



The ThunderWord

Thunderbird Field EAA Chapter 1217 June 2020

Scottsdale, Arizona

PRESIDENT'S CORNER

Greetings from my corner of the hangar! Hopefully everyone has been devoting a little more time to working on their planes and projects to escape from the craziness of the world around us. We all need to escape and put in a couple of hours driving rivets, stripping paint, or wiring in the latest gadget every day to occupy ourselves productively. I am finding that if I do a little every day things get done!

I am doing the practice retirement as I like to call it. Sooner or later they will get tired of paying me to stay home and I will be back flying. After 32 years I guess there are some perks to the job and a big light at the end of the tunnel. By the time I go back the powered glider will be flying and the orange twin will be in the paint shop. Now all I have to do is stay off of Barnstormers.com!

See you around the airport!

Curtis

CHAPTER MEETINGS

RESTART IN SEPTEMBER

One of the things our Chapter 1217 members enjoy is our monthly meetings and guest speakers. It is a chance to catch up with old friends and make new ones while getting to enjoy a presentation that can be humorous, educational and entertaining. With all of the uncertainty surrounding the Corona Virus we thought it wise to take the summer off from having monthly meetings. It was a tough decision but with all the available meeting spaces closed and guest speakers reluctant to talk to groups it was a no-win situation.

The Scottsdale Airport team has been in touch with me and are in agreement that starting the meetings in September is a good plan. There

will be some minor protocols such as no dead bats and wearing your shoes on the opposite feet, but the plan will change a hundred times between now and our September meeting.

Rest assured that for 22 years we have been having monthly meetings and we will get back to it when life gets back to normal.

EAA TO HOST VIRTUAL AIRVENTURE

The Experimental Aircraft Association will offer a virtual Spirit of Aviation Week from July 21 through 25 in lieu of the annual AirVenture Fly-In event that was canceled. A variety of on-demand and streamed content will be available online, including air show performances, educational forums, homebuilt airplane workshops and virtual exhibits. Go to AirVenture.org for more information.

BEARHAWK MODEL 5

Backcountry specialist, Bearhawk Aircraft, introduced a flying prototype of the Model 5 six-seat, tube-and-fabric, short-takeoff-and-landing taildragger that is powered by a spec-built 300-horsepower Lycoming IO-580 engine.

The kit- or plans-built Model 5 is 24 inches longer and slightly wider than the Bearhawk 4-Place but shares the same Riblett airfoil and 186-square-foot wing surface area.

The idea for stretching the robust airframe took shape after a friend of designer Bob Barrows asked him for a bigger version to accommodate the friend's large physique, the company said in a news release. The effort, which has been under development for two years, moved from drawing board to workshop when Avipro/Bearhawk quick-builder Mark Goldberg floated the concept to fellow builder

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Bearhawk Model 5

Collin Campbell, who has a solid reputation as an aircraft scratch-builder.

The cabin is 14 inches longer than the four-place high-wing model. The added space can be used for extra cargo or two additional seats. Bearhawk said the Model 5 “has considerably more interior room” than a Cessna 185 Skywagon, which is a much-loved aerial pickup truck also certified for six occupants.

The Model 5 prototype made its maiden flight on May 3 and has flown more than five hours in testing. Test pilot Rollie van Dorn said the Model 5 exhibited “excellent flight characteristics” during those initial flights. Takeoff performance was between 220 feet and 300 feet, and landings were intentionally kept short “to under 650 ft as the wet, muddy runway” caused van Dorn to use only half of the landing strip’s 1,350-foot length. He said the airplane “offered no surprises on takeoff or climb out” but with the big engine, “things happen quickly.” The company said power-on stall speed tests were recorded at “less than 40 mph.”

Cruise speeds nearing 160 mph are expected and “156 mph [true air speed] at 3,500-ft and 24-squared, or 72-percent power, was seen during tests,” the company noted. Fuel flow of 14.5 to 15 gallons per hour were anticipated during lean-of-peak operations equating to speeds “of around 145-150 mph.”

The Model 5’s smallest engine will be the six-cylinder 250/260 hp Lycoming O-540. The Model 5 has the ability to use the heavier angle-valve cylinder Lycoming O-540 and IO-580 of 300 and 315 hp respectively.

