Brisbane Valley Flyer

March - 2015

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.

The Seeker SB7L-360A – See article next page.

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Seeker goes on sale in America

Australia gifts a unique and highly developable aircraft to our cousins in the You Ess of A.

Reproduced from an article by Stephen Pope.

The Seeker, a light utility aeroplane born in Australia in the early 1990s, has gained U.S. type certification allowing it to finally go on sale here in America.

If you've never heard of the Seeker you're probably not alone. A two-seat, high-wing taildragger with the engine mounted high behind the cabin, it's an odd bird. In Australia it's long been known as the Seabird Seeker, built and sold by Seabird Aviation Australia.

With exceptional visibility and penny-pinching economics, it's billed as a cost-effective alternative to a helicopter. And if you don't need vertical takeoff and landing capability, there's an argument to be made that the Seeker is just about the perfect alternative to a rotorcraft.

Seekers have been flying in limited numbers in the United States as sales demonstrators and with government entities, and now you too can own one after Seeker Aircraft America completed FAA validation flights allowing them to be shipped here, reassembled and sold as Part 23 certified aeroplanes.

Two versions will be offered in the U.S. market, the Seeker SB7L-360A and higher horsepower SB7L-360A2, both powered by Lycoming IO-360 engines.

With nearly seven hours of flight endurance and a stall speed of 48 knots, Seeker Aircraft America is hopeful this unique aeroplane can find a ready home in this country.

The de Havilland Beaver – a 60 year success story

Extracted from an article by Michael Vivion, Photograph By Jessica Ambat

You first notice the sound as a low rumble in the distance. It grows louder, and the throaty rumble increases to a roar as the big floatplane swings into the wind for landing. On this remote northern lake where you've been stranded by weather for days, this is the sound of salvation. A hardworking Pratt and Whitney radial engine, firmly attached to arguably the best bush plane ever built, is on its way to pick up and deliver you to the land of hot showers and warm beds. Indeed, as I was told by a well-known pilot in Kodiak, Alaska, when I began flying a Beaver, "You won't find a better aeroplane for flying in marginal weather in the bush."

That aeroplane—the de Havilland Beaver, celebrated a birthday in August—60 years from its first flight. Officially known as the de Havilland Canada DHC-2 Mk.I Beaver, it's listed as one of the 10 greatest Canadian inventions. More significantly, almost all backcountry pilots who've flown the aircraft have a soft spot for the reliable workhorse.

What makes the Beaver such a wonderful working aeroplane? A great team of designers paid careful attention to the original design objective, as well as to the responses of a survey of working pilots in the north, and produced what has become an icon. The team of Phil Garratt, Jaki Jakimiuk, Fred Buller and Dick Hiscocks created not just a bush aeroplane, but also a legend.

The goal of these designers was to develop a purpose-built bush aeroplane capable of carrying heavy loads on wheels, skis and floats, and with performance to meet the demands of the bush operators of the day. The final design of the aeroplane was dictated by the decision to utilize the Pratt & Whitney R-985 Wasp Junior radial engine as its power plant instead of a 330 hp Gypsy engine. The R-985 was first built in 1929, and there are still hundreds of these engines in service today. Were it not for the durability of the Beaver, the R-985 would probably now be uncommon in the ranks of working engines, but the two have proven to be a match made in Downsview, Ontario, Canada, birthplace of the Beaver.

It was the switch from the inline engine to the radial that gave the Beaver its pug nose. To provide loading flexibility, the radial had to be mounted virtually in the cockpit. In fact, the Beaver's six-gallon engine oil tank is the centre console between the pilot and co-pilot's feet. The oil filler cap is to the right of the centre pedestal, adjacent to the co-pilot's left knee. Theoretically, one can add oil in flight but this is seldom necessary.

The first production Beaver was delivered in early 1948. By the end of production, 1,631 Mk.I Beavers, one Mk.II prototype with an Alvis Leonides 500 hp engine and 60 Mk.III Turbo Beavers had been built. The U.S. military bought 968 Mk. I Beavers as U-20 utility aircraft. For years, Kenmore Air Harbor in Seattle, Wash., has done a lively business converting military Beavers to civilian configuration.

The prototype Beaver illustrates the durability of the type. The first Beaver, CF-FHB, made its first flight in August 1947. After flight-testing was completed, it was refurbished as a demonstrator. In June 1948, the aeroplane was sold to Central British Columbia Airways, which was in need of working aircraft. FHB then became a working air-taxi aeroplane. The prototype continued to fly for air-taxi operators until 1980, when it was purchased by a museum and retired. How many manufacturers can claim that a flight-test prototype of one of their aircraft was in continuous, day-to-day commercial service for 32 years?

