

2011 KIT AIRCRAFT BUYER'S GUIDE

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December 2010

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Cost? How To Form
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On the cover: Judi Crouse designed the cover photo montage that illustrates the wide spectrum of current Experimental kit aircraft. Photos by Paul Bertorelli, Dave Martin, Kevin Wing, Richard VanderMeulen and courtesy Zenith Aircraft Company.

Annual Buyer's Guide, Part 1

33 2011 KIT AIRCRAFT BUYER'S GUIDE

Here is your chance to learn more about the 320 kit aircraft available today using our updated and comprehensive listing; compiled by Cory Emberson.

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The way we do business.

It's been said that general aviation can be its own worst enemy. Among the other concerns for survival—the aging pilot population, economic pressures, airspace grabs, fuel worries and indefensible regulations (high on my list is the FAA's stance on through-the-fence runway access at residential airparks)—is one that savvy businesses can actually do something about: poor customer relations.

You've no doubt walked into an FBO—fixed base operator, an unfortunate term for a company that has to do so much including fueling, repairs and flight instruction—and been largely ignored or treated poorly. If you're an experienced pilot, this is nothing really new and probably won't tick you off very much. But if you are taking those first steps to realizing the dream of flight, such roadblocks, even minor compared to the inconveniences we see every day, might be enough to send you back to boats, motorcycles or the Apple store. It's hard to know for sure.

I'm not picking on FBOs exclusively. In fact, I have had some very good experiences recently. Every place I stopped on the way to and from Oshkosh this year—a total of eight different FBOs from Cortez, New Mexico, to Madison, Wisconsin—provided great service. (Before I move on, I have to give everyone at AirVenture a virtual high-five for keeping cool and remaining kind despite the weather challenges at the start of the show. The volunteers showed incredible persistence, inventiveness and class.)

Regarding FBOs. Take Cutter in Phoenix. You'd think an FBO in a major metropolitan area accustomed to jets and bigwigs wouldn't go out of the way for a homebuilt capable of taking on 25 gallons of fuel. But you'd be wrong: On our recent trip to visit friends, Cutter's staff were uniformly polite, waived overnight fees for not-outrageously priced fuel and even had the reasonably priced Enterprise rental car under the wing within a



It's the little things. Can it cost more than two bits to send a welcome message to incoming aircraft? But your amazed passengers will love it, think you're a big deal.

couple of minutes of our shutting down on the ramp—as this FBO and its ebullient staff have done several times before. This most recent experience made the decision to fly (as opposed to drive or take the airlines) seem incredibly smart. Cutter, because its employees took care with a small customer, has earned my admiration and future business. That's how it is when management appreciates the value of happy workers, I suppose.

Contact Play

The annual Kit Aircraft Buyer's Guide that appears in this issue gives us an opportunity to talk to a broad cross section of the industry. Contributor Cory Emberson is tasked with making first contact, but inevitably there are kit makers who are difficult to reach despite repeated attempts through email and telephone. Eventually, our Managing Editor, Mary Bernard, and I get involved and have to press the issue.

In the end, it's actually pretty simple: If we can't make contact and get current information, we assume the company to be either defunct or on the verge of it. But we *are* persistent. It's in our nature, sure, but mainly we don't want to penalize a small company because the owner decided to take a well-earned vacation or because he would rather attend to his paying customers than take a phone call from a magazine.

But we are also left wondering: Is it just us, or do paying customers get the same treatment?

I have a theory that some small kit companies stay small not because the airplanes aren't good but because of poor business practices. Reader Greg Fila sent me a letter that forms a concrete example. He ordered a \$20 information packet from Preceptor Aircraft. "After a few weeks I called...to ask about the status of my order, leaving a message. Their recording said that they would return my call [but] they never did return my initial call, nor at least half a dozen more calls over a period of a month or more." Fila

Marc Cook

has been in aviation journalism for 22 years and in magazine work for more than 25. He is a 4400-hour instrument-rated, multi-engine pilot with experience in nearly 150 types. He's completed two kit aircraft, an Aero Designs Pulsar XP and a Glastar Sportsman 2+2.



Pilots learn to make better decisions by starting with decisions like this one:

Choosing between the latest Garmin GPSMAP® 696 and aera™ 560 portables is not the easiest of decisions. Tall or wide? MFD-size or smaller? Control keys or touchscreen? There are so many ways to compare. The larger 696 comes with a crisp 7-inch hi-res display and preloaded U.S. FliteCharts®¹. The compact aera 560 offers touchscreen control and fly/drive versatility with pre-installed City Navigator® NT street mapping. Both units support XM WX™ satellite weather² with NEXRAD capability – plus you can access over 170 channels of XM audio as well. Detailed flight mapping, terrain advisories, and Garmin's patented Panel page are featured on both. So are SafeTaxi® diagrams, AOPA Airport Directory, and more. Clearly, either unit would make a great addition to your flight bag. So, the key question is: Which one?

Follow the leader.

NASDAQ **GRMN**

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¹Updates for U.S. FliteCharts® are available on single-cycle or annual basis for the GPSMAP® 696. ²XM subscription required (sold separately).

www.garmin.com/aviation

GARMIN.

was able to stop payment on the \$19.99 check (at a cost of \$10) after contacting the Better Business Bureau, which was unable to reach the company after making "several attempts." Fila was unhappy enough to write a letter, spend time deal-



ing with his local BBB office and generally outstrip the cost of the miscue in the value of his time. However, most potential builders would turn away, perhaps never to try our sport again, assuming, wrongly, that this treatment represents standard procedure.

Is the failure to send an info pack the end of the world? Certainly not. But there are lessons to be learned for would-be builders. Pay very close attention to your first interactions. Can you actually reach someone at the company? Does the company or a salesperson respond within a reasonable amount of time? Are you treated kindly?

I'm completely sympathetic to the small-business syndrome: You have too few people to do too much work. It's like that around here some days, but an apology and a make-good will bridge any gulf if performed in a reasonable amount of time and with sincerity. I think you see a lot of what a company is made of in how

it responds to situations like this.

Add to your due diligence by asking other builders about their experience with the company, and as you get closer to making the final purchase decision, join or watch the online forums that support the specific design. (But also remember that online forums are often dominated by those with a beef, while the quietly contented tend to sit on the sidelines, watching the mayhem.) The thing is, a bad first impression—unreturned phone calls, failure to send information or a broken web site—shouldn't be the sole reason you walk away from a particular kit airplane. But if the behavior appears routine, it's

time to give your attention to the many conscientious manufacturers out there who are working hard, vying for your business, and are ready and eager to sell you an airplane-building project that will improve your life.

Program Notes

As you'll soon see, this issue of KITPLANES® is belly-full of the annual Kit Buyer's Guide, and while the overall number of pages is up, we have to push some of the tools to the corner of the shop to make room. That's why Mel Asberry is taking the month off with his popular Ask the DAR column; he claims to have actually gone on a vacation, lucky guy. Bob Fritz is working on more Home Machinist installments for us, and we have Stein Bruch pecking away at the keyboard for another round of useful hands-on avionics columns. Finally, Ron Wanttaja will resume his series on homebuilt-aircraft safety in the January issue. ✚

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LETTERS

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That Guy

BEST LETTER!

I've heard about him since I first started flying. He's usually at a small airport and just happens to walk up as you need a part, a ride or directions from someone with local knowledge. I've wondered if he really existed.

My flying "guru," Darrin, of Jackson Flight Center, went with me from Moses Lake, Washington to Scappoose, Oregon to deliver my old Challenger and fly home the Cessna 150 I'd traded it for. Of course the weather report showing a break in the clouds and rain that had been going on for the past six weeks that spring was less than accurate. We spent the night with the hopes of leaving early in the morning with a planned flight path following the Columbia River Gorge to hopefully stay under the clouds.

By about 10 a.m., we had about 5 miles' visibility so we said, "Lets go!" Within 30 miles, visibility decreased and the clouds seemed to sink toward the ground. It wasn't until just north of Troutdale and barely out of Portland's airspace that we saw nothing but a wall of clouds in front of us. As we made a fairly steep 180° turn, we both noticed a runway just under the left wing and almost at the same time said, "Airport." Our turn ended in a downwind and we continued in for a landing keeping a watch for traffic since we didn't know the local frequency.

The airport was Grove Field in Camas, Washington, and I admit it was small enough that I hadn't even noticed it when planning the flight. We taxied to the parking area, tied down and were standing with our hands in our pockets, looking at the sky, when a man walked up to us. Barely through the introductions he said, "It looks like there are three things you guys need: a ride to get lunch while you decide what to do, a tour of town to see where the motels are in case you don't get out today and transportation. So I'll take you to lunch, show you

around, and then you take me home and keep my car until you leave. When you make it out just park the car in the lot here at the airport." All this was within seconds of learning our names.

We had a nice lunch and in conversation learned our benefactor had a Piper Pacer at Grove Field, but worked as a pilot for a major airline. After lunch, a quick tour of town and a stop to drop him off at home, the clouds seemed to be getting lighter, so we went back to the airport. As we got there, we could see a break in the direction of our flight path and decided to give it a try. If it was too bad, we could come back and use our new transportation to get to a motel. It was close but legal for the first 10 miles and then opened up so that all we had the rest of the way was a 40-knot tailwind and thunderstorm cells over the central basin. It was an S-shaped course to stay away from the cells, but we made it home without problems. So I now know that "that guy" does exist. He flies out of Grove Field in Camas, and his name is Neil. We didn't use all the help offered, but still I have to say thanks, Neil. I'll probably never get the chance to pay back your kindness, so I'll settle for trying to pay it forward.

DEAN HANKINS

Gassed Up

That was a great article on leaded fuel in the October issue. One idea that I had (maybe too simplistic) is to buy a can of lead additive. Is there a reason why we could not add this to the "fuel of the future" to raise the anti-knock rating?

STEVE ROTHERT

I really enjoyed your article "Altogether now," (Around the Patch, October 2010), but there are two points that you left out that may be pertinent to the topic. Number one is the fact that many of us are already using auto gas in our small planes and with much longer plug life and even better mileage. The second is that if the aviation community would get rid of the 1930s-tech mags and go to computer ignitions, we could all use auto gas. My wife and I drive a Mercedes C-320 with a 10:1 compression engine and it runs great on 87-octane auto gas; the engine is in perfect shape thanks to an electronic ignition that puts it in the flex-fuel category.

DR. GEORGE A. MILLER

Hey, that's 1950s-tech mags to you, Doc. Octane boosters, which do not contain lead, might not get us all the way to a 100-octane rating, and there are possible issues of compatibility with aircraft fuel systems, how long the additive stays in suspension in the base fuel and other issues including price. As for changing to electronic engine controls to use lower-octane fuel, that's still a half measure. Lycoming has done the tests, and electronics don't close the gap in high-performance engines. Already, the lower-performance engines can use fuel with an octane rating close to auto gas, but the high-output/turbocharged engines really do need 100 octane points, regardless of how sophisticated those electronic controls may be. Finally, there is a world of difference in load factors (how much of the max power is used over the lifetime of the engine) and combustion-chamber design from the current big-bore aircraft engines to your Mercedes.—Ed. ✚

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WHAT'S NEW



New Cub in Town

Dakota Cub Aircraft is taking orders for its Super 18-180 kit, which has been added to the FAA's list of approved kits. The two place "Super Cub" type aircraft is powered by a 180-horsepower Lycoming engine, has a useful load of more than 1000 pounds, and, with its slotted wings, is capable of sustained level flight at 30 mph at max gross weight of 2300 pounds. Standard features include: super-duty landing gear, 90-inch flaps, 48-gallon fuel capacity and a wide-body fuselage. The Super 18 is also available as a complete, ready-to-fly certified aircraft.

Dakota Cub Aircraft has been in operation for more than 15 years, and currently produces FAA/PMA replacement parts and STC modifications for fabric Piper aircraft, as well as both the certified Super 18-180 and the Experimental/Amateur-Built S18-180-EXP.

Kit price is \$64,077 (not including engine). For more information, call 605/757-6628 or visit www.dakotacub.com. Find a direct link at www.kitplanes.com.

Dynon Updates EFIS Software for Autopilot

Dynon Avionics has introduced updates for its EFIS products with its Version 5.4 software. Designed for the EFIS-D10A, EFIS-D100 and FlightDEK-D180 units, the upgrade features enhanced autopilot pitch control. Included are new user-adjustable parameters to optimize autopilot performance for individual aircraft. "The autopilot now flies just as an experienced pilot would, with crisp, appropriate inputs that really seem to understand the airplane" said Ian Jordan, chief systems engineer.

These EFIS products have been in service for over seven years and continue to be upgraded by the company, including the free autopilot upgrade two years ago. "It's all part of our commitment to support our customers," said Robert Hamilton, marketing director. Upgrades for "legacy" systems comes as the company pushes development of its new SkyView system. For more information, visit Dynon Avionics www.dynonavionics.com. Find a direct link at www.kitplanes.com.



AeroLEDs Upgrades SunSpot Landing Light



AeroLEDs has refined its popular SunSpot36X (PAR36 replacement) landing light and replaced it with two new models. The new SunSpot36HX draws 45 watts of power and produces 60,000 candelas, with an integrated wig-wag feature that eliminates the need for an external flash box. It is available with either a landing lens or a taxi lens. The new SunSpot 36LX draws 30 watts, producing 40,000 candelas. It does not have the integrated wig-wag feature and is available with either a narrower-beam landing lens or a wider-beam taxi lens.

AeroLEDs says the SunSpot36HX and LX will burn for more than 50,000 hours, an advantage over legacy lights that draw 100 watts of power and have a shorter life. The 36HX and LX can be operated on 9 to 36 VDC, are sealed from external elements and offer a direct replacement for existing PAR36 bulbs. MSRP for the SunSpot 36HX is \$495; the 36LX price is \$395.

For more information, call 208/850-0552 or visit www.aeroleds.com. Find a direct link at www.kitplanes.com. ±

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The Enduring Eagle



For three decades, the Christen Eagle has been one of the most desirable kitbuilt aerobatic designs.

BY BOB GRIMSTEAD

If you always hankered to own a Pitts, Stearman or Tiger Moth, but felt that you couldn't truly afford one—or maybe you suspected they might be too hard to handle, try a Christen Eagle. It is inexpensive and practical, and its spectacular color scheme turns heads and draws attention wherever it goes. Although the Christen Eagle design is more than 30 years old, it is still competitive as a two-place aerobatic ship. Kits continue to be available from Aviat Aircraft, and pre-owned examples represent extremely good value.

For pure flying excitement and adventure, you'll find an Eagle hard to beat, while being well within the capability of most competent tailwheel pilots. Because it's an Experimental/Amateur-Built, you can't give aerobatic instruction in an Eagle, but you can receive instruction in your own Eagle. Further, you can get transition training in one of the many Pitts S-2s around the country. If you can land an S-2, you'll find the Eagle easy.

Background

The Eagle was basically an improved, better styled and more competitive version of the Pitts, designed in 1976 by a wealthy semiconductor production equipment manufacturer, P-51 Mustang pilot and aerobatic competitor Frank Christensen, when he was thwarted in his attempt to buy out "Pappy" Pitts's operation—much like the contemporaneous battle between Ferrari and Lamborghini.

After taking early retirement, Christensen rose through the competitive aerobatic ranks while making a modest income from manufacturing manual aircraft fuel pumps, aerobatic safety harnesses, Pitts-designed inverted oil systems (later bought out by Lycoming) and upmarket fuel testers. His operation was more a labor of love and enthusiasm than a big earner. Indeed, he is often quoted as saying, "There's a lot of money to be made in general aviation. I know, 'cause I put it there!"

Knowing that the old Pitts design could be greatly improved, and aware that Pitts wanted to sell his busi-



With inverted fuel and oil systems, the Eagle can fly upside down as long as you can. Probably longer.

ness, Christensen tried hard to buy it, but negotiations came to naught. Undaunted, Christensen designed his own Pitts-beater, which became this Eagle, with first flight and manufacture beginning in 1977. Unwilling to go through all of the FAA's certification

nausea, he set up kit production, and the rest is history.

In 1983, Christensen was able to acquire Pitts Aerobatics. His former company, Aviat, now owns production rights for all of the Pitts designs, this Eagle and the utilitarian Husky.



The two-seat tandem cockpit is of reasonable size yet still cozy for larger pilots.

Opinion Change

I used to regard the Eagle as a sub-standard Pitts, but I was wrong. The 200-horsepower Eagle outperforms any 200-hp two-place Pitts, and its cleaner airframe is roomier, more comfortable, more affordable, better finished and has superior visibility in addition to being easier to control. As an aerobatic two-place biplane, the Eagle's ability is surpassed only by the six-cylinder Pitts S-2B with nearly 50% more power (but lower G limits).

The primary pilot occupies an Eagle's comfortable and slightly reclined (for good positive G tolerance) rear seat. The front seat is a little more upright, but you both have sturdy five-point harnesses, with additional lap straps for extra security. There is only one instrument panel, right at the front, where everything is in focus and visible at a glance from the back. Flying instruments are grouped around its periphery where the passenger's head won't obscure them.



Wiggling the javelins is part of a good preflight because any movement here will help disclose loose or broken flying wires.

The panel's center holds an A5 sequence-card holder, presuming that competition aerobatics would be flown solo. The only poorly placed indicator is the fuel sight tube on the tank's rear face, ahead and up under the panel, where neither pilot can easily see it when two up. Both occupants have primary controls, including brakes and throttles, but only the rear-seater has

secondary controls such as propeller rpm control, mixture, trim, intercom and radio.

Fiberglass and aluminum sheet side panels enclose both structure and control cables. A long, side-hinged canopy is firmly framed, and it locks securely both open and closed. You can taxi with the canopy wide open, enabling you to look well ahead past the engine for excellent

Owning an Eagle

The Christen Eagle kit was legendary—probably the most comprehensive ever, with virtually everything pre-made. A 26-volume instruction manual, taking up a full 4 feet of shelving, even included razor blades to cut open the components' vacuum packaging.

The Eagle has a conventional welded chrome-moly steel tube fuselage with fiberglass cowlings, aluminum sheeting back to the rear seat and painted Dacron thereafter. The spruce-spar, wood-rib wings are also Dacron covered, and braced with one-piece steel interplane and cabane struts, and stainless-steel flying and landing wires.

The tail feathers are similarly conventional fabric-covered steel tubing. This construction is extremely strong and is well understood, but dedicated aerobatic aircraft have a hard life, so all of the usual checks should be done carefully to ensure structural integrity.

Fatigue cracks might particularly be expected on the lower fuselage longerons where the main landing gear legs attach, at the fuel tank and exhaust attachment points, and at the smoke-injection point in the exhaust. In particular, the fuel tank supports on the forward upper longerons are well-known for fatigue cracking. The structural tubing is only the standard thickness (0.035-inch), and the four vertical tank supports can crack and pull right off, causing the tank to drop. It's over the front rudder pedals, so calamity could result if the filler cap doesn't arrest its descent. Inspection is easy

by unscrewing a couple of panels, and the tank can be removed by unbolting one cabane strut designed for that purpose.

Although I have not heard of failures affecting Eagle wings, the similar Pitts can suffer from upper wing-spar cracking as a result of a heavy landing. Rib glue failure might also be a problem, but careful inspection is always the answer; a sudden change in tension or behavior of the bracing wires is cause for immediate grounding and investigation. Our example recently developed a crack in a bracing wire's separating "javelin." An unsupported wire might vibrate and cause flutter, so beware.

As always, fabric condition is a major aspect of an aircraft's value, because while replacement materials might not be too costly, it is a labor-intensive and expensive process to replace and repaint.

How risky is it to buy a well-used Eagle? No more risky than purchasing any other aerobatic aircraft, but the Eagle is well-designed and built, and hence robust.

—B.G.



tail-down visibility. Push it forward and lock it, and you can be certain it won't open. This is the best-designed canopy I have ever encountered.

Control Freak

As you would expect, the Eagle's controls have little static friction. Both occupants sit quite close to the ground, but that wide engine is well ahead of you, the cockpit sides are low, and the canopy sides are bulged, so visibility is comparatively good, even with it shut. The front-seater gets a good all-round view too (better than in an Extra) provided there are enough seat cushions.

The engine is standard fuel-injected Lycoming with all its foibles, and the propeller is a constant-speed Hartzell—both common and well-understood components. Ground handling is often a good predictor of character, and this one's surprisingly easy. The steerable tailwheel is positive, tightly turning this short-coupled airplane, and can be unlocked with a kick for super-tight turns; tap a brake and you pivot around one wheel. The brakes are good, as they should be to stop such a fast-landing aircraft, while the solid aluminum main

AVIAT EAGLE II

Price.....	\$160,000
Estimated completed price.....	\$200,000 - \$225,000
Estimated build time.....	2000 hours
Number flying (at press time).....	302
Powerplant.....	Lycoming IO-360, 200 hp @ 2700 rpm
Propeller.....	Hartzell two-blade, constant-speed

AIRFRAME

Wingspan	19 ft 11 in
Wing loading	12.62 lb/sq ft
Fuel capacity.....	25 gal
Maximum gross weight	1578 lb
Typical empty weight.....	1025 lb
Typical useful load.....	553 lb
Full-fuel payload	407 lb
Seating capacity	2
Cabin width	28 in

PERFORMANCE

Cruise speed	165 mph (143 kt) TAS
7000 ft @ 75% of max-continuous, 10.0 gph	
Maximum rate of climb	2100 fpm
Stall speed (landing configuration)	58 mph (50 kt) IAS
Takeoff distance	1450 ft
Landing distance	2100 ft

Specifications are manufacturer's estimates and are based on the configuration of the demonstrator aircraft. As they say, your mileage may vary.

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Handling on the runway, grass or pavement, is surprisingly good despite the Eagle's short-coupled nature and quick-response controls.

legs are stiff but neither too rigid nor too bouncy.

To my surprise, considering the Eagle's power-to-weight ratio, takeoffs are easy from grass or hard runways. Line up straight, add a bit of into-wind aileron, softly squeeze the right rudder, gently open the throttle, brace against the acceleration, ease up the tail to set the cowling top on the horizon (and see directly ahead), tap dance lightly on the pedals, and you're off.

I had expected a fight to stay straight, but found it no harder than my Maule to control—possibly easier. All right, you can't see much in the three-point attitude, but you can soon raise the tail, it comes up easily, and there is no tendency to bounce or swerve, nor any propensity to dart for the trees. The whole process takes seconds and perhaps 600 feet—less when you know

it better and can increase the power more quickly.

Sitting so far back, you can use the fuselage's whole length for instant indication of any veering tendency. Use the cabane struts as an aiming sight: Pin them on the far threshold and hold them there. The Eagle has such great control authority that any problems would be entirely self-induced. For my first attempt I tensed like a coiled spring, but it wasn't necessary. I was really starting to enjoy this!

Within seconds we were at 1000 feet AGL, throttling back and reducing rpm while bending into the traffic pattern. I needed a steady right rudder input in the climb, and now I discovered the Eagle's Achilles heel. You have to concentrate on its rudder, almost to the exclusion of the other axes. It is quite light and effective, but this short-coupled airplane has

little yaw stability, so you are continually adjusting pedal pressures. Every change of power or speed will require a slight rudder correction.

There's not much to check on downwind in such a straightforward machine except for fuel and prop rpm; then it's time to throttle back and start the approach. Rarely flying biplanes these days, I had forgotten the pleasures of viewing the world through a web of wings and wires. The downside is inevitably some reduction in forward visibility, but you sit well aft and can see all around, just not ahead without occasionally shifting the ironmongery.

Tackle Landings First

I would prefer to make my first landing on grass, as I would in any fast, close-coupled, semi-blind tailwheel design, but the only grass runway available was





How many Eagle kits were sold to those hanging on the airport fence and greeted with this view? Short answer: A whole bunch.

too short for an initial attempt, so I had to make do with the long, wide bitumen runway of a nearby airport. I found a circling, slightly sideslipped approach easiest. Turning left put the airspeed needle just where I wanted it, neatly in my peripheral vision without having to refocus. In a steady bank I could hold the runway continuously positioned between our left wings, giving me instant information about the glide path, while some slip kept the fuselage out of my line of sight. Control forces were light, both bank and yaw steady and instinctive. The Eagle flies its curved approach with minimal input from me—as though on spiral rails.

With all that biplane drag, the power-off glide was too steep for comfort, so I used a trickle of power to modulate the comparatively steep descent of those highly loaded wings. I could tell by the balanced-on-a-pin feel that anything below 70 knots would cause more sink. Eighty knots worked well on base leg, reducing to 75 over the threshold. The Eagle is surprisingly speed-stable once you get the trim set.

