Brisbane Valley Flyer

April - 2016

Brisbane Valley Sport Aviation Club Inc

www.wattsbridge.com.au
www.bvsac.org.au

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

A beautiful classic aircraft, a Cessna C34, at Watts Bridge.

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The Stalling Syndrome – What's the problem with us?

As a young student pilot, I listened avidly to my peers as they bandied stories around involving the dangerous exercise of stalling. These yarns, for that is what they were, fomented an atmosphere of danger and an ambience of fear, and the whole subject of aerodynamic stalling became a topic tinged with adrenalin. I, too, absorbed this impression. Stalling became an exercise that I was definitely uncomfortable with and this seriously eroded my confidence in carrying out any stalling exercise and did nothing for my ability to recover from a deliberate stall let alone an inadvertent one.

My observations of others during my years instructing and examining has impressed on me that this fear exists right across the flying fraternity to the extent that it is a syndrome and obviously not conducive to safe flying practices. Safe pilots must have a reasoned knowledge of the boundaries of flight so any reaction to an unexpected incident will be met by a reasoned response and not a panic attack that can induces inappropriate actions

So what is a stall? And what causes it? Asking pilot candidates what a stall was prompted, too often, the response of, "Flying too slowly", which only demonstrated their poor training and lack of adequate understanding of the topic. Unfortunately, also too often I could trace the inadequacy of the response directly to their instructor who, in turn and in spite of holding the pre-requisite qualification to instruct and teach, didn't adequately understand the issue themselves.

The stall is a condition of flight where the aerofoil of the aeroplane's wing has reached an angle to the oncoming airflow that is too sharp to allow the air to flow over it. Instead, the airflow breaks away close to the point of maximum camber and tumbles across the rest of the upper surface. Like a car that tries to take a bend that is too sharp for the car's speed: the car will leave the curve because its mass causes too much inertia for it to follow it. Because across much of the aeroplane's aerofoil, the air fails to follow the aerofoil's curve and substantial lift is lost – sometimes quoted as up to 80% of the lift that was being provided immediately before the airflow broke away.

So lift is lost. What is so dreadful about that? The end of the world is not nigh as the lift will be regained immediately the angle of attack is reduced to less than the stalling angle. Modern civil aeroplanes cannot get certification if their stalling characteristics are outside the boundaries considered safe and these boundaries are very conservative. To the aeroplane, and from a "principles of flight" point of view, stalling is a perfectly normal function; the problem lies with the pilot holding the controls.

Most pilots, my early self included, have a serious fear of losing control and being unable to regain it. As in my own case, the predominant causes of this fear was a belief that the aeroplane's behaviour after the stall occurred might be so unpredictable that control would not be regainable and potential disaster was a real possibility. In myself and the others that I have observed, these beliefs are seldom verbalised, even under questioning, but can be seen by an instructor who is looking for the visual clues that manifest themselves during a stalling exercise.

So what really does lie after a stall? Well, in a correctly rigged modern day aircraft with no damage to the wings, within its weight limit and with a centre of gravity position within limits, frankly nothing - provided yaw is controlled. So long as the aircraft nose position is aligned, or re-aligned if it wanders, with the preselected reference point. As long as the yaw is controlled and is countered with the rudder, even if a wing drops the aircraft will just descend in a series of sagging wing and nose drops. This is a recognised manoeuvre known as a "falling leaf".

So what does a pilot need to do to render an aeroplane so “tamed”? The answer is extremely simple - just put a higher priority on yaw and not allow themselves to be spooked by rolling as a wing drops or pitch as the nose sags. As mentioned in my previous articles on flying techniques, pilots tend (naturally) to put a greater emphasis on roll and pitch than they do to yaw. Thus, unless specifically trained to change priorities, pilots tend to be spooked by roll and pitch when there is no reason to be. In fact, if they STOP the yaw the wing will stop dropping. If the banked attitude is ignored and the rudder used to re-align the nose with the reference point, the wings go back to level with very little input from the pilot.

So why are so many pilots failing to do this? As humans learning to walk we learned that any failure to limit roll and pitch hurt our head/ears and nose/back of head respectively. This conditioning remains with us for life unless an alert instructor teaches us otherwise in our basic training or, after many hour’s experience, some of us figure it out for ourselves.

