

BRISBANE VALLEY FLYER

June - 2016

BRISBANE VALLEY



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

SPORT AVIATION CLUB INC

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



A recent visitor to Watts Bridge – Bob Hyam in his diminutive Teenie 2.

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Richard Faint (Secretary) 0412 317 754
Rob Knight (Editor) 0400 89 3632

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Aircraft Handling – The Slippery Slopes of Wind Gradients

By Rob Knight

The approach looked good – they'd make the flare point target on the button. Now, at 50 feet AGL, the ASI needle hovers over the required 60 knots and this approach is still looking sweet! In less than 60 seconds the wheels will softly touch the runway in another great landing and the flight will be over. The pilot holds the nose attitude and smiles contentedly, thinking about the drive home from the airfield.

But suddenly that flare point has risen on the windscreen. There is no turbulence and the pilot hesitates for a second trying to catch up with what's happening. The flare point rises further even though the attitude hasn't changed. The pilot lifts the nose to stop the excessive sink. The stick feels light and a glance shows the ASI now reading just 45 knots. The pilot lowers the nose to correct the airspeed then looks up to see the boundary fence filling the windscreen. They snatch the stick back and shove the throttle wide open but the aircraft is behind its drag curve and cannot change its flight path to clear the obstacles. It collapses quickly in a nose-high attitude and strikes the ground violently. The port wing separates as the belly panels crumple and the propeller shatters. The aircraft slews violently and stops. The smell of petrol is an overpowering as the dazed pilot tries to open the canopy. Then they remember the passenger and look sideways. The figure on their right is sagged forward, not moving. Rivulets of blood drip onto the seat. The pilot fumbles for the seat belt. All it will take is one single, tiny spark.....

Accident cause – wind gradient effect – the hidden potential hazard to every approach.

In this context wind gradient is the change in effective headwind component along the runway with changing height AGL. This change in head or tail wind component can be caused by the earth's surface friction reducing the wind speed as it flows across the landscape with wind speed reduction being greater when closer to the earth's surface. Or it could be caused by just a change in wind direction providing a change in headwind or tail wind component. The effect is just the same

The process where head or tail wind changes can modify the aeroplane's airspeed is subtle. Pilots see airspeed as the speed of the machine through the air and this is exactly correct. However, the airspeed they see is not a single item; rather it is the result of the two vector quantities of ground speed and the head or tail wind component at that point in time.

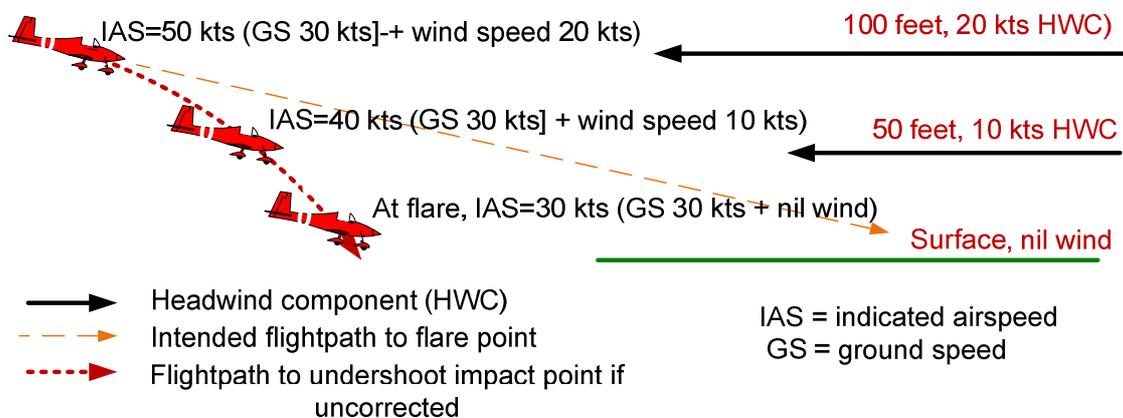
It's really Sir Isaac Newton's fault. In his laws of motion he states that *a body will remain at rest or uniform motion unless acted on by an outside force*, and, as this pertains to aircraft, this *uniform motion* is the ground speed. In still air it is simple, the airspeed and the ground speed will be the same. However, when a head or tail wind component exists, the airspeed will equal the ground speed modified by the wind component.