Crossing the threshold, a final glance confirmed the airspeed trickling back through 70 knots as I concentrated on straightening and flaring before we thwacked into the numbers. Again, I was surprised at the ease of this maneuver, which can be quite tricky in some other short-coupled airplanes.

Squeezing some rudder to align ourselves precisely with the runway, I

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carefully held the wings level, and then eased the throttle shut. The world is flashing past, and I can no longer see anything but Eagle ahead, yet the runway's edges are clearly equidistant and close below. The speed quickly drops away, the airplane settling after a short float for a squeaking firm touchdown on those stiff legs. We must have been dead straight, because even with hard tires there was no "dart for the dirt."

Do It Again, Sam

Moving to the downwind side of the runway, I kicked us around a 360 and backtracked for another go. We used perhaps 2800 feet all told, so this is probably not a short-airstrip airplane, though less distance could clearly be achieved with practice. Did I mention we had a 40°, 10-knot crosswind? With these powerful controls, I suspect even double that would be no problem.

I flew a couple more patterns. Each was significantly easier than the last, though I was advised against wheel landings, "They are difficult and unnecessary." Even a go-around from the flare gave no problems, with instant acceleration and climb, no tendency to pitch up or roll and not too much yaw to counter.

Leaving the pattern, I timed our climb at 1100 feet per minute at 75 knots, much less than Aviar's quoted 2100 fpm (at an unspecified airspeed), but this is a well-used example, with an 1800-hour engine. For cross-country

work, you can select something like 23.5 inches and 2300 rpm (which represents 75% power), and you'll get a cruise of 105 knots true. Properly leaned, this should give 2 hours' endurance with the 25-gallon tank.

The interior is roomy, but a bit noisy without headsets; this is an airplane for active noise reduction. Nevertheless, it's surprisingly comfortable, especially seated on my conformal foam cushions. The Eagle slices through turbulence so well you hardly notice any bumps.

Wringing It Out

We did most of our subsequent flying at considerable altitude, in deference to my unfamiliarity and another shareholder's comment, "Be careful, Bob, it can be a bitey little mongrel!" But we had no real problems. As you would expect of a potential advanced or unlimited aerobatic mount, the Eagle is barely (though still positively) stable in all three axes, with its particularly light and responsive rudder demanding careful attention at all times. The straight power-off stall came at 54 knots with a slight tendency for either wing to drop; a power-off spin was neatly entered and quickly recovered in half a turn to either left or right.

Now it was time for the fun stuff. Part owner David Brown does all of his aerobatic flying at around 85% power, saving full power only for competitions. A simple loop is easy, with a steady 4-G pull from 135 knots, easing off to zero

G over the top. The fully inverted fuel and oil systems make all of this stuff child's play. Half Cubans and half-reverse Cubans are no more difficult, and you do not need to use anything like full aileron to make the upward and downward half rolls. About a third of full stick deflection seemed to be all that was required.

No Jelly on the Roll

With a quoted 204°-per-second rate, level (slow) rolls can be lightning quick or super, super slow, while the required rudder/elevator coordination is not at all difficult with the Eagle's excellent knife-edge performance. Barrel rolls can be big or tight, while ballistic aileron rolls are childishly simple.

On the other hand, a hammerhead turn requires some care and precise inputs, with a smooth rudder push (rather than a kick) at 40 knots. But this is a boring maneuver without doing something else on the long up and down lines, as Brown demonstrated, his neat cartwheel topping a 1000-foot vertical 360° roll. He also flew long, level, eight-point rolls with dexterity and precision.

Positive snap rolls were straightforward as well, and seemed quicker than in a Pitts (probably thanks to the Eagle's more rearward CG), though further experimentation in this potent airplane should produce more standardized results. My first snap was at 90 knots, two up, with half fuel and in a slight full-throttle climb at 5000 feet. Yank, kick, push, *whee*, stop. The Eagle snapped



An Eagle watchpoint: The tabs that hold the central fuel tank can fracture, potentially allowing the tank to descend and block the front-seat rudder pedals.

around quicker than you can read this. It was such fun that I did several more.

Do you want to make a full vertical roll? Solo, the Eagle can make two-and-a-half upward revolutions, but two up we would have to be content with 360°. So we flew south, I accelerated to 160 knots, pulled 4 G, checked with a forward prod, and whacked the stick against my thigh. You stop when you're heading south again—that is, if you get it right.

If, like me, you are unfamiliar with both the airplane and full 360° vertical rolls, you might lose it part way around, one wing sagging as you slightly topple over onto your back. Stop rolling, pull gently to humpty-bump out of trouble as you would in your accustomed mount, get halfway through it and watch the upside down world inexplicably begin rotating as you wonder why the stick is being pulled forward in your hand. Luckily, Brown guessed my puzzlement, closing the throttle and lowering the nose to recover. "I didn't think we'd cover inverted, power-on, flat spins quite this early," he said, laughing. "Whatever happens, if you lose it, just close the throttle and it will usually sort itself out."

Despite the blunder, I did enjoy myself in this burly little biplane. Indeed, no sooner had we landed than I arranged for a second go. Like so many before me, I had become an Eagle addict. ✈

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Spidertracks S3 Aviator

This Kiwi satellite tracker gets better with the second generation.

BY MARC COOK



for the blue LED to stop blinking—this is the sign that the S3 is communicating with the network and confirming a safe end of the flight. When the light's out, you can power down the S3.

Pushing the SOS button while in flight immediately sends a message back to the web site to summon help. As it does when it loses a Spiderwatch signal, the system informs your so-called Tier 1 responders, who you define, and if they don't respond within 15 minutes, the system automatically begins to ping your Tier 2 contacts, which can include emergency services.

In our testing, the S3 proved as robust as the previous-generation box. We could reliably obtain position tracking points even with the unit well away from the preferred position on the glareshield; it locked on and established communication with both the navigational GPS and the Iridium system quickly.

Spidertracks has included a few new features with the launch of the S3, including a new interactive web site that provides a Facebook-like social network where pilots can share details of trips and destinations along with their flight tracks. And, as before, it's possible to share the tracking page for your S3 so that friends and family can see where you are.

But perhaps the biggest news for the S3's arrival is a new pricing structure. The S3 itself is \$995, \$800 less than the previous Spidertracks offering. The connection costs are also reduced, and are now offered in several tiers designed to be cost-effective for different usage rates. The least expensive is designed for pilots who fly less than 5 hours a month—for \$120 per year prepaid (\$10/month), you get up to 4 hours of coverage with the updates from the S3 to the web site every 2 minutes. Plus 20 cents per text transmission. There are six plans in total, the details of which are on the Spidertracks web site—but it's clear the company is trying to get costs down so the average pilot can afford the service.

With the S3, Spidertracks has improved an already good product, and brought it to market for less. We like that. ✚

For more information, visit www.spidertracks.com. A direct link can be found at www.kitplanes.com.



The blue light above the Watch button indicates the S3 is in Spiderwatch mode. The green LED to the far right tells you that it has good GPS lock.

Product Review

Spidertracks has improved its satellite-based safety-and-tracking system with the latest iteration, the S3 Aviator. The core mechanics are the same, using an internal, highly sensitive GPS receiver for position information and an Iridium GPS transceiver for data link. But the S3 is repackaged into a small wedge-like module that's intended to sit on the glareshield. Before, the main unit was designed to be mounted anywhere it had a good view of the sky, with an optional keypad placed into the pilot's line of vision; the new S3 combines those modules.

As with the previous Spidertracks model, there are two essential modes, passive tracking and "Spiderwatch."

In the latter, when invoked through the setup process on the Spidertracks web site, the S3 will hop into Spiderwatch mode when the system determines the airplane has taken off. At that point, the system continues watching the flight. Should the S3 stop transmitting—either after a crash or by removal of power—the Spiderwatch network will begin sending alerts as determined on the setup page of the web site. These alerts are sent as either text messages (SMS) or email. The idea is that your friends and family might know where you are, and can help determine if the alert is legitimate or a false alarm. In addition, the system produces an email and/or text to the owner each time Spiderwatch is activated and deactivated. After landing, you must press and briefly hold the Watch button and wait



CGS Hawk Arrow

From Slusarczyk to Dezauche, the essence of the lightweight Hawk is intact.

BY ED WISCHMEYER

One of the classics in the very light airplane category is the CGS Hawk, but the surprise is how conventionally it flies by “real airplane” standards—that’s not a backhanded compliment, it’s a full-on *atta boy!*

The Hawk was originally designed by the inimitable Chuck Slusarczyk, one of the pioneers of the early days of powered hanggliders (think Easy Riser) who started Chuck’s Glider Supplies, whence the “CGS” in CGS Hawk. He was also on the TV show *Junkyard Wars...* twice. Also his was the notable, noxious, notorious, non-aeronautical liquid concoction called “Muzzleloader,” a secret combination of paint removers and rocket fuels frequently foisted off on the unsuspecting as a liqueur. In my case, a quarter teaspoon years ago was a lifetime dose. Slusarczyk calls this rite of passage into the CGS world a “liquid dignity remover.”

Slusarczyk’s shop manager for 10 years, Charles Capaldi, moved from northeast Ohio to southwest Alabama with CGS when it was sold recently to Danny Dezauche, a longtime ultralight pilot and Hawk owner, who after years of discussions with Slusarczyk, bought the business (whose name remains CGS Aviation). Dezauche says he bought it because, “The EAA chapter was the kind of people you want your kids to be around,” and his boys are 10 and 14.

Multiple Models

The Hawk line has been in full production for six months now at the new location, and there are a half-dozen versions (See Table 1).

Taildragger and nosedragger versions are available, and there’s a flight school coming to teach you how to fly your own Hawk. The ultralight Hawk Ultra weighs only 244 pounds empty, so



Two radiators flank the engine, plus carburetors on the right, exhaust on the left, prop in the middle.



The ubiquitous Rotax 582, but an older model. Also seen are the radiator cap and the BRS ballistic parachute.



Ailerons have spades, just like the hot rod competition aerobatic designs. Don't get your hopes up, though. The Hawk is a great cruiser but not an aerobatic ship.

Table 1.

Model	Seats	Gross Wt (lb)	Wing*	Notes
Hawk Classic	One	600	Flat	
Hawk Sport	One	625	Semi-sym	Hot rod version of the Classic.
Hawk Arrow	One	625	Semi-sym	Roomier nose, bigger tail.
Hawk Arrow	Two	950	Semi-sym	Fuselage is widened on newest ones.
Hawk Arrow SLSA	Two	950	Semi-sym	Ready to fly.
Hawk Plus	One	800	Semi-sym	Single-seat version of two-seat Hawk Arrow. Has wing tanks and lots of baggage room.
Hawk Ultra	One	600	Flat	FAR Part 103 legal ultralight.

*Note: Flat wing is flat-bottom airfoil, and there are jury struts on the wingstruts. Semi-sym is a semi-symmetrical airfoil with no jury struts.



The plexiglass in the doors provides great views of the ground, and each occupant has two air vents for cooling.

it will be possible to make a nosewheel version that is still Part 103 legal (254 pounds or less).

The covering applied to any of these models can be either sailcloth or Poly-Fiber, your choice, with speeds and handling qualities reported to be about the same for each covering type. Wings with the Poly-Fiber covering have an aluminum leading edge under the fabric, but sailcloth wings do not. The Classic and Ultra (as in ultralight) models have a flat-bottom airfoil with no rib holding the bottom surface, but the rest have structure to shape the bottom con-

tour. The airfoil is a CGS0012, and it is unlikely to be found in any of the traditional airfoil texts.

All Hawks have a curved, tubular aluminum tailboom that's bent in a humongous tube bender at the factory. To make sure the doublers fit, they are attached to the boom before it is bent.

Bensinger's Baby

The particular aircraft we flew was built by Hawk dealer Steve Bensinger from Bushnell, Florida, about an hour north of Lakeland. His aircraft has the Rotax 582 engine, the older version (model 90) of the familiar blue head (model 99). For the four-stroke crowd, the 60-horsepower HKS 700E engine is available, and a handful have been installed on the two-seaters. A large battery up front keeps the weight and balance under control. Bensinger is looking forward to the 700T, a turbocharged version with 80 hp (for takeoff) and only a little more weight. The ubiquitous Rotax 912 has been installed by one customer, and the factory is working to make that an option once the center of gravity issues are resolved.

Bensinger's Hawk has had the wing expanded by adding one more rib and one more bay between ribs to each side, increasing the span from the stock 31.5

feet to 34. (Single-seaters have a 29-foot, 10-inch span). The flaps were extended as well, but the ailerons stayed the stock length. (All of the Hawks have separate flaps and ailerons, not flaperons). Optional wing fuel tanks, 5 gallons per side, replaced the standard 10-gallon fuselage tank.

All Aboard!

Entering the front cockpit requires its own unique technique. You stand in front of the right wingstrut so that you don't have to clamber over the throttle on the left side, then lean back along the wingstrut and stick your left foot in as if you were feeding an alligator but wanted to retain a few body parts for yourself. The rest of you sort of follows your foot onboard. Once in, there's good room all around, but you don't want to bonk your head on the emergency parachute handle overhead.

Electric start is not only a convenience, but a safety factor. "Safety, safety, safety" was Bensinger's comment on the matter, and I was reminded of

CGS HAWK ARROW

Price.....	\$14,350
Estimated completed price.....	\$24,000 - \$25,000
Estimated build time.....	350 hours
Number flying (at press time).....	186
Powerplant.....	Rotax 582, 65 hp @ 5800 rpm
Propeller.....	three-blade fixed-pitch

AIRFRAME

Wingspan.....	31 ft 8 in
Wing loading.....	6.7 lb/sq ft
Fuel capacity.....	10 gal
Maximum gross weight.....	990 lb
Typical empty weight.....	450 lb
Typical useful load.....	540 lb
Full-fuel payload.....	482 lb
Seating capacity.....	2
Cabin width.....	26 in

PERFORMANCE

Cruise speed.....	70 mph (61 kt) TAS
7000 ft @ 75% of max-continuous, 4.8 gph	
Maximum rate of climb.....	1100 fpm
Stall speed (landing configuration).....	35 mph (30 kt) IAS
Takeoff distance.....	150 ft
Landing distance.....	250 ft

Specifications are manufacturer's estimates and are based on the configuration of the demonstrator aircraft. As they say, your mileage may vary.

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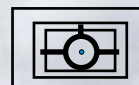


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another pilot earlier in the week who buckled his passenger in, then stood on the ground beside his plane so that he could get enough leverage to pull-start the two-stroke engine.

Takeoff from the grass ultralight field involved a series of bumps and moderate acceleration, not at all like some of the overpowered single-seaters. Heading into the sun, I could not read the MGL Avionics Stratomaster instrument cluster, perhaps because my sunglasses were incompatible with the display. Not knowing the pitch attitude, I was faster than the desired climb speed of 60 mph. Not to fear. Bensinger got the speed under control with pitch attitude until it was time to level off at the 400-foot pattern altitude.

Leaving the pattern, we headed past South Lakeland and climbed, being rewarded with smooth air at 1200 feet.



Rudder and elevator cables emerge from the tailboom to do their duty. The very top cable actuates the trimtab.



The rudder attachment atop the tail boom.



The view forward is terrific with the small, low windshield. And, no, the mirror is not for avoiding bird strikes from the rear.

That smooth air was moving, though, with about 30 knots of winds aloft. The Hawk's handling qualities were some combination of sailplane and airplane, with a yaw string out front to indicate sideslip. With a skid ball, the memory aid is "step on the ball," but with a yaw string, you step to pull the string toward that foot. It's not that hard (glider pilots do it all the time), but the process is a bit different and slightly confusing if you don't do it enough. Yaw string notwithstanding, banked turns of 10°, 20° and 30° were easy, with a nice, light, smooth feel to the ailerons. Predictably, the roll rate with the longer wings and stock ailerons was slow to moderate, but the yaw string was easier to control than in, say, a Schweizer 2-33.

One surprise was the amount of indicated sideslip you can generate with the rudder. With the yaw string taped to the forward fuselage instead of on a mast, the amount of deflection is not necessarily an accurate measure of the sideslip angle (the horizontal angle between the relative wind and the direction the airplane is pointing), but it was impressive to see the yaw string showing more than 30° of sideslip.

Conventional Handling

With the aluminum-tubing fuselage, the oversized plexiglass doors, and the yaw string and the pusher configuration (not to mention the wing loading of 6.7 pounds per square foot), you'd not easily confuse the Hawk with a "real" airplane



Bensinger's Hawk does have a greater wingspan than normal at 34 feet, with stock aileron span but longer flaps.

in the narrow sense of the term. But flying the Hawk required less accommodation than other aircraft derived from ultralights. Most of that was predictable, such as adverse aileron yaw and the need for rudder, just as it is for other low-speed airplanes.

These “real-airplane” qualities were apparent in the stall performance as well. Stalls were preceded by a light buffet, and the nose fell through with the airplane having little tendency to fall off on one wing. Departure stalls were perhaps the mellowest that I’ve ever seen in an aircraft, with a gentle break and the nose dropping only a little.

What’s in the Box

The basic kit comes with prebuilt wings and control surfaces (flaps, ailerons, rudder, vertical stab, horizontal stab and elevator), dual controls, shoulder harnesses and seat belts, conventional or tricycle gear, 10-gallon fuel tank, rough-terrain wheels (16x6.5x6 inch). That costs \$11,319.

Add to that the covering package. This includes your choice of either 3.8-ounce stabilized Dacron covers or a dope-and-fabric kit. Dacron covers include all control surfaces pre-sewn and ready to install, zipper doors and full fuselage enclosure. The dope-and-fabric kit includes ribs, stringers, hard doors, fabric and glue—everything but paint. Dacron color samples will be supplied upon request. The price is \$3031.

Engine packages range from \$5926 for the Rotax 503 (50 hp; add \$818 for electric start) to \$10,143 for the HKS 700E. In between is the Rotax 682 with electric start for \$8816. All engine packages come with a prop, throttle assembly, engine mounts, muffler mounts, miscellaneous hardware and cooling systems where required.

—E.W.



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One unique interruption to this handling qualities exploration was an insistent flashing red light above the compass. I asked if it was a warning that we were lost, but Bensinger explained that it was a warning for high exhaust-gas temperature from the two-stroke engine. The remedy for high EGT in a two-stroke is to put some load on the prop, which means climbing or maybe a turn.

Speaking of which, turns had their own quirks. In a 20° bank, you could hear the engine load up, and the air-speed dropped from 72 mph to 65 mph with the added induced drag of the turn. With the high winds at our altitude, the ground track of our turns seemed more like a prolate cycloid than a circle.

Back to the Barn

The view from over the area south of Lakeland was a hodgepodge of metal, with mobile homes and ranch buildings, and shanties sharing the real estate with McMansions as we went to South Lakeland Airport for a landing or two. Still, this kind of sightseeing is what low and slow is all about. The real gotcha is that in case of engine failure, low altitude



The ultralight version, the Hawk Ultra, flies overhead at the Sun 'n Fun fly-in last spring. You can fly it Part 103 even after losing your FAA medical. (LSAs can be flown with no medical or an expired one, but not after a denial.)

and a poor glide ratio limit your options for forced landing sites. This Hawk did have a ballistic parachute installed, but ballistic 'chutes are not necessarily the answer to every emergency, because if the landing gear doesn't absorb the vertical deceleration of a landing under canopy, your spine will. The Hawk gear is fiberglass, and there's crushable struc-

ture around it, and those features would increase survivability.

Bensinger did the first landing, flying the pattern at 60 mph, with me adding two notches of flaps when requested, using the flap handle over my left shoulder. The trick in flying a very light, high-drag airplane was explained to me years ago—fly to the runway, fly down the runway, then land. Bensinger landed right on centerline, then added power and away we went.

My approach started high, but an extended downwind took care of that. Then a thermal and a bit of wind shear on short final messed with me. Even so, control was easy and my touchdown was



The exhaust and ballistic parachute close up. The left wingtip and tail of the Hawk Ultra are visible behind.



The Hawk Ultra on the scales. At 244 pounds, there's 10 pounds available for a nosewheel or whatever else the Part 103 pilot might desire.

also on the centerline. The gear, which had felt so stiff taxiing out, felt just right on the landing. Full power got us back in the air, and by now I knew the pitch attitude for climbout, retracted the flaps to the first notch, and headed us back toward Lakeland.

The Paradise City traffic pattern is this huge affair that is usually, but not always, under the helicopter traffic pattern. Final is at least a mile long, and you lose altitude slowly. Plus, there's a little more pressure when landing in a frisky crosswind in front of a few hundred spectators and a narrator who seems to know everything about every plane out there. But I forgot and gave the stick a tug in the flare and ballooned like a newbie. Fortunately, the Hawk was easy enough to control that I recovered and touched down on the upwind wheel first and gentle as you please, just like all the books say to. Nice.

With Chuck Slusarczyk semi-retired, it's great to see his designs still flying, still in production and still supported. This is a neat little machine, and deserves the following it has. Four-stroke engines will make the Hawks even more attractive to a Sport Pilot who's downsizing from bigger aircraft. Even without a snootful of Muzzleloader. ‡

For more information, call 251/957-HAWK (4295) or visit www.cgsaviation.com. Find a direct link at www.kitplanes.com.

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AirCam owner Ed Wischmeyer has flown about 175 makes and models—from the CGS Hawk to the Thunder Mustang—with more than 100 pilot reports published. All of them just about paid for his most recent: the ATP/AMES in a Grumman Widgion.



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THE KITCHEN WINDOW

When an aircraft mod simply must be done, you use the tools on hand.

BY STEVEN MAHONEY



The happy Mahoneys. Understanding wife Carol has forgiven our author for using the kitchen oven on unauthorized projects.

While flying my BD-4 through our rainy Pacific Northwest skies, I often noticed that the raindrops streaking near the top of the side “quarter” windows moved in a circular path. This pattern led me to perform some tuft testing, which revealed that the airflow around the window, just beneath the Bede’s high wing, was turbulent, which caused two bad things: noise and drag.

Bring in da Noise (and Drag)

This airflow separation causes vortices that travel back and forth, beating on the flat plexiglass side-door windows right at ear level. Occupying the cabin during flight is like sitting inside a musical instrument, maybe a drum; one passenger likened it to a bee inside a beer can. Many years ago, in an attempt to damp this noise, I installed a secondary set of plexiglass windows on the inside frame of the front windows with about



Mahoney’s BD-4. He initiated a small baking project to improve its aerodynamics.

1 inch of dead air space between them. This helped some, but it always stuck in my craw as an inelegant and heavy solution. The idea of killing noise at the source was much more appealing than just muffling it.

With regard to drag, any situation that transforms energy into noise and makes water droplets move forward must be causing drag. I hate drag.

Battle of the Bulge

To conquer both of these enemies I decided to replace the flat door windows with new ones that bulged slightly. The curved shape should be friendlier to the airflow and, as a bonus, be rigid enough to prevent the vibration that caused all that noise in the cabin. The idea was fine...all I had to do was figure how to make a bulged window!

The first method I tried was a drape form. I carved a male mold for a window that bulged outboard and fit the existing frame in the door. I heated a sheet of plexiglass, draped it over the mold and allowed it to cool. Several attempts proved unsuccessful. It was hard to control the consistency of the material, and the optical properties of the finished window were terrible.

That avenue exhausted, I decided to try free-blowing the window. This method required trapping the edges of

the plexiglass in a frame that resembled an old tennis racket press, heating the assembly until the material was soft and then introducing compressed air into the frame to force it into the desired shape. The amount of bulge in the window is controlled by carefully regulating the air pressure. I didn't want to blow too big a bubble, just enough to prevent oil canning and provide a little better aerodynamic surface. All I needed was a place to heat the plex where I could see what was happening, and a way to introduce and control compressed air. Nothing to it.

Honey, Don't Come Home Yet

The first thing to consider in performing such a procedure is timing. I waited

until my wife had a day's work away from home, and began to plan the operation, because the obvious tool for providing the heat I needed was the oven in the kitchen—*her kitchen*. It was perfect: accurately controlled heat and a window in the door. Perfect, except that the designers of the oven had, for some inexplicable reason, thought more about the size of turkeys and pork loins and completely ignored the needs of BD-4 window builders. The oven just wasn't big enough.

