BRISBANE VALLEY FLYER

AUGUST - 2018

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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.

Chris Spencer-Scarr and the Poker Run winning team. Congratulations all.

. .

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Poker Run 2018

Who ordered the weather for the Poker Run on Saturday 7th July 2018. For the event. It was very badly arranged with a base around 1800 feet and viz to match. Sack that man!

However, an improvement did eventuate, not a lot but enough, and the event got underway with pilots departing to their chosen airfields to collect their winning cards. Until the weather did pick-up dramatically around the middle of the day, the returning pilots stood around the BBQ and waited.

At the competition close there had been 20 plus aircraft entered, ranging from home-builts to a twin. The weather had cleared enough by late afternoon for the conditions to be very pleasant and in the balmy late afternoon the winner was announced. It was pilot Chris Spencer-Scarr and the Cessna team that collected the magnificent winning hand of three (3) Aces and a pair of 9s.

Congratulations to all. It was another great day

The Winning hand

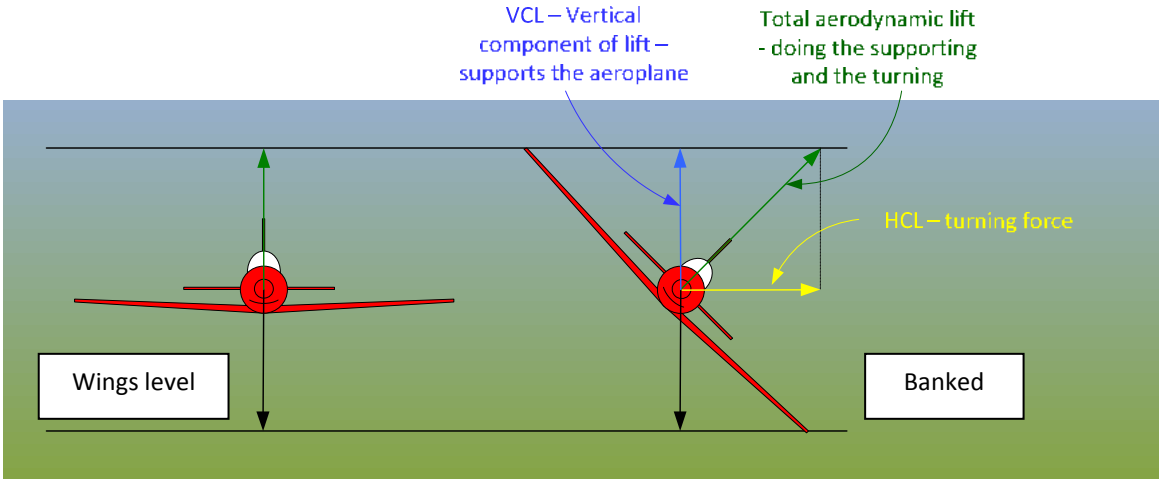
I

Untie Those Tangled Turns

By Rob Knight

A recent email asked me for details on easily achieving balanced turns. The RA pilot emailer lived interstate, had qualified about 8 years ago, and had logged around 500 hours. He owned his own aircraft and flew regularly. After three or four emails each way, the thread ceased to grow and my last email requesting feedback is still unanswered. While there are a multitude of reasons why this might have been left hanging, the tone of the pilot's reply emails left me believing he simply did not have the underpinning knowledge necessary to understand the basic concepts and vector diagrams I had provided. I do believe he had failed to understand this oh-so-basic exercise right from his student days and his instructors had failed to realize and remedy this deficiency. From other past and current eavesdropped comments, I don't think this is an isolated case, and more care needs to be applied during training to ensure that trainee pilot understanding of the mechanics and issues of all the training exercises are meeting the necessary standards. And turning is a particularly simple exercise.

Basically, Newton's laws tell us that an aeroplane needs a force to divert it from its current direction of travel. This force needs to be sideways because turns are sideways. The sketch below shows the disposition of the lift and weight forces that are relevant to this. Lift gives us this sideways force



In normal flight lift equals weight. However, in a level turn, the lift must do better than that; the lift supports the aeroplane (balances its weight) AND provides a turning force to pull it around the corner. In the sketch above, the green line represents the lift from the wings, the blue line the vertical component of that lift to support the weight, and the yellow line displays the horizontal component of lift that turns the aeroplane. In this state, where the lift is inclined, the aeroplane is said to be banked.

