

BRISBANE VALLEY FLYER

DECEMBER - 2018



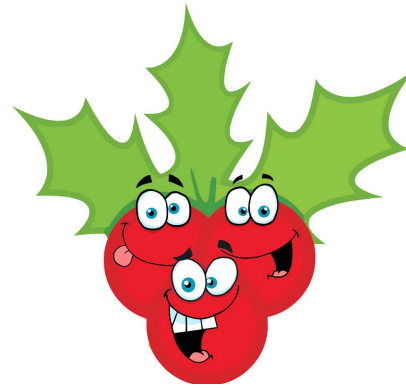
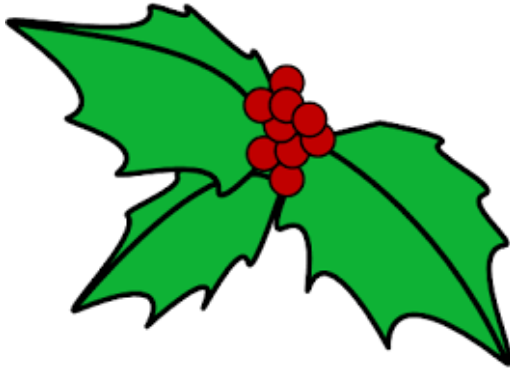
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- Brisbane Valley Flyer -



Another year has almost gone, another that will soon only remain in our memories for the highlights and lowlights we encountered in our passage through its twelve months of passage.

We have each experienced our specific joys and fears, successes and less-than-successes, all different but just like us as human beings, all so similar yet, at the same time, all so different.

Please accept my best wishes for the forthcoming festive and New Year seasons, and my faith that 2019 will see all our best hopes and dreams fulfilled.

See you next year!

Rob Knight

Editor: BVSAC Flyer

December 2018



- Brisbane Valley Flyer -

The Stall/Spin Trap

By Rob Knight

We see the reports all too often. I have seen it for myself, actually present, standing on a grass runway verge watching a Taylor Titch ultralight take off, not knowing that the pilot had only a few seconds more to live. Even though that accident took place at Whitainga Airfield in New Zealand on December 1, 1972 (45 years ago this Saturday) when a country airshow was taking place, the sense of loss still lingers as do the questions as to why he did it.

The aircraft did a low level, high speed run (maybe 110 knots) down the runway which had a severe crosswind blowing from the pilot's right. In front of the crowd the pilot pulled up into a steep climb to about 250 feet where his airspeed had decayed somewhat. As the aircraft slowed it began to sink, he rolled left, perhaps intending to reverse his direction and the aircraft sink rate increased. I remember seeing the aircraft rolled about 45° suddenly slam the left wing down as the yaw of the wing drop pulled the nose into the vertical and the aircraft snapped left. It was now below 200 feet and descending vertically. It fell into mangroves in the estuary that bounded the runway. There was a loud CRACK as the aircraft impacted and then silence. The astonishment that a simple go-around resulted in such an unexpected fatality I still clearly recall.

The pilot was considered cautious. He had 248 hours logged, of which 28 was logged as dual, and 108 logged as P In C on the Titch. What went wrong – and what is STILL going wrong with us. We are still having the same problems/fatalities, and sometimes with pilots having logged many, many more flying hours than the Titch pilot in my example.

Statistically, I doubt that there is a greater percentage of stall/spin fatalities today than in the 1960s when I was a student. That instructional techniques have changed goes without saying and while some would argue that these changes are improvements, I have grave doubts about that. In the 1960s if a student wasn't solo in around 7 to 8 hours, the instructor was asked what the problem was. I remember sending a student first solo with just 4 hours 20 minutes in his logbook and before anyone says that was too little, that man, a Kiwi, came over here and was one of the RAAF's best F111 pilots in his time and reached a good ranking in the RAF with not a single accident to his name. Instead he has now retired from a second career as an Airline Pilot. So where is the advantage of all the paperwork and rigmarole that is now imposed on RA-Aus and CASA driven Instructors? It seems that in the past we did it better with less. It seems that we, today, in this respect at least, are no better than the 1960s. I am not suggesting that the earlier years gave better instruction, but it was certainly different to what we see now, in techniques and the emphasis Instructors imparted with the individual lessons/topics/exercises being each an individual part of the whole that makes a pilot. Perhaps therein lies a challenge for the authorities, for a realistic look at yesteryear's instructing techniques and learn from it. Many of the differences lie in modern theories of teaching and learning but here lies a trap. It is a failure to follow new principles if they don't actually improve the skill sets necessary to carry out the duties of a pilot.