So I constructed a plywood "oven extension" that would provide enough space for the airplane window and mold. It mated to the oven opening and rested on the open oven door, trapping the oven's heat in a larger space. I then hid

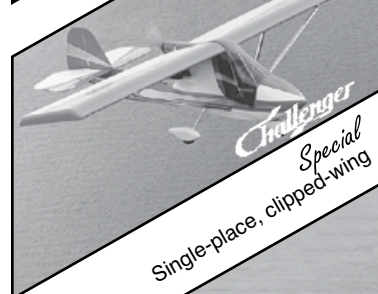
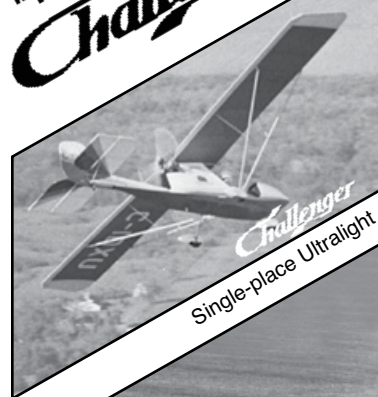


Tuft testing of the side window helped shine a light on local flow separation.



The tufts in flight. Yarn at the leading edge of the wing hangs there, indicating stalled airflow.

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The first step in creating a new, bulging side window was to make a frame to define the mating flanges.

the extension in my shop and consulted my wife's calendar.

Timing the "forming event" was crucial. I needed enough time to get the oven ready, heat the plexiglass, form it, let it cool and then put all of my equipment away without leaving a trace. Monday night: band practice. Great! Band



With the sheet of flat plexiglass in the frame comes the test fit into the oven. Oops. It's bigger than a turkey.

practice always lasts the entire evening, so I laid my plans, made all of the fixtures I needed—an air fitting mounted in the frame, for instance—and waited for Monday.

Ready, Set, Go

When I saw the taillights leave the driveway, I sprang into action. I rolled the compressor into the kitchen and installed the oven-extension unit. Just in case, I moved my 5-pound shop fire extinguisher into the kitchen. I put the

plexiglass with fixture inside the oven and set the dial to 320° F. Once the material was up to temperature, I slowly opened the valve on the compressor. With a tight seal around the edge of the plexiglass, it only took a few psi to inflate the window to the desired 1-inch bulge. The air hissed gently into the oven, the plexiglass bulged exactly as I'd hoped, and I had just turned the oven off and was letting the new, perfectly formed window cool when the kitchen door flew open.

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Uh-oh

This was the exact moment I noticed the band music on the kitchen counter, where my wife had left it, and she had now returned to pick it up. The next few minutes are a bit foggy, but I remember some stammered explanations of the

virtues of drag reduction and the benefit of reducing our carbon footprint and why it is important for the planet that our airplane be more efficient and help reduce global warming.

Carol didn't buy it for a minute, but she hasn't lived with an airplane-

A homemade extension box for the oven allows the frame to fit.



Mahoney quietly brought the air compressor into the kitchen. It's used to provide a slight pressure bulge on the inside of the window pane to create the desired bubble. A little pressure goes a long way.

obsessed engineer for years without developing a sense of humor. I can only imagine her description of the scene—I'm sure the band was in stitches.

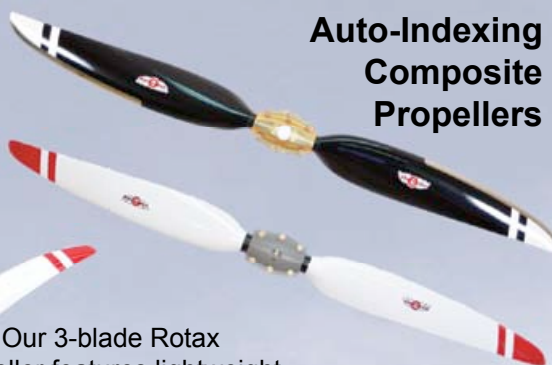
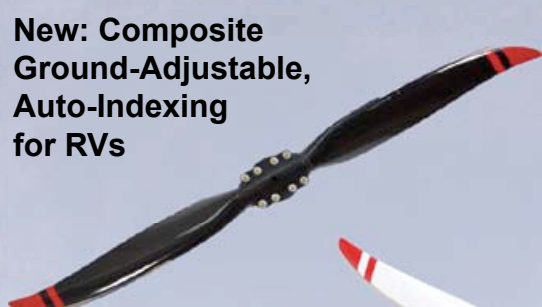
The windows ended up beautifully curved and optically perfect. I'm sure, absolutely sure, that they do everything I told her they would do. Better yet, they look really cool. ‡

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The completeness of the kit and the amount of quickbuild componentry you choose will have a profound influence on the total cost of the build.

The Cost to Build

To know what you're in for, you need to understand that the kit price is only the beginning.

BY MARC COOK

Here's an insider's glimpse of life at the sweet-smelling and well-lighted KITPLANES® world headquarters. When we sit down with the incredible amount of data gathered for the first (and largest) of our annual Buyer's Guides, often can be heard the booming, Magliozzi-brothers-like interjection: *Boooogus!* And it's usually when we're running the manufacturers' estimated completed cost fields through one of our many background formulas

Bob Camacho, RV-9A

Although I knew about the Florida sales tax, it was still difficult to pay it and receive no benefit other than the ability to base the aircraft in Florida. I guess my real cost surprise was the weekly miscellaneous items I had to order, usually from Aircraft Spruce. My wife came to expect several weekly aircraft package presents. This usually added a couple of hundred dollars to my monthly Visa bill throughout the building process.

that help us determine data veracity. Red lights flash, klaxons sound. The neighbors complain.

Why? Well, the estimates we get sometimes look like back-of-the-napkin guesses that apparently consider the cost of the kit, engine, prop and avionics—and not much else. We admit some companies are much better than others, obviously providing numbers with the benefit of realistic thinking. Speaking of real-world experience, take a look at the opinions of builders who were asked what was most surprising cost-wise about their projects. Their responses appear in various sidebars throughout this article.

What can you do? Start with a set of photos or, better yet, the plans for the airplane you are considering building. Look at each component from the front

to the back—prop spinner, prop, backing plate, cowlings...and so on until you get to the tail cone. Think about where each piece comes from. Now think about systems—hydraulic (brakes), electrical (avionics, lighting, control systems like trim and flaps) and pneumatic (pitot-static)—and consider where all these pieces will come from. Hold that thought; we'll come back to it.

Pricing the Kit

Getting a good top-line number on the basic kit should be easy, but it's often complicated by multiple options, offsets and other factors. As you get close to choosing the design you want to build, ask for a detailed list of *what's actually in the kit*. This is your backbone document; you'll build a more detailed estimate from it as you fill in the answers to the questions we posed a moment ago.

The goal here is to understand and account for the gap. Certain bits and pieces will come with most basic kits, but there is an amazing gulf between what is on the invoice list and what you'll need to complete the airplane, quite beyond



Daniel J. McElroy, Questair Venture

It took me 20 years to build N334Q, a Questair Venture. I bought the aluminum airplane kit with a factory-new Continental IO-550 and McCauley propeller for \$57,500. I went through three landing gear iterations that added about \$12,000, and we all know that when you do anything with avionics, it adds up. I have three type ratings in glass cockpit airplanes and still wanted to keep some old-school round gauges in this machine. I have a Garmin 430 and Collins PN-101 HSI, my altimeter came out of a McDonnell Douglas MD-88, and my airspeed indicator out of a Boeing 727 (thanks to eBay).

By the time I was done I had around \$100,000 invested. But the costs that I was surprised by were for the finishing materials. I used a PPG urethane basecoat clear coat paint system. I acid-etched all of the aluminum pieces then alodined them, then added an epoxy primer, then many urethane primer-filler coats, then the base coat, trim color coats and the clear coat. That represents a lot of sanding and buffing. I bought 4 quarts of buffing compound at over \$80 a quart, not to mention the sand paper and buffing pads at the end. All told I probably spent more than \$3000 on finishing materials, and this does not count my worn-out fingertips.

the big pieces like engine, prop, avionics, interior and paint.

One more thing: The following advice assumes that you're going to build the airplane in strict adherence to the design. When you begin substituting engines, props, landing gear, canopies or other major components, the costs in dollars and hours will increase exponentially. Trust us, it's true. The quickest, least expensive build is the airplane most like the factory's.

Most kit aircraft manufacturers give you the big stuff—airframe, wings, control system, landing gear, basic fairings and things like an instrument panel



blank and, maybe, seat frames. To control costs and quality, most kit manufacturers also provide the important pieces of the control system, such as cables, pushrods, bellcranks and hardware. It's important to them (and to you) that the proper pieces are used here; a control system is no place to substitute hardware-store items.

Big Piece Number One

Typically, the engine is the single greatest expenditure of the whole project. Many of the larger kit manufacturers have arrangements with the conventional engine manufacturers like Continental, Lycoming, Jabiru and Rotax. Often, the kit maker's prices are competitive, but you'll be getting a standard engine. Aftermarket builders can provide selectively upgraded engines constructed from kit or overhauled components, and they deserve a call before signing the big check. A small shop's warranty and customer service can be better than the factory's, though that's not a given.

Engine choices typically favor the most powerful example approved for the airplane because the price differential is not great when you consider it as part of the whole cost. For example, a Lycoming O-320 is often within \$2000 of the O-360. A four-cylinder Jabiru 2200A is approximately 25% cheaper than the 3300, but has 30% less power. Then there's resale, which always favors the larger-engine examples.



Buying a used engine, either one intended to go right onto the airplane or one meant to be overhauled first, can be an excellent way to save money, but you absolutely have to know what you're doing. A great deal on a used engine might turn into a nightmare if the crankshaft fails to pass inspection or the camshaft is shot or the cases are in need of repair. This is a story for another time—like our engine roundup coming in March—but we'll end the discussion here by saying that unlucky or incautious builders have found themselves paying nearly as much for an overhauled engine as it would have cost to buy new.

Choosing a propeller is more difficult because the all-up costs between, say, a metal fixed-pitch and a metal constant-speed unit are substantial, and the performance payoff is slightly more elusive.

Steve Anderson, RV-7A

My plane was quite a bit more expensive than your normal RV-7A. Originally, I went with the Eggenfellner H-6 engine and MT prop. This combination was equivalent price-wise to the Lycoming IO-360 and Hartzell prop. I went all the way though testing and flying with the H-6 and eventually decided that this was not the best engine for me. I loved tinkering with my plane and engine, but at some point you have to get serious about flying. I realized the Eggenfellner H-6 was too "experimental" for me and bought a Lycoming IO-360 and blended-airfoil Hartzell prop from Van's Aircraft. Along with my Blue Mountain EFIS (the company went out of business), I have spent quite a bit in hardware that I had to sell at a tremendous discount. However, I am pleased as punch with my new Lycoming and Hartzell prop. They drive my plane quickly and efficiently into the air and to the far-flung places I've chosen to travel to. I weighed the decision to essentially start anew with a different powerplant carefully, but I finally have a great flying machine that outperforms any comparably priced plane.

Ted Sutton, Highlander

Concerned about my advancing age, I elected to enlist the help of a builder-assistance facility that could provide experience, special tooling, heated hangar, good paint booth, and a place to stay while 900 miles from home. I also had a valid medical that I didn't want to renew, now that I had invested in an LSA-legal Just Aircraft Highlander.

Like many builders, I enjoyed fabricating and individualizing N9939, but the fact was I had borrowed funds from my vacation home and knew I was paying interest on something that had small value until completed. I also would need to be absent from work for extended periods from a company that had employed me for more than 40 years. While I've never been quick at doing projects, time is an expensive part of the overall success of such a personal endeavor.

I signed a contract with a builder-assistance facility that would contribute to the completed, firewall forward, painted, test flown, and ready for the 40-hour fly off aircraft, starting on a set week. I arrived to see that another customer had "weaseled" in line in front of me! The net effect was that I paid for a motel, while he stayed free in the hangar loft and worked on his Highlander. Later, I bought an enclosed trailer and lived out of it.

During the build, the shop owner found out that he had worded the contract incorrectly and needed another \$1500 for paint, supplies and labor. I was really steamed at first, but when the plane was completed, I was thrilled with the experience. The Highlander looked great, flew great, and I had a great time flying off the 40 hours. It was a hoot. Basically, time (including extra time) was the most costly factor. So many things add to delays and costs: engines out of stock, needing time-sensitive parts sent next-day air, travel expenses, time away from the build and hunting down fiddly little parts.



The engine is likely to be the single largest expense in the building program, but incremental differences from one engine to the next are easily overshadowed by the entire cost of the project.

You have to consider the airplane's mission and overall performance profile; typically, the lower-powered designs (below about 150 horsepower) benefit the least from a constant-speed prop.

But there's more to the discussion ahead of the firewall. Pieces not provided with the engine or with the kit include exhaust systems, engine mounts, vibration isolators, oil coolers, fuel and oil hoses, baffling material (some kits include full baffles, but some tell you how to make your own), carburetor or fuel-injection airbox/filter arrangements, engine controls (cables and quadrants, as applicable) and engine accessories such as starter and alternator. Some new and kit engines come with a starter, alternator and a set of magnetos, but not all; you need to tick each item off the list. Failing to account for these simple firewall-forward items can cause you to underestimate your budget by \$2000 to \$5000, depending upon airplane design. More if you're dealing with a turbocharged airplane.



The amount of factory prefabrication will be reflected in the kit cost, but purchasing quickbuild components is often both cost- and time-effective.

Panel Planning

Pilots love to create dream panels, and the costs for the primary pieces—electronic or standard instruments, radios and intercoms—are easy to calculate. But you'll still need to wire it all, plus, perhaps, build your own panel or panel substructure. Costs for a basic electrical system start at \$500 for an RV-type aircraft, and that's just the elemental stuff like wires and circuit breakers and nothing-special switches. It's worthwhile to contact your local avionics shop for a quote. Chances are good the techs there will think of items you won't, and items such as interior lighting, antennas (and antenna cables), connectors and other miscellany can add up quickly.

When you first start building, make a generous estimate of what you'll want, but don't buy until you're fairly close to

finishing. The pace of avionics development remains rapid, and while we don't exactly have a Moore's Law working, it is true that the newest avionics have more features for the same or less money. At least that part of the economic model is going in the right direction.

All the Other Stuff

Budget for tools, even if you own a good set of mechanics bits. For metal aircraft, a high-quality air compressor is a top priority; again, bigger is better. Watch Sears for periodic sales. The big RV market supports a market for ready-made tool kits. The most inclusive kits run around \$2000, though you'll find use for more specialized tools than that. (Plus, you'll want maintenance items such as a com-



pression tester and timing tools eventually. Again, watch for holiday sales.)

Builders of composite aircraft should invest in tools as well. An epoxy pump will be your best friend, so spend wisely there, but also consider buying or building a dedicated composites table that allows you to cleanly cut and manage raw materials without getting them dirty or having them underfoot at inopportune times. You will also consume

Rob Jamros, Challenger II

By conducting due diligence prior to my project, all the costs for the components of my aircraft were of no surprise. I received advice from several builders prior to my project, which was, "Do not add up all the receipts in your shoebox when you are done with your airplane." Of course, that's what I did. I learned that they probably did not heed their own advice. The most surprising thing to me, cost wise, about building my project was the total at the bottom of the tape. I now pass that aforementioned advice along to others, as did those wise ones before me.

Jack Smits, Midget Mustang

My logs and pics speak for themselves. I bought a half-finished project and wanted to build the best Midget Mustang. I invested in a new engine, autopilot and glass cockpit. For half the price I could have bought a flying RV-4, RV-6 or even a Rocket F1 as advertised in *Barnstormers*. My advice: Don't build. Buy a flying kit airplane to save time and money. "If you build you don't fly, and if you fly you don't build." Or get another cheap flying airplane. At the risk of being the most stupid builder, I had part of my airplane built. (I did not have time and wanted the best airplane. It cost me at least an extra \$41,000).

I still have to paint the MM1, as I am repairing the landing gear, which folded on a hard landing. I plan to make Oshkosh next year with it.



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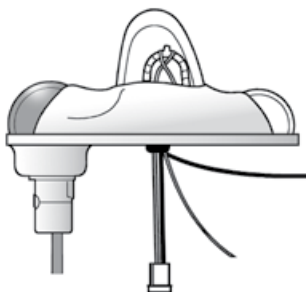
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The Cost to Build *continued*

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On composites and finishes, budget for finishing materials such as fillers and primers. They're not cheap. A gallon



Don't forget materials! Determine if the covering system is included in the kit before "finalizing" your budget.

Peter B. Field, Lancair 320

The most surprising cost in building my airplane was caused by the bankruptcy of Direct 2 Avionics (D2A), which had received more than \$19,000 from me for a complete Chelton Sport System. I had received the displays but not the GPS Aided Aircraft Heading and Reference System (GADAHRS), which was the heart of the Chelton two-display system. Chelton was later taken over by Cobham, and in my negotiations Cobham/Chelton stood tall behind its obligations. In my case, I had to fork over another \$4000 for the GADAHRS (valued at over \$12,000) and a GPS antenna that I had to have to complete the system. Other D2A customers were left in far worse straits, and I don't know how they made out. Cobham/Chelton has been great in service and getting me through the D2A bankruptcy. The company is an example of a highly responsible vendor.

A final note on this issue is that EAA, who I have great praise for in all other Experimental aircraft matters, apparently does not vet any of the many vendors that hawk hardware at Oshkosh. I think the buying public should be insulated at least to some extent with some financial analysis on the sorts of money schemes that these startup companies embrace. I have seen other examples of this sort of "anything goes entrepreneurial spirit" among vendors at Oshkosh. In amateur aircraft construction something a little above "caveat emptor" needs to be in place to better protect the buying public.

of primer/surfacer can be \$100 to \$200, and you'll use more than one. Like preparation, paint is a big variable. The materials are also expensive, and the builder who can get through a self-shot final finish for less than \$2000 in materials is a miracle worker. A professional job for an RV-size aircraft varies widely by scheme and geographical region, but \$4000 to \$7000 is a fair range. There are more than a few five-figure paint jobs out there.

Tax, License, Truck

Finally, don't forget that you may have to pay a sales tax on the kit components and there may be other local taxes to be applied to out-of-state purchases. It's also worthwhile to get a quote on shipping and compare it to the cost of borrowing or renting a truck to fetch the big pieces yourself.

The bottom line is that there really isn't a bottom line for most builders, though the savvy ones are willing to look at the entirety of the project to determine if it's within their budget, either from a total-cost or a total-time standpoint. Many builders self-finance and buy the pieces of the project as they can afford them. It's a slower way to go, but rewarding and non-threatening to domestic tranquility. ✚



2011 KIT AIRCRAFT BUYER'S GUIDE

COMPILED BY CORY EMBERSON

Into the beginnings of a slow economic recovery we have some good news from the homebuilt-aircraft front. At 320 available designs, we're actually up seven from last year. The word from those manufacturers we talked to—make no mistake, we pick up the phone and actually speak to a human being—is that business, after taking a hit in late 2008 and 2009, is starting to rebound. The bottom did not fall out, as many anticipated, and a good number of these kit manufacturers are predicting—also hoping for—steady, slow growth.

The ins and outs: A few new designs have joined the ranks. CubCrafters' Carbon Cub EX has been out for about a year, the Dakota Cub Super 18-180 is new to our list as is the fine-flying Bearhawk Patrol. The KR line, though not technically a returnee, comes to us from a new kit manufacturer in nVAero. No fewer than 13 companies have new models.

Deleted designs include Tom Peghiny's Flightstar line, sold to the Yuneec company, which won't be selling kits for the short term. And a few companies failed to return any of a half dozen calls for information. They are—Culp's Specialties, Higher Class Aviation, Light Miniature Aircraft, Sportair Aviation and Weedhopper. If you think any of these companies is still in business, let us know at editorial@kitplanes.com. We do our best to make contact, but our thinking is that if we can't reach them, you probably can't either.

On Light Sport designations. Unaccounted variables can take some borderline aircraft and include or exclude them from the LSA category. Our philosophy is that if the basic design can meet the chief LSA requirements—mainly for maximum gross weight and clean stall speed—without modification, we'll mark it as LSA Legal. In some cases, the designs are too fast; there is a 120-knot/138-mph (at sea level on max-continuous power) limitation. Some designs are capable of going faster but can be restricted by choice of prop (or setting of prop pitch for ground-adjustable units) to meet the rules. Prices: We do our best to coerce the companies to give us achievable estimated completed costs, but remember that these may or may not be feasible in the real world. To meet some of these, you'll be purchasing a used engine and doing a lot of scrounging. For a certain kind of builder, that's fun; for the rest of us, think of the middle to high end of the range as realistic. ±

Key to Buyer's Guide Codes

All specifications are provided by the manufacturers.

Not applicable	n.a.
Information was not provided	n.p.
Retractable gear/fixed gear	R/F
Composite	C
Metal	M
Wood	W
Tubing	T
Fabric	F
Meets Light Sport Aircraft Rules	LSA Legal



No photo was provided by the manufacturer.

A.S.A.P. Beaver RX-550 Plus

Cruise, mph	73	Fuel Capacity, gal.	10
Stall, mph	37	Empty/Gross Weight, lb.	430/1050
Range, s.m.	230	Length, ft.	20.7
Rate of Climb, fpm	1050	Wingspan, ft.	32
Takeoff/Landing Distance, ft.	250/250	Wing Area, sq. ft.	154.5
Engine Used	Rotax 582	No. of Seats	2T
HP/HP Range	65/50-80	Cockpit Width, in.	n.a.
		Landing Gear	trigear
		Bldg. Materials	F, T

Beginner Build Time, hr.	220
No. Completed & Flown	2060
Cost	\$12,995
Estimated Completed Cost	\$21K-\$28K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.ultralight.ca
250/549-1102



A.S.A.P. Beaver SS

Cruise, mph	67	Fuel Capacity, gal.	5
Stall, mph	30	Empty/Gross Weight, lb.	340/650
Range, s.m.	350	Length, ft.	18
Rate of Climb, fpm	800	Wingspan, ft.	31
Takeoff/Landing Distance, ft.	90/65	Wing Area, sq. ft.	138
Engine Used	Rotax 447	No. of Seats	1
HP/HP Range	40/40-50	Cockpit Width, in.	n.a.
		Landing Gear	trigear
		Bldg. Materials	F, T

Beginner Build Time, hr.	180
No. Completed & Flown	20
Cost	\$10,995
Estimated Completed Cost	\$15K-\$17K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.ultralight.ca
250/549-1102





A.S.A.P. Chinook Plus 2

Cruise, mph	83
Stall, mph	35
Range, s.m.	350
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	200/250
Engine Used	Rotax 582
HP/HP Range	65/50-80

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	406/1050
Length, ft.	18
Wingspan, ft.	32
Wing Area, sq. ft.	154.5
No. of Seats	2T
Cockpit Width, in.	39
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	250
No. Completed & Flown	1100
Cost	\$12,995
Estimated Completed Cost	\$21K-\$37K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.ultralight.ca
250/549-1102



Ace Aircraft, Inc. Baby Ace

Cruise, mph	100
Stall, mph	35
Range, s.m.	400
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	500/250
Engine Used	Continental C-85
HP/HP Range	85/85-120

Fuel Capacity, gal.	17
Empty/Gross Weight, lb.	575/950
Length, ft.	18
Wingspan, ft.	26.5
Wing Area, sq. ft.	110
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tri or tail
Bldg. Materials	F, T, W

Beginner Build Time, hr.	1000
No. Completed & Flown	453
Cost	\$18,950
Estimated Completed Cost	\$35K-\$75K
Quickbuild/Plans Available?	V/\$125
	LSA Legal

www.aceaircraft.com
706/886-6341



Ace Aircraft, Inc. Junior Ace

Cruise, mph	109
Stall, mph	38
Range, s.m.	410
Rate of Climb, fpm	500
Takeoff/Landing Distance, ft.	600/300
Engine Used	Continental C-85
HP/HP Range	85/85-120

Fuel Capacity, gal.	18
Empty/Gross Weight, lb.	700/1320
Length, ft.	18
Wingspan, ft.	26.5
Wing Area, sq. ft.	110
No. of Seats	2
Cockpit Width, in.	36
Landing Gear	tri or tail
Bldg. Materials	F, T, W

Beginner Build Time, hr.	1000
No. Completed & Flown	202
Cost	\$20,950
Estimated Completed Cost	\$37K-\$78K
Quickbuild/Plans Available?	V/\$145
	LSA Legal

www.aceaircraft.com
706/886-6341



Aero Adventure Aviation Ventura HP

Cruise, mph	75
Stall, mph	32
Range, s.m.	250
Rate of Climb, fpm	1100
Takeoff/Landing Distance, ft.	150/150
Engine Used	Rotax 503
HP/HP Range	50/50-80