The prototype Model 5 partly owes its outstanding performance to the Lycoming IO-580. A three-blade Hartzell 82-inch diameter carbon fiber Trailblazer propeller completes the package with its really strong takeoff thrust and climb. At a projected gross weight of 3,000 lb, with utility category strength at full gross, the 1,512 lb empty weight of the Model 5 results in a plane that is expected to carry double its own weight.

In addition to the quick-build 4-Place (\$47,000), the Bearhawk lineup also includes the two-place side-by-side Companion

(\$45,750), tandem-seat Patrol (\$44,750), and LSA (\$38,500) models. Pricing for the Model 5 was not announced.

The Bearhawk Model 5 is a conventional gear, tube-and-fabric, kit-built STOL backcountry single that seats six and is powered by a six-cylinder Lycoming engine.



Cessna Grand Caravan with Magnix Electric Power

ELECTRIC AIRPLANES ARE COMING

Economically-feasible all-electric commercial flight has remained elusive for years, hamstrung largely by the relatively low energy density of batteries, which has constrained aircraft range and payload.

But propulsion company Magnix and AeroTEC, an engineering and flight test specialist, say their modified Grand Caravan proves that small all-electric aircraft can feasibly and economically operate short routes that airlines long ago abandoned.

Wichita-based, Cessna, delivers Grand Caravans equipped with Pratt & Whitney Canada PT6A turboprops generating 867shp (647kW). The aircraft can carry 10-14 people. But the Grand Caravan that flew on 28 May received power not from a PT6A, but from Magnix's Magni500, a 750hp all-electric

propulsion system. AeroTEC had performed the complex task of replacing the PT6A with the new electric system.

The "eCaravan" took off from Grant County International airport and circled the field for about 30min before landing. The test pilot described the maiden flight as "flawless"

Magnix Info

Magnix, which has offices in Australia and Seattle, has been working on the Grand Caravan project alongside other electric-aircraft efforts. In December, Canadian commuter airline, Harbour Air, flew a Magni500-powered de Havilland DHC-2 Beaver. That airline and Magnix are working to have that configuration certificated.

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**Chapter Member Jerry Lane's restored Schweizer 1-26C.
It even comes with a nice open trailer. See thunderAds for more info**



Schweizer 1-26C Ready for First Flight

Magnix has also been named one of two companies to supply propulsion systems for Alice, an all-electric, nine-passenger aircraft being developed by Israeli company Eviation Aircraft. That project hit a snag in January when an electric system fire damaged an Alice prototype in Arizona.

As configured, the Magni500-powered Grand Caravan can carry 4-5 passengers on flights up to 100 miles, taking into account the need for reserve power. Magnix and AeroTEC are working on certifying that aircraft by the end of 2021. By then the company predicts battery technology will have advanced to where the Grand Caravan will be able to operate 100-

mile flights carrying a full load of nine passengers.

Magnix and AeroTEC are pitching Magni500-powered Caravans as perfect for operating routes less than 500 miles that connect cities within regions, says AeroTEC chief executive Lee Human. Decades ago, small airlines known as "commuters" operated such routes in the USA. Nearly all such carriers long since folded as the airline industry trended toward larger regional jets.

"There is a huge gap," Human says, adding that no existing aircraft have the economics to make such routes feasible.

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Electric propulsion systems burn no fuel and have fewer moving parts and less complexity than fuel-burning engines. That means they cost significantly less to operate – about half as much as internal combustion engines. The Magni500 consumed about \$6 worth of electricity during the Grand Caravan’s 30 min test flight, he adds.

The Magni500 on the Grand Caravan receives power from a 750V lithium-ion battery system weighing roughly one ton, though Magnix is studying other technologies, including lithium-sulfur batteries and hydrogen fuel cells.

In airline service, operators would need to recharge the batteries between flights, with charging times correlating closely to flight times. That means the batteries would need about 30-40 min of charging following a 30 min flight. The weight of the batteries makes swapping spent cells for fresh cells unfeasible between flights.

The company declines to disclose pricing or how many Magnix-powered aircraft that customers have ordered. “There is way more interest at this point than we anticipated,” is all they would say.

