

In this Issue:

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Newsletter, October 31, 2019

Notice of Meeting:

Thursday, October 31, 2019 at 7:30 PM.

Bill Evans will give a talk on his experiences with the AeroInjector™, which eliminates floats and floatbowls and claims outstanding performance and versatility.

John Dudkoff will give a brief talk on EAA webinars.

Location:

Room 204, Penfield Building
John Abbott College
Ste. Anne de Bellevue

Please be advised that any technical discussions or articles presented in this newsletter are for educational purposes ONLY. You and you alone must make the determination as to if the information provided is suitable for your particular application, is technically sound, safe to use, and follows generally accepted aviation practices.

President:
Mike Lustig

Vice-President:
Bill Evans

Past President:
Michel Moreau

Treasurer:
Roberto Cea-Campo

Membership Coordinator:
John Dudkoff

Secretary & Webmaster:
David Cyr

Program Director:
Paul Czernenko

Newsletter Editor:
Richard Guevara

Catering:
Leo & Nora Nikkinen

To contact any of our executive, send email to

contact@eaa266.org

and mention in the email the person to whom it is directed.

Librarian:
Ed Hannaford

Technical Counselor:
J.P. Chartrand

Flight Advisor:
Graham Batty

A word from our Chapter President...**Mike Lustig**

Just some short notes to keep in mind...

PLEASE NOTE: Next month's meeting is one week EARLIER than usual, November 21, 2019!

Chapter elections for the Board of Directors will be held this Thursday. Please show your support for your candidate team for this year!

In our September 2019 newsletter, pages 8 – 10, we published details of the Aircraft Riveting Workshop to be given by Michel Parent, scheduled for February 22, 2020 and the Advanced Aircraft Assembly Workshop, on February 29th, 2020. Please take note...

Annual dues of \$40 are now due. We are now able to receive payment for membership dues via e-Transfer from your own bank via email to: eaachapter266@gmail.com.

Lastly, Chapter Member Raymond Lambert asked me to include some additional reference material about a rotary engine installation in a Bearhawk Patrol, this following our excellent presentation last month by George Payne on Wankel Engines. You should find this below starting on page 6.

Best Regards to All,

Mike Lustig
President, EAA 266

A word from our Editor**Richard Guevara**

A few years ago, I asked my wife to get me the three Tony Bingelis books as a Christmas present. Over the next three years I spent the twenty minute on the Metro on my way to and from work reading them and freaking out at how much I did NOT know. I still have not figured out how someone could put so much useful stuff on paper. Every few pages covered a distinct issue and how to solve it, and it was written in a simple, clear and succinct style.

As a Technical Writer by trade, I know all too well that clear writing only results from hard work and is no mistake. They are probably now the most shop-worn books I own. As with all things, there are also some other books on homebuilding that I have that, to this day, remain on my bookshelf simply because I am too lazy to throw them out.

As good as reading a good book, (if not better) is talking with someone who really knows his stuff. Today I dropped into a store in Laval (no names) and had a long chat with Herschey, a carpenter in the store, who seems to know his stuff. He changed my mind on the approach I will take to route out my VW wing ribs, router bit selection, and injected some old school dog sense into the task. He never once told me what to do – only suggested what I should do. Maybe I will take one of his classes. A most productive day ...

-The Editor

Donald Gordon Power Obituary July 22, 1928 – August 7, 2019

Donald Gordon Power, a past member of EAA 266 for many years, passed away this summer.

Don was born in Halifax and later relocated to Hawkesbury, Ontario.

His life's passion was flying, and all things related to aircraft. He earned his pilot's license at the age of 31 and kept flying until the age of 86. His passion became his profession upon his first retirement at age 56 to create his own aviation firm. That business thrived for 30 more years as he became one of the most highly respected and sought-after craftsmen in his region. He built and rebuilt many aircraft and gliders, but his proudest achievement was building his own plane from a set of mail order plans. The Volksplane – a fabric and wood creation using a converted VW auto engine -- was built using his own hands and tools at home in his spare time. CF-GDP was completed in 1971 and flew for over 40 years ultimately becoming a training plane for future airline pilots.

Don was a highly resourceful, self-made man. He could solve any mechanical puzzle, fix or build anything he set his mind out to do. Don was always happiest in his workshop in the home he built for his wife in Hawkesbury. Don defined "home" as community.

Board of Directors busy at work ...