Fuel Capacity, gal.	12
Empty/Gross Weight, lb.	390/750
Length, ft.	20.6
Wingspan, ft.	29.8
Wing Area, sq. ft.	158
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel/R
Bldg. Materials	C, F, T

Beginner Build Time, hr.	200
No. Completed & Flown	42
Cost	\$17,995
Estimated Completed Cost	\$24K-\$32K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.sea-plane.com
321/635-8005



Aero Adventure Aviation Ventura II

Cruise, mph	85
Stall, mph	30
Range, s.m.	290
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	150/300
Engine Used	Rotax 912S
HP/HP Range	100/65-120

Fuel Capacity, gal.	12
Empty/Gross Weight, lb.	850/1430
Length, ft.	23
Wingspan, ft.	31
Wing Area, sq. ft.	161.7
No. of Seats	2
Cockpit Width, in.	49
Landing Gear	tailwheel/R
Bldg. Materials	C, F, T

Beginner Build Time, hr.	300
No. Completed & Flown	215
Cost (includes engine)	\$44,900
Estimated Completed Cost	\$46K-\$70K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.sea-plane.com
321/635-8005



Aero Adventure Aviation Ventura UL

Cruise, mph	55
Stall, mph	24
Range, s.m.	120
Rate of Climb, fpm	500
Takeoff/Landing Distance, ft.	150/150
Engine Used	Rotax 447
HP/HP Range	48

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	328/650
Length, ft.	20.5
Wingspan, ft.	21.6
Wing Area, sq. ft.	156
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel/R
Bldg. Materials	C, F, T

Beginner Build Time, hr.	200
No. Completed & Flown	90
Cost	\$14,995
Estimated Completed Cost	\$20K-\$24K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.sea-plane.com
321/635-8005



Aero Adventure Aviation Toucan

Cruise, mph	62
Stall, mph	28
Range, s.m.	170
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	150/150
Engine Used	Rotax 582
HP/HP Range	65

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	460/1050
Length, ft.	22.6
Wingspan, ft.	29.8
Wing Area, sq. ft.	158
No. of Seats	2T
Cockpit Width, in.	30
Landing Gear	tailwheel
Bldg. Materials	C, F, M, T

Beginner Build Time, hr.	250
No. Completed & Flown	10
Cost	\$15,995
Estimated Completed Cost	\$20K-\$27K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.sea-plane.com
321/635-8005



AeroCad, Inc. AeroCanard FG

Cruise, mph	205
Stall, mph	71
Range, s.m.	1000
Rate of Climb, fpm	1700
Takeoff/Landing Distance, ft.	800/1500
Engine Used	Lycoming IO-360
HP/HP Range	200/160-200

Fuel Capacity, gal.	63.5
Empty/Gross Weight, lb.	1200/2150
Length, ft.	16.8
Wingspan, ft.	28.1
Wing Area, sq. ft.	102.3
No. of Seats	4
Cockpit Width, in.	42
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	1400
No. Completed & Flown	18
Cost	\$25,132
Estimated Completed Cost	\$50K-\$100K
Quickbuild/Plans Available?	V/\$500

www.aerocad.com
800/558-7180

**AeroCad, Inc.
AeroCanard RG**

Cruise, mph	210
Stall, mph	78
Range, s.m.	1000
Rate of Climb, fpm	1900
Takeoff/Landing Distance, ft.	800/1500
Engine Used	Lycoming IO-360
HP/HP Range	200/160-200

Fuel Capacity, gal.	50
Empty/Gross Weight, lb.	1300/2150
Length, ft.	16.8
Wingspan, ft.	28.1
Wing Area, sq. ft.	102.3
No. of Seats	4
Cockpit Width, in.	42
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	1700
No. Completed & Flown	3
Cost	\$30,615
Estimated Completed Cost	\$50K-\$100K
Quickbuild/Plans Available?	Y/\$500

www.aerocad.com
800/558-7180


**AeroCad, Inc.
AeroCanard SB**

Cruise, mph	200
Stall, mph	78
Range, s.m.	1000
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	800/1500
Engine Used	Lycoming IO-360
HP/HP Range	200/160-200

Fuel Capacity, gal.	52
Empty/Gross Weight, lb.	1150/2050
Length, ft.	16.8
Wingspan, ft.	28.1
Wing Area, sq. ft.	102.3
No. of Seats	4
Cockpit Width, in.	42
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	1500
No. Completed & Flown	2
Cost	\$23,894
Estimated Completed Cost	\$50K-\$100K
Quickbuild/Plans Available?	Y/\$500

www.aerocad.com
800/558-7180


**AeroCad, Inc.
AeroCanard SX**

Cruise, mph	205
Stall, mph	71
Range, s.m.	1000
Rate of Climb, fpm	1700
Takeoff/Landing Distance, ft.	800/1500
Engine Used	Lycoming IO-360
HP/HP Range	200/180-200

Fuel Capacity, gal.	63.5
Empty/Gross Weight, lb.	1200/2150
Length, ft.	16.8
Wingspan, ft.	28.1
Wing Area, sq. ft.	102.3
No. of Seats	4
Cockpit Width, in.	42.5
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	1500
No. Completed & Flown	1
Cost	\$26,950
Estimated Completed Cost	\$50K-\$100K
Quickbuild/Plans Available?	Y/\$500

www.aerocad.com
800/558-7180


**Aero Concepts, LLC
Discovery**

Cruise, mph	225
Stall, mph	58
Range, s.m.	650
Rate of Climb, fpm	2300
Takeoff/Landing Distance, ft.	800/1200
Engine Used	Lycoming O-360
HP/HP Range	180/160-230

Fuel Capacity, gal.	30
Empty/Gross Weight, lb.	860/1620
Length, ft.	17.9
Wingspan, ft.	30
Wing Area, sq. ft.	125
No. of Seats	2
Cockpit Width, in.	43
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	1200
No. Completed & Flown	3
Cost	\$35,000
Estimated Completed Cost	\$60K-\$150K
Quickbuild/Plans Available?	Y/N

www.aeroconceptsllc.com
352/362-1139


**Aircraft Designs, Inc.
Stallion**

Cruise, mph	235
Stall, mph	81
Range, s.m.	2531
Rate of Climb, fpm	1800
Takeoff/Landing Distance, ft.	1800/1200
Engine Used	Continental IO-550
HP/HP Range	300/300-700

Fuel Capacity, gal.	180
Empty/Gross Weight, lb.	2200/3800
Length, ft.	25
Wingspan, ft.	35
Wing Area, sq. ft.	140
No. of Seats	6
Cockpit Width, in.	49
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	4000
No. Completed & Flown	11
Cost	\$200,000
Estimated Completed Cost	\$500K
Quickbuild/Plans Available?	N/N

www.aircraftdesigns.com
831/621-8760


**Airdale LLC
Airdale**

Cruise, mph	108
Stall, mph	48
Range, s.m.	650
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	800/400
Engine Used	Subaru EA-81
HP/HP Range	100/65-125

Fuel Capacity, gal.	28
Empty/Gross Weight, lb.	700/1400
Length, ft.	19
Wingspan, ft.	30
Wing Area, sq. ft.	132
No. of Seats	2
Cockpit Width, in.	43
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	700
No. Completed & Flown	4
Cost	\$18,200
Estimated Completed Cost	\$26K-\$56K
Quickbuild/Plans Available?	Y/N

www.airdale.com
715/369-1343


**Airdale LLC
Avid Plus**

Cruise, mph	90
Stall, mph	35
Range, s.m.	350
Rate of Climb, fpm	890
Takeoff/Landing Distance, ft.	630/500
Engine Used	Rotax 582
HP/HP Range	65/65-110

Fuel Capacity, gal.	28
Empty/Gross Weight, lb.	450/1200
Length, ft.	18.3
Wingspan, ft.	29
Wing Area, sq. ft.	122.5
No. of Seats	2
Cockpit Width, in.	43
Landing Gear	tri or tail
Bldg. Materials	F, T, W

Beginner Build Time, hr.	500
No. Completed & Flown	7
Cost	\$17,550
Estimated Completed Cost	\$25K-\$55K
Quickbuild/Plans Available?	Y/N

LSA Legal

www.airdale.com
715/369-1343


**Airdrome Aeroplanes, Inc.
Bleriot Model XI (Full Scale)**

Cruise, mph	50
Stall, mph	32
Range, s.m.	100
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	240/400
Engine Used	Rotec R2800
HP/HP Range	110/110-150

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	654/1014
Length, ft.	n.p.
Wingspan, ft.	28.6
Wing Area, sq. ft.	187
No. of Seats	1
Cockpit Width, in.	26
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	375
No. Completed & Flown	3
Cost	\$11,995
Estimated Completed Cost	\$14K-\$21K
Quickbuild/Plans Available?	Y/N

LSA Legal

www.airdromeaeroplanes.com
816/230-8585





Airdrome Aeroplanes, Inc. Bleriot Model XI (3/4 Scale)

Cruise, mph	40
Stall, mph	28
Range, s.m.	70
Rate of Climb, fpm	400
Takeoff/Landing Distance, ft.	200/350
Engine Used	1835cc VW
HP/HP Range	35/35-90

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	376/676
Length, ft.	18
Wingspan, ft.	26
Wing Area, sq. ft.	117
No. of Seats	2
Cockpit Width, in.	22
Landing Gear	tailwheel
Bldg. Materials	T

Beginner Build Time, hr.	320
No. Completed & Flown	1
Cost	\$6495
Estimated Completed Cost	\$8K-\$13K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.airdromeaeroplanes.com
816/230-8585



Airdrome Aeroplanes, Inc. DeHavilland DH-2

Cruise, mph	61
Stall, mph	29
Range, s.m.	120
Rate of Climb, fpm	615
Takeoff/Landing Distance, ft.	175/400
Engine Used	Valley Engineering Big Twin
HP/HP Range	40/40-52

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	354/596
Length, ft.	15
Wingspan, ft.	22.8
Wing Area, sq. ft.	145
No. of Seats	1
Cockpit Width, in.	20
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	350
No. Completed & Flown	2
Cost	\$5995
Estimated Completed Cost	\$10K-\$12K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.airdromeaeroplanes.com
816/230-8585



Airdrome Aeroplanes, Inc. Dream Classic Strut Braced

Cruise, mph	54
Stall, mph	26
Range, s.m.	120
Rate of Climb, fpm	875
Takeoff/Landing Distance, ft.	75/300
Engine Used	Rotax 447
HP/HP Range	35/35-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	236/465
Length, ft.	14
Wingspan, ft.	30
Wing Area, sq. ft.	120
No. of Seats	1
Cockpit Width, in.	n.p.
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	120
No. Completed & Flown	3
Cost	\$3995
Estimated Completed Cost	\$6K-\$9K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.airdromeaeroplanes.com
816/230-8585



Airdrome Aeroplanes, Inc. Dream Classic Wire Braced

Cruise, mph	67
Stall, mph	26
Range, s.m.	120
Rate of Climb, fpm	850
Takeoff/Landing Distance, ft.	95/350
Engine Used	Rotax 447
HP/HP Range	35/35-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	241/491
Length, ft.	14
Wingspan, ft.	30.5
Wing Area, sq. ft.	122
No. of Seats	1
Cockpit Width, in.	n.p.
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	120
No. Completed & Flown	53
Cost	\$3495
Estimated Completed Cost	\$6K-\$9K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.airdromeaeroplanes.com
816/230-8585



Airdrome Aeroplanes, Inc. Dream Fantasy Twin

Cruise, mph	45
Stall, mph	27
Range, s.m.	70
Rate of Climb, fpm	550
Takeoff/Landing Distance, ft.	125/500
Engine Used	Rotax 377
HP/HP Range	35/35-52

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	312/630
Length, ft.	15
Wingspan, ft.	30
Wing Area, sq. ft.	150
No. of Seats	2
Cockpit Width, in.	n.p.
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	150
No. Completed & Flown	4
Cost	\$4995
Estimated Completed Cost	\$8K-\$15K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.airdromeaeroplanes.com
816/230-8585



Airdrome Aeroplanes, Inc. Fokker DR-1 (3/4 Scale)

Cruise, mph	64
Stall, mph	34
Range, s.m.	280
Rate of Climb, fpm	950
Takeoff/Landing Distance, ft.	150/400
Engine Used	Rotax 582
HP/HP Range	65/60-85

Fuel Capacity, gal.	12
Empty/Gross Weight, lb.	341/583
Length, ft.	15
Wingspan, ft.	17.9
Wing Area, sq. ft.	150
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	375
No. Completed & Flown	27
Cost	\$8495
Estimated Completed Cost	\$13K-\$15K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.airdromeaeroplanes.com
816/230-8585



Airdrome Aeroplanes, Inc. Fokker DR-1 (Full Scale)

Cruise, mph	72
Stall, mph	32
Range, s.m.	240
Rate of Climb, fpm	1100
Takeoff/Landing Distance, ft.	150/400
Engine Used	VW Torque Master
HP/HP Range	105/85-110

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	532/872
Length, ft.	18.3
Wingspan, ft.	24
Wing Area, sq. ft.	210
No. of Seats	1
Cockpit Width, in.	32
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	450
No. Completed & Flown	5
Cost	\$10,995
Estimated Completed Cost	\$16K-\$19K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.airdromeaeroplanes.com
816/230-8585



Airdrome Aeroplanes, Inc. Fokker D-VI (3/4 Scale)

Cruise, mph	73
Stall, mph	30
Range, s.m.	120
Rate of Climb, fpm	750
Takeoff/Landing Distance, ft.	125/400
Engine Used	Rotax 503
HP/HP Range	46/46-65

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	297/568
Length, ft.	15
Wingspan, ft.	17.9
Wing Area, sq. ft.	110
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	300
No. Completed & Flown	14
Cost	\$5995
Estimated Completed Cost	\$9K-\$15K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.airdromeaeroplanes.com
816/230-8585

Airdrome Aeroplanes, Inc.
Fokker D-VII (80% Scale)

Cruise, mph	94
Stall, mph	34
Range, s.m.	240
Rate of Climb, fpm	960
Takeoff/Landing Distance, ft.	210/400
Engine Used	Hirth F30
HP/HP Range	80/80-110

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	470/770
Length, ft.	15
Wingspan, ft.	23.3
Wing Area, sq. ft.	148
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	400
No. Completed & Flown	5
Cost	\$8995
Estimated Completed Cost	\$13K-\$18K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.airdromeaeroplanes.com	
816/230-8585	

**Airdrome Aeroplanes, Inc.**
Fokker D-VIII (3/4 Scale)

Cruise, mph	80
Stall, mph	32
Range, s.m.	280
Rate of Climb, fpm	1120
Takeoff/Landing Distance, ft.	150/450
Engine Used	Rotax 503
HP/HP Range	52/46-85

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	275/517
Length, ft.	16
Wingspan, ft.	25
Wing Area, sq. ft.	75
No. of Seats	1
Cockpit Width, in.	20
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	300
No. Completed & Flown	21
Cost	\$5495
Estimated Completed Cost	\$9K-\$15K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.airdromeaeroplanes.com	
816/230-8585	

**Airdrome Aeroplanes, Inc.**
Fokker E-III Eindecker (3/4 Scale)

Cruise, mph	54
Stall, mph	26
Range, s.m.	280
Rate of Climb, fpm	1120
Takeoff/Landing Distance, ft.	150/450
Engine Used	Rotax 503
HP/HP Range	52/45-52

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	238/468
Length, ft.	18
Wingspan, ft.	24
Wing Area, sq. ft.	96
No. of Seats	1
Cockpit Width, in.	22
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	400
No. Completed & Flown	21
Cost	\$5495
Estimated Completed Cost	\$9K-\$15K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.airdromeaeroplanes.com	
816/230-8585	

**Airdrome Aeroplanes, Inc.**
Morane Saulnier L

Cruise, mph	63
Stall, mph	31
Range, s.m.	300
Rate of Climb, fpm	650
Takeoff/Landing Distance, ft.	150/300
Engine Used	Valley Engineering Big Twin
HP/HP Range	35/35-52

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	356/640
Length, ft.	17
Wingspan, ft.	26
Wing Area, sq. ft.	120
No. of Seats	2
Cockpit Width, in.	22
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	300
No. Completed & Flown	2
Cost	\$5995
Estimated Completed Cost	\$9K-\$11K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.airdromeaeroplanes.com	
816/230-8585	

**Airdrome Aeroplanes, Inc.**
Nieuport 11 (7/8 Scale)

Cruise, mph	74
Stall, mph	34
Range, s.m.	150
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	250/300
Engine Used	1835cc VW w/redrive
HP/HP Range	52/52-80

Fuel Capacity, gal.	8
Empty/Gross Weight, lb.	380/720
Length, ft.	13.5
Wingspan, ft.	23.6
Wing Area, sq. ft.	110
No. of Seats	2
Cockpit Width, in.	25
Landing Gear	tailwheel
Bldg. Materials	T

Beginner Build Time, hr.	375
No. Completed & Flown	1
Cost	\$7995
Estimated Completed Cost	\$12K-\$13K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.airdromeaeroplanes.com	
816/230-8585	

**Airdrome Aeroplanes, Inc.**
Nieuport 17

Cruise, mph	89
Stall, mph	40
Range, s.m.	370
Rate of Climb, fpm	950
Takeoff/Landing Distance, ft.	125/400
Engine Used	2180cc VW
HP/HP Range	102

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	532/872
Length, ft.	19.5
Wingspan, ft.	26.8
Wing Area, sq. ft.	180
No. of Seats	1
Cockpit Width, in.	28
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	400
No. Completed & Flown	9
Cost	\$9995
Estimated Completed Cost	\$17K-\$22K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.airdromeaeroplanes.com	
816/230-8585	

**Airdrome Aeroplanes, Inc.**
Nieuport 24 (Full Scale)

Cruise, mph	83
Stall, mph	36
Range, s.m.	370
Rate of Climb, fpm	850
Takeoff/Landing Distance, ft.	125/400
Engine Used	Hirth F30
HP/HP Range	110/85-110

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	496/836
Length, ft.	19.5
Wingspan, ft.	26.9
Wing Area, sq. ft.	180
No. of Seats	1
Cockpit Width, in.	28
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	400
No. Completed & Flown	12
Cost	\$10,195
Estimated Completed Cost	\$15K-\$18K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.airdromeaeroplanes.com	
816/230-8585	

**Airdrome Aeroplanes, Inc.**
Nieuport 28

Cruise, mph	84
Stall, mph	39
Range, s.m.	200
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	325/400
Engine Used	Rotec R2800
HP/HP Range	110/110-150

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	812/1212
Length, ft.	24
Wingspan, ft.	25
Wing Area, sq. ft.	204
No. of Seats	1
Cockpit Width, in.	28
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	500
No. Completed & Flown	2
Cost	\$14,995
Estimated Completed Cost	\$25K-\$30K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.airdromeaeroplanes.com	
816/230-8585	





Airdrome Aeroplanes, Inc. *Sopwith Camel (Full Scale)*

Cruise, mph	85
Stall, mph	40
Range, s.m.	200
Rate of Climb, fpm	675
Takeoff/Landing Distance, ft.	400/500
Engine Used	Rotec R3600
HP/HP Range	150/110-150

Fuel Capacity, gal.	18
Empty/Gross Weight, lb.	943/1243
Length, ft.	n.p.
Wingspan, ft.	26.2
Wing Area, sq. ft.	195
No. of Seats	1
Cockpit Width, in.	26
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	450
No. Completed & Flown	1
Cost	\$13,495
Estimated Completed Cost	\$33K-\$40K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.airdromeaeroplanes.com
816/230-8585



Airdrome Aeroplanes, Inc. *Sopwith Pup (Full Scale)*

Cruise, mph	81
Stall, mph	37
Range, s.m.	200
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	120/400
Engine Used	Rotec R2800
HP/HP Range	110/110-150

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	396/596
Length, ft.	19
Wingspan, ft.	27
Wing Area, sq. ft.	205
No. of Seats	1
Cockpit Width, in.	30
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	450
No. Completed & Flown	1
Cost	\$12,995
Estimated Completed Cost	\$27K-\$30K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.airdromeaeroplanes.com
816/230-8585



Airdrome Aeroplanes, Inc. *Taube*

Cruise, mph	65
Stall, mph	35
Range, s.m.	200
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	300/450
Engine Used	VW
HP/HP Range	105

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	720/1145
Length, ft.	17
Wingspan, ft.	30
Wing Area, sq. ft.	170
No. of Seats	2
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	500
No. Completed & Flown	1
Cost	\$12,995
Estimated Completed Cost	\$18K-\$20K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.airdromeaeroplanes.com
816/230-8585



Alisport *Silent 2*

Cruise, mph	50
Stall, mph	37
Aspect Ratio	19.2:1
L/D	39:1
Minimum Sink, fpm	106
Engine Used	n.a.
HP/HP Range	n.a.

Fuel Capacity, gal.	n.a.
Empty/Gross Weight, lb.	275/540
Length, ft.	20.8
Wingspan, ft.	42.6
Wing Area, sq. ft.	94.7
No. of Seats	1
Cockpit Width, in.	22
Landing Gear	monowheel
Bldg. Materials	C

Beginner Build Time, hr.	350
No. Completed & Flown	1
Cost	\$45,150
Estimated Completed Cost	\$47K-\$53K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.alisport.com
931/434-3434



Alisport *Silent 2 Electric*

Cruise, mph	56
Stall, mph	40
Aspect Ratio	19.2:1
L/D	39:1
Minimum Sink, fpm	118
Engine Used	Air Energy DC
HP/HP Range	13 kw

Fuel Capacity, gal.	n.a.
Empty/Gross Weight, lb.	385/660
Length, ft.	20.8
Wingspan, ft.	42.6
Wing Area, sq. ft.	94.7
No. of Seats	1
Cockpit Width, in.	22
Landing Gear	monowheel
Bldg. Materials	C

Beginner Build Time, hr.	500
No. Completed & Flown	2
Cost (includes engine)	\$114,000
Estimated Completed Cost	\$116K-\$122K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.alisport.com
931/434-3434



Alisport *Silent 2 Self-Launch*

Cruise, mph	56
Stall, mph	40
Aspect Ratio	19.2:1
L/D	39:1
Minimum Sink, fpm	118
Takeoff/Landing Distance, ft.	460/330
Engine Used	A302 efi

HP/HP Range	28
Fuel Capacity, gal.	4.5
Empty/Gross Weight, lb.	385/660
Length, ft.	20.8
Wingspan, ft.	42.6
Wing Area, sq. ft.	94.7
No. of Seats	1
Cockpit Width, in.	22
Landing Gear	monowheel

Bldg. Materials	C
Beginner Build Time, hr.	500
No. Completed & Flown	25
Cost (includes engine)	\$58,725
Estimated Completed Cost	\$60K-\$68K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.alisport.com
931/434-3434



Alisport *Silent 2 Targa Self-Launch*

Cruise, mph	56
Stall, mph	40
Aspect Ratio	20:1
L/D	40:1
Minimum Sink, fpm	118
Engine Used	A302 efi
HP/HP Range	28

Fuel Capacity, gal.	4.2
Empty/Gross Weight, lb.	385/660
Length, ft.	20.8
Wingspan, ft.	43.6
Wing Area, sq. ft.	95.7
No. of Seats	1
Cockpit Width, in.	22
Landing Gear	monowheel
Bldg. Materials	C

Beginner Build Time, hr.	500
No. Completed & Flown	15
Cost (includes engine)	\$67,500
Estimated Completed Cost	\$69K-\$76K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.alisport.com
931/434-3434



Alisport *Silent Club*

Cruise, mph	50
Stall, mph	36
Aspect Ratio	14:1
L/D	31:1
Minimum Sink, fpm	126
Engine Used	n.a.
HP/HP Range	n.a.