IT’S ROCKET SCIENCE

A NOVA 2 rocket, being developed by Starchaser, is within ten months of its first launch. This one-seater rocket is a significant step towards future plans which include a rocket capable of taking two passengers with the pilot.

This uniquely British project is being built in Hyde, Cheshire with “WEST SYSTEM” epoxy and glass fibre as the main components for the capsule.

NOVA 2 is one of a series of rockets being developed by Starchaser. The design for the volunteer-homebuilt rocket has been thoroughly examined by the European Space Agency (ESA) following the award of an ESA Study Contract.

“Upon completion of the contract they gave our plans a hearty thumbs-up,” says Steve Bennett (Starchaser MD). “Everything NASA does is in



NOVA 2 Rocket

the public domain, so if we want to see how they solved a particular engineering problem, it’s easy to look up. We’ve got two dozen part-time volunteers working on the build as a labor of love, they’re a fantastic team.”

A NOVA 2 test flight is planned with a crash test dummy, for the early part of 2021 from a site in northern England (Covid-19 permitting). Manned flights will ultimately take place from a purpose-built Spaceport in New Mexico.

“I’ve always been interested in space and building rockets,” says Steve who gave up his day job 22 years ago to start the company. “Over the years the designs have got bigger and better and more sophisticated.



Terry Johnson with his Kitfox 7 Super Sport. This plane is really nice and uses the Oratex iron on covering.

Thunder Ads

SCHWEIZER 1-26C GLIDER

Complete restoration, new fabric and paint with Stewart Systems. New skid, new tire and canopy. Has cg hook and factor tip wheels. Trailer painted with new tires, lights and wheel bearings. Completed in spring of 2012 and stored inside. You tube video glider Jerry Lane. This glider is 100 percent legal and ready to tow to field and fly today. \$10,500.⁰⁰ Jerry Lane - 602-663-2432

MISC GOODIES

Continental 0-200 case with data tag and extras. \$500; **Cleveland 6:00 x 6 used wheels**, discs, bearings and double puck calipers \$500; **Beech 18 fabric rudder**, fits either side or make into a coffee table. \$200; **Beech Staggerwing** carved desktop model with stand, about 12 inch wingspan \$100; **Douglas DC-4 pedestal** with throttles and controls. Perfect for your man cave \$100. Curtis Clark 602 710-4494

ALASKA BABY BUSHWHEEL

tailwheel assembly, Like new. 6x8.5 tire Used but in good shape, Jack Pollack 480 695-4441

LONGEZ AND SONEX

Tom Partin has decided to stop flying and has two airplanes for sale at Thunder Ridge air park (AZ28), a 180hp LongEz and a 120hp Sonex. Anyone interested can contact Bertha Partin at bmpartin@gmail.com

GLASAIR III

Lynn Babcock has decided it's time to sell his Glasair III. This aircraft has every upgrade from speed brakes to airconditioning and cruises at 220 kts. He is asking \$215,000. Lynn is the original builder and the plane has been based at Scottsdale Airport its entire life. 480-227-5945.

THATCHER CX-4 PLANS & BUILDERS MANUAL

New, never used, donated to our Chapter. Curtis 602 710-4494

COOL PLANES FOR SALE

Only flown by little old ladies to church on Sundays. <http://captainbillywalker.com/aircraft-for-sale/aircraft-for-sale>

CESSNA 172'S FOR RENT

Two IFR Cessna 172s for rent at Chandler. Owned by Chapter member Pat McGarry. Contact Chris Hoel for more information and to schedule birdgangft@gmail.com

RV-4 PARTIALLY BUILT KIT

\$13,500 Lycoming 0-290-D2, kit for \$3,000 or \$16,000 for both. Bill Refrow 602-843-9862 w7lov@cox.net

LYCOMING 0-360 A1A

Engine built up for RV project never completed. Invested \$50,000. Price very firm at \$25,000. Martin Del Giorgio delgiorgiopels@gmail.com

GARMIN GDL39 PORTABLE GPS

ADS-B Receiver with free Weather and Dual-Link Traffic. Battery Pack with extra Battery included. Works with all Apple Products. Brand new in the box, \$400. Ken Roth 602-228-5000, or e-mail: RothDevCor@aol.com

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Eloy Airport Julie White 520-466-3442

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