On left, front to back:
Roberto, Ed, John. On right, front to back: Mike,
Michel. Remote participants (on Skype) Dave
and Richard.

Of General Interest**various contributors**

1. EAA 266 is now able to receive payment for membership dues via E-transfer from your own bank via email to: eaachapter266@gmail.com. Use the password "Luscombe". A really convenient way to pay your annual EAA266 dues!
2. If anyone is aware or comes across any event that may be of interest to our members, please email myself or someone in the list on the front of this newsletter and let us know so that we can broadcast it to all concerned.

EAA 266 Library**by Ed Hannaford**

Ed would like to make it known to all that we have a DVD called "*Spitfire: The Feature Documentary*" (on loan for a LIMITED TIME ONLY by Mike Lustig) that is now available for loan from the library. To learn more about this landmark film, please visit:

Filmmakers Announce Spitfire Documentary

<https://www.eaa.org/eaanewsandpublications/eaanewsandaviationnews/news/07-19-2017-filmmakers-announce-spitfire-documentary>

The EAA 266 library contains a collection of books and DVDs that cover aircraft in general, homebuilding construction techniques, local events, history and Technical Manuals. To order books - Call Ed Hannaford 613-347-1201 e-mail Skyranch33@gmail.com
Cost to borrow these items is \$2.00 for a one month period.

The Unclassified Classified**Free Ads for Paid-Up Members**

Plans (drawings) to give away: Plans for the Super Cavalier SA 105 all-wood aircraft. Donation thanks to John Duckmanton. For information, call Michel 514-694-2129.

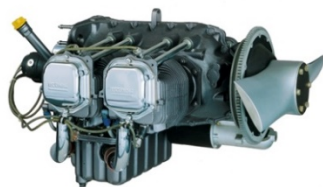
Plans (drawings) for Sale: \$250 (paid \$550) Karatoo J6C (Australian version of Karatoo). Larger, longer, 80hp to 100hp, steel tube fuselage, metal OR wood wing, folding wing option, removable rear cockpit tubing for use as camper vehicle. High wing and large windows for exceptional outside view. Luc Robillard Tel: 514-366-7500, cell: 514-298-3459

Picture below FOR REFERENCE ONLY:



For Sale: Lycoming O235-C1 with logs 2160 SMO, 1427 STO (Penn Yan) with starter and generator. \$2900.00 John 514-428-1233

Picture below FOR REFERENCE ONLY:



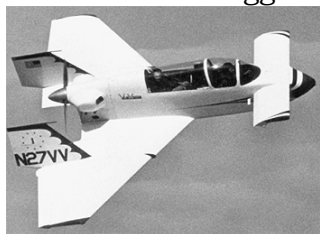
Seeking: Looking for partner (or partners) to purchase a small (2-4 place) airplane. Would consider factory or home-built, tricycle or tail wheel. Robert Hope, roberthope530@gmail.com

For Sale: Hangar doors (sliding) complete with rails for 40-foot hangar. Door height is 11'5½" all metal. As removed from hangar at Cornwall. \$1200.00. Ed Hannaford. skyranch33@gmail.com

For Sale: 1 ea. H-Type shoulder harness 2 inch, black with metal to metal fittings. New never used, from Aircraft Spruce, no lap belts, \$100.00. skyranch33@gmail.com

For donation: Vari-Viggen Rutan, designed by Burt Rutan inspired by the SAAB 37 Viggen. It is 60% complete with almost everything you need to complete except the engine and the propeller. Located at the airport of Louiseville, QC CSJ4. Gaston Girard (438) 495-5253

Picture of vari-Viggen below FOR REFERENCE ONLY:



Seeking: Active aircraft builder looking for old projects or materials. Specialized in old wood aircraft and restoration. Ron Gosselin (514) 808-1808 - ronny@total.net

For Sale: Landing lights, 50W, 24V, 20\$ each, Frank Grayer (613) 874-2837.

Contact Us!

<http://eaa266.org>

Australian Bearhawk Patrol Glider Tug Called “Lucy”

by Alan Arthur

The gliding fraternity have been talking about auto engine powered tugs for decades and despite the efforts of many they haven't become a reality (yet), recent changes to Civil Aviation Safety Authority (CASA) regulations have made it a far more practical proposition. A casual conversation around the bar lead to a syndicate being formed to look at a private venture to install a Mazda 13B Rotary engine in a PA 25-150 (small Pawnee). The syndicate members Alan Arthur, Doug Harrington and Avon Furphy conducted an extensive search for a suitable aircraft and finally dismissed the idea as too expensive, too much work, too many ADs and too many owners that had an inflated idea of the true value of their aircraft.