So, what's it like to fly a Beaver? It can be a lot of fun and a lot of work. This is a big aeroplane by general aviation standards, with a 5,100-pound gross weight and 450 hp at full throttle. The engine is supercharged, and the aeroplane can have six fuel tanks. These aren't terribly complex aeroplanes, but they're not that simple either.

Loading a Beaver can be a daunting task—the useful load can be close to 2,000 pounds, even on floats. The shape of the doors on a Beaver initially appears odd. The front doors are narrow, but after flying one, you realize that it's a functional shape. The aft doors were designed to facilitate the loading of 55-gallon barrels, either upright or on their sides. Three fuel tanks occupy the forward belly of the aeroplane, which simplifies fuelling. There's no need for the pilot to climb up on the wings to fuel. Many Beavers have wing tip tanks, but with 95 gallons in the belly tanks (35, 35 and 25 gallons), the tips (another 46 gallons) are rarely used. Fuel management requires planning to maintain centre of gravity as fuel is burned.

The first procedure new Beaver pilots learn is engine starting. Radial engines require a few more steps than do opposed engines. Hydraulic lock is a possibility in a radial that hasn't been run for a bit. Oil can pool in the lower combustion chambers, and starting an engine in this case will create havoc.

The morning ritual starts by hand-pulling the big propeller through several blades to confirm there's no hydraulic lock. Then prime it with five primer strokes, engage the starter, count three to five blades, energize the boost coil and switch on the mags. Five cylinders are primed, so they fire first, then the others join in. This is accompanied by a cloud of smoke as the engine clears itself in preparation for the day's work. The sound of a radial engine coming to life has been known to bring tears to the eye of hardcore biker types. It's a sweet sound indeed.

Longevity of radial engines is dependent on a thorough warm up prior to takeoff—every day. In Kodiak, a 10- to 15-minute ground warm up was standard, even in summer. With the aeroplane tied down, I'd fire up the engine and read the morning paper while the Junior warmed itself for the day's adventures. There's six gallons of oil in there and a lot of metal to warm.

The Beaver is slab sided and sensitive to wind on the surface, but an experienced pilot can handle the aeroplane easily. For takeoff, the throttle pushes manifold pressure to 36.5 inches at 2,300 rpm. An idling R-985 rumbles a pleasant note, but at takeoff power, it emits a deafening roar. Attention to manifold pressure is important—it's easy to overboost.

On takeoff, the Beaver struts its stuff. This is what the aeroplane was bred for: STOL operations. Even heavy, the aeroplane outperforms most four- to six-seat aeroplanes. With modifications, the Mk.I Beaver can seat seven, the Mk.III up to 11. Ask any experienced pilot who's flown the Beaver and other bush aeroplanes which one he or she would choose to depart a small lake with a load, and the answer will be predictable.

Takeoff requires flaps. The designers refused to follow popular recommendations and dropped the ailerons when flaps deploy. These "flaperons" significantly improve the aeroplane's STOL capability. For takeoff, I lowered flaps to match aileron deflection with the yoke cranked over fully in one direction.

Once airborne, the Beaver's control harmony is actually quite nice and light. Adverse yaw is prominent, so proper application of rudder is required. With a 48-foot wingspan, a "leisurely" roll rate and lots of adverse yaw are inevitable.

The heavily loaded Mk.I Beaver doesn't exhibit spectacular climb capability, but with patience and bumps of the throttle to maintain power during climb, it'll get you there. The aeroplane climbs best with partial flaps. Engine temperatures may limit climb performance on hot days.

Cruise speed of a loaded float-equipped Beaver is around 110 knots. When I first flew the aeroplane, it seemed difficult to find a proper cruise pitch attitude, because of the rounded cowling. I learned to level the bottom of the left wing with the horizon, and I flew with a bit of flaps deployed when heavy. Flaps are hydraulically activated, permitting an infinite range of deflection. Fuel burn in cruise ranges from 22 to 28 gph (83 to 106 litres per hour).

On approach, the Beaver exhibits a characteristic typical of DHC aircraft: A very nose low pitch attitude is required to maintain airspeed. These aeroplanes illustrate the concept of flight "behind the power curve" graphically. These are draggy aeroplanes, and raising the nose increases drag. As a Beaver slows, you must keep the nose down. Get low on final, raise the nose and the aeroplane will sink like a stone. The aeroplane won't climb, even with a lot of power until you push the nose down. Push and the aeroplane will climb nicely, assuming it's not too far into the pit before the pilot awakens. Any initial checkout in the Beaver should include extensive exposure to this characteristic.