So where might the problem lie? It's easier to throw rocks than solutions but there must be some fundamental issues that can be addressed by everyday pilots to act as a potential shield and reduce the chance of falling into the stall/spin trap. There are.

Awareness of what the aeroplane is doing in the air is a fundamental skill that is generally lacking today. For example, a recent flight with a certified pilot recently doing some stalls presented issues

- Brisbane Valley Flyer -

with his recovery technique. He couldn't understand that the aeroplane sank after the stall, which increased his angle of attack with no change in nose attitude. It had never been presented to him that the aeroplane would lose height when the lift reduced at the stall although it was obvious to him when I explained it. The lack of appreciation of aircraft flight path change meant that he wasn't getting the stick forward far enough to completely unstall. The torque when adding full power sometimes caused a wing drop in his recovery. As soon as he could picture what was happening he remedied his technique and improved his recovery results. If a pilot cannot imagine what the aeroplane is doing, they cannot master completely the controllability of their flight. Aerobatics is a good teacher of this but, alas, such manoeuvres are verboten to RA pilots.

The second point I would like to make involves the basic training given to pilots. In the dinosaur days (1960s) when I did my basic training, rudder was a control taught with equal emphasis to the other two, aileron and elevator. This is easy for an instructor to achieve when training in Cubs and Austers etc. However, marketing and money are more powerful managers than a desire to train well and tail-wheel aircraft as trainers are lost, now in the deepening mists of time. However, some of the lessons they taught would stand nose-wheel trained pilots in good stead, but of course, these pilots don't have these skills and are unaware of the hole in their abilities. To say that pilots today are not properly trained in rudder use always conjures up a fight, and usually the most vocal and violent opponents have never flown a tail wheel aeroplane in their lives. Unless they have they don't know what they are talking about. Let it suffice to say that many nose-wheeled trained pilots are unaware of the potential improvement to their skills if they did some work on tail wheels. These added skills make a pilot far more aware of proper yaw control that they are currently unaware that they lack.

The third point I would make is the manner in which pilots view and practice the exercises they learned during their training and the interaction of those individual exercises into the whole of flying an aeroplane. These exercises are taught singularly, as they indeed must be, but Instructors should polish off their students by ensuring that they can recognise and safely carry out compound exercises. This will also assist in special awareness appreciation, something that some pilots have naturally whilst others need to be directed to it.

Where the compound exercise issue appears in the Stall/Spin trap is where pilots get trapped into doing too much simultaneously. Take a case where a pilot is a little too close in. He overshoots the extended centreline and has to turn back towards it. He rolls left into the turn. It's very steep compared to his usual turns: he is too close to the runway so it must be tight. His nose is in its usual attitude for the approach but the pilot doesn't recognise the manoeuvre for what it really is – a steep descending turn. In any turn the stalling speed rises more on the inner wing because it is descending along a steeper path. He adds more rudder to pull the nose around as he doesn't want to bank any steeper. The left yaw induces left roll so he applied a little more out of turn aileron which further increases the angle of attack on the left wing. His speed is now very low and suddenly the aircraft responds rapidly, snapping into a left roll and the aircraft is inverted at 300 feet. In the several seconds that the pilot will take to catch up with the aeroplane the aircraft will have impacted with the ground and the grim reaper will take out his well-worn clipboard and make yet another big black tick.

But what went wrong. Why did the pilot behave this way? The answer to that is easy – he got into a situation where his training was inadequate to have him meet the handling criteria required to successfully complete the compound manoeuvre he was attempting. In other words, his lack of

- Brisbane Valley Flyer -

specific training allowed him to be lured into the stall/spin trap. Let's pull apart the sequence I have described.

1. He should not have been so close to the runway at that height.

But he could have gone around.

2. He should have started his finals turn earlier so the extra pressure

But he could have gone around.

3. He should have recognised the need for a lower nose attitude in the steep descending turn

But he could have gone around.

4. He should have realised the danger of applying rudder to increase the yaw rate.

But he could have gone around.

5. He should not have applied out of turn aileron to prevent over banking

But he could have gone around. That was his last chance to do so.

At each step the pilot could have easily and safely resolved the issue. The accident was caused by a number of warning signs or signals being ignored at worst, or unrecognised at best. Part of this failure lies in the pilot's level of natural wit (he is supposed to be in command of the situation after all and awareness is a tool in meeting that duty) But another part lies in the training, both curricular and the inherent understand of his aircraft's actual behaviour and his control inputs that brought him to and over the edge of the aircraft's safety limits.