The idea changed to building a kit aircraft similar to a Piper Super Cub, also with a Mazda Rotary engine. The Bob Barrows designed Bearhawk Patrol was selected and after some consideration an order was placed for a Bearhawk Patrol quick build kit with Bearhawk Aircraft in Austin Texas. The kit was ordered in July 2016 and after a couple of months sorting out options arrived in Perth Western Australia on 29 December 2016.

A couple of days later after it had cleared quarantine/customs, a trailer ride to Narrogin saw it installed in the new hangar at the Narrogin Gliding Club for the build. The kit consisted of a steel tube frame and other welded steel tubes and fittings and lots of raw material. The instruction manual was quite basic but I purchased CDs of the build details compiled by other builders and the kit manufacturer provided hundreds of photographs of other builders projects. The basic airframe went together quite quickly and by the end of January 2017 we had the first visit from the SAAA TC Geoff Danes and the AP for the project Bill Keehner.

Avon already had a Mazda 13B engine sitting in his shed waiting for a racing car project so he donated it to the project, it hadn't run for many years so was shipped to Rotormotion in Perth for a complete overhaul and conversion for aircraft use. Rotormotion's brief included a target HP between 210-240 Hp.

The auto engine installation consumed enormous amounts of time as our glider towing goal meant that we could not have any problems with engine cooling at relatively low airspeeds and high power settings. Consequently we selected a twin radiator system and a double sized oil cooler. Experience during the test flying program indicates that we may have got it right. Avon's Mazda rotary engine was a fuel injected and electronic ignition version from a Mazda RX7. All of the Mazda fuel injection and ignition system was discarded and instead twin aftermarket EMS Stinger systems were installed driving the standard injectors and twin spark plugs. Also discarded was the heavy exhaust manifold and all the environmental systems. After initial engine runs the custom exhaust was modified to include two straight through mufflers and ceramic coatings on the engine pipes.

PSRU selection proved to be a bit of a problem, all of the toothed belt systems seem to have disappeared, the only system we could find with good reports was a geared system from Autoflite in NZ. This PSRU is available in two or three gear versions and we chose the three geared one to keep the direction of rotation the same as Lycomings. It also moved the engine thrust line up closer to the original design position. After selecting the PSRU then we were able to order a prop to match. We ordered an IVOPROP Corp Magnum three bladed ground adjustable prop of 76" diameter.





The fuel system needed to be modified to incorporate dual high-pressure injection pumps. Initially I was going to build a header tank with dual submerged pumps but in the end found exactly the setup I had planned in an auto supply catalogue at a much cheaper price. The system is now gravity feed to the header tank and high pressure to the injectors, return fuel comes back to the header tank.

The aircraft relies on electrical power for engine operation so it was quite critical that everything was duplicated; not only is everything from dual batteries to the ignition boxes selectable but we have incorporated a panic switch that can change all selections to the opposite selection with the flick of one switch. At higher altitudes you can do some fault diagnosis but when towing a glider at 100 ft you don't have time to play around with systems.

The airframe is part covered with aluminium alloy and part with fabric; we chose to use the Oratex pre-painted fabric. The Oratex fabric is quite easy to use and being pre-painted has no hazardous solvents to use, the glue is a water based hot melt glue. The fabric is about 80% the weight of other fabric systems which resulted in the aircraft center of gravity being well forward requiring lead ballast in the tail. If I was to build another Bearhawk I would plan to fit the dual batteries in the rear fuselage and not on the firewall.



Instrumentation did not need to be very complex and other than the engine monitor all are round steam gauges. For the engine management system we used the MGL Extreme EMS display which has the advantage of being in the main programmable.

After 19 months, 4450 hours and a lot of engine runs and taxi tests the big day arrived. Word had spread and instead of having a quiet first flight there were dozens of spectators on Saturday 15 September 2018. The SAAA team arrived early for the final inspection, Geoff Danes and Bill Keehner did their inspections and Bill issued the Phase 1 C of A. The aircraft flies really well; it took to the air as if it was made to fly. Alan also says: *Dennis and Donna suggested that I also send you some photographs of my fool proof control lock (you can't leave it in and go flying).*