It really is that simple. Stop the yaw after the stall and the aeroplane will be totally predictable and wing drop stalls will no longer be a tiger-to-tame that fills pilots with dread. I use the term “dread” because it is absolutely correct and appropriate.

In summary, remember that yaw and yaw control is very important in all stages of flight. Never more so, though, than when operating at low speed, and especially during a stall recovery. Obviously roll and pitch are important too, but yaw is the first axis and plane of motion that must be controlled as it can instigate non-pilot-input roll at an inappropriate time. Remember the effects of controls lesson and the further effects of yaw?

Stalls are definitely not to be feared: such an emotion is not helpful to pilot proficiency. To be wary of stalling is healthy and wise; to be fearful is potentially tragic. Keep in mind that the only dangerous stall in a modern aeroplane is the inadvertent one at low-level, on approach, with a distracted pilot flying. At a safe altitude, it is just an exercise and no more dangerous that a simple turn. Fear is a serious distraction!

Are you such a fearful animal? What really is it that makes you be fearful of stalling? It’s just another exercise that needs practice so you can recognise the symptoms of an impending stall and take action BEFORE it jumps up and grabs your wing.

If you have any questions talk to your CFI, or give me a call and we can talk about it. I’ll even get out the old blackboard and chalk if that would help. Being afraid of stalling is not conducive to a high pilot proficiency in anyone’s book.

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Remember:

A stall is caused by the angle of attack being too high (above the critical angle).

To recover from a stall, the angle of attack must be reduced (with just enough forward stick movement to unstall (no more than that).
Simultaneous with the forward stick movement, the nose must be re-aligned with the reference point using RUDDER and the full power applied to minimise height loss.

NO AILERON MAY BE USED UNTIL AFTER THE STALL RECOVERY HAS BEEN EFFECTED

F4U Corsair: The Gullwing Legend

by Budd Davisson

A peanut. That's what you feel like after you've scaled the side of a Corsair and into the cockpit. You are so small and inconsequential compared to the airplane that you feel like a peanut. This thing is BIG! And intimidating! If looks could kill, you wouldn't even have to fire it up to become an ace!

With 2800 cubic inches of fire-breathing Pratt and Whitney perched on the end of that impossibly long nose and three of Mr. Browning's fast firing specials in each wing, the Corsair more than looked mean. It was mean. And it was tough.

As legendary as the Corsair became at the hands of heroes like Pappy Boyington, the Corsair was far from being an instant success. In fact, it actually was an instant flop as a carrier plane. The Navy refused to qualify it for carrier duty until December 1944, two years after introduction, because it demonstrated too many short comings.

For one thing, that big nose blotted out everything directly ahead, so the canopy was bulged upward allowing the pilot to move higher on landing. The airplane exhibited a really nasty rolling tendency when it stalled, so a large, fierce looking wedge was added to the right wing to help control the airflow. And, worse of all, the airplane loved to bounce on touchdown.

Carrier airplanes can't bounce. They are supposed to hit the deck and stick. But the Corsair bounced. A lot. The fix to that was a single-action landing gear leg that absorbed shock, but didn't feed any of the energy back into the airplane. Considering that the gear already had a linkage that not only rotated the wheels to fair them into the wing but also made the gear shorter so it would fit better, designing a no-bounced shock system into it was a pretty good feat. But they did it and eventually the Corsair became a double threat, launching from island runways and carriers alike.

The early Corsairs, the F4U-1A and FG-1As suspended the pilot in a metal chair many feet above the cavernous inside belly of the fuselage. If you dropped anything smaller than a basketball, down that yawning hole, it was gone.

As the Corsair matured it became more sophisticated. It grew floor boards and eventually the canopy moved forward and back at the flick of a switch. She also was equipped with ever-increasing power, and the last wartime version, the F4U-4 was to have 2,450 ponies stuffed into that cowl.

Surprisingly, the airplane has nice, slick controls with a higher roll rate than you'd expect and that ability to roll didn't disappear during a dive, which was a huge advantage considering that the Zero rolled like a turtle when fast.

Although the Corsair wasn't an exact match to the Zero in a turning fight, in the right hands, it could hold its own. However, as soon as the combat was moved into the vertical plane, the Corsair shined as it could slash and dash with the best of them and drop down on its foe like an avenging eagle only to zoom up and do it again. Plus, the Corsair could absorb an immense amount of punishment and bring its pilot home.