Fuel Capacity, gal.	n.a.
Empty/Gross Weight, lb.	300/530
Length, ft.	20.8
Wingspan, ft.	39.4
Wing Area, sq. ft.	110.9
No. of Seats	1
Cockpit Width, in.	22
Landing Gear	monowheel
Bldg. Materials	C

Beginner Build Time, hr.	350
No. Completed & Flown	6
Cost	\$38,650
Estimated Completed Cost	\$40K-\$46K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.alisport.com
931/434-3434

Alisport Silent Club Self-Launch

Cruise, mph	53
Stall, mph	38
Aspect Ratio	14:1
L/D	31:1
Minimum Sink, fpm	138
Engine Used	A302 efi
HP/HP Range	28

Fuel Capacity, gal.	4.5
Empty/Gross Weight, lb.	375/639
Length, ft.	20.8
Wingspan, ft.	39.3
Wing Area, sq. ft.	110.9
No. of Seats	1
Cockpit Width, in.	22
Landing Gear	monowheel
Bldg. Materials	C

Beginner Build Time, hr.	500
No. Completed & Flown	41
Cost (includes engine)	\$52,350
Estimated Completed Cost	\$55K-\$60K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.alisport.com	
931/434-4343	



Alturair BD-5B

Cruise, mph	205
Stall, mph	66
Range, s.m.	950
Rate of Climb, fpm	1800
Takeoff/Landing Distance, ft.	900/850
Engine Used	Honda
HP/HP Range	90/90-100

Fuel Capacity, gal.	26.4
Empty/Gross Weight, lb.	545/860
Length, ft.	14.5
Wingspan, ft.	21
Wing Area, sq. ft.	49
No. of Seats	1
Cockpit Width, in.	23.8
Landing Gear	trigear/R
Bldg. Materials	M

Beginner Build Time, hr.	3500
No. Completed & Flown	115
Cost	\$10,500
Estimated Completed Cost	\$20K-\$35K
Quickbuild/Plans Available?	Y/N
www.alturdyne.com	
619/440-5531	



Alturair BD-5G

Cruise, mph	229
Stall, mph	55
Range, s.m.	575
Rate of Climb, fpm	1920
Takeoff/Landing Distance, ft.	590/530
Engine Used	Xenoah
HP/HP Range	70/70-100

Fuel Capacity, gal.	28
Empty/Gross Weight, lb.	355/660
Length, ft.	14.5
Wingspan, ft.	17
Wing Area, sq. ft.	37.5
No. of Seats	1
Cockpit Width, in.	23.8
Landing Gear	trigear/R
Bldg. Materials	M

Beginner Build Time, hr.	3500
No. Completed & Flown	10
Cost	\$10,500
Estimated Completed Cost	\$20K-\$35K
Quickbuild/Plans Available?	Y/N
www.alturdyne.com	
619/440-5531	



American Homebuilts Corp. John Doe

Cruise, mph	110
Stall, mph	30
Range, s.m.	490
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	120/120
Engine Used	LOM
HP/HP Range	120/120-160

Fuel Capacity, gal.	26
Empty/Gross Weight, lb.	820/1320
Length, ft.	21.9
Wingspan, ft.	30.6
Wing Area, sq. ft.	130.5
No. of Seats	2T
Cockpit Width, in.	28
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	500
No. Completed & Flown	6
Cost	\$19,500
Estimated Completed Cost	\$35K-\$45K
Quickbuild/Plans Available?	N/N
	LSA Legal
10419 VanderKarr Road	
Hebron, IL 60034	
815/648-4617	



American Patriot Aircraft LLC Patriot Supercruiser

Cruise, mph	135
Stall, mph	50
Range, s.m.	850
Rate of Climb, fpm	1400
Takeoff/Landing Distance, ft.	400/400
Engine Used	RAM-Subaru
HP/HP Range	115/80-175

Fuel Capacity, gal.	40
Empty/Gross Weight, lb.	760/1320
Length, ft.	n.p.
Wingspan, ft.	30
Wing Area, sq. ft.	137
No. of Seats	2
Cockpit Width, in.	49
Landing Gear	trigear
Bldg. Materials	M, T

Beginner Build Time, hr.	400
No. Completed & Flown	1
Cost	\$24,000
Estimated Completed Cost	\$35K-\$75K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.americanpatriotaircraft.com	
608/369-2606	



Amphibian Airplanes of Canada Seastar Sealoon

Cruise, mph	100
Stall, mph	40
Range, s.m.	550
Rate of Climb, fpm	750
Takeoff/Landing Distance, ft.	220/300
Engine Used	Rotax 912S
HP/HP Range	100/80-120

Fuel Capacity, gal.	17
Empty/Gross Weight, lb.	850/1430
Length, ft.	21.1
Wingspan, ft.	30.3
Wing Area, sq. ft.	196
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	trigear/R
Bldg. Materials	F, M, T

Beginner Build Time, hr.	1000
No. Completed & Flown	1
Cost	\$35,500
Estimated Completed Cost	\$85K-\$105K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.seastaramphibian.com	
604/898-5327	



Amphibian Airplanes of Canada Super Petrel

Cruise, mph	100
Stall, mph	45
Range, s.m.	400
Rate of Climb, fpm	500
Takeoff/Landing Distance, ft.	250/360
Engine Used	Rotax 912S
HP/HP Range	100/65-100

Fuel Capacity, gal.	16
Empty/Gross Weight, lb.	850/1150
Length, ft.	19.3
Wingspan, ft.	30.3
Wing Area, sq. ft.	196
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear/R
Bldg. Materials	C, F, M, T, W

Beginner Build Time, hr.	1000
No. Completed & Flown	91
Cost	\$48,000
Estimated Completed Cost	\$80K-\$100K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.seastaramphibian.com	
604/898-5327	



Arion Aircraft, LLC Lightning

Cruise, mph	155
Stall, mph	46
Range, s.m.	625
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	500/500
Engine Used	Jabiru 3300
HP/HP Range	120

Fuel Capacity, gal.	22
Empty/Gross Weight, lb.	825/1425
Length, ft.	20
Wingspan, ft.	27.1
Wing Area, sq. ft.	91
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	600
No. Completed & Flown	56
Cost	\$35,900
Estimated Completed Cost	\$60K-\$85K
Quickbuild/Plans Available?	N/N
www.flylightning.net	
931/680-1781	





Arion Aircraft, LLC Lightning LS-1

Cruise, mph	138
Stall, mph	51
Range, s.m.	600
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	400/500
Engine Used	Jabiru 3300
HP/HP Range	120

Fuel Capacity, gal.	22
Empty/Gross Weight, lb.	820/1320
Length, ft.	20.7
Wingspan, ft.	30.5
Wing Area, sq. ft.	102
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	600
No. Completed & Flown	1
Cost (includes engine)	\$63,900
Estimated Completed Cost	\$96K-\$115K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.flylightning.net
931/680-1781



Aviat Aircraft Eagle II

Cruise, mph	165
Stall, mph	58
Range, s.m.	440
Rate of Climb, fpm	2100
Takeoff/Landing Distance, ft.	1450/2100
Engine Used	Lycoming IO-360
HP/HP Range	200

Fuel Capacity, gal.	25
Empty/Gross Weight, lb.	1025/1578
Length, ft.	17.9
Wingspan, ft.	19.9
Wing Area, sq. ft.	125
No. of Seats	2T
Cockpit Width, in.	28
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	2000
No. Completed & Flown	302
Cost	\$160,000
Estimated Completed Cost	\$200K-\$225K
Quickbuild/Plans Available?	N/N

www.aviataircraft.com
307/885-3151



AviPro Aircraft Bearhawk

Cruise, mph	155
Stall, mph	40
Range, s.m.	625
Rate of Climb, fpm	1700
Takeoff/Landing Distance, ft.	350/500
Engine Used	Lycoming O-540
HP/HP Range	250/150-260

Fuel Capacity, gal.	50
Empty/Gross Weight, lb.	1400/2700
Length, ft.	23.5
Wingspan, ft.	33
Wing Area, sq. ft.	180
No. of Seats	4
Cockpit Width, in.	42.5
Landing Gear	tailwheel
Bldg. Materials	F, M, T

Beginner Build Time, hr.	1200
No. Completed & Flown	75
Cost	\$43,500
Estimated Completed Cost	\$75K-\$110K
Quickbuild/Plans Available?	V/\$295

www.bearhawkaircraft.com
309/749-8881



AviPro Aircraft Bearhawk Patrol

Cruise, mph	140
Stall, mph	35
Range, s.m.	700
Rate of Climb, fpm	1700
Takeoff/Landing Distance, ft.	250/300
Engine Used	Lycoming O-360
HP/HP Range	185/110-210

Fuel Capacity, gal.	55
Empty/Gross Weight, lb.	950/2000
Length, ft.	22.8
Wingspan, ft.	33
Wing Area, sq. ft.	180
No. of Seats	2T
Cockpit Width, in.	32
Landing Gear	tailwheel
Bldg. Materials	F, M, T

Beginner Build Time, hr.	1200
No. Completed & Flown	3
Cost	\$36,825
Estimated Completed Cost	\$55K-\$110K
Quickbuild/Plans Available?	V/\$285

www.bearhawkaircraft.com
309/749-8881



Backcountry Super Cubs LLC Mackey SQ2

Cruise, mph	115
Stall, mph	20
Range, s.m.	1000
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	100/150
Engine Used	Lycoming O-360
HP/HP Range	180/180-240

Fuel Capacity, gal.	48
Empty/Gross Weight, lb.	1200/2200
Length, ft.	21
Wingspan, ft.	36.9
Wing Area, sq. ft.	170
No. of Seats	2T
Cockpit Width, in.	30
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	1200
No. Completed & Flown	7
Cost	\$53,500
Estimated Completed Cost	\$106K-\$126K
Quickbuild/Plans Available?	N/N

www.supercub.com
800/862-1276



Backcountry Super Cubs LLC Supercruiser

Cruise, mph	115
Stall, mph	28
Range, s.m.	580
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	150/250
Engine Used	Lycoming O-360
HP/HP Range	180/180-240

Fuel Capacity, gal.	48
Empty/Gross Weight, lb.	1200/2400
Length, ft.	21
Wingspan, ft.	38.1
Wing Area, sq. ft.	170
No. of Seats	1+2
Cockpit Width, in.	36
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	1200
No. Completed & Flown	140
Cost	\$47,000
Estimated Completed Cost	\$100K-\$120K
Quickbuild/Plans Available?	N/N

www.supercub.com
800/862-1276



Backcountry Super Cubs LLC Supercub Replica

Cruise, mph	112
Stall, mph	28
Range, s.m.	580
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	150/250
Engine Used	Lycoming O-360
HP/HP Range	180/180-240

Fuel Capacity, gal.	48
Empty/Gross Weight, lb.	1200/2400
Length, ft.	21
Wingspan, ft.	37.7
Wing Area, sq. ft.	170
No. of Seats	2T
Cockpit Width, in.	30
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	1200
No. Completed & Flown	138
Cost	\$53,500
Estimated Completed Cost	\$100K-\$120K
Quickbuild/Plans Available?	N/N

www.supercub.com
800/862-1276



Bakeng Deuce Airplane Factory Bakeng Deuce

Cruise, mph	110
Stall, mph	51
Range, s.m.	460
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	600/1000
Engine Used	Lycoming O-320
HP/HP Range	150/125-160

Fuel Capacity, gal.	34
Empty/Gross Weight, lb.	1000/1500
Length, ft.	20.9
Wingspan, ft.	30.4
Wing Area, sq. ft.	136
No. of Seats	2
Cockpit Width, in.	24.5
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	4000
No. Completed & Flown	112
Cost	\$75,000
Estimated Completed Cost	\$75K-\$100K
Quickbuild/Plans Available?	N/\$350

www.bakengdeuce.com
262/658-9286

**Ballard Sport Aircraft Ltd.
Pelican PL Turbo**

Cruise, mph	152
Stall, mph	50
Range, s.m.	800
Rate of Climb, fpm	1700
Takeoff/Landing Distance, ft.	500/600
Engine Used	Rotax 914
HP/HP Range	115

Fuel Capacity, gal.	26
Empty/Gross Weight, lb.	800/1400
Length, ft.	19.8
Wingspan, ft.	29.5
Wing Area, sq. ft.	108
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	trigear
Bldg. Materials	C, M

Beginner Build Time, hr.	1100
No. Completed & Flown	350
Cost	\$33,000
Estimated Completed Cost	\$65K-\$85K
Quickbuild/Plans Available?	Y/N
www.ballardsportaircraft.com	
819/563-5847	

**Ballard Sport Aircraft Ltd.
Pelican Sport 600**

Cruise, mph	130
Stall, mph	44
Range, s.m.	700
Rate of Climb, fpm	1350
Takeoff/Landing Distance, ft.	500/600
Engine Used	Rotax 912S
HP/HP Range	100

Fuel Capacity, gal.	23
Empty/Gross Weight, lb.	750/1320
Length, ft.	19.8
Wingspan, ft.	32
Wing Area, sq. ft.	117.3
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	trigear
Bldg. Materials	C, M

Beginner Build Time, hr.	1000
No. Completed & Flown	425
Cost	\$35,000
Estimated Completed Cost	\$45K-\$75K
Quickbuild/Plans Available?	Y/N
www.ballardsportaircraft.com	
819/563-5847	

**BD-Micro Technologies, Inc.
BD-5B**

Cruise, mph	175
Stall, mph	62
Range, s.m.	720
Rate of Climb, fpm	1600
Takeoff/Landing Distance, ft.	750/700
Engine Used	Hirth 3203
HP/HP Range	68/50-80

Fuel Capacity, gal.	24
Empty/Gross Weight, lb.	410/830
Length, ft.	14
Wingspan, ft.	21.5
Wing Area, sq. ft.	47.4
No. of Seats	1
Cockpit Width, in.	23.5
Landing Gear	trigear/R
Bldg. Materials	M

Beginner Build Time, hr.	1000
No. Completed & Flown	150
Cost	\$26,500
Estimated Completed Cost	\$39K-\$46K
Quickbuild/Plans Available?	Y/N
www.bd-micro.com	
541/444-1343	

**BD-Micro Technologies, Inc.
BD-5J Microjet**

Cruise, mph	240
Stall, mph	67
Range, s.m.	400
Rate of Climb, fpm	2400
Takeoff/Landing Distance, ft.	1800/1000
Engine Used	Microturbo TRS
HP/HP Range	325/220-325

Fuel Capacity, gal.	30
Empty/Gross Weight, lb.	432/860
Length, ft.	12.8
Wingspan, ft.	17
Wing Area, sq. ft.	37.8
No. of Seats	1
Cockpit Width, in.	23.5
Landing Gear	trigear/R
Bldg. Materials	M

Beginner Build Time, hr.	800
No. Completed & Flown	12
Cost	\$43,315
Estimated Completed Cost	\$100K-\$145K
Quickbuild/Plans Available?	Y/N
www.bd-micro.com	
541/444-1343	



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VAN'S AIRCRAFT, INC., 14401 Keil Rd NE, Aurora, OR 97002 503-678-6545
www.vansaircraft.com



BD-Micro Technologies, Inc. BD-5T Turboprop

Cruise, mph	225
Stall, mph	63
Range, s.m.	728
Rate of Climb, fpm	2400
Takeoff/Landing Distance, ft.	1000/1000
Engine Used	Quantum H-95
HP/HP Range	95/95-100

Fuel Capacity, gal.	36
Empty/Gross Weight, lb.	450/910
Length, ft.	14.7
Wingspan, ft.	21.5
Wing Area, sq. ft.	47.4
No. of Seats	1
Cockpit Width, in.	23.5
Landing Gear	trigear/R
Bldg. Materials	M

Beginner Build Time, hr.	900
No. Completed & Flown	15
Cost (includes engine)	\$62,500
Estimated Completed Cost	\$64K-\$80K
Quickbuild/Plans Available?	Y/N

www.bd-micro.com
541/444-1343



Bede Corp LLC BD-4B

Cruise, mph	198
Stall, mph	55
Range, s.m.	900
Rate of Climb, fpm	1700
Takeoff/Landing Distance, ft.	600/600
Engine Used	Lycoming IO-360
HP/HP Range	200/180-300

Fuel Capacity, gal.	52
Empty/Gross Weight, lb.	1250/2400
Length, ft.	21.4
Wingspan, ft.	25.6
Wing Area, sq. ft.	110
No. of Seats	4
Cockpit Width, in.	42
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	900
No. Completed & Flown	700
Cost	\$27,000
Estimated Completed Cost	\$46K-\$66K
Quickbuild/Plans Available?	N/\$220

www.jimbede.com
330/721-9999



Bede Corp LLC BD-4C

Cruise, mph	174
Stall, mph	61
Range, s.m.	900
Rate of Climb, fpm	1400
Takeoff/Landing Distance, ft.	600/600
Engine Used	Lycoming IO-360
HP/HP Range	200/180-300

Fuel Capacity, gal.	52
Empty/Gross Weight, lb.	1200/2400
Length, ft.	22.6
Wingspan, ft.	26.5
Wing Area, sq. ft.	110
No. of Seats	4
Cockpit Width, in.	46
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	700
No. Completed & Flown	2
Cost	\$29,000
Estimated Completed Cost	\$50K-\$80K
Quickbuild/Plans Available?	N/\$220

www.jimbede.com
330/721-9999



Bede Corp LLC BD-6

Cruise, mph	140
Stall, mph	46
Range, s.m.	980
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	450/500
Engine Used	HKS 700E
HP/HP Range	60/50-80

Fuel Capacity, gal.	20
Empty/Gross Weight, lb.	570/800
Length, ft.	19.3
Wingspan, ft.	21.5
Wing Area, sq. ft.	55.6
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	450
No. Completed & Flown	2
Cost	\$13,000
Estimated Completed Cost	\$19K-\$29K
Quickbuild/Plans Available?	N/\$220

www.jimbede.com
330/721-9999



Bede Corp LLC BD-17

Cruise, mph	141
Stall, mph	54
Range, s.m.	900
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	700/900
Engine Used	HKS 700E
HP/HP Range	60/60-120

Fuel Capacity, gal.	20
Empty/Gross Weight, lb.	610/950
Length, ft.	17.9
Wingspan, ft.	21.5
Wing Area, sq. ft.	53.5
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	300
No. Completed & Flown	7
Cost (includes engine)	\$32,000
Estimated Completed Cost	\$32K-\$38K
Quickbuild/Plans Available?	N/N

www.jimbede.com
330/721-9999



Belite Aircraft Belite 254

Cruise, mph	55
Stall, mph	28
Range, s.m.	90
Rate of Climb, fpm	400
Takeoff/Landing Distance, ft.	200/200
Engine Used	Hirth F33
HP/HP Range	30

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	254/550
Length, ft.	16.4
Wingspan, ft.	25.2
Wing Area, sq. ft.	98.9
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tri or tail
Bldg. Materials	C, F, T

Beginner Build Time, hr.	700
No. Completed & Flown	2
Cost	\$11,803
Estimated Completed Cost	\$16K-\$26K
Quickbuild/Plans Available?	Y/N

www.beliteaircraft.com
316/253-6746



Belite Aircraft Superlite

Cruise, mph	55
Stall, mph	28
Range, s.m.	90
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	200/200
Engine Used	Hirth F23
HP/HP Range	50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	278/550
Length, ft.	16.4
Wingspan, ft.	25.2
Wing Area, sq. ft.	101
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tri or tail
Bldg. Materials	C, F, T

Beginner Build Time, hr.	700
No. Completed & Flown	2
Cost	\$11,803
Estimated Completed Cost	\$16K-\$26K
Quickbuild/Plans Available?	Y/N

www.beliteaircraft.com
316/253-6746



Better Half VW Double Eagle

Cruise, mph	70
Stall, mph	35
Range, s.m.	230
Rate of Climb, fpm	500
Takeoff/Landing Distance, ft.	230/350
Engine Used	VW
HP/HP Range	60/60-65

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	385/900
Length, ft.	18
Wingspan, ft.	28.3
Wing Area, sq. ft.	127
No. of Seats	2
Cockpit Width, in.	48
Landing Gear	tailwheel
Bldg. Materials	F, M, W

Beginner Build Time, hr.	1600
No. Completed & Flown	6
Cost	\$3675
Estimated Completed Cost	\$10K-\$13K
Quickbuild/Plans Available?	N/\$80

www.doubleeagleairplane.com
281/375-5453

Better Half VW Legal Eagle

Cruise, mph	60
Stall, mph	25
Range, s.m.	170
Rate of Climb, fpm	500
Takeoff/Landing Distance, ft.	250/200
Engine Used	1/2 VW
HP/HP Range	40/30-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	244/500
Length, ft.	14.6
Wingspan, ft.	23.6
Wing Area, sq. ft.	107
No. of Seats	1
Cockpit Width, in.	19
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	600
No. Completed & Flown	75
Cost	\$4500
Estimated Completed Cost	\$7K-\$9K
Quickbuild/Plans Available?	N/\$50
	LSA Legal
www.betterhalfvw.com	
281/375-5453	



Better Half VW Legal Eagle XL

Cruise, mph	60
Stall, mph	25
Range, s.m.	120
Rate of Climb, fpm	500
Takeoff/Landing Distance, ft.	200/250
Engine Used	1/2 VW
HP/HP Range	40/30-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	246/575
Length, ft.	16.1
Wingspan, ft.	23.6
Wing Area, sq. ft.	107
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	600
No. Completed & Flown	1
Cost	\$5000
Estimated Completed Cost	\$5K-\$7K
Quickbuild/Plans Available?	N/\$80
	LSA Legal
www.betterhalfvw.com	
281/375-5453	



Blue Yonder Aviation, Inc. E-Z Flyer

Cruise, mph	75
Stall, mph	38
Range, s.m.	380
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	100/175
Engine Used	Rotax 582
HP/HP Range	65/52-130

Fuel Capacity, gal.	24
Empty/Gross Weight, lb.	495/1320
Length, ft.	21
Wingspan, ft.	31
Wing Area, sq. ft.	176
No. of Seats	2T
Cockpit Width, in.	n.a.
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	350
No. Completed & Flown	64
Cost (includes engine)	\$26,600
Estimated Completed Cost	\$25K-\$30K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.ezflyer.com	
403/936-5767	



Blue Yonder Aviation, Inc. Merlin GT/E-Z

Cruise, mph	85
Stall, mph	30
Range, s.m.	550
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	100/175
Engine Used	Rotax 912S
HP/HP Range	100/65-130

Fuel Capacity, gal.	24
Empty/Gross Weight, lb.	712/1450
Length, ft.	23
Wingspan, ft.	35.5
Wing Area, sq. ft.	235
No. of Seats	2
Cockpit Width, in.	41
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	400
No. Completed & Flown	308
Cost (includes engine)	\$37,425
Estimated Completed Cost	\$48K-\$65K
Quickbuild/Plans Available?	N/N
www.ezflyer.com	
403/936-5767	



BRM LA582

Cruise, mph	90
Stall, mph	25
Range, s.m.	360
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	100/100
Engine Used	Rotax 582
HP/HP Range	65

Fuel Capacity, gal.	21
Empty/Gross Weight, lb.	562/1232
Length, ft.	n.p.
Wingspan, ft.	28.3
Wing Area, sq. ft.	195
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	80
No. Completed & Flown	1
Cost	\$20,900
Estimated Completed Cost	\$40K - \$55K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.planeperfection.com	
204/257-2609	



BRM LA912

Cruise, mph	96
Stall, mph	25
Range, s.m.	500
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	100/100
Engine Used	Rotax 912
HP/HP Range	80/80-100

Fuel Capacity, gal.	21
Empty/Gross Weight, lb.	595/1232
Length, ft.	n.p.
Wingspan, ft.	28.3
Wing Area, sq. ft.	195
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	80
No. Completed & Flown	1
Cost	\$20,900
Estimated Completed Cost	\$46K - \$60K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.planeperfection.com	
204/257-2609	



CGS Aviation Hawk Arrow

Cruise, mph	65
Stall, mph	35
Range, s.m.	185
Rate of Climb, fpm	1100
Takeoff/Landing Distance, ft.	100/125
Engine Used	Rotax 503
HP/HP Range	52/40-65

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	330/625
Length, ft.	21.3
Wingspan, ft.	28.9
Wing Area, sq. ft.	135
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tri or tail
Bldg. Materials	F, T

Beginner Build Time, hr.	200
No. Completed & Flown	135
Cost	\$11,877
Estimated Completed Cost	\$18K-\$21K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.cgsaviation.com	
251/454-0579	



CGS Aviation Hawk II Arrow

Cruise, mph	70
Stall, mph	35
Range, s.m.	180
Rate of Climb, fpm	1100
Takeoff/Landing Distance, ft.	150/250
Engine Used	Rotax 582
HP/HP Range	65/50-80

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	450/990
Length, ft.	22.1
Wingspan, ft.	31.6
Wing Area, sq. ft.	147
No. of Seats	2T
Cockpit Width, in.	26
Landing Gear	tri or tail
Bldg. Materials	F, T

Beginner Build Time, hr.	350
No. Completed & Flown	186
Cost	\$14,350
Estimated Completed Cost	\$24K-\$26K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.cgsaviation.com	
251/454-0579	





CGS Aviation Hawk Classic

Cruise, mph	65
Stall, mph	30
Range, s.m.	185
Rate of Climb, fpm	1100
Takeoff/Landing Distance, ft.	100/125
Engine Used	Rotax 503
HP/HP Range	52/40-60

