Brisbane Valley Flyer

August - 2015

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

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

And the Poker Run Winner IS ..... John Nooyan and his red hot Savannah.
Congratulations John.

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BVSAC Fun Fly Poker Run 2015

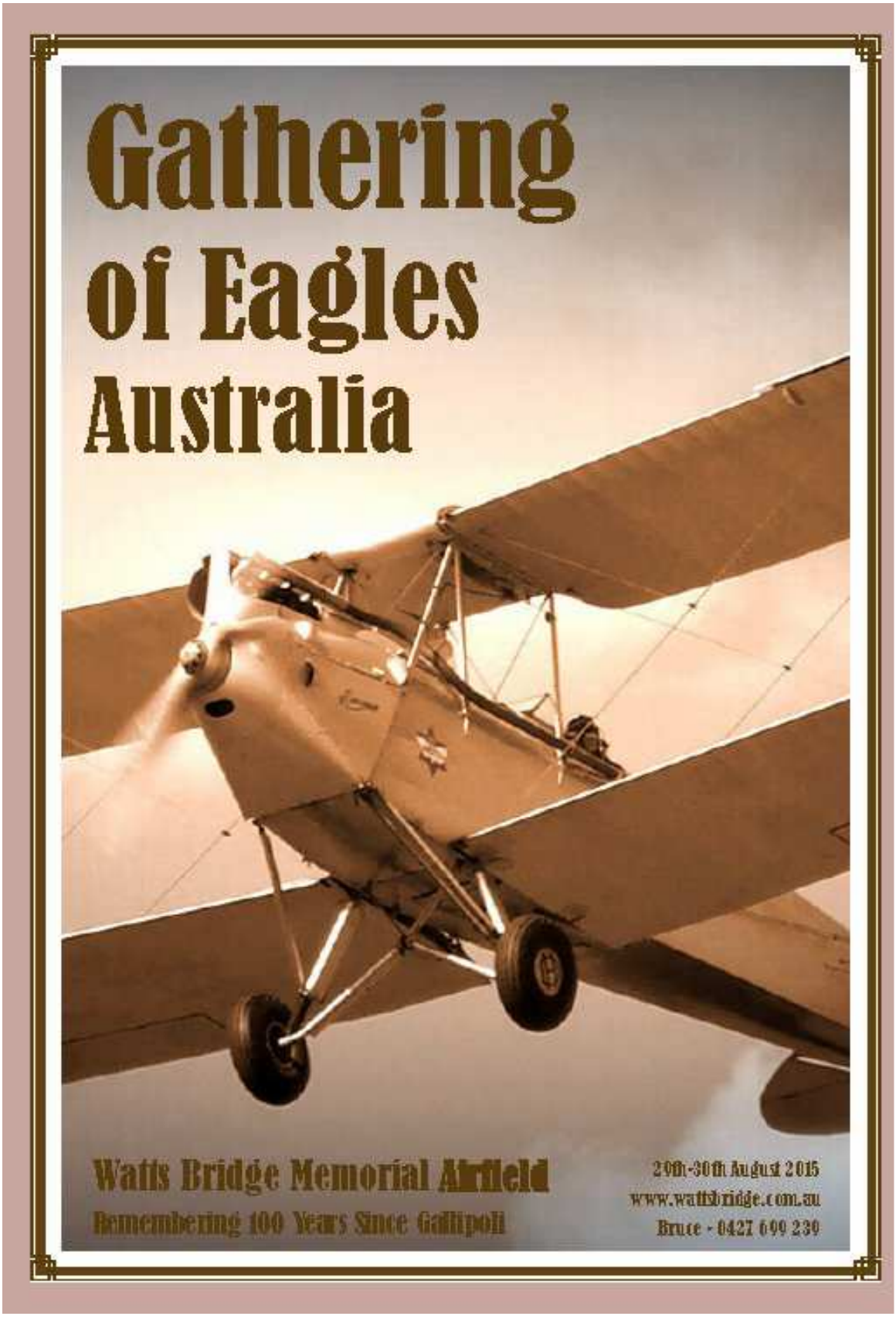
July, every year, sees pilots and navigators from all over S.E. Queensland do battle to be the champion of the Brisbane Valley Sport Aviation Club's Fun Fly Poker Run. This a game of pure chance requires each pilot/crew playing the game to find their way to three airfields in the district and select a card in a sealed envelope. The last stop is Watts Bridge where the poker hand is completed by the two cards drawn at random by the house.