Let's look at the simple case presented in the following sketch. An aircraft is on approach and flying at 50 knots IAS into a 20 knot headwind so its ground speed is 30 knots (50-20). If the wind suddenly ceased, the aircraft would immediately suffer a 20 knot reduction in its airspeed because of the loss of the headwind. And that's a fact. It will only hold onto its ground speed

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Let's look at this step by step. All is well at 100 feet AGL. The aircraft has an IAS of the required 50 knots, being made up of 30 knots of ground speed and 20 knots of headwind component. As the aeroplane descends through 50 feet, the headwind falls to 10 knots. If the pilot makes no correction, the airspeed will fall because the aeroplane will retain the 30 knot ground speed but with just 10 knots of headwind component, the IAS will have reduced to 40 knots. The aircraft is now 10 knots slower than desired.

With the lower airspeed, the lift/drag ratio will reduce and the flight path considerably steepen. Still uncorrected, after descending the last 25 feet, the aeroplane will arrive at the flare height, short of the target flare point (perhaps short of the runway) and, with the IAS indicating just 30 knots (ground speed + 0 wind), in a potential stall condition immediately the stick is pulled back to flare. At this time the situation is irrecoverable; it is too late for any remedy.



Keep in mind that the aeroplane's nose attitude has not changed since it passed through the 100 foot level. Yet it is as if the world outside the cockpit has suddenly stolen nearly half the aeroplane's airspeed. In reality, with the help of physics, it has! And pilots must be always be aware of the potential for this situation to occur. A headwind gradient on approach can cause an increased rate of descent and an increased angle of descent because of the inherent fall in IAS unless the pilot makes the necessary corrections quickly and correctly.

So how can a pilot anticipate the occurrence of a wind gradient on approach? Firstly, in reality and except when the wind is calm throughout the vertical reaches of the atmosphere, a wind gradient must always exist. This has to be, because surface friction MUST cause a reduction in wind speed the closer to the surface one looks at it. Thus a wise pilot will assume there is one and be attentive on approach to the three clues – the falling IAS reducing feel or weight in the controls, and the rising flare point in the windshield.

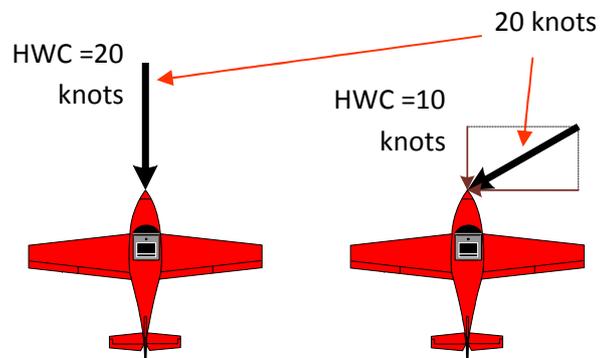
And how does a pilot counter the effects of such a wind gradient once its presence is noticed? Simply by lowering the nose to accelerate to the correct airspeed, and adding sufficient power to correct and then maintain the required descent angle to the desired flare point. These actions can be done separately but are better done simultaneously as time is of the essence. Wary pilots, watchful for the symptoms, recognise the clues early and need only small adjustment to attitude and power. Naturally, suspecting and anticipating the presence of a wind gradient and thus being alert

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for the symptoms will provide faster recognition of the existence and severity of a gradient, and quicker and better judged responses to the issue.