The sole issue providing difficulties in achieving balanced turns is getting the aeroplane into this banked attitude, holding it, and then returning the aeroplane to wings level at the exit of the turn. In other words – ROLL control – and the difficulties lie in the necessity of ailerons to achieve this roll.

Ailerons simply modify the airflows about the outer extents of a wing to modify the lift force provided by that section of the wing. . They are small, movable surfaces connected to the stick or

yoke and are connected in a manner that provides differential deflection i.e. when one goes up the other goes down. When deflected they cause a local increase in both the angle of attack and camber (to increase lift) or a decrease in both the angle of attack and camber (to decrease the lift)., This imbalance in lift results in the aeroplane rolling about its Centre of Gravity in the direction in which the stick has been pressed.

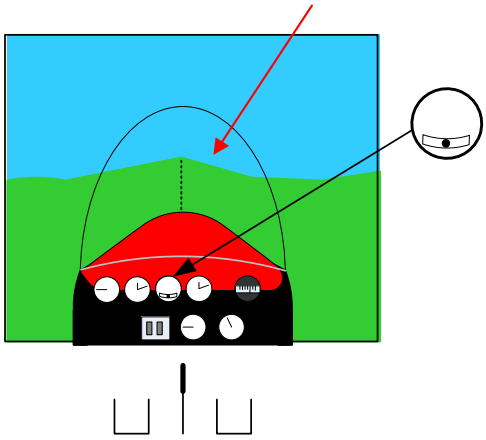
However, an increase in lift will, inevitably, increase drag and the term *Aileron Drag* comes into play because the aileron use instigated it. On the other wing, where the aileron has been deflected upwards, the lift has diminished and this wing will suffer some reduction in drag.

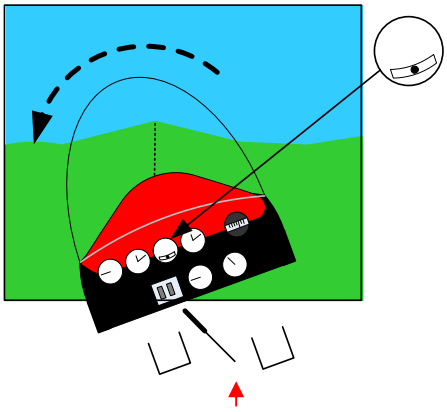
Stop and look at where we are at. Assuming the stick has been pressed left to provide left roll, to enter a left bank, to begin a left turn. The left aileron goes UP as the right aileron goes DOWN. The lift and drag on the right (the rising wing) wing are both increased and, simultaneously, the lift and drag on the left wing are both decreased.

The aircraft is confused – the lift imbalance tells the aeroplane to roll LEFT but the yaw imbalance screams YAW RIGHT – away from the turn. This is now a case of aileron drag causing *Adverse Yaw* – yaw away from the direction of the intended turn.

Rocking an aeroplane's stick sideways will rock the wings, and the adverse yaw generated by the ailerons can be seen pulling the nose towards the higher wing - AWAY from the direction of intended turn. It is easy to see the horizon tilting and indicating bank but unless pilots are specifically looking for it, pilots will pay far more natural attention to the roll action than the yaw and they will fail to see what is directly there in front of their eyes.