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	310/600
Length, ft.	21.3
Wingspan, ft.	28.9
Wing Area, sq. ft.	135
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tri or tail
Bldg. Materials	F, T

Beginner Build Time, hr.	300
No. Completed & Flown	990
Cost	\$10,728
Estimated Completed Cost	\$17K-\$20K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.cgsaviation.com	
251/454-0579	



CGS Aviation Hawk Plus

Cruise, mph	75
Stall, mph	35
Range, s.m.	220
Rate of Climb, fpm	1100
Takeoff/Landing Distance, ft.	200/300
Engine Used	Rotax 503
HP/HP Range	52/50-65

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	350/800
Length, ft.	21.3
Wingspan, ft.	29
Wing Area, sq. ft.	135
No. of Seats	1
Cockpit Width, in.	26
Landing Gear	tri or tail
Bldg. Materials	F, T

Beginner Build Time, hr.	250
No. Completed & Flown	65
Cost	\$12,359
Estimated Completed Cost	\$19K-\$22K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.cgsaviation.com	
251/454-0579	



CGS Aviation Hawk Sport

Cruise, mph	65
Stall, mph	32
Range, s.m.	200
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	100/125
Engine Used	Rotax 503
HP/HP Range	52/40-65

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	330/625
Length, ft.	21.3
Wingspan, ft.	28.9
Wing Area, sq. ft.	135
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tri or tail
Bldg. Materials	F, T

Beginner Build Time, hr.	300
No. Completed & Flown	8
Cost	\$12,325
Estimated Completed Cost	\$19K-\$21K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.cgsaviation.com	
251/454-0579	



CGS Aviation Hawk Ultra

Cruise, mph	60
Stall, mph	30
Range, s.m.	170
Rate of Climb, fpm	1100
Takeoff/Landing Distance, ft.	100/150
Engine Used	Rotax 447
HP/HP Range	40/30-65

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	254/600
Length, ft.	20.1
Wingspan, ft.	28.8
Wing Area, sq. ft.	135
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tri or tail
Bldg. Materials	F, T

Beginner Build Time, hr.	200
No. Completed & Flown	8
Cost	\$11,728
Estimated Completed Cost	\$17K-\$18K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.cgsaviation.com	
251/454-0579	



C.L.A.S.S. BushCaddy L160

Cruise, mph	115
Stall, mph	42
Range, s.m.	720
Rate of Climb, fpm	1300
Takeoff/Landing Distance, ft.	360/500
Engine Used	Lycoming O-320
HP/HP Range	160/125-180

Fuel Capacity, gal.	48
Empty/Gross Weight, lb.	1098/2250
Length, ft.	23.8
Wingspan, ft.	36
Wing Area, sq. ft.	189
No. of Seats	2+1
Cockpit Width, in.	44
Landing Gear	tailwheel
Bldg. Materials	M

Beginner Build Time, hr.	1200
No. Completed & Flown	12
Cost	\$28,825
Estimated Completed Cost	\$60K-\$110K
Quickbuild/Plans Available?	Y/N
www.bushcaddy.com	
450/455-2773	



C.L.A.S.S. BushCaddy L162 Max

Cruise, mph	125
Stall, mph	42
Range, s.m.	720
Rate of Climb, fpm	1300
Takeoff/Landing Distance, ft.	380/500
Engine Used	Lycoming O-360
HP/HP Range	180/160-250

Fuel Capacity, gal.	60
Empty/Gross Weight, lb.	1250/2650
Length, ft.	23.8
Wingspan, ft.	36
Wing Area, sq. ft.	189
No. of Seats	2+2
Cockpit Width, in.	47
Landing Gear	tailwheel
Bldg. Materials	M

Beginner Build Time, hr.	1200
No. Completed & Flown	12
Cost	\$35,403
Estimated Completed Cost	\$60K-\$110K
Quickbuild/Plans Available?	Y/N
www.bushcaddy.com	
450/455-2773	



C.L.A.S.S. BushCaddy L164

Cruise, mph	125
Stall, mph	42
Range, s.m.	750
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	250/600
Engine Used	Lycoming O-360
HP/HP Range	180/160-250

Fuel Capacity, gal.	60
Empty/Gross Weight, lb.	1350/2650
Length, ft.	25.5
Wingspan, ft.	36
Wing Area, sq. ft.	189
No. of Seats	4
Cockpit Width, in.	47
Landing Gear	tailwheel
Bldg. Materials	M

Beginner Build Time, hr.	1200
No. Completed & Flown	4
Cost	\$38,582
Estimated Completed Cost	\$80K-\$120K
Quickbuild/Plans Available?	Y/N
www.bushcaddy.com	
450/455-2773	



C.L.A.S.S. BushCaddy R80 UL/Sport

Cruise, mph	105
Stall, mph	32
Range, s.m.	560
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	200/350
Engine Used	Rotax 912S
HP/HP Range	100/80-120

Fuel Capacity, gal.	24
Empty/Gross Weight, lb.	700/1320
Length, ft.	22.1
Wingspan, ft.	32
Wing Area, sq. ft.	168
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	1000
No. Completed & Flown	80
Cost	\$22,648
Estimated Completed Cost	\$50K-\$75K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.bushcaddy.com	
450/455-2773	

**C.L.A.S.S.
BushCaddy R120**

Cruise, mph	110
Stall, mph	34
Range, s.m.	750
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	200/500
Engine Used	Rotax 912S
HP/HP Range	100/60-120

Fuel Capacity, gal.	36
Empty/Gross Weight, lb.	832/1500
Length, ft.	22
Wingspan, ft.	32
Wing Area, sq. ft.	168
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	1000
No. Completed & Flown	43
Cost	\$24,759
Estimated Completed Cost	\$60K-\$90K
Quickbuild/Plans Available?	Y/N

www.bushcaddy.com
450/455-2773

**Classic Sport Aircraft
S-18/S-18T**

Cruise, mph	180
Stall, mph	63
Range, s.m.	540
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	900/1200
Engine Used	Lycoming O-360
HP/HP Range	180/125-190

Fuel Capacity, gal.	29
Empty/Gross Weight, lb.	1000/1600
Length, ft.	18.6
Wingspan, ft.	20.9
Wing Area, sq. ft.	86
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	1900
No. Completed & Flown	56
Cost	\$20,200
Estimated Completed Cost	\$30K-\$45K
Quickbuild/Plans Available?	N/N

www.classicsportaircraft.com
559/539-2755

**Comp Air, Inc.
Comp Air 4**

Cruise, mph	155
Stall, mph	39
Range, s.m.	1150
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	400/550
Engine Used	Lycoming O-360
HP/HP Range	180/110-260

Fuel Capacity, gal.	60
Empty/Gross Weight, lb.	1390/2590
Length, ft.	24.5
Wingspan, ft.	35
Wing Area, sq. ft.	212
No. of Seats	4
Cockpit Width, in.	42.5
Landing Gear	tri or tail
Bldg. Materials	C

Beginner Build Time, hr.	1000
No. Completed & Flown	31
Cost	\$36,295
Estimated Completed Cost	\$56K-\$90K
Quickbuild/Plans Available?	Y/N

www.compairinc.com
321/453-6641

**Comp Air, Inc.
Comp Air 6**

Cruise, mph	165
Stall, mph	39
Range, s.m.	1150
Rate of Climb, fpm	1700
Takeoff/Landing Distance, ft.	750/750
Engine Used	Lycoming IO-540
HP/HP Range	290/260-650

Fuel Capacity, gal.	80
Empty/Gross Weight, lb.	1900/3200
Length, ft.	24.5
Wingspan, ft.	35
Wing Area, sq. ft.	212
No. of Seats	5-6
Cockpit Width, in.	42.5
Landing Gear	tri or tail
Bldg. Materials	C

Beginner Build Time, hr.	1500
No. Completed & Flown	66
Cost	\$45,645
Estimated Completed Cost	\$66K-\$100K
Quickbuild/Plans Available?	Y/N

www.compairinc.com
321/453-6641



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Comp Air, Inc. Comp Air 7

Cruise, mph	230
Stall, mph	53
Range, s.m.	1040
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	475/800
Engine Used	Lycoming IO-540
HP/HP Range	290/260-650

Fuel Capacity, gal.	220
Empty/Gross Weight, lb.	2100/3700
Length, ft.	26.6
Wingspan, ft.	34.6
Wing Area, sq. ft.	176
No. of Seats	6
Cockpit Width, in.	46
Landing Gear	tri or tail
Bldg. Materials	C

Beginner Build Time, hr.	2200
No. Completed & Flown	77
Cost	\$66,545
Estimated Completed Cost	\$87K-\$325K
Quickbuild/Plans Available?	Y/N

www.compairinc.com
321/453-6641



Comp Air, Inc. Comp Air 7SLX

Cruise, mph	210
Stall, mph	54
Range, s.m.	1040
Rate of Climb, fpm	3000
Takeoff/Landing Distance, ft.	600/800
Engine Used	Walter 601D
HP/HP Range	657/450-660

Fuel Capacity, gal.	220
Empty/Gross Weight, lb.	2400/4200
Length, ft.	29.5
Wingspan, ft.	33
Wing Area, sq. ft.	178
No. of Seats	6
Cockpit Width, in.	47
Landing Gear	tri or tail
Bldg. Materials	C

Beginner Build Time, hr.	1800
No. Completed & Flown	38
Cost	\$78,645
Estimated Completed Cost	\$98K-\$375K
Quickbuild/Plans Available?	Y/N

www.compairinc.com
321/453-6641



Comp Air, Inc. Comp Air 8

Cruise, mph	210
Stall, mph	48
Range, s.m.	1140
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	400/600
Engine Used	Walter 601D
HP/HP Range	657/450-660

Fuel Capacity, gal.	220
Empty/Gross Weight, lb.	2900/4800
Length, ft.	30.5
Wingspan, ft.	36
Wing Area, sq. ft.	239
No. of Seats	8
Cockpit Width, in.	44
Landing Gear	tri or tail
Bldg. Materials	C

Beginner Build Time, hr.	2200
No. Completed & Flown	35
Cost	\$90,745
Estimated Completed Cost	\$187K-\$425K
Quickbuild/Plans Available?	Y/N

www.compairinc.com
321/453-6641



Comp Air, Inc. Comp Air 9

Cruise, mph	253
Stall, mph	71
Range, s.m.	2070
Rate of Climb, fpm	2500
Takeoff/Landing Distance, ft.	750/750
Engine Used	TPE 331-10
HP/HP Range	970

Fuel Capacity, gal.	300
Empty/Gross Weight, lb.	3800/7200
Length, ft.	37
Wingspan, ft.	43
Wing Area, sq. ft.	250
No. of Seats	8
Cockpit Width, in.	52
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	3800
No. Completed & Flown	1
Cost	\$295,000
Estimated Completed Cost	\$770K-\$1.2M
Quickbuild/Plans Available?	Y/N

www.compairinc.com
321/453-6641



Comp Air, Inc. Comp Air 10

Cruise, mph	180
Stall, mph	56
Range, s.m.	920
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	500/600
Engine Used	Walter 601D
HP/HP Range	657/450-660

Fuel Capacity, gal.	220
Empty/Gross Weight, lb.	2900/5700
Length, ft.	30
Wingspan, ft.	37.6
Wing Area, sq. ft.	254
No. of Seats	10
Cockpit Width, in.	60
Landing Gear	tri or tail
Bldg. Materials	C

Beginner Build Time, hr.	2500
No. Completed & Flown	11
Cost	\$102,845
Estimated Completed Cost	\$250K-\$425K
Quickbuild/Plans Available?	Y/N

www.compairinc.com
321/453-6641



Creative Flight Aerocat SR

Cruise, mph	260
Stall, mph	53
Range, s.m.	1200
Rate of Climb, fpm	2300
Takeoff/Landing Distance, ft.	600/600
Engine Used	PT6A-21
HP/HP Range	350/250-600

Fuel Capacity, gal.	170
Empty/Gross Weight, lb.	1750/3400
Length, ft.	26
Wingspan, ft.	38
Wing Area, sq. ft.	220
No. of Seats	4
Cockpit Width, in.	54
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	700
No. Completed & Flown	1
Cost	\$120,000
Estimated Completed Cost	\$225K-\$350K
Quickbuild/Plans Available?	Y/N

www.creativeflight.com
705/457-2192



Creative Flight Aerocat SRX

Cruise, mph	232
Stall, mph	53
Range, s.m.	1050
Rate of Climb, fpm	1900
Takeoff/Landing Distance, ft.	650/640
Engine Used	PT6A-21
HP/HP Range	350/250-600

Fuel Capacity, gal.	170
Empty/Gross Weight, lb.	1975/3400
Length, ft.	26
Wingspan, ft.	38
Wing Area, sq. ft.	220
No. of Seats	4
Cockpit Width, in.	54
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	700
No. Completed & Flown	1
Cost	\$138,000
Estimated Completed Cost	\$225K-\$350K
Quickbuild/Plans Available?	Y/N

www.creativeflight.com
705/457-2192



Creative Flight Aerocat TR

Cruise, mph	201
Stall, mph	53
Range, s.m.	1250
Rate of Climb, fpm	1600
Takeoff/Landing Distance, ft.	700/450
Engine Used	Lycoming O-320
HP/HP Range	160/150-200 (2)

Fuel Capacity, gal.	125
Empty/Gross Weight, lb.	2050/3400
Length, ft.	26
Wingspan, ft.	38
Wing Area, sq. ft.	220
No. of Seats	4
Cockpit Width, in.	54
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	700
No. Completed & Flown	1
Cost	\$122,000
Estimated Completed Cost	\$200K-\$350K
Quickbuild/Plans Available?	Y/N

www.creativeflight.com
705/457-2192

Creative Flight Aerocat TRX

Cruise, mph	185
Stall, mph	53
Range, s.m.	1100
Rate of Climb, fpm	1270
Takeoff/Landing Distance, ft.	900/800
Engine Used	Lycoming O-320
HP/HP Range	160/150-200 (2)

Fuel Capacity, gal.	125
Empty/Gross Weight, lb.	2275/3400
Length, ft.	26
Wingspan, ft.	38
Wing Area, sq. ft.	220
No. of Seats	4
Cockpit Width, in.	54
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	700
No. Completed & Flown	1
Cost	\$140,000
Estimated Completed Cost	\$200K-\$350K
Quickbuild/Plans Available?	Y/N
www.creativeflight.com	
705/457-2192	



Cubcrafters Carbon Cub EX

Cruise, mph	115
Stall, mph	32
Range, s.m.	400
Rate of Climb, fpm	2100
Takeoff/Landing Distance, ft.	150/200
Engine Used	CC340
HP/HP Range	180

Fuel Capacity, gal.	25
Empty/Gross Weight, lb.	950/1865
Length, ft.	23.3
Wingspan, ft.	34.2
Wing Area, sq. ft.	179
No. of Seats	2T
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	C, F, T

Beginner Build Time, hr.	1100
No. Completed & Flown	5
Cost	\$64,980
Estimated Completed Cost	\$100K-\$150K
Quickbuild/Plans Available?	N/N
www.cubcrafters.com	
509/248-9491	



Custom Flight Lite Star

Cruise, mph	100
Stall, mph	45
Range, s.m.	400
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	200/200
Engine Used	Corvair
HP/HP Range	110/65-110

Fuel Capacity, gal.	20
Empty/Gross Weight, lb.	650/1320
Length, ft.	21
Wingspan, ft.	30.5
Wing Area, sq. ft.	160
No. of Seats	2
Cockpit Width, in.	39.8
Landing Gear	tailwheel
Bldg. Materials	F, M, T

Beginner Build Time, hr.	400
No. Completed & Flown	1
Cost	\$22,000
Estimated Completed Cost	\$35K-\$60K
Quickbuild/Plans Available?	N/N
LSA Legal	
www.customflightltd.com	
705/526-9626	



Custom Flight North Star

Cruise, mph	115
Stall, mph	25
Range, s.m.	690
Rate of Climb, fpm	1100
Takeoff/Landing Distance, ft.	180/200
Engine Used	Lycoming O-320
HP/HP Range	150/150-180

Fuel Capacity, gal.	52
Empty/Gross Weight, lb.	1170/2350
Length, ft.	22.5
Wingspan, ft.	36.3
Wing Area, sq. ft.	190.7
No. of Seats	2T
Cockpit Width, in.	29
Landing Gear	tailwheel
Bldg. Materials	F, M, T

Beginner Build Time, hr.	1200
No. Completed & Flown	17
Cost	\$49,500
Estimated Completed Cost	\$80K-\$100K
Quickbuild/Plans Available?	N/N
www.customflightltd.com	
705/526-9626	



Dakota Cub Super 18-180

Cruise, mph	100
Stall, mph	51
Range, s.m.	400
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	200/200
Engine Used	Lycoming O-360
HP/HP Range	180

Fuel Capacity, gal.	46
Empty/Gross Weight, lb.	1250/2300
Length, ft.	23
Wingspan, ft.	36
Wing Area, sq. ft.	189
No. of Seats	2T
Cockpit Width, in.	28
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	750
No. Completed & Flown	6
Cost	\$64,077
Estimated Completed Cost	\$120K-\$150K
Quickbuild/Plans Available?	N/N
www.dakotacub.com	
605/757-6628	



DFE Ultralights, Inc. Ascender 3A

Cruise, mph	40
Stall, mph	25
Range, s.m.	150
Rate of Climb, fpm	400
Takeoff/Landing Distance, ft.	150/150
Engine Used	Cuyuna 430
HP/HP Range	35/25-45

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	165/435
Length, ft.	12.3
Wingspan, ft.	33
Wing Area, sq. ft.	164
No. of Seats	1
Cockpit Width, in.	15
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	100
No. Completed & Flown	401
Cost	\$5900
Estimated Completed Cost	\$7K-\$8K
Quickbuild/Plans Available?	N/N
LSA Legal	
170 Grimplin Rd., Vanderbilt, PA 15486	
724/529-0450	



DFE Ultralights, Inc. Ascender 3B

Cruise, mph	40
Stall, mph	28
Range, s.m.	150
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	150/150
Engine Used	Cuyuna 430
HP/HP Range	35/25-45

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	215/485
Length, ft.	16.8
Wingspan, ft.	33
Wing Area, sq. ft.	172
No. of Seats	1
Cockpit Width, in.	15
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	100
No. Completed & Flown	1001
Cost	\$6300
Estimated Completed Cost	\$8K-\$10K
Quickbuild/Plans Available?	N/N
LSA Legal	
170 Grimplin Rd., Vanderbilt, PA 15486	
724/529-0450	



DFE Ultralights, Inc. Ascender 3C

Cruise, mph	40
Stall, mph	28
Range, s.m.	150
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	150/150
Engine Used	2si F40
HP/HP Range	35/25-65

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	235/535
Length, ft.	16.8
Wingspan, ft.	33
Wing Area, sq. ft.	172
No. of Seats	1
Cockpit Width, in.	15
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	100
No. Completed & Flown	1002
Cost	\$6500
Estimated Completed Cost	\$8K-\$10K
Quickbuild/Plans Available?	N/N
LSA Legal	
170 Grimplin Rd., Vanderbilt, PA 15486	
724/529-0450	





Dream Aircraft, Inc.

Tundra

Cruise, mph	118
Stall, mph	52
Range, s.m.	684
Rate of Climb, fpm	720
Takeoff/Landing Distance, ft.	400/500
Engine Used	Lycoming O-360
HP/HP Range	180/160-235

Fuel Capacity, gal.	55
Empty/Gross Weight, lb.	1475/2550
Length, ft.	25.5
Wingspan, ft.	36
Wing Area, sq. ft.	183.6
No. of Seats	4
Cockpit Width, in.	44
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	1000
No. Completed & Flown	15
Cost	\$50,766
Estimated Completed Cost	\$110K-\$160K
Quickbuild/Plans Available?	Y/N

www.dreamaircraft.com
866/500-9929



Earthstar Aircraft

Gull 2000

Cruise, mph	63
Stall, mph	27
Range, s.m.	165
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	125/75
Engine Used	Hirth F33
HP/HP Range	28/25-52

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	248/550
Length, ft.	18.3
Wingspan, ft.	20
Wing Area, sq. ft.	95
No. of Seats	1
Cockpit Width, in.	27
Landing Gear	trigear
Bldg. Materials	C, F, M, T

Beginner Build Time, hr.	150
No. Completed & Flown	15
Cost	\$12,965
Estimated Completed Cost	\$16K-\$20K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.thundergull.com
805/438-5235



Earthstar Aircraft

Odyssey

Cruise, mph	87
Stall, mph	37
Range, s.m.	348
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	200/175
Engine Used	HKS 700E
HP/HP Range	60/60-100

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	460/1000
Length, ft.	18.3
Wingspan, ft.	26
Wing Area, sq. ft.	124
No. of Seats	2
Cockpit Width, in.	41
Landing Gear	trigear
Bldg. Materials	C, F, M, T

Beginner Build Time, hr.	300
No. Completed & Flown	15
Cost	\$17,500
Estimated Completed Cost	\$21K-\$34K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.thundergull.com
805/438-5235



Earthstar Aircraft

Soaring Gull

Cruise, mph	63
Stall, mph	26
Range, s.m.	180
Rate of Climb, fpm	850
Takeoff/Landing Distance, ft.	115/70
Engine Used	Hirth F33
HP/HP Range	20/25-52

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	254/550
Length, ft.	18.3
Wingspan, ft.	28
Wing Area, sq. ft.	133
No. of Seats	1
Cockpit Width, in.	27
Landing Gear	trigear
Bldg. Materials	C, F, M, T

Beginner Build Time, hr.	150
No. Completed & Flown	10
Cost	\$14,590
Estimated Completed Cost	\$17K-\$22K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.thundergull.com
805/438-5235



Europa Aircraft Ltd.

Europa XS Motor Glider

Cruise, mph	145
Stall, mph	49
L/D	27:1
Minimum Sink, fpm	200
Rate of Climb, fpm	1300
Engine Used	Rotax 914
HP/HP Range	115/75-90

Fuel Capacity, gal.	18
Empty/Gross Weight, lb.	878/1370
Length, ft.	19.1
Wingspan, ft.	47.6
Wing Area, sq. ft.	143
No. of Seats	2
Cockpit Width, in.	41
Landing Gear	monowheel/R or tri
Bldg. Materials	C

Beginner Build Time, hr.	1200
No. Completed & Flown	20
Cost	\$58,651
Estimated Completed Cost	\$80K-\$120K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.customflightcreations.com
813/653-4989



Europa Aircraft Ltd.