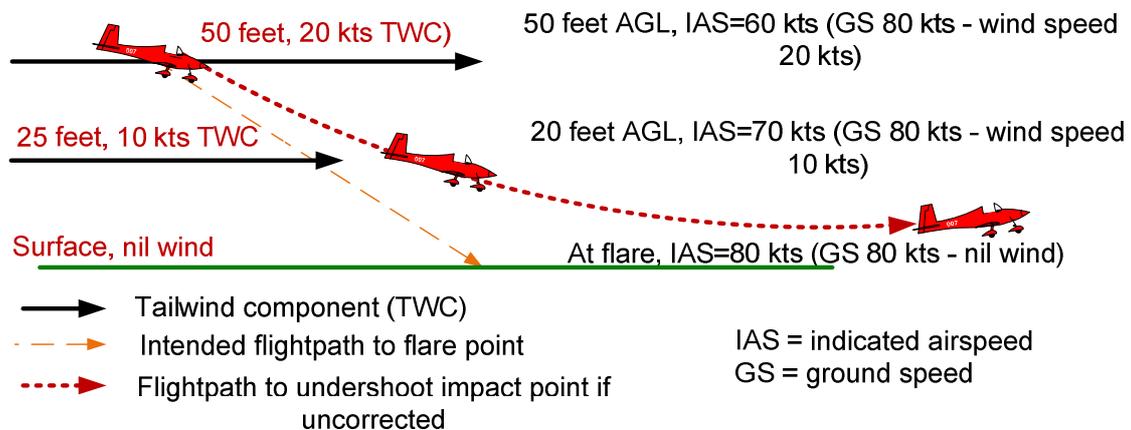
We are far more familiar with the effects of a wind gradient on the take-off and initial climb sector. An increasing headwind component with increasing height AGL can have a substantial effect on an aeroplane increasing (over the short term at least) the aeroplane's IAS, rate of climb, and angle of climb increase. However, if a sudden and substantial change in wind direction occurs, even if the wind speed remains the same, the reverse can occur.

In the next sketch, the aircraft is shown experiencing a headwind of 20 knots that suddenly veers 60°. Notice that, although the wind speed (the black line) is the same in both parts, the right side headwind component is only half the original value (now it's 10 knots after the direction change). Again, the aircraft will be fixed to its ground speed so the IAS will fall by 10 knots and all because the wind changed direction. Obviously, if the wind had veered the whole 90° there would have been no headwind component at all and the aeroplane's IAS would have decreased by the entire 20 knots. Of course – if it was a tailwind that we were discussing, the same factors would apply and change the tailwind component.



As one might expect, in tailwind gradient conditions, the reverse happens. During the approach and landing the airspeed increases, the angle of descent diminishes, and the rate of descent decreases. Instead of the aeroplane falling out of the sky, it is indeed reluctant to descend.

In the case below, the aircraft started its approach at the correct airspeed of 60 knots but as the tailwind component diminishes during the aircraft's descent, the descent rate decrease, the approach angle diminishes, and its airspeed increases. This is intolerable in terms of aircraft flight path and airspeed control accuracy.



So how does a pilot avoid a tailwind component situation? It is as simple as avoiding a tailwind approach.

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So let's summarise the issue. Wind gradients occur on most approaches but, because their speed change is usually over an extended height band, their effects are relatively easy to avoid. However, a pilot cannot be complacent and their first defence against wind gradient issues is to be always aware of their potential presence and ever watchful for their earliest symptoms. The second line of defence is to act decisively on recognising their symptoms appear and to be prepared to go around without hesitation. Remember, if the decision to go around is left too late, in severe cases the go-around may not be an option.

If in doubt – let's get out the old chalk board and look at the details. Otherwise – see your CFI and get some advice or even some practical experience.

Happy flying

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BVSAC Local Club Excursion

Thanks to Mal McKenzie.

Hello Folks,

Early morning flight on Saturday 14th May. Outbound we flew via Brisbane Valley to Kumbia then return via Toogoolawah, Watts Bridge . After Watts we did a few stalls to lose height and a spiral dive to the west before landing at Watts for breakfast. Time logged was 1.6 hours. Still air with lots of fog/ low cloud to the east.