Landings in a Beaver are non-events. The aeroplane flares and settles on quite nicely: all in all, a gentle lady. Got some rough water to work? That's the Beaver's job. It's big, tough and as honest an aeroplane as was ever built, assuming the pilot approaches properly. The aeroplane has the capability of extreme flap deployment—58 degrees, with a note in the pilot's handbook recommending that "the full flap setting should be used only for emergency crash landings." That’s an interesting concept.

The Beaver has been "improved" by numerous modifiers. De Havilland itself adapted the Mk. 1 to turbine power to create the Mk.III Turbo Beaver, with a Pratt & Whitney PT6 engine. Sixty were built in the late '60s. The difference in engine weights required a 28-inch extension to the fuselage aft of the pilot's seat to keep the Mk.III in CG. A larger rudder and vertical fin manage the additional horsepower from the turbine engine.

Modifications exist for a gross weight of 5,600 pounds for Mk. I Beavers, and 6,000 pounds for Mk.III Beavers. Numerous seating arrangements, larger cargo doors, larger windows and smaller batteries have all been approved. The induction has been moved to the top cowl to reduce water ingestion, the wing struts have been strengthened—the list is extensive. Viking Air Ltd. converts Mk. I Beavers to Mk.III configuration, turning your rumbler into a whiner, so to speak. Wipaire in Minnesota has developed its own turbine conversion for the Beaver, a quite different machine than the Mk.III Beaver, but with many attractive features of its own.

Whether modified or stock, the Beaver is (and has been for 60 years) the recognized workhorse of the North Country. A harder working, more productive bush aeroplane hasn't been built, and Beavers are today being refurbished and put back to work at a price that I'm sure the designers couldn't have imagined in 1947.

When test pilot Russ Bannock made that first flight in Beaver CF-FHB on August 16, 1947, he knew DHC had a winner, but I doubt that he ever dreamed of the impact on bush aviation and the tenacity that the Beaver would display.

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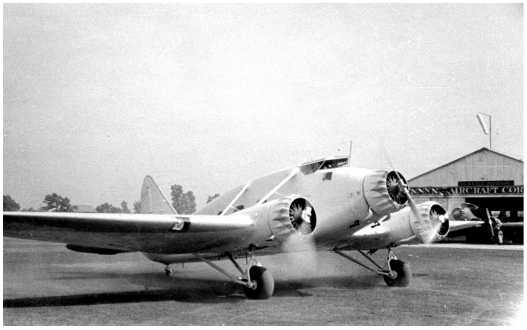
FLY-INS Looming

March 14	Murgon, QLD	Angelfield Brekkie Fly-in, Murgon
March 15 (Sunday)	Clifton, QLD	Annual Fly-in. See poster on page 6 of this publication

Mystery Aircraft (December Issue)

What's this?

Mystery Aircraft (November Issue)



A Stinson Model A in standard trimotor configuration.
Several of these aircraft, including this example, came to Australia.

Congratulations to Mal McKenzie for being the first to correctly identify this aircraft and commiserations for those that nearly got it.


This year, 2015, join us for the
Darling Downs Sport Aircraft Assn Inc
"Annual Clifton Fly-In"
Latitude S 27 55.66 Longitude E 151 50.85 Freq 126.7 multicom
Elevation 1500, Runway 06/24, 800meters. Right hand circuits runway 06
8 km west of Clifton, adjacent the Clifton-Leyburn Road, 24 nautical miles south of Toowoomba
Sunday 15th March 2015
from 8 am
* All pilots must register at Canteen upon arrival
* Pilots and crew welcome to stay Saturday evening 14th for a BBQ Dinner and hangar talk about all things aviation but please advise for catering purposes
* On field camping, bring your swag
* Ring to confirm airfield condition prior to coming due to the unseasonable weather we can have
* Sunday Morning Breakfast from 6am to 9am
* Avgas / Mogas by arrangement cash or cheque only
A question and answer presentation will be given by the RAAus Chief Executive Officer, Michael Linke and Board members at 0930 hrs on Sunday 15th March in the club hangar
Open to the Public, no admission fees
Fly or drive in, bring family and friends for an enjoyable outing
FILLET STEAK BURGERS TEA, COFFEE, COLD DRINKS
for Clifton Airfield details: refer to ERSA
Fly-In Information phone 0429 378 370 or a/h 07 4695 8541
Email: trevorbange@bigpond.com
Website: www.loneeagleflyingschool.org.au
Organised by: Darling Downs Sport Aircraft Assn. Inc., 549 Clifton-Leyburn Road, Clifton. Qld. 4361

For Sale

Aircraft for sale: **610 Brumby**. The aircraft is as new with T/T airframe 12 hours, engine 500 hours. Asking **$120,000.00**		**Contact 0407334456**
Large 15 by 45 metre hangar at Boonah Airfield. **POA**		

'Are we nearly there yet?'