How can we fix this? I believe that:

1. We must teach better use of the rudder in maintaining accurate yaw control at all levels of pilot training.
2. We must get completely away from the insidious training that leaves pilots believing inherently that stalls only occur in level flight and always within the range of discussed stall speeds.
3. We must ensure that pilots go around more often by removing the belief/stigma that only inadequate pilots go around. *In fact, it's only the best pilots that carry out this manoeuvre that too many find so difficult.*
4. We must teach better situational awareness and ensure pilots can see more clearly the results of flawed control techniques.

And how can this be done? By modifying the syllabus and the training that pilots are given. The necessary changes can only be achieved if the senior managers in the various involved authorities believe they are necessary. Surely the fact that the accident figures should have reduced with all these new training techniques, methods and record keeping. But they haven't. I rest my case.

Happy flying-

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- Brisbane Valley Flyer -

A Fighter of My Time – The Hawker Hunter

A pilot report by Vince Moore



The Hawker T. 8 Hunter

When it comes to picking a "dream plane," my vote goes to the British-built classic, the Hawker Hunter jet fighter. When it comes to the sheer pleasure of flying, it's hard to beat the Hunter. N289XF is a former Royal Navy Hunter T.8 owned by George Lazik and Bob Guilford of Los Angeles. Since its arrival in the U.S. in 1995, it has appeared at airshows all around the country, occasionally with the author in the left seat.

First Impressions

Knowing you're about to take to the sky in a world-class fighter that has a distinguished military history and is one of the sexiest aircraft ever designed is awe-inspiring. A video about life in an RAF Hunter squadron shows two pilots strapping into a two-seater. To show how easy it is to start the engine, the instructor casually intones a few checklist steps, flips a few switches and phooossh!! -- the engine whines to life and they taxi away.

Flying in the Real World

In the real world, the 45-year-old Hunter does not become airborne at the push of a few buttons; it must be charmed to life by arriving at



Hunter Instrument Panel

- Brisbane Valley Flyer -

least two-and-a-half hours before takeoff. Without a plane captain or crew chief, the pilot must perform all the preflight checks.

To prepare for a launch, a truck is parked alongside the Hunter. In back are compartments that house tools, hoses, high-pressure nitrogen and oxygen bottles, start cartridges, ladders and an infinite number of accessories that may be required to start the plane. First, the tires are inflated to the required pressure, brakes adjusted, accumulators charged, battery checked, start cartridges replaced, nosegear door retracted for towing, gear box and engine oil levels serviced, hydraulic reservoir topped off, oxygen tank refilled, and then the plane is fuelled, the cockpit prepped and a pre-flight walk-around performed. Finally, you pack the drogue chute into the tail, which is a two-man job.

Getting ready in the cockpit seems to take almost as long. The seat and rudder pedals are adjusted, leg garters hooked up, seat belts, shoulder harnesses and parachute straps fitted and snapped into place, oxygen masks plugged in and checked, helmet connected to the communication system, and charts and GPS readied. Since it's now a civil bird, don't pull the ejection seat pins -- a no-no, says the FAA.

Starting Up

For the uninitiated, engine start can be startling. The first versions of the Hunter were fired off with large brass cartridges filled with cordite. When the cartridge is ignited, air pressure spools the compressor up to the required speed for a light-off. The four-second "swoosh" this produces usually sends anyone within earshot diving for cover, and the plume of black cordite smoke shooting from the belly sends ramp personnel scrambling for fire extinguishers. Because of the pyrotechnic danger of the cartridges and their dwindling availability, many owners are converting to electric starting systems.

Cockpit layout is rather disorganized, even for a jet designed at the beginning of the turbine era. Seems like the ergonomics engineers at Hawker grabbed a handful of instruments, levers, switches and dials, threw them up in the air and left them wherever they fell in the cockpit.

Getting Airborne

Asked about the Hunter's flying qualities, former Hawker Chief Test Pilot Bill Bedford said simply, "It's a real pilot's airplane!" Another example of typical British understatement.