Pilot selected Reference point





Left stick and left rudder to roll left

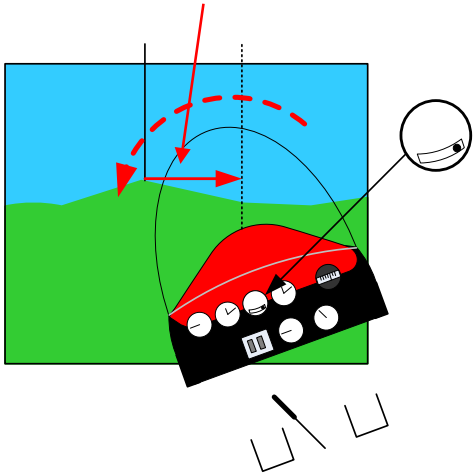
Let's see this pictorially. In the sketch on the left, the aeroplane is flying straight towards a reference point with the wings level. The pilot wishes to enter a left turn which will require left stick to provide the roll to enter the banked attitude. The ailerons will deflect and create aileron drag which will cause adverse yaw. If the pilot is practiced and aware, he/she will apply coordinated rudder sufficient to counter the adverse yaw and the aerolane will be banked with the nose momentarily still pointing at the reference point, not having yawed. The balance ball will be in the centre where it should be. As the back pressure is applied to increase the angle of attack, the nose will rise slightly and begin to turn to the left.

The sketch now on the left shows the aeroplane banked, in balance, with stick and rudder applied, and the nose still pointing at the same point on the horizon. As the longer the aileron is held, the further the aeroplane will roll, we need to stop the bank increasing so the pilot will centralize the aileron and

eliminate their effects in lift. This will also eliminate all aileron drag and adverse yaw, so with the centralized aileron so must occur centralized rudder. No aileron gives no aileron drag so no rudder is needed because there is no adverse yaw. But this is only the design. Too often little or no rudder is input with the aileron, and the turn entry is stuffed before the wings have even begun to roll.

Too many pilots have not developed the habit of watching for this adverse yaw and stopping it with the rudder. As the sketch on the left depicts, as the aileron is applied and the aeroplane begins to roll left, the aeroplane's nose, in front of the pilot's eyes, yaws RIGHT and they don't even notice it. Their heads snap left, into the turn and they fly around the turn slipping and tending to lose height. They snatch the stick back and the increasing angle of attack drags the descent to a halt and they stagger around with the balance ball out to the right (in a left turn) until they guess the need to exit the turn has arrived. With right stick and insufficient right rudder, they level their wings, not noticing their nose is pointed in a different direction to the point they instigated the roll out. All because they weren't paying attention to what was directly in front of them.

Left stick, left but no coordinated left rudder, will see the nose yaw RIGHT



This all sounds pretty harsh and I must admit that most pilots aren't as sloppy as I am portraying. However, too many are and, as a pilot examiner, the greater majority of pilots that I have sat beside fail to watch for yaw as they enter or exit a turn. As an examiner, this failing was a contributing factor on many unsuccessful flight tests yet the solution is so simple it beggars belief. The real culprit was very apparent in the instructors that I examined, either for initial issues or for renewals. They failed to do this simple exercise too; so how could they pass on a skill they didn't have themselves?

In all circumstances, applying aileron will necessitate the application the same side rudder to keep the aeroplane in balance. The exceptions are when slip or skid is intended. In fact, the very term, "balanced turn" refers to using sufficient rudder to *BALANCE* the adverse yaw.

It is worthy of note, also, that when in a banked turn, many aeroplanes require some out-of-turn aileron to prevent over banking caused by airspeed differences between the inner and outer wings. When such aileron is applied, so must sufficient rudder same-side rudder, because that aileron application will be creating adverse yaw.

Left stick requires left rudder to coordinate, and vice versa. Go out and try it yourself. Try rolling on a point of the horizon - it's easier than you might think.

Happy flying

Iraqi Airways pilots suspended for alleged fighting in cockpit

WATHIQKHUZAIE/GETTY

The jet had been flying from Mashhad, Iran, to Baghdad, Iraq (file photo).

Iraqi Airways has suspended two pilots involved in an alleged mid-air brawl over an in-flight meal.

The pair were flying the jet from Mashhad, Iran, to Baghdad, Iraq, with 157 passengers onboard last week, when the fight broke out at 37,000 feet (11,277 metres).

The co-pilot wrote a letter to the airline saying the "conversation with the pilot became heated because he forbade an air hostess from bringing me a meal tray, under the pretext that I hadn't asked him for authorisation," reports The Independent.

A security guard was called to intervene when the argument became physical.

The plane landed safely but the duo continued to fight on the ground.