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

1. Why does a fixed pitch propeller have a changing blade angle as it moves out from its hub?
   A. The blade angle doesn't change – it is an optical illusion.
   B. To maintain a constant angle of attack along the blade when it is operating.
   C. To compensate for having a fixed pitch.
   D. To minimize propeller slip.

2. Which of the following options most correctly provides the characteristics of a laminar flow aerofoil?
   A. The transition point lies further aft along the chord and thus skin friction drag is reduced.
   B. The separation point lies closer to the wing trailing edge.
   C. The point of maximum camber lies further back from the leading edge than on a conventional aerofoil.
   D. All the above are correct.

3. From the following select the correct statement.
   A. Aerodynamic balance is provided to reduce the chance of flutter.
   B. A higher aspect ratio wing will have a lower stalling angle than a lower aspect ratio wing.
   C. A METAR is an hour-by-hour weather forecast provided for a specific weather station.
   D. As an aircraft climbs, the reducing air density causes the engine to run leaner.

4. Aerodynamically balanced ailerons will have which of the following attributes?
   A. Increased roll rate.
   B. Lighter stick pressures.
   C. Reduced aileron drag.
   D. Improved sideslip effectiveness.

5. In a tailwheel aircraft, having the Centre of Gravity at the aft limit will case which of the following?
   A. Harder to raise the tail on take-off.
   B. Increased gyroscopic effect from the propeller.
   C. Increased potential of swing caused by "P" factor on take-off.
   D. A and C above.

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

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 07.02.2015 GENERAL MEETING

MEETING LOCATION: Watts Bridge Memorial Airfield – BVSAC Clubrooms

MEETING DATE: 7th February 2015

MEETING OPENED: 10:08AM

MEMBERS PRESENT: 16

APOLOGIES: Liz Cook, Neil Bowden, Bruce Clark, Mary Clark

VISITORS: 2

NEW MEMBERS: 0

MINUTES: November 2014 meeting of the BVSAC Inc.

Proposed: David Ratcliffe Seconded: Peter Ratcliffe Acceptance motion carried.

PRESIDENT'S REPORT: Wayne welcomed everyone to 2015. He noted that there has been little flying conducted in the last month or so due to the less than favorable weather which should start to improve as we move into autumn.

SECRETARY'S REPORT: Richard reported that there was little for the Secretary to report.

TREASURER'S REPORT: Priscilla provided a financial statement summary and advised that the BVSAC ING account balance is $541.66 and that the BVSAC NAB account balance is $2577.75
Priscilla tabled financial documents for those members requiring additional details.

WBMA REPORT: Peter Freeman expressed concern about the proposal mentioned in the WBMA BoM Minutes about having multiple operators using the airfield equipment. He highlighted the need for planning, co-ordination and programmed maintenance and questioned who would be responsible.

Wayne Petty spoke of his concerns regarding the use of equipment that was not his and who would be responsible in the event of breakdown, accident or equipment failure.

Richard Faint spoke to the background of the original proposal from WBMA BoM that HBG's be responsible for mowing certain areas of the airfield. Mention was made of the proposed training to be provided to the volunteers but noted that to date none had occurred.

Mal McKenzie suggested that BVSAC use the club's ride-on mower to assist in keeping the areas in question mowed and tidy. The mower's serviceability was questioned.

Peter Ratcliffe compared the Watts Bridge volunteer mowing to the Coast Guard volunteer activities and was of the belief that it could be made to work with training and organization.

Richard Faint advised of the flying and social events planned for Watts Bridge in 2015.
The All-In Fly-In May 30th, BVSAC Poker Run & Christmas in July 4th July, and the Gathering of Eagles – Australia 29th and 30th August.

BUSINESS ARISING: Wayne Petty had several vinyl flooring samples for appraisal.

GENERAL BUSINESS: Sandy Walker enquired about the number of BVSAC Members and how that compared to prior years. Richard Faint advised that membership hovered around 60 members and that membership had been stable for the last few years.

Peter Ratcliffe reported on the work that had been performed on the hangar doors by him, Max Bain and others.

Rob Knight discussed the newsletter quiz.

RA Aus REPORT Mike Smith (RA Aus Representative) advised that there will be no NATFLY 2015
Mike explained his support for a reduction in size of the RA Aus Board suggesting that a board of 5/7 members would be more appropriate given the nature of RA Aus and its activities.
Mike spoke about the self-conducted Maintenance Course / Examination with members having 2 years to complete. Finally he commented on the CASA / Jabiru situation.

NEXT MEETING: The next meeting will be 07.03.2015 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 11:03AM
A BBQ lunch was held after the meeting.

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