This July saw perfect flying conditions and the excellent turn-out of 30 participants ready to enjoy a great morning's flying and the culminating BBQ feast held back at the at the BVSAC Clubrooms where the winning poker player would be announced.

And for this year, 2015, the clear winner of the coveted Fun Fly trophy for 2015 was John Nooyan flying his red hot Savannah – Jalapeno (that's pronounced with a "Y," folks).

John was the runner-up for 2014, so it's good to see that he has been hard at work improving his playing skills to elevate himself to the winners circle with a competition crushing hand of three 10's.

The shindig afterwards.


Gathering
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29th-30th August 2015
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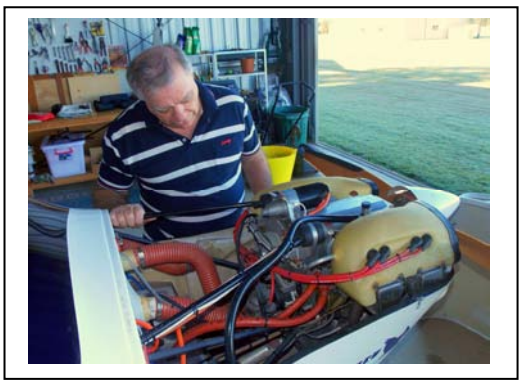
A Jabiru Report

By Rob Knight

There has been much controversy of late around the Jabiru line of aircraft and I had been discussing the issues with Richard Faint, the Secretary of the Brisbane Valley Sport Aviation Club. He suggested that we take a trip in their kit built Jabiru SP500 so I could see for myself. Although construction began more than 10 years ago, the aeroplane has been flying for a little under 5 years and is absolutely mint.

Richard opened the hangar doors at Watts Bridge while the sun was still low. Yellow light streaked across an 'almost-frost' and the wind socks hung dead. Some mist lay around but it lacked traction and was beginning, even then, to clear. We had picked a day right out of the box.



The cowlings are off and everything checks out just fine

Richard pre-flighted 19-7605 in the hangar and ran though his Jab's idiosyncrasies with me. As he spoke I admired the beautifully smooth lines and joints that spoke volumes about the care with which 7605 had been manufactured. The tab system that Jabiru uses to lock every hinge pin on every control surface yet produce just a miniscule drag increase was interesting. I had heard that the control surfaces on these aircraft were too small and, indeed, the ailerons, elevator, and rudder did look smallish. The fin also appeared diminutive compared to other aircraft. But I keep an open mind and waited until I flew it before I made any judgment. Richard replaced the engine cowl and we pulled it out onto the grass. She looked clean, neat, smart, and inviting, daring us to board and commit aviation.

With us and 45 litres of avgas in the tank behind the seat, we were just under the 500 kg MTOW. Using 20 LPH we had just over 2 hours endurance – plenty for our exercise. I looked around the cockpit.

Large it is not, yet there was no discomfort. My right side bucket seat fitted nicely and there was ample room. The sheepskin cover was soft and warm and the harness fitted well. The centre-mounted stick lay comfortably in my left hand but I couldn't find my throttle. Richard grinned and suggested that I check the front of my seat, in the centre. With the usual "push for power" movement, the throttle was a small knobbed lever that ran through 90° of travel from idle to max noise, mounted on the seat frame and extending out between my knees. This was different.

The flight and engine instruments are well laid out on the glass panel

The engine started easily and ran sweetly as Richard eased off the choke. It sounded very even and was rather deeper noted than I expected. Richard's fantastic glass panel threw us heaps of details

and for a few minutes we watched attentively as the oil temp and CHT rose. When all were in the greens, we released the brakes.

The nosewheel linked rudder pedals felt solid, responded positively, and gave a fair turning circle. The throttle was easier to use than its position suggests and taxi speed was easily controlled. Ground visibility was typical of most high-winged aeroplanes. The undercarriage was comparatively stiff and there was little tendency to roll laterally over uneven ground. I wondered how it would go on landing.