On takeoff, the Hunter lifts off very naturally and in flight, its controls are light and well-balanced through the entire range of airspeeds. Performance-wise, it behaves as well at 600 knots as it does in the traffic pattern, a claim most jets can't make. Even with the smaller Rolls-Royce Mk.120 engine, there is impressive acceleration when you need it. The Hunter is such a thoroughbred, it's almost impossible to fly somewhere straight and level. Aileron rolls are so effortless, they can become hypnotic. The Hunter's stall and spin characteristics are relatively docile and predictable. That's why it's the only swept-wing jet in the world routinely used for spin-recovery training. The wide-track landing gear adds a margin of safety for takeoffs and landings in crosswinds and on rough surfaces. If the gear won't extend, the Hunter can land on its underwing fuel tanks with minimal damage.

Airshows and Odd Jobs

N289XF has performed at some of the country's biggest airshows, including Oshkosh and the USAF 50th anniversary at Edwards AFB in 1997. Last year, I flew to several shows with George Lazik and his Polish Air Force MiG-17. We usually depart Van Nuys [California] as a two-ship, climb to flight level

- Brisbane Valley Flyer -

20- or 30- something and arrive at the destination with an overhead break. Not even in my dreams did I ever think I'd one day be flying a Hawker Hunter in formation with a Soviet MiG. Tearing along at 450 knots next to a MiG with rocket pods under its wings is one of the highlights of my 20-year flying career.

N289XF's career as a civil jet hasn't been all play and no work, however. The Air Force Test Pilot School at Edwards AFB and the National Test Pilot School at Mojave, Calif. both leased the swept-wing Hunter to teach pilots about the handling characteristics of early Fifties fighters. It even flew the role of "Goon 51" with the former Top Gun school at the Naval Strike and Air Warfare Center (NSAWC), NAS Fallon, Nevada. Along with several other vintage jets, N289XF was invited to fly against recent NSAWC graduates as a "surprise adversary."

Civil Versus Military

Like many Hunter T.8Cs, N289XF began life as a single-seat F.4 variant. In 1958, Hawker converted it to a two-seat T.7 and shortly thereafter, converted it again to a T.8 for the Royal Navy's Number 764 Squadron. After many years of service, it was transferred to the Fleet Requirements and Direction Unit at RNAS Yeovilton in the mid-1980s. The airplane was used for Harrier conversion training and as a low-level target simulator until it was sold at auction in November 1994.

There are some major differences between how the Hunter is flown on the civilian airshow circuit and how they were operated by the military, and most of them have to do with economics. It's not news that jet warbirds are ungodly expensive to operate when a private citizen rather than a government is paying the bills. In the military, a jet's wings were routinely loaded with as many weapons as possible; for airshow flying, we carry as many fuel tanks as possible. That's because when a show is providing free fuel, you want to be able to take as much as you possibly can. It's the same with brakes. A civilian pilot uses aerodynamic braking and as much of the runway as he can to prolong the life of hard-to-find brakes. Where military pilots flew the Hunter in all kinds of instrument conditions, we try to fly VFR whenever possible.

Maintaining the Hunter hasn't been a problem so far. However, it's obvious that some necessities will soon be in short supply and require extensive and expensive searching to obtain. Among these are start cartridges, isopropyl nitrate used to start the bigger engines, brake disks and pads. Guilford said that he and others are researching the possibility of re-chroming the disks and having the pads manufactured abroad from scratch.

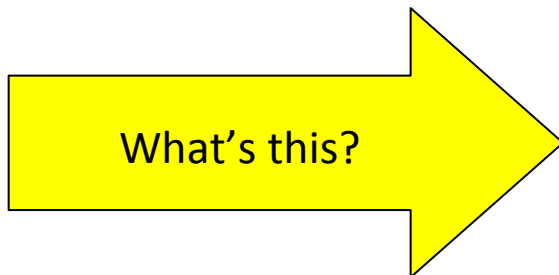


- Brisbane Valley Flyer -

FLY-INS Looming

08/12/2018	Murgon (Angelfield)	Burnett Flyers Breakfast Fly-In
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Mystery Aircraft (This Issue)



Mystery Aircraft (Last Issue)



Bellanca Aircruiser. Built c. 1935. Designed as a workhorse, the Aircruiser could carry a payload of 1800+ kg and cruise at around 130 Knots – performance that the multi-engined Fokkers and Ford Tri-Motors of the day could not even get close to. They were operated in Canada into the 1970s. Congratulation to Mike Smith for identifying this vintage aircraft.

Old Coot (Non PC) Quotes:

1. I'm not saying let's go kill all the stupid people I'm just saying let's remove all the warning labels and let the problem work itself out.
2. I changed my car horn to gunshot sounds People move out of the way much faster now.
3. You can tell a lot about a woman's mood just by her hands. If they are holding a gun, she's probably very unhappy
4. You know that tingly little feeling you get when you really like someone you've just met? That's common sense leaving your body.
5. I don't like making plans for the day. Because then the word "premeditated" gets thrown around in the courtroom.