XS Trigear

Cruise, mph	155
Stall, mph	60
Range, s.m.	600
Rate of Climb, fpm	1300
Takeoff/Landing Distance, ft.	500/600
Engine Used	Rotax 914
HP/HP Range	115/80-120

Fuel Capacity, gal.	18
Empty/Gross Weight, lb.	897/1370
Length, ft.	19.2
Wingspan, ft.	27.2
Wing Area, sq. ft.	102
No. of Seats	2
Cockpit Width, in.	41
Landing Gear	monowheel/R or tri
Bldg. Materials	C

Beginner Build Time, hr.	1200
No. Completed & Flown	475
Cost	\$38,100
Estimated Completed Cost	\$48K-\$114K
Quickbuild/Plans Available?	Y/N

www.customflightcreations.com
813/653-4989



Excalibur Aircraft

Excalibur

Cruise, mph	90
Stall, mph	32
Range, s.m.	290
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	96/300
Engine Used	Rotax 503
HP/HP Range	52/52-65

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	450/1000
Length, ft.	20
Wingspan, ft.	31.5
Wing Area, sq. ft.	185
No. of Seats	2T
Cockpit Width, in.	26
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	175
No. Completed & Flown	750
Cost (includes engine)	\$22,300
Estimated Completed Cost	\$24K-\$26K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.excaliburaircraft.com
863/385-9486



Excalibur Aircraft

Excalibur Four Stroke

Cruise, mph	90
Stall, mph	33
Range, s.m.	290
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	96/300
Engine Used	HKS 700E
HP/HP Range	60/60-80

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	450/1000
Length, ft.	20
Wingspan, ft.	31.5
Wing Area, sq. ft.	185
No. of Seats	2T
Cockpit Width, in.	30
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	175
No. Completed & Flown	400
Cost (includes engine)	\$27,500
Estimated Completed Cost	\$28K-\$29K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.excaliburaircraft.com
863/385-9486

Excalibur Aircraft Excalibur Wide Body

Cruise, mph	90
Stall, mph	32
Range, s.m.	290
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	96/300
Engine Used	Rotax 503
HP/HP Range	52/52-65

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	450/1000
Length, ft.	20
Wingspan, ft.	31.5
Wing Area, sq. ft.	185
No. of Seats	2T
Cockpit Width, in.	32
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	175
No. Completed & Flown	750
Cost (includes engine)	\$22,300
Estimated Completed Cost	\$23K-\$24K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.excaliburaircraft.com	
863/385-9486	



Falcomposite Furio LN 27 RG

Cruise, mph	201
Stall, mph	62
Range, s.m.	1380
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	1000/1100
Engine Used	Lycoming IO-390
HP/HP Range	210/180-210

Fuel Capacity, gal.	66
Empty/Gross Weight, lb.	1279/2160
Length, ft.	22.3
Wingspan, ft.	26.4
Wing Area, sq. ft.	110
No. of Seats	2
Cockpit Width, in.	43.5
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	1000
No. Completed & Flown	2
Cost	\$107,740
Estimated Completed Cost	\$180K-\$240K
Quickbuild/Plans Available?	N/N
www.falcomposite.com	
+011 64 9 296 7966	



Falconar Avia, Inc. AMF-14H

Cruise, mph	92
Stall, mph	36
Range, s.m.	350
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	200/200
Engine Used	Rotax 912S
HP/HP Range	100/65-110

Fuel Capacity, gal.	26
Empty/Gross Weight, lb.	650/1200
Length, ft.	22
Wingspan, ft.	32
Wing Area, sq. ft.	158
No. of Seats	2
Cockpit Width, in.	46
Landing Gear	tri or tail
Bldg. Materials	F, W

Beginner Build Time, hr.	1100
No. Completed & Flown	1
Cost	\$12,180
Estimated Completed Cost	\$19K-\$40K
Quickbuild/Plans Available?	N/\$200
	LSA Legal
www.falconaravia.com	
780/465-2024	



Falconar Avia, Inc. AMF-Super 14D Maranda

Cruise, mph	120
Stall, mph	39
Range, s.m.	480
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	200/200
Engine Used	Lycoming O-320
HP/HP Range	150/85-200

Fuel Capacity, gal.	22
Empty/Gross Weight, lb.	1100/1850
Length, ft.	22
Wingspan, ft.	31.8
Wing Area, sq. ft.	158
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	tri or tail
Bldg. Materials	F, W

Beginner Build Time, hr.	1200
No. Completed & Flown	95
Cost	\$13,785
Estimated Completed Cost	\$28K-\$40K
Quickbuild/Plans Available?	N/\$170
www.falconaravia.com	
780/465-2024	



Falconar Avia, Inc. F11A Sporty

Cruise, mph	123
Stall, mph	38
Range, s.m.	570
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	200/300
Engine Used	Continental O-200
HP/HP Range	100/65-100

Fuel Capacity, gal.	17
Empty/Gross Weight, lb.	785/1300
Length, ft.	22
Wingspan, ft.	27.3
Wing Area, sq. ft.	138
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	tri or tail
Bldg. Materials	F, W

Beginner Build Time, hr.	1200
No. Completed & Flown	100
Cost	\$15,276
Estimated Completed Cost	\$20K-\$40K
Quickbuild/Plans Available?	N/\$200
	LSA Legal
www.falconaravia.com	
780/465-2024	



Falconar Avia, Inc. F11E Sporty

Cruise, mph	110
Stall, mph	41
Range, s.m.	280
Rate of Climb, fpm	1025
Takeoff/Landing Distance, ft.	150/250
Engine Used	Hirth F30
HP/HP Range	110

Fuel Capacity, gal.	17
Empty/Gross Weight, lb.	560/1100
Length, ft.	22
Wingspan, ft.	27.3
Wing Area, sq. ft.	140
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	tri or tail
Bldg. Materials	F, W

Beginner Build Time, hr.	1000
No. Completed & Flown	1
Cost	\$14,986
Estimated Completed Cost	\$20K-\$40K
Quickbuild/Plans Available?	N/\$225
	LSA Legal
www.falconaravia.com	
780/465-2024	



Falconar Avia, Inc. F12A Cruiser

Cruise, mph	150
Stall, mph	51
Range, s.m.	615
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	600/500
Engine Used	Lycoming O-360
HP/HP Range	180

Fuel Capacity, gal.	44
Empty/Gross Weight, lb.	1170/1800
Length, ft.	24
Wingspan, ft.	28
Wing Area, sq. ft.	140
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	tri or tail
Bldg. Materials	F, W

Beginner Build Time, hr.	1200
No. Completed & Flown	20
Cost	\$15,707
Estimated Completed Cost	\$22K-\$45K
Quickbuild/Plans Available?	N/\$220
www.falconaravia.com	
780/465-2024	



Falconar Avia, Inc. Mignet Flying Flea 290/293E

Cruise, mph	90
Stall, mph	28
Range, s.m.	290
Rate of Climb, fpm	500
Takeoff/Landing Distance, ft.	180/150
Engine Used	1500cc VW
HP/HP Range	30/50-60

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	360/580
Length, ft.	13
Wingspan, ft.	20
Wing Area, sq. ft.	117
No. of Seats	1
Cockpit Width, in.	23
Landing Gear	tri or tail
Bldg. Materials	F, W

Beginner Build Time, hr.	500
No. Completed & Flown	4
Cost	\$7950
Estimated Completed Cost	\$11K-\$20K
Quickbuild/Plans Available?	N/\$95
	LSA Legal
www.falconaravia.com	
780/465-2024	





Falconar Avia, Inc. *SAL Mustang (2/3 Scale)*

Cruise, mph	176
Stall, mph	60
Range, s.m.	502
Rate of Climb, fpm	1850
Takeoff/Landing Distance, ft.	700/700
Engine Used	Ranger 6-440
HP/HP Range	200/200-350

Fuel Capacity, gal.	36
Empty/Gross Weight, lb.	1420/2180
Length, ft.	22.5
Wingspan, ft.	24.8
Wing Area, sq. ft.	110
No. of Seats	1-2T
Cockpit Width, in.	24
Landing Gear	tailwheel/R
Bldg. Materials	W

Beginner Build Time, hr.	2500
No. Completed & Flown	20
Cost	\$30,276
Estimated Completed Cost	\$40K-\$80K
Quickbuild/Plans Available?	N/\$670

www.falconaravia.com
780/465-2024



Falconar Avia, Inc. *Turbi D5*

Cruise, mph	81
Stall, mph	34
Range, s.m.	400
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	600/400
Engine Used	Continental C-85
HP/HP Range	65/65-115

Fuel Capacity, gal.	16
Empty/Gross Weight, lb.	609/1089
Length, ft.	25.8
Wingspan, ft.	28.5
Wing Area, sq. ft.	142
No. of Seats	2T
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	1100
No. Completed & Flown	40
Cost	\$13,225
Estimated Completed Cost	\$20K-\$35K
Quickbuild/Plans Available?	N/\$275

LSA Legal

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780/465-2024



Fisher Flying Products *Avenger*

Cruise, mph	80
Stall, mph	28
Range, s.m.	130
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	100/200
Engine Used	Rotax 503
HP/HP Range	48/20-48

Fuel Capacity, gal.	7
Empty/Gross Weight, lb.	280/600
Length, ft.	16.2
Wingspan, ft.	27
Wing Area, sq. ft.	121
No. of Seats	1
Cockpit Width, in.	27
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	600
No. Completed & Flown	35
Cost	\$5999
Estimated Completed Cost	\$9K-\$11K
Quickbuild/Plans Available?	Y/\$300

LSA Legal

www.fisherflying.com
905/856-7050



Fisher Flying Products *Avenger V*

Cruise, mph	85
Stall, mph	31
Range, s.m.	100
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	200/250
Engine Used	VW
HP/HP Range	30/30-65

Fuel Capacity, gal.	7
Empty/Gross Weight, lb.	350/650
Length, ft.	16.2
Wingspan, ft.	27
Wing Area, sq. ft.	121
No. of Seats	1
Cockpit Width, in.	23
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	400
No. Completed & Flown	30
Cost	\$6475
Estimated Completed Cost	\$10K-\$12K
Quickbuild/Plans Available?	Y/\$300

LSA Legal

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905/856-7050



Fisher Flying Products *Celebrity*

Cruise, mph	85
Stall, mph	40
Range, s.m.	180
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	300/300
Engine Used	Continental O-200
HP/HP Range	90/65-125

Fuel Capacity, gal.	13
Empty/Gross Weight, lb.	600/1230
Length, ft.	17.5
Wingspan, ft.	22
Wing Area, sq. ft.	176
No. of Seats	2T
Cockpit Width, in.	26
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	700
No. Completed & Flown	55
Cost	\$13,750
Estimated Completed Cost	\$20K-\$25K
Quickbuild/Plans Available?	Y/\$400

LSA Legal

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905/856-7050



Fisher Flying Products *Classic*

Cruise, mph	85
Stall, mph	39
Range, s.m.	130
Rate of Climb, fpm	600
Takeoff/Landing Distance, ft.	200/300
Engine Used	Rotax 582
HP/HP Range	65

Fuel Capacity, gal.	7.5
Empty/Gross Weight, lb.	425/850
Length, ft.	16.8
Wingspan, ft.	22
Wing Area, sq. ft.	154
No. of Seats	2T
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	600
No. Completed & Flown	155
Cost	\$10,999
Estimated Completed Cost	\$15K-\$17K
Quickbuild/Plans Available?	Y/\$400

LSA Legal

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Fisher Flying Products *Dakota Hawk*

Cruise, mph	100
Stall, mph	35
Range, s.m.	250
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	350/400
Engine Used	Rotax 912
HP/HP Range	80/65-120

Fuel Capacity, gal.	12
Empty/Gross Weight, lb.	600/1150
Length, ft.	19.8
Wingspan, ft.	28.5
Wing Area, sq. ft.	128
No. of Seats	2
Cockpit Width, in.	43
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	700
No. Completed & Flown	25
Cost	\$14,900
Estimated Completed Cost	\$25K-\$35K
Quickbuild/Plans Available?	N/\$400

LSA Legal

www.fisherflying.com
905/856-7050



Fisher Flying Products *FP-202 Koala*

Cruise, mph	55
Stall, mph	26
Range, s.m.	135
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	95/125
Engine Used	Rotax 277
HP/HP Range	28/28-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	250/500
Length, ft.	17.8
Wingspan, ft.	30
Wing Area, sq. ft.	120
No. of Seats	1
Cockpit Width, in.	28
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	700
No. Completed & Flown	330
Cost	\$7750
Estimated Completed Cost	\$10K-\$12K
Quickbuild/Plans Available?	Y/\$350

LSA Legal

www.fisherflying.com
905/856-7050

Fisher Flying Products FP-303

Cruise, mph	60
Stall, mph	25
Range, s.m.	100
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	125/125
Engine Used	Rotax 277
HP/HP Range	28/28-40

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	235/450
Length, ft.	17
Wingspan, ft.	27.8
Wing Area, sq. ft.	111
No. of Seats	1
Cockpit Width, in.	23
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	700
No. Completed & Flown	205
Cost	\$5200
Estimated Completed Cost	\$8K-\$10K
Quickbuild/Plans Available?	Y/\$300
	LSA Legal

www.fisherflying.com
905/856-7050



Fisher Flying Products FP-404

Cruise, mph	72
Stall, mph	30
Range, s.m.	100
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	125/200
Engine Used	Rotax 503
HP/HP Range	48/48-65

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	275/540
Length, ft.	15
Wingspan, ft.	18
Wing Area, sq. ft.	120
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	700
No. Completed & Flown	355
Cost	\$7999
Estimated Completed Cost	\$11K-\$13K
Quickbuild/Plans Available?	Y/\$400
	LSA Legal

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905/856-7050



Fisher Flying Products FP-505 Skeeter

Cruise, mph	60
Stall, mph	26
Range, s.m.	100
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	150/200
Engine Used	Rotax 503
HP/HP Range	48/28-48

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	250/500
Length, ft.	16.5
Wingspan, ft.	28
Wing Area, sq. ft.	112
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	700
No. Completed & Flown	45
Cost	\$6800
Estimated Completed Cost	\$10K-\$12K
Quickbuild/Plans Available?	Y/\$300
	LSA Legal

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905/856-7050



Fisher Flying Products FP-606 Skybaby

Cruise, mph	60
Stall, mph	26
Range, s.m.	130
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	150/150
Engine Used	Rotax 503
HP/HP Range	48/28-48

Fuel Capacity, gal.	7.5
Empty/Gross Weight, lb.	250/500
Length, ft.	17.8
Wingspan, ft.	28
Wing Area, sq. ft.	116
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tri or tail
Bldg. Materials	F, W

Beginner Build Time, hr.	700
No. Completed & Flown	15
Cost	\$7600
Estimated Completed Cost	\$10K-\$12K
Quickbuild/Plans Available?	Y/\$300
	LSA Legal

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905/856-7050



Fisher Flying Products Horizon 1

Cruise, mph	95
Stall, mph	40
Range, s.m.	200
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	500/350
Engine Used	Continental
HP/HP Range	65/65-115

Fuel Capacity, gal.	13
Empty/Gross Weight, lb.	520/1050
Length, ft.	18.8
Wingspan, ft.	25.2
Wing Area, sq. ft.	113
No. of Seats	2T
Cockpit Width, in.	25
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	600
No. Completed & Flown	55
Cost	\$12,500
Estimated Completed Cost	\$17K-\$20K
Quickbuild/Plans Available?	Y/\$350
	LSA Legal

www.fisherflying.com
905/856-7050



Fisher Flying Products Horizon 2

Cruise, mph	100
Stall, mph	38
Range, s.m.	200
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	500/350
Engine Used	Continental
HP/HP Range	65/65-115

Fuel Capacity, gal.	13
Empty/Gross Weight, lb.	570/1050
Length, ft.	19.8
Wingspan, ft.	26
Wing Area, sq. ft.	113.6
No. of Seats	2T
Cockpit Width, in.	28
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	600
No. Completed & Flown	40
Cost	\$14,750
Estimated Completed Cost	\$22K-\$25K
Quickbuild/Plans Available?	Y/\$400
	LSA Legal

www.fisherflying.com
905/856-7050



Fisher Flying Products R-80 Tiger Moth

Cruise, mph	90
Stall, mph	35
Range, s.m.	290
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	300/400
Engine Used	Rotax 912S
HP/HP Range	100/80-120

Fuel Capacity, gal.	13
Empty/Gross Weight, lb.	560/1150
Length, ft.	19
Wingspan, ft.	25
Wing Area, sq. ft.	170
No. of Seats	2T
Cockpit Width, in.	26
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	600
No. Completed & Flown	24
Cost	\$14,999
Estimated Completed Cost	\$25K-\$30K
Quickbuild/Plans Available?	Y/\$400
	LSA Legal

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905/856-7050



Fisher Flying Products Super Koala

Cruise, mph	75
Stall, mph	32
Range, s.m.	200
Rate of Climb, fpm	1400
Takeoff/Landing Distance, ft.	150/250
Engine Used	Rotax 582
HP/HP Range	52/52-64

Fuel Capacity, gal.	8
Empty/Gross Weight, lb.	400/900
Length, ft.	18.1
Wingspan, ft.	31
Wing Area, sq. ft.	140
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	500
No. Completed & Flown	105
Cost	\$10,500
Estimated Completed Cost	\$17K-\$20K
Quickbuild/Plans Available?	N/\$350
	LSA Legal

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905/856-7050





Fisher Flying Products Youngster

Cruise, mph	85
Stall, mph	32
Range, s.m.	150
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	200/250
Engine Used	Rotax 503
HP/HP Range	50/50-65

Fuel Capacity, gal.	8
Empty/Gross Weight, lb.	400/650
Length, ft.	15.5
Wingspan, ft.	18
Wing Area, sq. ft.	126
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	600
No. Completed & Flown	20
Cost	\$8475
Estimated Completed Cost	\$13 K-\$15K
Quickbuild/Plans Available?	Y/\$300
	LSA Legal

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905/856-7050



Free Bird Innovations LiteSport II

Cruise, mph	75
Stall, mph	32
Range, s.m.	160
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	250/150
Engine Used	Rotax 503
HP/HP Range	48/48-80

Fuel Capacity, gal.	8.5
Empty/Gross Weight, lb.	375/900
Length, ft.	15.2
Wingspan, ft.	26
Wing Area, sq. ft.	142
No. of Seats	2
Cockpit Width, in.	22
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	350
No. Completed & Flown	352
Cost	\$3895
Estimated Completed Cost	\$10K-\$15K
Quickbuild/Plans Available?	Y/\$185
	LSA Legal

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218/844-5914



Free Bird Innovations LiteSport Classic

Cruise, mph	80
Stall, mph	32
Range, s.m.	140
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	150/300
Engine Used	Rotax 582
HP/HP Range	65/60-80

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	450/900
Length, ft.	17
Wingspan, ft.	26
Wing Area, sq. ft.	121
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear
Bldg. Materials	C, F, T

Beginner Build Time, hr.	150
No. Completed & Flown	102
Cost	\$10,275
Estimated Completed Cost	\$15K-\$19K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.flyfbi.com
218/844-5914



Free Bird Innovations LiteSport Ultra

Cruise, mph	55
Stall, mph	22
Range, s.m.	90
Rate of Climb, fpm	850
Takeoff/Landing Distance, ft.	75/150
Engine Used	Rotax 447
HP/HP Range	40/40-60

Fuel Capacity, gal.	8.5
Empty/Gross Weight, lb.	295/500
Length, ft.	17.1
Wingspan, ft.	26.5
Wing Area, sq. ft.	121
No. of Seats	1-2T
Cockpit Width, in.	22
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	200
No. Completed & Flown	357
Cost	\$3595
Estimated Completed Cost	\$9K-\$15K
Quickbuild/Plans Available?	Y/\$185
	LSA Legal

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218/844-5914



Glasair Aviation Glasair III

Cruise, mph	278
Stall, mph	78
Range, s.m.	1239
Rate of Climb, fpm	2990
Takeoff/Landing Distance, ft.	n.p.
Engine Used	Lycoming IO-540
HP/HP Range	300

Fuel Capacity, gal.	70
Empty/Gross Weight, lb.	1625/2400
Length, ft.	21.4
Wingspan, ft.	23.3
Wing Area, sq. ft.	81.3
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	3000
No. Completed & Flown	500
Cost	\$57,546
Estimated Completed Cost	\$125K-\$300K
Quickbuild/Plans Available?	Y/N

www.glasairaviation.com
360/435-8533



Glasair Aviation Glasair Super II FT

Cruise, mph	210
Stall, mph	73
Range, s.m.	1446
Rate of Climb, fpm	2700
Takeoff/Landing Distance, ft.	900/1300
Engine Used	Lycoming IO-360
HP/HP Range	180/160-210

Fuel Capacity, gal.	70
Empty/Gross Weight, lb.	1300/2100
Length, ft.	20.8
Wingspan, ft.	23.3
Wing Area, sq. ft.	81.3
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	3000
No. Completed & Flown	1200
Cost	\$38,341
Estimated Completed Cost	\$80K-\$200K
Quickbuild/Plans Available?	Y/N

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360/435-8533



Glasair Aviation Glasair Super II RG

Cruise, mph	221
Stall, mph	73
Range, s.m.	1520
Rate of Climb, fpm	2700
Takeoff/Landing Distance, ft.	900/1300
Engine Used	Lycoming IO-360
HP/HP Range	180/160-210

Fuel Capacity, gal.	70
Empty/Gross Weight, lb.	1400/2100
Length, ft.	20.8
Wingspan, ft.	23.3
Wing Area, sq. ft.	81.3
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	3000
No. Completed & Flown	1200
Cost	\$47,094
Estimated Completed Cost	\$80K-\$200K
Quickbuild/Plans Available?	Y/N

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Glasair Aviation Sportsman

Cruise, mph	172
Stall, mph	48
Range, s.m.	829
Rate of Climb, fpm	1850
Takeoff/Landing Distance, ft.	375/260
Engine Used	Lycoming IO-360
HP/HP Range	180/180-210

Fuel Capacity, gal.	50
Empty/Gross Weight, lb.	1350/2400
Length, ft.	23
Wingspan, ft.	35
Wing Area, sq. ft.	131
No. of Seats	4
Cockpit Width, in.	46
Landing Gear	tri or tail
Bldg. Materials	C, F, M

Beginner Build Time, hr.	1500
No. Completed & Flown	270
Cost	\$50,502
Estimated Completed Cost	\$80K-\$200K
Quickbuild/Plans Available?	Y/N

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360/435-8533

Glasair Aviation
Two Weeks to Taxi Sportsman

Cruise, mph	172
Stall, mph	48
Range, s.m.	733
Rate of Climb, fpm	2100
Takeoff/Landing Distance, ft.	325/260
Engine Used	Lycoming IO-390
HP/HP Range	210/180-210

Fuel Capacity, gal.	50
Empty/Gross Weight, lb.	1350/2400
Length, ft.	23
Wingspan, ft.	35
Wing Area, sq. ft.	131
No. of Seats	4
Cockpit Width, in.	46
Landing Gear	tri or tail
Bldg. Materials	C, M, T

Beginner Build Time, hr.	n.a.
No. Completed & Flown	130
Cost (includes engine)	\$157,000
Estimated Completed Cost	\$157K-\$250K
Quickbuild/Plans Available?	Y/N
www.glasairaviation.com	
360/435-8533	


Glasair Aviation
Two Weeks to Taxi Sportsman TC

Cruise, mph	172
Stall, mph	50
Range, s.m.	960
Rate of Climb, fpm	2500
Takeoff/Landing Distance, ft.	325/260
Engine Used	Lycoming TIO-360
HP/HP Range	180

Fuel Capacity, gal.	50
Empty/Gross Weight, lb.	1400/2500
Length, ft.	23
Wingspan, ft.	35
Wing Area, sq. ft.	131
No. of Seats	4
Cockpit Width, in.	46
Landing Gear	tri or tail
Bldg. Materials	C, M

Beginner Build Time, hr.	n.a.
No. Completed & Flown	1
Cost (includes engine)	\$199,000
Estimated Completed Cost	\$199K-\$250K
Quickbuild/Plans Available?	Y/N
www.glasairaviation.com	
360/435-8533	


Green Sky Adventures, Inc.
Micro Mong

Cruise, mph	80
Stall, mph	35
Range, s.m.	200
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	200/400
Engine Used	HKS 700E
HP/HP Range	60

Fuel Capacity, gal.	9
Empty/Gross Weight, lb.	400/650
Length, ft.	14
Wingspan, ft.	19.5
Wing Area, sq. ft.	100
No. of Seats	1
Cockpit Width, in.	21.8
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	500
No. Completed & Flown	19
Cost	\$10,450
Estimated Completed Cost	\$14K-\$30K
Quickbuild/Plans Available?	Y/\$135
LSA Legal	
www.greenskyadventures.com	
888/887-5625	


Hevle Aviation
Hevle Classic

Cruise, mph	105
Stall, mph	45
Range, s.m.	290
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	400/500
Engine Used	Rotec R2800
HP/HP Range	110/85-150

Fuel Capacity, gal.	16
Empty/Gross Weight, lb.	800/1320
Length, ft.	22
Wingspan, ft.	28
Wing Area, sq. ft.	120
No. of Seats	2T
Cockpit Width, in.	27
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	1200
No. Completed & Flown	3
Cost (includes engine)	\$15,995
Estimated Completed Cost	\$19K-\$40K
Quickbuild/Plans Available?	N/\$130
LSA Legal	
www.hevleaviation.com	
661-858-4515	


Hummel Aviation
H-5

Cruise, mph	120
Stall, mph	36
Range, s.m.	500
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	350/750
Engine Used	2400cc Hummel
HP/HP Range	85/60-90

Fuel Capacity, gal.	20
Empty/Gross Weight, lb.	430/850
Length, ft.	17
Wingspan, ft.	23.5
Wing Area, sq. ft.	84
No. of Seats	1
Cockpit Width, in.	24.5
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	420
No. Completed & Flown	12
Cost	\$16,000
Estimated Completed Cost	\$17K-\$32K
Quickbuild/Plans Available?	Y/\$350
LSA Legal	
www.flyhummel.com	
419/636-6700	


Hummel Aviation
Ultracruiser

Cruise, mph	75
Stall, mph	28
Range, s.m.	150
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	200/350
Engine Used	Hummel
HP/HP Range	37/28-45

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	249/575
Length, ft.	16
Wingspan, ft.	23.5
Wing Area, sq. ft.	84
No. of Seats	1
Cockpit Width, in.	23.5
Landing Gear	tailwheel
Bldg. Materials	M

Beginner Build Time, hr.	420
No. Completed & Flown	100
Cost	\$13,950
Estimated Completed Cost	\$17K-\$26K
Quickbuild/Plans Available?	Y/\$250
LSA Legal	
www.flyhummel.com	
419/636-6700	