Great visibility over the nose in the climb

On take-off the aeroplane accelerated quickly and rotated gently and cleanly at 40 knots, flying itself off at around 50. By 300 feet we had settled into a comfortable climb at 500 FPM with an IAS of 80 knots. This was slightly faster than the POH V_Y but gave better engine cooling. The engine was a deep hum with little vibration in my headset. The control pressures were firm but not heavy. There was resistance to stick movement but pressing the single pole stick against the pressure gave a good sharp response. I could find nothing to support the gossip of inadequate control response - at this speed anyway. Harmony was good – it felt very nice to fly; positive and lively.

Leveling out at 3500 feet, I found the trim, a push/pull lever on the console, powerful and precise. With the aircraft trimmed we did the HASEL check where I took special note of the visibility. It was perfectly adequate: no worse than many other light aircraft I have flown.

We first tried a basic stall - no power or flap, and then in an approach configuration stall – as a distracted pilot might encounter on a bad day. The basic stall just gave us a wings level sink with the warning squealing and stick full aft. There was a slight tendency to nod its nose but absolutely no other indication except the VSI pointing to around 800 FPM down. There was not even a discernable buffet. With power and flap applied, at the stall onset the nose sagged a little but, again, with a full aft stick, the aircraft just settled in a squealing nose-high attitude at 200 FPM down. Stalling in this aeroplane is significant by its lack of symptoms. As an old instructor I like a definite stall but this was an aeroplane purchased and used for simple private operations and not training.

Turns were not difficult. Adverse yaw was there, albeit in small amounts, and the ball definitely moved if balancing rudder was not applied with the aileron. What was noticeable was that right turns required more rudder – probably a function of propeller rotation and forces. Steeper turns were a non event and it was easy to maintain height. The stick was a little heavier but not an issue, the forces were still relatively light. I took it to the stall onset in a left hand turn and did find a buffet. Recovery was immediate

A nice aeroplane to fly

with relaxing back-pressure. I completed the turn without height loss

Richard and Glenda purchased this aeroplane with its cross-country performance in mind and the instrumentation is setup to do just that with an MGL Odyssey filling the pilot side of the panel. 7605 is one of the most technologically sophisticated private ops light aircraft that I have ever seen. I wish such gear had been around when I was operating IFR.

To demonstrate its capabilities, Richard called up Kilcoy in his system and set heading for Kilcoy, about 15 nm north of our then position. He set the heading bug and we sat back and read off all the relevant numbers. At 2800 RPM at 2500 feet with 91 knots IAS, we were getting a TAS of 94 knots.

The superb two screen layout is a tremendous navigation plus

Time to Kilcoy was presented and with the press of a cunningly disguised button, he could call up all the other local airfields and change to an alternate destination at any time by pressing a button. Then, crossing Mt Brisbane, we got a terrain warning - we had terrain less than 1000 ft below us.

We returned to Watts in a powered descent to shoot some circuits. Lowering the nose saw an immediate rise in IAS showing how slippery the aircraft was and it could be difficult to lose height and remain below the Vne. We established downwind, reported our position, and did the checks.

Because it is so slippery, Richard began reducing power just after mid downwind and I was again surprised to see the rise in nose attitude to wash the speed off. At just the right time we turned onto base and Richard added a little trim to hold the power that he had added. It looked too easy and it was. Needless to say the landing was flawless. The next one was mine.

Visibility on finals was good. The crosswind was more noticeable above 200 feet AGL

As I added take-off power with my hand between my knees everything was alive. It came off clean and flew away with ease and no issues presented until late downwind when I had to get the speed back to below the 70 knot V_{FE}. Eventually it did and I turned base. I needed more power than Richard – I was further out. Then it became a juggling match to maintain more than 60 knots but less than 70 and I found about 2° change in nose attitude was all it took to go outside these limits. Approaching the fence I reduced power and lowered the nose and just caught the speed increase: you need a fine touch to fly this

aircraft with accuracy. There was a slight cross wind and I kicked straight and landed on the windward wheel fractionally first. There was plenty of control.