BRISBANE VALLEY

SPORT AVIATION CLUB

Christmas Party

1st December 2018

All club members, their families and friends are invited to the Brisbane Valley Sport Aviation Club's end of year holiday celebration - the BUSAC CHRISTMAS PARTY which is being held in the Clubrooms at Watts Bridge Memorial Airfield.

The cost is \$10 per person paid on the day. RSVP is essential.

BOOKINGS ARE ESSENTIAL FOR CATERING PURPOSES !!

RSVP by email by 27th November 2018
Mike Smith 0418-735-785
secretary@bvsac.org.au

MENU

- Platters of Mixed Cheese, Nuts and Savoury Nibbles.
- BBQ Chicken.
- Ham and Baked Ham.
- Dinner Rolls.
- Choice of Coleslaw and 3 Salads.
- Plum Pudding with Ice Cream and Custard.
- Water and Soft Drinks.

- Brisbane Valley Flyer -

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

1. The destination aerodrome, in an area with variation of 10°E, has a single runway surface – 21/03. The TAF lists the surface wind as 210/15. Landing into wind on runway 03 will give which of the following?
 - A. Zero Crosswind.
 - B. 10° Crosswind from port.
 - C. 10° Crosswind from starboard.
 - D. A Tail wind.

2. In regard to stated cloud base heights in TAFs and Metars respectively?:
 - A. TAFs in feet above aerodrome level, METARs in feet above aerodrome level
 - B. TAFs in feet above aerodrome level, Metars in feet above mean sea level.
 - C. TAFs in feet above mean sea-level, METARs in feet above aerodrome level.
 - D. TAFs in feet above mean sea level, METARs in feet above mean sea level;

3. A wind that blows across a mountain range, depositing rain on the windward side and delivering a very hot, dry, blustery wind on the lee side is called what?
 - A. A katabatic wind.
 - B. An anabatic wind.
 - C. A scirocco wind
 - D. A fohn wind

4. What caused the air to rise causing Cbs ahead and along a cold front line?
 - A. The warmer air forcing the colder air to rise.
 - B. The cold air driving forward and under the warmer air and lifting it.
 - C. Thermal instability caused by the warm air a loft.
 - D. The coriolus effect that also causes the air to circle a depression.

5. Leveling out after a climb at a constant indicated 80 knots, the airspeed does not rise as the aeroplane accelerates in level flight. The most likely cause is?
 - A. Needle jammed.
 - B. A blocked static vent,
 - C. A blocked dynamic vent or pitot tube.
 - D. The instrument can't find a satellite.

ANSWERS: 1. B, 2. A, 3. D, 4. B, 5. C.

If you have any problems with these questions, call me(in the evening) and let's discuss it! Ed.

- Brisbane Valley Flyer -

BRISBANE VALLEY SPORT AVIATION CLUB Inc

MINUTES OF NOVEMBER 2018 MEETING

Notice:

Please be advised that:

For the Month of November 2018 there are no meeting minutes available.

Aircraft Engine for sale

Verner

Twin cylinder horizontally opposed 4 stroke aircraft engine.

Suit many homebuilt types.



General characteristics (from Wikipedia)

- **Bore:** 97 mm (3.82 in)
- **Stroke:** 90 mm (3.54 in)
- **Displacement:** 1,329 cc (81.1 cu in)
- **Length:** 617 mm (24.29 in)
- **Width:** 736 mm (28.98 in)
- **Height:** 456 mm (17.95 in)
- **Dry weight:** 61 kg (134 lb)

Components

- **Fuel type:** 95 octane auto fuel or 100LL [Avgas](#)
- **Oil system:** oil class SH/SG 5
- **Cooling system:** air-cooled
- **[Reduction gear](#):** 2:1 or 2.29:1 oil-filled gear box

Performance

- **Power output:** 63 kW (84 hp) at 5500 rpm for three minutes, 51 kW (68 hp) at 4200 rpm continuous
- **[Compression ratio](#):** 9.8:1
- **Fuel consumption:** 11 litres (2.4 imp gal; 2.9 US gal) per hour at cruise settings
- **[Power-to-weight ratio](#):** 1.03 kW/kg

This engine was originally fitted to an ultralight aircraft imported from the USA,
For inspection, price and/or other details, contact Neil Morgan via Rob Knight.
Telephone 0400 89 3632.