One of the most distinctive appearing airplanes of WWII, it was also the only one to stay in long-term production after the war. The last Corsair rolled off the line as an AU-1 ground attack machine for the USMC in 1953 after thirteen years of continuous production.

Old Hose Nose earned, and is deserving of, its legendary status

CASA Instigated Major Mud Wasp Alert

Effectivity: All aircraft.

Purpose: Urgently advise operators, maintainers and pilots of the dangers associated with undetected mud wasp infestation in aircraft, and the circumstances under which they can occur.

Background: Mud dauber wasp nests pose a significant safety hazard to all aircraft because they typically remain undetected in aircraft structure, flight controls, drains and flight instrument pitot static systems until during or after take-off. A wasp nest can completely block pitot tubes, fuel tank vents and drains.

Mud dauber wasps will build a nest in any available cavity.

Figure 1. Mud dauber wasp emerging from an uncovered pitot tube. (Source:backcountrypilot.org)

Figure 2. Australian Mud Dauber Wasp (Source: BrisbaneInsects.com)

A recent SDR investigation found a number of wasp nests inside the wing of a Cessna 182, in the cavity formed between the rear spar and the flap fairing, (Figure 3 Right).

There was also one large wasp nest entirely suspended on the flight control cables in the rear fuselage.

Whenever the pitot-static system has been disconnected to clear a blockage, it must be tested for leaks when re-connected, and every 24 months thereafter, in accordance with the requirements of the current Amendment of CAO 100.5 Appendix 1.

Wasp nest and insect blockages in pitot tubes are not limited to small aircraft. Between 2010 and 2015, CASA received approximately 20 SDRs detailing departure gate delays, aborted take-offs and air turn-back occurrences due to wasp nest infestations in the pitot tubes of large aircraft in Australia

alone. Overseas reports detail fatal accidents which have been attributed to wasp nests blocking the pitot tube, resulting in loss of airspeed indication.
A typical example occurred in 2013 when an Airbus A330 suffered a rejected take-off in Brisbane, Australia, due to an airspeed indication failure which was only detected during the take-off roll. During the subsequent inspection it was found that the Captain's pitot probe (Figure 5) was almost totally obstructed by an insect nest, consistent with mud-dauber wasp nest residue.

The residue was built up while the aircraft was on the ground over a two hour period, while the aircraft was parked at the loading gate. The pitot probe covers were not installed by maintenance staff during this time.

While the ATSB Report AO-2016-212 in relation to this occurrence indicates that a mud dauber wasp nest can completely block a pitot tube inside two hours, CASA has received anecdotal evidence which indicates that the mud dauber wasp can build a significant nest capable of completely blocking a pitot tube, vent, or drain in around 20 minutes.

It should also be noted that aircraft equipped with Built In Test Equipment (BITE) may only check the various computers associated with critical flight instruments during pre-take-off testing, and may not check for clear passages in the pitot head or static vents. The investigation of any anomalies flagged by such systems should include a careful inspection for pitot tube blockages, including visual inspection and pitot static testing.

Recommendations: CASA recommends that owners and operators review their procedures against the manufacturer's maintenance instructions and recommendations with regard to parking and storage.

In addition:

1. Install pitot / static and vent covers any time the aircraft is parked.
2. Consider installing approved fuel vent screens or removable drain/vent covers and engine compartment blanks, as well as installing tight fitting pitot / static vent covers.
3. In instances where the aircraft has been stored long term in the open air, remove inspection panels before flight as required to inspect unsealed wing and fuselage cavities etc.
4. Continually monitor and remove any wasp nesting sites in the general area where the aircraft is stored or maintained in accordance with appropriate insect control procedures.
5. Be aware that on-ground pre-flight air data module BITE tests and/or computer checks will usually not test pitot probes or static vents for blockages.

Reporting: All wasp nest and / or insect infestations and any associated defects or operational difficulties should be reported to CASA via the SDR system.

Gatton Airpark Breakfast Fly-in

Put a ring around 8 May 2016 on your calendar

Enjoy a hot breakfast and cappuccino with friends and a stroll around Australia's most popular residential airpark. See classic and modern aeroplanes, and classic cars. Bring your family, or maybe your mum!