I found this aeroplane quite delightful. All aeroplanes have quirky characteristics but this had no more than its fair share. The engine ran perfectly during the whole exercise and, if I had to make a criticism, I'd say only that the V_{FE} is too close to the approach speed. With such a slippery airframe it's a real challenge to keep it between these lines. Obviously experience would make it easier. For the rest – it makes an admirable platform for Richard and Glenda's cross country flights. As for reliability – statistics aside – I felt totally safe and this one flew perfectly well for me. I'll go again as soon as Richard invites me.

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

REMINDER – 2015/16 Club Fees due 30/06/15

You should have received your BVSAC Renewal of membership invoice in the first week of July.
Please note that, if you have changed your email address in the last year, please advise the BVSAC treasurer 'at treasurer@bvsac.org.au ' or phone 07 3206 3548.

BirdsiPhotography

Want an air-to-air or ground shot of you and your dream machine? It's easy to arrange and will cost less than you might think. Grab the phone and contact Peter Davies or Rob Knight on 0400 89 3632,
or email kni.rob@bigpond.com

FLY-INS Looming

August 08	Murgon	Angelfield Brekkie Fly-In
August 08-09	Maryborough	Fraser Coast Fly-In
August 16	South Grafton	Wings and Wheels Open Day
August 29-30	Watts Bridge	Gathering of Eagles Annual Fly-In

Mystery Aircraft (August Issue)

What's this?

Mystery Aircraft (Last Issue)

This aircraft is an Aeronca C-3 "Bathtub", built in the 1920's and 30's. They were very popular in their day for their ease of flying (for their time) and simple maintenance. See pilot report page 11.
Congratulations to Mal McKenzie for identifying this type, too.

Arguing with a pilot is like wrestling with a pig in the mud, after a while you begin to think the pig likes it.

Real planes use only a single stick to fly. This is why bulldozers & helicopters — in that order — need two.

Brisbane Valley Sport Aviation Club Meeting

The Poker Run replaced the July 2015 Meeting. The Next BVSAC meeting is scheduled for Saturday August 1st.

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Please Register Interest or RSVP by 24th August 2015

This will assist us with food and organising Buses for the Seafood Festival

Date: Saturday 08/08/15 to Sunday 09/08/15
Time: 08:00 onwards
RSVP: 24/07/2015

Call Brad on 0416 00 7777
or email info@frasercoastairpark.com.au

Please RSVP by 24th August 2015

This will assist us with food and organising Buses

Date: Saturday 08/08/15 to Sunday 09/08/15

Time: 08:00 onwards

Aeronca C2 / C3 – An Aircraft Report

With the pilot sitting so low in the cockpit, landing was easy with the Flying Bath Tub-giving rise to the expression "Flying by the seat of your pants" The Aeronca C-3 is dubbed the father of affordable private aviation being the first really successful light plane on the scene. It got an amazing 20 miles to the gallon.
Its success was mainly responsible for the way it was hyped and marketed in a well organized and professional way. Not to mention that it flew pretty darn well.

By 1931, most light aircraft had two seats rather than one. Airplane owners naturally wanted to share the pleasures of flight, and even more important was the fact that a second seat was necessary if the plane was to be used for flight instruction. In order not to lose its lead in the field, the Aeronautical Corporation of America set about developing the C-3, a larger version of the C-2 with seating for two side by side. Power was to be provided by the new Aeronca E-113 engine of 36 hp. Two prototype C-3s were put through extensive tests in 1930 and production started in March of the following year.

One C-3 was dispatched on a 13,000-mile demonstration tour through seventeen states, and gave many people their first look at the "Duplex" or "Collegian" as the regular and trainer versions were called. Despite the added fuselage size and weight, performance was crisp with the new engine. Orders poured in and production literally had to double at Lunken Airport to meet the demand.

The 70-foot takeoff roll, 12,000-foot ceiling, and landing speed of only 35 miles per hour were good selling points, but the strongest was its economy combined with a utility the C-2 had not had. A good demonstration of its ruggedness was provided when a C-3 was entered in the 1931 National Air Tour, a difficult 4,858-mile event in which the new Aeronca, the first light airplane ever to participate averaged a respectable 64 mph.