European Airlines Will Soon Demand Psychological and Substance Screening for Flight Crews

New rules emerged in the wake of the deadly 2015 Germanwings crash.

By George Clark 01 August 2018

The EU has begun organizing new rules to screen pilots for mental illness issues, in addition to drugs and alcohol, as the result of the deadly 2015 Germanwings crash.

In response to the deliberate crash of Germanwings Flight 9525 by the jetliner's first officer, airlines within the European Union will now be required to perform psychological assessments of new pilots, as well as introduce policies to prevent and detect the misuse of psychoactive substances in pilots and cabin crew, according to reports.

First officer Andreas Lubitz purposely crashed Germanwings Flight 9525 into a French mountainside in 2015 when he locked the captain out of the cockpit. Lubitz reportedly had a history of depression, and was being medicated for the condition. He did not report this to his employer.

EU airlines must now develop objective, transparent and non-discriminatory screening for psychoactive substances, including alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents. Caffeine and tobacco will not be included. Alcohol testing will also be strengthened.

Airlines in Germany already have similar screening practices, German Aviation Association spokesman Ivo Rzegotta explained to AIN. “In fact, the existing programs of the German airlines were a blueprint for the regulation, which is now binding for all EU airlines,” Rzegotta said. “The new EU regulations therefore create one thing above all, a binding basis for all European airlines and thus even more safety in aviation.”

Screening will take place during employment, and further random testing will occur after rehabilitation and return to work. Airlines must also provide access to support programs for those found to have psychological conditions. The programs will begin in 2020.

The Chrislea Skyjeep

A piece of history

Skyjeep - a rara avis!

The Chrislea Aircraft Company did many things wrong…it seemed that it was in the wrong place, at the wrong time, with the wrong product. British buyers of light aircraft couldn't afford a new design with a novel control system which was overweight and under-performed. Not when hundreds of war-surplus Austers (to which the Super Ace had a passing resemblance), DH 82A Tiger Moths, Miles Magisters and Messengers were flooding the British market. Inevitably, the company turned turtle in 1952, and the remaining uncompleted airframes were scrapped. Just before it went under, Chrislea managed to undertake production of a series of six Chrislea CH3 Super Ace Skyjeep Series 4, a developed Super Ace, with conventional (stick and rudder) controls and a 'taildragger' undercarriage (at a time when this was the norm amongst light aircraft); it had a more powerful 155hp Blackburn Cirrus Major 3 engine, and a removable rear decking, to enable it to fulfil the utility aircraft role. One was sold to Argentina and at least two to Australia. The Australian registration, VH-BRP, was intended to apply to a different airframe, but there was a serious fire on board the freighter taking it to Australia in 1951, when she docked at Port Said, Egypt, which destroyed that particular Skyjeep, so the registration was applied to another aircraft! It was re-registered VH-RCD in 1956, following an

extensive rebuild (which saw her wearing a striking deep purple and cream colour scheme). In 1963, you could have found the aircraft hangared at Bankstown Airport, New South Wales, Australia (IATA code BWU, ICAO code YSBK) in a very dilapidated state, with engine and propeller removed (she had previous worn the Australian registration VH-OLD).

Somehow the Skyjeep made her way back to the UK to assume her original registration, G-AKVR, and was then fully restored, becoming the ONLY survivor of her type. At the eleventh hour at Hullavington, we manage to arrange participation by the one Skyjeep and the last two flying Super Ace aircraft on the British register, and parked them adjacent to each other in the historic section of the Aircraft Park. To say that this caused a 'reverential scrum' of aviation photographers would be no exaggeration, as they took hundreds of photographs of the **total** British Chrislea population.

FLY-INS Looming

04.08.2018	YBSU Sunshine Coast	Airshow, Fly-in, Open Day
11.08.2018	Murgon, Angelfield	Burnett Flyers Brekkie Fly-In
19.08.2018	YBAF, Archerfield	Outback Air Race START
29.08.2018	YBDV Birdsville	Birdsvill Races 2018

Mystery Aircraft (May Issue)

What's this?