About to start an ILS into Watts



Tarong Power Station & Bunya Mountains



Kumbia, near Kingaroy



Watts Bridge, from 4000 feet

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The ACE of the Base

The wind was calm the sun was up, not a cloud stirred in the sky
As I wheeled out the old Drifter, some STOL work I would try
The pre-flight done, I fired 'er up and she crackled and she popped.
Then the ruddy motor stopped. No-one had topped 'er up
They left the plane for me to fuel, much to my surprise
Not my fault I do declare – the sun was in my eyes

All gassed up and wind sock checked I taxied to the strip
There were people in the way but I just let 'er rip.
Amongst scattered hats and fleeting feet I lined up on the grass
Rammed the throttle, pulled the stick, and took-off with a blast
Then I saw the other plane heading at me plain as day
Not my fault I do declare – he was in my way.

I ducked left and he went right, he was correct in that I guess
I tried to get his rego and report him for causing stress
Then with motor screaming, nose up high, I saw the airspeed reading naught
That the ASI was stuffed again was my one and only though
But when the nose came down it worked again, fading all my fears
Not my fault I do declare – blame the engineers.

All along the crosswind leg I drifted to the left
That some fool had bent the rudder tab was more than just a guess
I turned downwind, saw the runway clear, I was making number one
I waggled the wings and kicked my feet, this surely was great fun
Then that other aircraft came again at me still going the other way
Not my fault I do declare – how could it – I wasn't fey.

Then on finals and all lined up, I was nearly back at base
But it came up pretty fast, lucky I'm such an ace
There were people running everywhere as I bounced a bit then flared
The nose pitched up, a wire snapped and I landed, 10 feet in the air
Then came a crunch, a sickening lurch, and I was on the ground
Not my fault, it couldn't be – the windsock was turned around.

I left her there, a crumpled heap, tail up in the air
Bent and twisted, fabric torn; I'd survived by just a hair
I briskly walked back to my car, to fly another day
When the CFI came running up, determined to have his say
His face was red, he screamed at me so I waved and bid adieu,
Not my fault, it couldn't be – now I have things to do

Very much A NON A MOUSE

B.V.S.A.C. FUN FLY POKER RUN 2016



THE EVENT

The Brisbane Valley Sport Aviation Club's Fun Fly Poker Run will be held on Saturday 2nd July 2016.

Starting time is 9:00am and finishing at 2:00pm.

It doesn't matter what you fly— Recreational, Homebuilt, General Aviation, Gyroplanes — we would love to have you join in the fun !!

THE GAME

Fly to any three of the participating airfields, Bradfield, Kilcoy, Gatton Airpark or Mc Carron's Field and collect an envelope which contains a playing card from underneath the primary windsock.

DO NOT OPEN ANY ENVELOPES UNTIL REGISTERING AT THE BVSAC CLUBHOUSE — WATTS BRIDGE.

You can start anywhere you like and go to the airfields of your choice in any order that suits you.

Then just fly on to Watts Bridge Memorial Airfield where you pay your entrance fee of \$5.00 and register your hand.

BBQ, Drinks and Snacks will be available all day long.

THE WINNER

The organizers will have drawn two cards at random prior to the start of the game. These cards will complete the five card hands for all players.

The best Poker Hand wins the Trophy for 2016.

**THIS IS FUN FLYING AT ITS BEST,
SO COME ON AND GIVE IT A GO !!**

AIRFIELD LOCATIONS

BRADFIELD	S 27° 25.1' E 152° 24.1'	KILCOY	S 26° 58.2' E 152° 34.0'
GATTON AIRPARK	S 27° 35.4' E 152° 15.4'	MC CARRON'S FIELD	S 27° 05.9' E 152° 36.2'
WATTS BRIDGE	S 27° 05.9' E 152° 27.6'		

If you have any questions :
please contact :

Richard Faint

Phone: (07) 5 427-0816

Mobile: 0412-317-754

Email: richard@auav.org



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Gatton Airpark Breakfast Fly-in

Held Sunday, May 8th.

What a day. Not a cloud in sky and the wand was on strike. The smell of breakfast drew aircraft from all over and the line of parked machines grew very long indeed. The figures are impressive – 65 aircraft took part. 160 people had a breakfast and 140 cup of coffee were served.