Start is at 0730 and runs until whenever. Airfield details are in the ERSA or phone Martin 0419 368 696

FLY-INS Looming

Sunday April 13	Clifton, QLD	Annual Clifton Fly-In
Saturday April 16	North Stradbroke Island, QLD	Straddie Breakfast Fly-In
Sunday April 17	Heck Field	Monthly Fly In/Morning tea & BBQ
Weekend April 23-24	Caboolture	TAVAS Great Vintage Fly-in
April 29-2	Charleville	Cessna 200 Series Autumn Fly In
April 29-2	Shute Harbour	Whitsunday Fly In Relax

Mystery Aircraft (April Issue)

What's this?

Mystery Aircraft (Last Issue)

Congratulations to Nick Maylor for his identification of this historic French aircraft.

The Caudron C.450 was a French racing aircraft built to participate in the Coupe Deutsch de la Meurthe race of 1934. It won to the intense dismay of the USA participants and their friends.

Interesting websites:

http://proaviation.com.au/2013/04/06/to-hell-with-the-rules/

http://www.chonday.com/Videos/pilotnewzdalnd1

Aircraft for sale.

Skydart - $5000

Done 233 hours and running smooth. A 447 Rotax engine swinging a 3 bladed prop. Instruments: ASI, VSI, ALT, COMP, HR METRE, RPM, EGT, CHT. Fuel lines recently replaced and continuing to give it some well deserved TLC. ROC on a good day around 800 fpm. 654 total landings. An unprecedented panoramic view that even beats a Drifter without ruffling your hair and a very comfortable semi reclined seat which gives it a very enjoyable flying experience. Skins serviceable. The fuel burn is 12 L/hr. at 5200 rpm and it cruises at around 65 knots.

Currently based at Lynfield, contact Bob Hyam. Tel: **(07) 5426 8983**

Aircraft for sale.

Rans S4 Coyote - $4000 ono.

I am reluctantly offering for sale my Rans S4 Coyote. It has about 275 hours in its logbook and resides in the BVSAC hangar at Watts Bridge airfield.
I am selling because I have relocated to a new employment position in Perth and it's neither practicable to commute nor is it possible to bring the aircraft out here in view of my limited experience.
It is currently registered but, as it hasn't flown for some time, it will require some TLC before it leaves the ground again.
Interested people should contact Bill Oates to view it or for further details as the logbook is in the aeroplane. Ivan Scott.

Contact Bill Oates, Tel: **0418 779 360**

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

1. A pilot retracts the flaps after take-off. What is actually happening to the wings
   A. A decrease in stall speed.
   B. An increase in anhedral.
   C. An increase in induced drag.
   D. A decrease in camber.

2. In a conventional light aeroplane flying in equilibrium, the centre of pressure is…..
   A. At the same position as the centre of gravity.
   B. Forward of the centre of gravity.
   C. Behind the centre of gravity.
   D. The centre of gravity cannot be determined because there is no weight on the wheels.

3. An aeroplane floats in ground effect after the flare when landing. This is likely caused by which of the following?
   A. Reduced "P" factor with throttle closed.
   B. Reduced form drag
   C. Reduced induced drag.
   D. Thermal lift off the runway surface.

4. When a pilot loads an aircraft tail-heavy, the centre of gravity and the centre of pressure moves _____, and the aeroplane becomes _____ stable.
   A. Closer together, more.
   B. Closer together, less.
   C. Further apart, more.
   D. Further apart, less.

5. An aeroplane is spinning. What is happening to the wings?
   A. Outer wing stalled, inner wing less stalled.
   B. Inner wing stalled, outer wing less stalled.
   C. Both wings are equally stalled.
   D. Neither wing is stalled.

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

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

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BRISBANE VALLEY SPORT AVIATION CLUB Inc.