Mystery Aircraft (Last Issue)

A relatively unknown "brother" of the FU-24, the Fletcher FD-25 Defender first flew in 1951.

Developed by the Fletcher brothers and John Thorp it was aimed at a perceived need in the US armed forces for a cheap and lightweight counter insurgency aircraft.

Congratulations to Mal McKenzie for identifying this rare aircraft

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

1. "P" factor is caused by which of the following?
   A. Propeller driven slipstream rotating about the fuselage.
   B. The up-going propeller blade providing less thrust than the down-going blade.
   C. Airframe roll caused by the engine rotating the propeller at high power settings.
   D. A higher angle of attack on the down-going propeller blade causing higher drag on that side of the propeller arc.

2. Which of the following options is the most correct?:
   A. Increasing weight increases an aircraft's stall speed.
   B. Turning whilst maintaining height or climbing increases an aircraft's stall speed.
   C. Climbing steeply after take-off increases an aircraft's stall speed.
   D. All the above are correct.
   E. A and B are correct.

3. Gliding an aeroplane at a lower speed than the best lift/drag ratio will….?
   A. Decrease the aeroplanes glide range
   B. Decrease the aeroplane's glide endurance
   C. Increase the aeroplane's sink rate.
   D. A and C are correct.

4. Two identical aeroplanes fly directly from meridian 152°E to 153°E, maintaining 100 knots TAS. Aircraft 1 does it along parallel 20 S, and aircraft 2 does it at parallel 28 S. Each aeroplane has an identical 15 knot headwind for the duration of their flight.
   A. Aircraft 1 will have a shorter flight time.
   B. Aircraft 2 will have a shorter flight time.
   C. Their flight times will be identical.

5. What effect will climbing with an increasing tailwind gradient condition, at the TAS for best L/D, create?
   A. Reduced rate of climb and reduced angle of climb.
   B. Increased rate of climb and reduced angle of climb
   C. Reduced rate of climb and increased angle of climb
   D. Increased rate of climb and increased angle of climb.

ANSWERS: 1. B, 2. E, 3. B, 4. B, 5. A

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

BRISBANE VALLEY SPORT AVIATION CLUB Inc

Announcement

Due to unforeseen circumstances ……..

THE NEXT MEETING OF THE BVSAC WILL BE HELD: Saturday 1st September at 10.00 am in the Clubrooms as usual.

------ooOOoo ------

Hangarage at Forest Hill.

It is possible that a hangar space may come available at Forest Hill (YFRH) in the near future. The current fees are $110/month, payable in advance.

For expressions of interest, please contact Rob Knight on **0400 89 3632**

FOR SALE

Aircraft Engine

Rotax 912, 80 HP. Available subsequent to fatal accident.

Last logbook entry reveals 365.3 hours TTIS. Engine appears undamaged except for air filters on the carburetors. For inspection, price and/or other details, contact Neil Morgan via Rob Knight. Telephone 0400 89 3632.

Aircraft Re-offered for Reluctant Sale

After approaches by several tyre-kickers and other dreamers, I am refreshing the advertisement for my Colby.

My Colby-503, a single-seat, one-off aircraft, based on the highly successful American Pioneer Flightstar. Currently flying most weekends, it has around 200 hours airframe total time and around 30 hours on a rebuilt Rotax 503 power plant. These hours will increase as the aeroplane is in use. STOL, this aircraft cruises at anything between 45 and 60 knots, depending on the power setting and can comfortably exceed its VNE in a climb. It holds 40 litres in a belly tank and a further 10 behind the seat. A 95-10 aircraft, its rego is 10-1918, and this will be valid until July 30, 2019.

The sale will include a purpose-built trailer (uncovered and unregistered), a spare 503 engine (disassembled), and a ground handling tow bar. There are some other assorted spare parts such as a strut, control surface tubing, fuel pump, spark plugs etc.

Also included is a hand-held ICOM radio with headset and PTT on the stick. This unit works well in the aeroplane.

I am putting my aeroplane up for sale only on the advice of my health professional.

$5,800.00 for the lot.

Contact Rob Knight. Tel: 0400 89 3632