00 NEG

A single seat, ultralight, Taildragger. Built in 1987, this aircraft has had a single owner for the past 18 years, and is only now I am regretfully releasing it again for sale. I also have a Teenie II and am building another ultralight so I need the space.



The landed Sky Dart III rolling through at YFRH Forest Hill

TTIS airframe is 311 hours, and the engine, TTIS 312 – is just 1 hour more. Up-to-date logbooks available. 2 X 20 litres tank capacity. To be sold with new annuals completed.

It is easy to fly (for a taildragger), and a great way to accumulate cheap flying hours.

Call me to view, Bob Hyam, Telephone mobile 0418 786 496 or Landline – 07 5426 8983, or Email: bobhyam@gmail.com



Landed at McMaster Field after my flight back from Cooma just West of Canberra. In the cockpit with me is GeeBee, my dog

Single Seat T84 Thruster, disassembled and ready for rebuild.

I have a T84 single seat Thruster project in my hanger at Watts bridge.

The fuselage is on its undercarriage, the wing assemblies are folded up and the skins are with them.

Included is a fully rebuilt Rotax 503 dual ignition engine and propeller.

And, most importantly – the aircraft logbook!

Asking price \$5000.00

Contact John Innes on **0417 643 610**

Brisbane Valley Flyer -

Slipstream Genesis for Sale

Slipstream Genesis. Built 2001. Two seats side by side, powered by 80 hp 912UL Rotax, driving a Warp Drive 3 bladed prop. Cruise 70-75 knots. Empty weight 304kg, MTOW 544 kg, Payload 240 kg. Fuel tanks hold 78 litres. With fuel burn averaging 16 litres/hr, still air endurance (nil reserve) is theoretically 5 hours, or 350 nm. Aircraft always hangared. It has been set up for stock control or mustering, and is not fitted with doors.

Registered until 13 October 2024, currently flying, and ready to fly away

Total Hours Airframe: 149.7. Current, up-to-date, logbook. Aircraft flying so these figures will change

Total Hours Engine: 1673.9. Annuals/100 hourly inspection due 07/06/2024. Sprag clutch replaced January 2020, gearbox overhauled January 2020. Just undergone ignition system overhaul. One CDI Ignition unit replaced PLUS brand-new spare unit included in sale. Easy aircraft to maintain - everything is in the open. Comes with spare main undercarriage legs, spare main wheel, and nosewheel with other assorted spare parts included. Sale also includes spare engine ready to fit (logbook available).

Fabric good, seats are good, interior is tidy. Fitted with XCOM radio/intercom. Basic VFR panel with appropriate engine instruments, and compass.

An article on this aircraft was published in Sport Pilot, June 2019 issue. See front cover and pilot report within.

Must sell: two aeroplanes are one too many. Quick sale - Fly it away for \$10,000 including spare engine.

Contact **Rob Knight** tel. +61 4 0089 3632, or email kni.rob@bigpond.com for details and POH.



\$10,000

Aircraft Engines for Sale

Continental O200 D1B aircraft engine

Currently inhibited but complete with all accessories including,

- Magneto's,
- Carburettor,
- Alternator,
- Starter motor,
- Baffles and Exhaust system, and
- Engine mounting bolts and rubbers.

\$POA

Total time 944.8 hours. Continental log book and engine log are included.

Phone John on **0417 643 610**

----- ooOOoo -----

**My wife took up gardening...
I wonder what she's going to plant**



Tinkerbell and her cousin, Tacobell!