Well done, Guys and Gals. It was a great day. If you missed – we'll see you next year



Ron Dunne's CT4



The Pipstrel on display



Bill Finlen's Vintage DH85 Leopard Moth



Wolfgang Klein's immaculate J2 Auster



Some breakfast takers



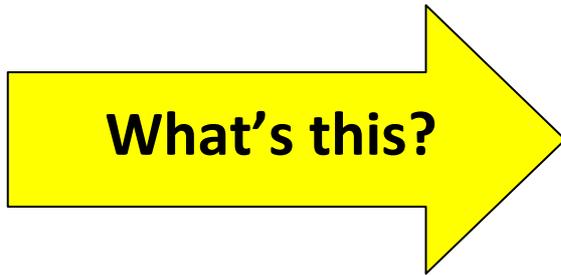
Part of the vehicle display line-up

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FLY-INS Looming

June 11	Angelfield, Murgon, QLD	Breakfast Fly-in
June 18-19 th	Lismore NSW	Lismore Aviation Expo
June 21 st	Dunwich, Stradbroke Is.	Straddie Breakfast Fly-In

Mystery Aircraft (June Issue)



Mystery Aircraft (Last Issue)



This was a 1929 TravelAir. Manufactured by the Travel Air Manufacturing Company owned by Clyde Cessna, Walter Beech, and Lloyd Stearman.

Congratulations to Mal Mckenzie who identified this aircraft with Nick Maylor running a close second.

House for Sale

Just 3 Minutes from Watts Bridge - 5 acres of land plus timber home with 3 bedrooms, 2 bathrooms, open plan kitchen, lounge and dining. 20,000 gals rainwater. Built 2009 and used as holiday home. As new. High aspect and good views. Contact: 0732897310 or email: thomasvall@dodo.com.au



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

1. Which option below most correctly defined an aerodynamic boundary layer?
 - A. The air blasted back by the propeller
 - B. The layer of air surrounding the aircraft in which sheering action takes place.
 - C. The air layer, close to an aircraft's surface, in which skin friction is generated
 - D. The boundary of air flowing around an aerofoil in which lift and drag are generated
2. Why can it be said that the centre of pressure movement on an unstalled aircraft is unstable?
 - A. Because the airflow changes as the stall approaches modified the longitudinal dihedral angle.
 - B. Because, with the airspeed changes as the stall approaches, the aircraft becomes untrimmed longitudinally.
 - C. Because, in most aircraft, at the stall the nose naturally tends to pitch down to un stall.
 - D. Because increasing the angle of attack caused the Centre of Pressure to move forward along the cord line.
3. If an aircraft flying due east on a magnetic compass southern hemisphere is accelerated...
 - A. The compass will swing and show an apparent turn to the North.
 - B. The compass will swing and show an apparent turn to the South.
 - C. The compass needle will not show any turn.
 - D. The compass needle may show a turn either to port or to starboard.
4. An aeroplane and a helicopter are approaching each other head on. Which of the following does the law require to happen?
 - A. Both machines turn to their respective right.
 - B. Both machines turn to their respective left.
 - C. The aircraft must give way to the helicopter.
 - D. The helicopter must give way to the aircraft.
5. Comparing an aeroplane in flight in a climb and a glide, both at its recommended speed for best L/D ratio, which of the following is most correct?
 - A. It is closer to the stall whilst climbing.
 - B. It is closest to the stall whilst gliding.
 - C. In neither case is the stall closer.