Aeronca owners all over the country flew for the pure pleasure of it, most after less than five hours of instruction due to the straightforward characteristics of the aircraft. The C-2 and C-3 were basically powered gliders with excellent gliding ability and gentle landing speeds. In addition, the pilot sat so low in the cockpit that the term "seat of the pants" applied perhaps better to landing an Aeronca than flying it. The result was that it was extremely difficult to make a bad landing as the pilot had an excellent view of the proximity of the wheels to the runway. But the nimble Aeronca's could also perform brilliantly in the hands of a truly fine pilot .Aeronca kept its finger on the pulse of the aviation public throughout the production of the C-2 and C-3. Improvements and desired features were quick to appear, the most noticeable being the new tail group and the extended, split-axle landing gear with Goodyear 16x 7.3 "airwheels." Brakes were also quickly introduced as an option to facilitate ground handling.

Aeroncas were also offered as seaplanes after the first fifty C-2s had rolled out the factory door. The single and two-seat versions were designated PC-2 and PC-3, respectively, the "P" standing for pontoon. Floats were manufactured by Warner; Aircraft Products Corporation; and the Edo Corporation of Long Island, New York. Edo was the largest supplier and also offer their Model D-990 and D-1070 floats as a conversion kit for wheeled Aeronca at a price of $750 The year 1932 saw the introduction of detachable cockpit doors with inset windows.

These panels could be put on for winter- or bad-weather flying, or left off to enjoy warm summer weather to the fullest. The following year, the seat back was raised, the cockpit was widened slightly, and leg room was increased. The improved Aeronca E-113A engine was put on a new mount to reduce the level of noise and vibration experienced in the cockpit. In 1934, a new cantilever landing gear without drag-inducing struts became part of the C-3 design, and the interior was made more elegant with new leather seat cushions. With wheel pants, available as an option since 1931, the two seat light plane attained a top speed of a little over 80 mph despite its low horsepower.

In 1935 the Aeronca came with a completely enclosed cockpit, optional wheel brakes and wing lights, and sold for just $1,890. When compared with the $1,880 price originally announced for the C-2 before the Great Depression, the Master was a bargain. Production was doubled again, and the five hundredth Aeronca was turned out in 1935 with 128 C-3 Masters being built that year alone. The Aeronca C-3 was also built in England as the Aeronca 100 by Light Aircraft, Ltd. This firm, under the new name Aeronautical Corporation of Great Britain, Ltd., built twenty-four Aeroncas before halting production due to a lack of sales.

The British-built Aeronca was virtually identical to its American cousin with the exception of having more conventional fabric-covered ailerons instead of metal ones. As with the Ohio-built aircraft, the ailerons were interchangeable right to left.

The Aeronca 100 originally was supposed to make use of the latest version of the C-3 engine, the 40-hp Aeronca E-113C being introduced on American aircraft in 1936. However, this engine had single rather than dual ignition and therefore did not meet British airworthiness standards. A license-built version of the E-113C with dual ignition was therefore built by J. A. Prestwick, Ltd., and was designated the J.A.P. Model J99.

That Aeronca in the United States did not incorporate dual ignition in their engines until 1937 was a matter of economics. Two spark plugs in each cylinder running off independent magneto generators meant greater cost for a marginal increase in safety. A more important area for improvement was thought to be the crankshaft, and this component was made considerably stronger in the E-113B of 1934. Another change in the appearance of the C-3 was accomplished when yet another type of landing gear was fitted. The tripodal gear had at first relied solely on the fat Goodyear "airwheels" for shock absorption until complaints of porpoising during rough landings led to the incorporation of an oleo strut. However, this system was bulky and produced excessive aerodynamic drag. The final landing gear consisted of a single cantilever strut with shock dampening housed internally in the fuselage.

Production of the successful C-3 was terminated late in 1937, not because it showed any drop in popularity but because it no longer met airworthiness requirements for production in this country.

The C-3 was loaded with now illegal features such as 3/32-inch control wires, external wire bracing instead of strut bracing, fabric right up to the firewall, a single-ignition engine, and no requirement for an airspeed indicator.