MINUTES OF THE 5.03.2016 GENERAL MEETING

MEETING LOCATION:	Watts Bridge Memorial Airfield – BVSAC Clubrooms
MEETING DATE:	5th March 2016
MEETING OPENED:	10:10AM
MEMBERS PRESENT:	17
APOLOGIES:	Liz Cooke, Scott Meredith, Danny Fowler, Priscilla Smith, Mike Smith, Max Bain, Brian Fitch.
VISITORS:	Katrina Duke
NEW MEMBERS:	Mark Purdie, who joined the club in late 2015, was introduced to the membership present.
MINUTES:	February 2016 meeting of the BVSAC Inc. Proposed: Bill Oates Seconded: Peter Ratcliffe. Acceptance motion carried.
PRESIDENT'S REPORT:	Wayne Petty mentioned the WBMA BoM Minutes and Watts for Breakfast to be discussed in General Business. Wayne reported that the clubroom extensions have been approved by WBMA BoM and have been presented to Somerset Council. Several issues raised by SC have been resolved and building approval is expected shortly.
SECRETARY'S REPORT:	Richard Faint detailed the inward and outward correspondence for February. This included emails to members regarding flying events in the district, the Amberley Airspace report and the distribution of the newsletter. A letter of resignation has been received from Robert Dalzeil.
TREASURER'S REPORT:	Priscilla Smith was not present at the meeting. The secretary presented the financial statement summary and advised that the BVSAC ING account balance is $554.38 and that the BVSAC NAB account balance is $6,000.36 with a cheque of $2,000.00 un-presented, leaving a cleared balance of $4,000.36
WBMA REPORT:	Bruce Clarke advised that the planning process for the Gathering of Eagles - 2016 (GoE-2016) is well underway with much more to see and do being planned for this year. Bruce stressed the need for and advantages of club participation and called upon all members to volunteer to assist in some way across the weekend. Members were encouraged to register with Bruce as volunteers following the meeting.
GENERAL BUSINESS:	Peter Freeman summarized the current agreement regarding the WBMA use of water from the tank on the BVSAC hangar which is used as a backup supply for the toilet block. Peter outlined the planned additions of a modest shower facility adjacent to the current toilet block and raised the possibility of obtaining water from the BVSAC clubroom tanks. Peter explained that the usage was expected to be minimal with almost no possibility that the BVSAC tanks would be emptied. This proposal was discussed with additional input from Mark Purdie (unisex toilet?) and Mal McKenzie (support for the proposal). Peter Freeman moved a motion, seconded by Jim Bowling that: "WBMA be allowed access to the water in the BVSAC clubroom tanks as a backup

supply to the proposed shower facilities. This would be at no cost to BVSAC for plumbing and associated works."
The motion was carried unanimously.

Wayne Petty detailed his concerns regarding Watts for Breakfast, mentioning the WBMA BoM minutes requirement for financial statements and various rumours circulating the airfield regarding the sale by BVSAC of drinks at the January Breakfast.
Wayne also felt that clubs should have been kept better informed about the event.

Watts for Breakfast organizer Mark Purdie explained his vison for Watts for Breakfast and stressed that his intention was to unite WBMA members with a non-club based flying event.
Mark outlined the approvals process required by the WBMA BoM with approval granted to conduct Watts for Breakfast in late 2015.
He explained that his request for club assistance was not with the running of the event, (he had a group of core volunteers), but rather a request for support by way of attendance.
Peter Freeman spoke in support of Watts for Breakfast and other flying activities on the airfield.
Richard Faint suggested that Watts for Breakfast could on-sell cold drinks sourced from BVSAC if it was evident that fly-in participants wished to purchase them. Watts for Breakfast would then reimburse BVSAC for the drinks sold. Further discussions regarding price and quantity sold would be required.
Ian Ratcliffe and Jim Bowling moved a motion of support for Watts for Breakfast and the organizers by way of acclimation.
It was agreed by all participants that they were happy with the outcome of the discussions.

Wayne Petty suggested that the GoE-2016 is an excellent opportunity for BVSAC to promote the club and also to raise funds, especially now that the plans for the clubroom extensions were underway.
He suggested everyone consider what and how the club could market at the GoE-2016 beyond the cold drinks that the club has sold in years past.
The advantages of not being in direct competition with other stall holders was noted.

Richard Faint mentioned that the next GoE-2016 Subcommittee meeting was in April and that it would be to the club's advantage to have a proposal to present to the next meeting.
Bruce Clarke mentioned that the GoE-2016 Subcommittee would not be telling the clubs what to do, but rather encouraged them to be involved and to offer an extend range of items for sale.

NEXT MEETING: The next meeting will be 02.04.2016 in the BVSAC Clubrooms Watts Bridge at 10:00AM
A BBQ lunch will follow the meeting.

MEETING CLOSED: There being no further business, the meeting was declared closed at 11:02AM
A BBQ lunch was held after the meeting.

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