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

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:	7 th May 2016
MEETING OPENED:	10:15AM
MEMBERS PRESENT:	17
APOLOGIES:	Peter Biddle, Bruce Clarke, Scott Meredith, Liz Cook, Ian Ratcliffe.
VISITORS:	Nil
NEW MEMBERS:	Though not a new member Rodger Connolly was attending his first BVSAC meeting and was introduced to the membership.
MINUTES:	<p>April 2016 meeting of the BVSAC Inc. Mark Purdie commented that his apologies for the April Meeting had not been recorded in the minutes. With that amendment the minutes were accepted.</p> <p>Proposed: Mal McKenzie Seconded: Mike Smith. Acceptance motion carried.</p>
PRESIDENT'S REPORT:	Wayne Petty updated the membership on the progress of the clubroom extensions and thanked those who have been offering assistance. He noted that there is still some sheeting to be done and an access door. Mike Smith has volunteered to take care of the fire extinguisher requirements.
SECRETARY'S REPORT:	<p>Richard Faint detailed the inward and outward correspondence for April. This included emails to members regarding flying events in the district, the Amberley Airspace report and the distribution of the newsletter.</p> <p>An offer has been made to the Gathering of Eagles (GoE) sub-committee and the WBMA BoM that the club hangar be made available for the GoE Saturday evening dinner if it were required, and that BVSAC will be undertaking retail catering activities at the GoE.</p>
TREASURER'S REPORT:	Priscilla Smith presented the financial statement summary and advised that the BVSAC ING account balance is \$557.46 and that the BVSAC NAB account balance is \$5,118.98.
WBMA REPORT:	Peter Freeman reported that the waterline connecting the club's tanks to the Watts Bridge amenities block has been installed and is now functional.
BUSINESS ARISING:	Richard Faint advised that permission has been sought and received from Ian Aviation, the owners of "Bradfield", to use the airfield for the Fun Fly Poker Run.
GENERAL BUSINESS:	<p>Sandy Walker moved a vote of thanks to Vern Grayson, Max Bain, Ian Ratcliffe, Peter Ratcliffe and David Ratcliffe for the repairs and improvements made to the hangar doors.</p> <p>Catering for the Fun Fly Poker Run which is to be held on the 2nd July was discussed.</p> <p>It was agreed that the catering would consist of BBQ sausages, onions and bread rolls, soup, hot tea and coffee and cold drinks. It is anticipated that approximately 60 meals will be served. Members were delegated the following tasks:</p> <p>Sandy Walker: Sausages and onions, Mike Smith: Bread rolls, butter, sauce, Richard Faint: Restocking the drinks fridge and generally organizing the event, Genda Faint: Soup.</p>

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It was agreed that the locks on the hangar personnel access door should be changed as a matter of some urgency . Ian Ratcliffe to co-ordinate.

Catering activities for the GoE was discussed. It was agreed the club would sell pre-prepared food items to be sourced at COSCO and elsewhere. Items offered for sale would include:

Wraps with four different fillings (approx. \$4.00ea)

Cakes, muffins, slices or sweets (approx. \$4.00ea)

Coffee and Tea (gold coin donation - self serve)

Cold drinks at \$2.00ea

The secretary is to update the GoE sub-committee with details.

It was resolved that the BVSAC clubrooms and facilities would not be available to other organizations during the GoE. The secretary is to inform the GoE sub-committee of this.

The volunteer briefing to be held in the clubrooms the week prior is OK.

Sandy Walker questioned whether the vinyl flooring as laid in the club rooms was suitable for the new extensions. The alternative would be tile flooring. To be discussed further.

Mike Smith, speaking as an RA Aus Delegate, spoke at some length about the proposed new RA Aus Constitution. He explained the reasons behind the change of corporate structure and governance issues and why he considered the new constitution to be a marked improvement.

Mike went on to answer many of the questions surrounding the proposed constitutional changes and to debunk some of the misinformation that is currently being circulated.

Mike made available proxy voting forms to RA Aus members who wished to cast a vote.

NEXT MEETING:

The next meeting will be 04.06.2016 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 11:25AM. A BBQ lunch was held after the meeting.

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Aircraft for Sale

Bantam B22S in good condition. Has Rotax 582 engine which runs perfectly. Engine and airframe have logged just 124 hours to date. A STOL aircraft, registered. A pretty machine that flies as good as it looks.

\$15000.00 (firm)

Contact Bert on 0428 735 294



Rotax Engine Wanted

Rotax 377 engine wanted. Preferably in good working order but anything considered
Contact Bert on 0428 735 294