In 1935, Aeronca introduced a low-wing aircraft with the designation C-70 or C-85, depending on whether it was fitted with the 70-hp or 85-hp LeBlond radial engine. With side-by-side seating for two in a completely enclosed cabin with excellent visibility, the C-85 offered a top speed of 120 mph. Overall dimensions were similar to the C-3 and the wingspan was the same at 36 feet, but the gross weight was half again higher at 1,500 pounds.

The true successor to the C-2 and C-3 series light planes, however, was the Model K. Introduced in 1937, it was a considerably more modern and pleasing design by all accounts. Powered by a dual-ignition Aeronca E-113C engine, the Aeronca K sat higher off the ground and had a strut-braced wing over an enclosed cockpit with side-by-side seating for two.

While the Model K did away with the conical lines usually associated with the Aeronca name, there were still plenty of "flying bathtubs" around. A grandfather clause in the new rulings allowed all aircraft built before the date of new regulations to continue flying.

Twelve out of thirty-three Official World's Records recognized by the N.A.A. in 1936 were won by Aeronca C-2s and C-3s, and by the time production of the C-3 ended the following year the figure was up to nineteen. Forest M. Johnston and his C-2 NC-568V held a number of them, predictably enough, including altitude records for both light land and sea planes.

Stanley C. "Jiggs" Huffman flew a C-2 with extra fuel from Lunken Airport to Roosevelt Field on Long Island, New York, with one quick stop for refuelling in New Jersey due to unexpected headwinds. Total time for the flight was 10 hours 10 minutes, 9 hours 40 minutes of it in the air, and 30 gallons of gasoline were used to cover the 570-mile distance. Upon landing, Huffman stated that the total cost of the flight had been $9.70, and proclaimed the C-2 the "smallest practical plane in the world."

Length:	20 ft	Wingspan:	36 ft
Height:	7 ft 10”	Wing Area:	142.2 ft
Empty Weight:	569 lb (258 kg)	MTOW:	1005 lb (456 kg)
Powerplant:	Aeronca E-113C horizontally opposed 2 cylinder , piston engine, 36 hp		
Max speed:	95 mph (82 knots)	Range:	174 nm
Service Ceiling:	12,000 ft		

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

1. A cold front is: (select the most correct definition from the following)
   A. A parcel of colder air cutting under and lifting a parcel of warmer air
   B. A parcel of warm air cutting under and lifting a layer of colder air.
   C. A parcel of colder air flowing across a layer of warmer air.
   D. A parcel of warmer air cutting under and lifting a parcel of colder air.

2. A sea breeze is caused by: (Select the most correct statement from the following)
   A. Lower density colder air over the sea being drawn inland by the prevailing wind.
   B. Warmer, less dense air over the sea flowing inland and lifting and replacing cooler air.
   C. Warmer air over the land rising and drawing in cooler air from over the sea
   E. Lower density warmer air over the sea being drawn inland by rising cooler air.

3. An airfield on the coast of Queensland has a runway designated as 18/36. Another airfield, in Western Australia, has an airfield with the same runway designators 18/36. Assuming the same magnetic variation, if these airfields could be put side by side would their runways be parallel?
   A. Yes, always.
   B. No, not ever.
   C. Yes, provided they are on the same parallel of latitude.
   D. No, unless they are both on the same rhumb line.

4. What is an impulse coupling and what does it do?
   A. A device fitted to an aircraft engine to reduce the shock to the crankshaft.
   B. A device fitted to a gyro compass to eliminate errors caused by electronic impulses from the aircraft electrical wiring.
   C. A device fitted to the aircraft's alternator to turn alternating current impulses into direct current.
   D. A device fitted to an aircraft's magneto to provide a hot, fat spark to aid starting.

5. The temperature at sea level is 30°. There is no cloud so the standard (ISA) temperate lapse rate applies. At what height should you expect the freezing level to be reached?
   A. 3000 feet.
   B. 15000 feet.
   C. 30000 feet.
   D. 10000 feet.
   E. 20000 feet

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

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

--ooOOoo—