Indy Aircraft, Ltd.
T-Bird I

Cruise, mph	60
Stall, mph	26
Range, s.m.	120
Rate of Climb, fpm	600
Takeoff/Landing Distance, ft.	100/100
Engine Used	Rotax 447
HP/HP Range	28/28-65

Fuel Capacity, gal.	12
Empty/Gross Weight, lb.	275/575
Length, ft.	18
Wingspan, ft.	31
Wing Area, sq. ft.	154
No. of Seats	1
Cockpit Width, in.	28
Landing Gear	tri or tail
Bldg. Materials	F, T

Beginner Build Time, hr.	100
No. Completed & Flown	1500
Cost	\$9750
Estimated Completed Cost	\$15K-\$30K
Quickbuild/Plans Available?	N/N
LSA Legal	
www.indyaircraftltd.com	
888/678-6929	


Indy Aircraft, Ltd.
T-Bird II

Cruise, mph	66
Stall, mph	36
Range, s.m.	160
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	300/230
Engine Used	Rotax 582
HP/HP Range	65/65-114

Fuel Capacity, gal.	12
Empty/Gross Weight, lb.	536/1071
Length, ft.	18
Wingspan, ft.	36
Wing Area, sq. ft.	194
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	tri or tail
Bldg. Materials	F, T

Beginner Build Time, hr.	140
No. Completed & Flown	2500
Cost	\$12,750
Estimated Completed Cost	\$17K-\$55K
Quickbuild/Plans Available?	N/N
LSA Legal	
www.indyaircraftltd.com	
888/678-6929	



2011 Kit Aircraft Buyer's Guide



Ion Aircraft *Ion 100*

Cruise, mph	138
Stall, mph	52
Range, s.m.	600
Rate of Climb, fpm	1400
Takeoff/Landing Distance, ft.	500/500
Engine Used	Rotax 912S
HP/HP Range	100/100-120

Fuel Capacity, gal.	25
Empty/Gross Weight, lb.	850/1320
Length, ft.	24
Wingspan, ft.	32
Wing Area, sq. ft.	128
No. of Seats	2T
Cockpit Width, in.	31
Landing Gear	trigear
Bldg. Materials	C, M

Beginner Build Time, hr.	500
No. Completed & Flown	1
Cost	\$44,000
Estimated Completed Cost	\$45K-\$75K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.ionaircraft.com	
651/653-0060	



Jabiru Pacific LLC *J170*

Cruise, mph	115
Stall, mph	52
Range, s.m.	1116
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	480/500
Engine Used	Jabiru 2200
HP/HP Range	85

Fuel Capacity, gal.	36
Empty/Gross Weight, lb.	635/1320
Length, ft.	18.8
Wingspan, ft.	31.3
Wing Area, sq. ft.	103
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	600
No. Completed & Flown	400
Cost	\$38,400
Estimated Completed Cost	\$45K-\$60K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.jabirupacific.com	
559/431-1701	



Jabiru Pacific LLC *J230*

Cruise, mph	138
Stall, mph	52
Range, s.m.	940
Rate of Climb, fpm	1300
Takeoff/Landing Distance, ft.	500/800
Engine Used	Jabiru 3300
HP/HP Range	120

Fuel Capacity, gal.	36
Empty/Gross Weight, lb.	760/1320
Length, ft.	21.5
Wingspan, ft.	31.3
Wing Area, sq. ft.	103
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	600
No. Completed & Flown	100
Cost	\$43,900
Estimated Completed Cost	\$65K-\$100K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.jabirupacific.com	
559/431-1701	



Jabiru Pacific LLC *J250*

Cruise, mph	138
Stall, mph	52
Range, s.m.	920
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	460/820
Engine Used	Jabiru 3300
HP/HP Range	120

Fuel Capacity, gal.	36
Empty/Gross Weight, lb.	760/1320
Length, ft.	21.5
Wingspan, ft.	30.8
Wing Area, sq. ft.	120
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	600
No. Completed & Flown	230
Cost	\$44,900
Estimated Completed Cost	\$60K-\$90K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.jabirupacific.com	
559/431-1701	



Jabiru Pacific LLC *J430*

Cruise, mph	138
Stall, mph	57
Range, s.m.	940
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	660/820
Engine Used	Jabiru 3300
HP/HP Range	120

Fuel Capacity, gal.	36
Empty/Gross Weight, lb.	800/1540
Length, ft.	n.p.
Wingspan, ft.	31.3
Wing Area, sq. ft.	103
No. of Seats	4
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	600
No. Completed & Flown	25
Cost	\$46,900
Estimated Completed Cost	\$65K-\$100K
Quickbuild/Plans Available?	Y/N
www.jabirupacific.com	
559/431-1701	



JDT Mini-Max LLC *1030R MAX 103 Ultralight*

Cruise, mph	55
Stall, mph	26
Range, s.m.	140
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	150/210
Engine Used	Rotax 277
HP/HP Range	28

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	250/560
Length, ft.	16
Wingspan, ft.	25
Wing Area, sq. ft.	112.5
No. of Seats	1
Cockpit Width, in.	22
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	550
No. Completed & Flown	250
Cost	\$5395
Estimated Completed Cost	\$8K-\$10K
Quickbuild/Plans Available?	N/\$200
	LSA Legal
www.jdtmini-max.com	
574/773-2151	



JDT Mini-Max *1100R Mini-MAX*

Cruise, mph	65
Stall, mph	31
Range, s.m.	140
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	100/200
Engine Used	Rotax 447
HP/HP Range	40/30-50

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	267/560
Length, ft.	16
Wingspan, ft.	25
Wing Area, sq. ft.	112.5
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	400
No. Completed & Flown	600
Cost	\$4795
Estimated Completed Cost	\$7K-\$9K
Quickbuild/Plans Available?	N/\$200
	LSA Legal
www.jdtmini-max.com	
574/773-2151	



JDT Mini-Max *1500R Open Cockpit*

Cruise, mph	65
Stall, mph	31
Range, s.m.	170
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	100/210
Engine Used	Rotax 447
HP/HP Range	40/30-50

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	269/560
Length, ft.	16
Wingspan, ft.	25
Wing Area, sq. ft.	112.5
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	450
No. Completed & Flown	200
Cost	\$5290
Estimated Completed Cost	\$7K-\$10K
Quickbuild/Plans Available?	N/\$200
	LSA Legal
www.jdtmini-max.com	
574/773-2151	

**JDT Mini-Max
1550V V-MAX**

Cruise, mph	75
Stall, mph	38
Range, s.m.	170
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	150/250
Engine Used	VW
HP/HP Range	50/50-60

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	400/700
Length, ft.	16
Wingspan, ft.	26.5
Wing Area, sq. ft.	118
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	500
No. Completed & Flown	250
Cost	\$5795
Estimated Completed Cost	\$8K-\$10K
Quickbuild/Plans Available?	N/\$225
	LSA Legal
www.jdtmini-max.com	
574/773-2151	

**JDT Mini-Max LLC
1600R Enclosed Cockpit**

Cruise, mph	72
Stall, mph	28
Range, s.m.	210
Rate of Climb, fpm	950
Takeoff/Landing Distance, ft.	100/210
Engine Used	Rotax 447
HP/HP Range	40/30-50

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	301/560
Length, ft.	16
Wingspan, ft.	25
Wing Area, sq. ft.	112.5
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	500
No. Completed & Flown	315
Cost	\$5695
Estimated Completed Cost	\$8K-\$10K
Quickbuild/Plans Available?	N/\$200
	LSA Legal
www.jdtmini-max.com	
574/773-2151	

**JDT Mini-Max LLC
1650R Eros Enclosed Cockpit**

Cruise, mph	75
Stall, mph	33
Range, s.m.	230
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	150/250
Engine Used	Rotax 503
HP/HP Range	50/50-60

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	400/700
Length, ft.	16
Wingspan, ft.	26.5
Wing Area, sq. ft.	118
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	550
No. Completed & Flown	300
Cost	\$5995
Estimated Completed Cost	\$10K-\$12K
Quickbuild/Plans Available?	N/\$225
	LSA Legal
www.jdtmini-max.com	
574/773-2151	

**JDT Mini-Max LLC
1700R Hi-MAX**

Cruise, mph	70
Stall, mph	31
Range, s.m.	140
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	100/210
Engine Used	Rotax 447
HP/HP Range	40/30-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	319/560
Length, ft.	16
Wingspan, ft.	25
Wing Area, sq. ft.	112.5
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	500
No. Completed & Flown	250
Cost	\$5765
Estimated Completed Cost	\$8K-\$10K
Quickbuild/Plans Available?	N/\$200
	LSA Legal
www.jdtmini-max.com	
574/773-2151	

**Jim Kimball Enterprises
Pitts Model 12**

Cruise, mph	175
Stall, mph	64
Range, s.m.	525
Rate of Climb, fpm	3200
Takeoff/Landing Distance, ft.	300/900
Engine Used	Vedeneyev M-14P
HP/HP Range	360/300-450

Fuel Capacity, gal.	54
Empty/Gross Weight, lb.	1525/2300
Length, ft.	19.6
Wingspan, ft.	22
Wing Area, sq. ft.	150
No. of Seats	2T
Cockpit Width, in.	26
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	2500
No. Completed & Flown	54
Cost	\$59,995
Estimated Completed Cost	\$115K-\$140K
Quickbuild/Plans Available?	N/\$300
www.pittsmodel12.com	
407/889-3451	

**Johnston Aviation
Tiger Cub UL**

Cruise, mph	65
Stall, mph	25
Range, s.m.	120
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	150/300
Engine Used	Rotax 447
HP/HP Range	40/30-55

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	275/600
Length, ft.	19.9
Wingspan, ft.	29.3
Wing Area, sq. ft.	130
No. of Seats	1
Cockpit Width, in.	27
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	450
No. Completed & Flown	29
Cost	\$12,560
Estimated Completed Cost	\$17K-\$21K
Quickbuild/Plans Available?	V/\$250
	LSA Legal
www.tigercubaircraft.com	
724/745-4040	

**Just Aircraft
Escapade**

Cruise, mph	110
Stall, mph	27
Range, s.m.	520
Rate of Climb, fpm	880
Takeoff/Landing Distance, ft.	300/300
Engine Used	Rotax 912S
HP/HP Range	100/65-120

Fuel Capacity, gal.	18
Empty/Gross Weight, lb.	615/1320
Length, ft.	19
Wingspan, ft.	28.5
Wing Area, sq. ft.	108
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	tri or tail
Bldg. Materials	F, T

Beginner Build Time, hr.	700
No. Completed & Flown	100
Cost	\$19,800
Estimated Completed Cost	\$44K-\$55K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.justaircraft.com	
864/718-0320	

**Just Aircraft
Highlander**

Cruise, mph	110
Stall, mph	27
Range, s.m.	520
Rate of Climb, fpm	880
Takeoff/Landing Distance, ft.	300/300
Engine Used	Rotax 912S
HP/HP Range	100/65-120

Fuel Capacity, gal.	18
Empty/Gross Weight, lb.	615/1320
Length, ft.	19
Wingspan, ft.	31.5
Wing Area, sq. ft.	120.8
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	700
No. Completed & Flown	120
Cost	\$22,800
Estimated Completed Cost	\$47K-\$59K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.justaircraft.com	
864/718-0320	





Kitfox Aircraft LLC Kitfox Super Sport

Cruise, mph	123
Stall, mph	41
Range, s.m.	600
Rate of Climb, fpm	1300
Takeoff/Landing Distance, ft.	290/290
Engine Used	Rotax 912S
HP/HP Range	100/80-100

Fuel Capacity, gal.	27
Empty/Gross Weight, lb.	750/1320
Length, ft.	19.8
Wingspan, ft.	30.7
Wing Area, sq. ft.	128
No. of Seats	2
Cockpit Width, in.	43
Landing Gear	tri or tail
Bldg. Materials	F, T

Beginner Build Time, hr.	1000
No. Completed & Flown	3800
Cost	\$18,985
Estimated Completed Cost	\$35K-\$60K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.kitfoxaircraft.com
208/337-5111



Lancair International, Inc. Lancair ES/Super ES

Cruise, mph	215
Stall, mph	70
Range, s.m.	1400
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	600/900
Engine Used	Continental IO-550
HP/HP Range	310/210-310

Fuel Capacity, gal.	105
Empty/Gross Weight, lb.	2200/3550
Length, ft.	25
Wingspan, ft.	35.5
Wing Area, sq. ft.	140
No. of Seats	4
Cockpit Width, in.	46
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	2000
No. Completed & Flown	90
Cost	\$100,000
Estimated Completed Cost	\$250K-\$350K
Quickbuild/Plans Available?	N/N

www.lancair.com
541/923-2244



Lancair International, Inc. Lancair Evolution

Cruise, mph	320
Stall, mph	61
Range, s.m.	1303
Rate of Climb, fpm	4000
Takeoff/Landing Distance, ft.	1000/1000
Engine Used	PT6A-135A
HP/HP Range	750/550-750

Fuel Capacity, gal.	168
Empty/Gross Weight, lb.	2350/4350
Length, ft.	30
Wingspan, ft.	37
Wing Area, sq. ft.	132
No. of Seats	4
Cockpit Width, in.	50
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	1000
No. Completed & Flown	4
Cost	\$495,000
Estimated Completed Cost	\$900K-\$1.2M
Quickbuild/Plans Available?	N/N

www.lancair.com
541/923-2244



Lancair International, Inc. Lancair Evolution Piston

Cruise, mph	278
Stall, mph	61
Range, s.m.	1955
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	1200/1400
Engine Used	Lycoming TEO-540
HP/HP Range	350

Fuel Capacity, gal.	168
Empty/Gross Weight, lb.	2500/4350
Length, ft.	30
Wingspan, ft.	37
Wing Area, sq. ft.	132
No. of Seats	4
Cockpit Width, in.	50
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	1000
No. Completed & Flown	1
Cost	\$495,000
Estimated Completed Cost	\$700K-\$800K
Quickbuild/Plans Available?	N/N

www.lancair.com
541/923-2244



Lancair International Inc. Lancair IV

Cruise, mph	285
Stall, mph	75
Range, s.m.	1550
Rate of Climb, fpm	2500
Takeoff/Landing Distance, ft.	1500/1900
Engine Used	Continental TS10-550
HP/HP Range	350/310-350

Fuel Capacity, gal.	110
Empty/Gross Weight, lb.	2000/3550
Length, ft.	25
Wingspan, ft.	30.2
Wing Area, sq. ft.	98
No. of Seats	4
Cockpit Width, in.	46
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	2500
No. Completed & Flown	110
Cost	\$100,000
Estimated Completed Cost	\$300K-\$400K
Quickbuild/Plans Available?	N/N

www.lancair.com
541/923-2244



Lancair International Inc. Lancair IV-P

Cruise, mph	300
Stall, mph	73
Range, s.m.	1550
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	1500/1900
Engine Used	Continental TS10-550
HP/HP Range	350/310-350

Fuel Capacity, gal.	90
Empty/Gross Weight, lb.	2200/3550
Length, ft.	25
Wingspan, ft.	30.2
Wing Area, sq. ft.	98
No. of Seats	4
Cockpit Width, in.	46
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	3000
No. Completed & Flown	250
Cost	\$130,000
Estimated Completed Cost	\$400K-\$500K
Quickbuild/Plans Available?	N/N

www.lancair.com
541/923-2244



Lancair International Inc. Lancair Legacy

Cruise, mph	270
Stall, mph	65
Range, s.m.	1150
Rate of Climb, fpm	2500
Takeoff/Landing Distance, ft.	800/900
Engine Used	Continental IO-550
HP/HP Range	310/200-310

Fuel Capacity, gal.	65
Empty/Gross Weight, lb.	1500/2200
Length, ft.	22
Wingspan, ft.	25.5
Wing Area, sq. ft.	82.5
No. of Seats	2
Cockpit Width, in.	43.5
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	1500
No. Completed & Flown	140
Cost	\$71,000
Estimated Completed Cost	\$220K-\$320K
Quickbuild/Plans Available?	N/N

www.lancair.com
541/923-2244



Lancair International Inc. Lancair Legacy FG

Cruise, mph	215
Stall, mph	65
Range, s.m.	1075
Rate of Climb, fpm	2500
Takeoff/Landing Distance, ft.	1500/900
Engine Used	Continental IO-550
HP/HP Range	310/200-310

Fuel Capacity, gal.	65
Empty/Gross Weight, lb.	1450/2200
Length, ft.	22
Wingspan, ft.	25.5
Wing Area, sq. ft.	82.5
No. of Seats	2
Cockpit Width, in.	43.5
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	1200
No. Completed & Flown	15
Cost	\$57,500
Estimated Completed Cost	\$200K-\$300K
Quickbuild/Plans Available?	N/N

www.lancair.com
541/923-2244

Legend Aircraft Inc. Turbine Legend

Cruise, mph	333
Stall, mph	66
Range, s.m.	943
Rate of Climb, fpm	5500
Takeoff/Landing Distance, ft.	1500/1500
Engine Used	Walter 601D
HP/HP Range	724/600-1000

Fuel Capacity, gal.	100
Empty/Gross Weight, lb.	2000/3300
Length, ft.	25.7
Wingspan, ft.	28.5
Wing Area, sq. ft.	101
No. of Seats	2T
Cockpit Width, in.	29.5
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	2000
No. Completed & Flown	24
Cost	\$124,900
Estimated Completed Cost	\$180K-\$500K
Quickbuild/Plans Available?	Y/N
www.turbinelegend.com	
318/435-4401	



Lockwood Aircraft Air Cam

Cruise, mph	80
Stall, mph	39
Range, s.m.	340
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	200/300
Engine Used	Rotax 912S (2)
HP/HP Range	100/64-100 ea

Fuel Capacity, gal.	28
Empty/Gross Weight, lb.	1040/1680
Length, ft.	27
Wingspan, ft.	36
Wing Area, sq. ft.	205
No. of Seats	2T
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, M, T

Beginner Build Time, hr.	1200
No. Completed & Flown	146
Cost (includes engine)	\$99,985
Estimated Completed Cost	\$105K-\$140K
Quickbuild/Plans Available?	N/N
www.lockwoodaircraft.com	
863/655-4242	



Lockwood Aircraft Super Drifter

Cruise, mph	75
Stall, mph	34
Range, s.m.	230
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	200/200
Engine Used	Rotax 912
HP/HP Range	80/50-80

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	495/1000
Length, ft.	22
Wingspan, ft.	30
Wing Area, sq. ft.	160
No. of Seats	2T
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, M, T

Beginner Build Time, hr.	300
No. Completed & Flown	1425
Cost (includes engine)	\$44,595
Estimated Completed Cost	\$47K-\$55K
Quickbuild/Plans Available?	N/N
LSA Legal	
www.lockwoodaircraft.com	
863/655-4242	



Loehle Aircraft Corp. 5151 Mustang

Cruise, mph	80
Stall, mph	30
Range, s.m.	370
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	150/250
Engine Used	Rotax 582
HP/HP Range	65

Fuel Capacity, gal.	13
Empty/Gross Weight, lb.	575/900
Length, ft.	22.9
Wingspan, ft.	27.4
Wing Area, sq. ft.	130
No. of Seats	1
Cockpit Width, in.	22.5
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	600
No. Completed & Flown	27
Cost	\$13,995
Estimated Completed Cost	\$18K-\$59K
Quickbuild/Plans Available?	N/N
LSA Legal	
www.loehle.com	
931/857-3419	



Loehle Aircraft Corp. 5151 RG Mustang

Cruise, mph	85
Stall, mph	30
Range, s.m.	370
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	150/250
Engine Used	Rotax 582
HP/HP Range	65

Fuel Capacity, gal.	13
Empty/Gross Weight, lb.	600/960
Length, ft.	22.9
Wingspan, ft.	27.4
Wing Area, sq. ft.	130
No. of Seats	1
Cockpit Width, in.	22.5
Landing Gear	tailwheel/R
Bldg. Materials	F, W

Beginner Build Time, hr.	750
No. Completed & Flown	83
Cost	\$16,188
Estimated Completed Cost	\$20K-\$61K
Quickbuild/Plans Available?	N/N
www.loehle.com	
931/857-3419	



Loehle Aircraft Corp. Fokker D-VII

Cruise, mph	65
Stall, mph	20
Range, s.m.	100
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	75/150
Engine Used	Rotax 503
HP/HP Range	50/28-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	265/525
Length, ft.	16.5
Wingspan, ft.	24
Wing Area, sq. ft.	168
No. of Seats	1
Cockpit Width, in.	20
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	75
No. Completed & Flown	3
Cost	\$17,995
Estimated Completed Cost	\$18K-\$41K
Quickbuild/Plans Available?	N/N
LSA Legal	
www.loehle.com	
931/857-3419	



Loehle Aircraft Corp. KW-909

Cruise, mph	85
Stall, mph	30
Range, s.m.	370
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	150/250
Engine Used	Rotax 582
HP/HP Range	65

Fuel Capacity, gal.	13
Empty/Gross Weight, lb.	575/900
Length, ft.	22.9
Wingspan, ft.	27.4
Wing Area, sq. ft.	130
No. of Seats	1
Cockpit Width, in.	22.5
Landing Gear	tailwheel/R
Bldg. Materials	F, W

Beginner Build Time, hr.	600
No. Completed & Flown	1
Cost	\$14,995
Estimated Completed Cost	\$18K-\$61K
Quickbuild/Plans Available?	N/N
www.loehle.com	
931/857-3419	



Loehle Aircraft Corp. P-40

Cruise, mph	85
Stall, mph	30
Range, s.m.	370
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	150/250
Engine Used	Rotax 582
HP/HP Range	65

Fuel Capacity, gal.	13
Empty/Gross Weight, lb.	600/900
Length, ft.	22.9
Wingspan, ft.	28.6
Wing Area, sq. ft.	135
No. of Seats	1
Cockpit Width, in.	22.5
Landing Gear	tailwheel/R
Bldg. Materials	F, W

Beginner Build Time, hr.	600
No. Completed & Flown	6
Cost	\$13,995
Estimated Completed Cost	\$18K-\$61K
Quickbuild/Plans Available?	N/N
www.loehle.com	
931/857-3419	





Loehle Aircraft Corp. SE5A

Cruise, mph	65
Stall, mph	20
Range, s.m.	100
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	75/150
Engine Used	Rotax 503
HP/HP Range	50/28-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	265/525
Length, ft.	16.5
Wingspan, ft.	24
Wing Area, sq. ft.	168
No. of Seats	1
Cockpit Width, in.	20
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	75
No. Completed & Flown	7
Cost	\$17,995
Estimated Completed Cost	\$21K-\$41K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.loehle.com
931/857-3419



Loehle Aircraft Corp. Spad XIII

Cruise, mph	65
Stall, mph	20
Range, s.m.	100
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	75/150
Engine Used	Rotax 503
HP/HP Range	50/28-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	265/525
Length, ft.	16.5
Wingspan, ft.	24
Wing Area, sq. ft.	168
No. of Seats	1
Cockpit Width, in.	20
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	75
No. Completed & Flown	6
Cost	\$17,995
Estimated Completed Cost	\$21K-\$41K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.loehle.com
931/857-3419



Loehle Aircraft Corp. Sport Parasol

Cruise, mph	65
Stall, mph	22
Range, s.m.	230
Rate of Climb, fpm	750
Takeoff/Landing Distance, ft.	100/150
Engine Used	Rotax 503
HP/HP Range	50/28-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	252/600
Length, ft.	18.4
Wingspan, ft.	25.5
Wing Area, sq. ft.	114
No. of Seats	1
Cockpit Width, in.	19.5
Landing Gear	tailwheel
Bldg. Materials	F, W

Beginner Build Time, hr.	350
No. Completed & Flown	80
Cost	\$7995
Estimated Completed Cost	\$12K-\$21K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.loehle.com
931/857-3419



Makelan Corp. Hatz Classic

Cruise, mph	100
Stall, mph	43
Range, s.m.	350
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	400/500
Engine Used	Lycoming O-320
HP/HP Range	160/150-160

Fuel Capacity, gal.	28
Empty/Gross Weight, lb.	1050/1700
Length, ft.	19.2
Wingspan, ft.	25
Wing Area, sq. ft.	180
No. of Seats	2T
Cockpit Width, in.	26
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	2000
No. Completed & Flown	15
Cost	\$28,000
Estimated Completed Cost	\$45K-\$60K
Quickbuild/Plans Available?	N/\$250

www.hatzclassic.com
830/905-7832



Mini-IMP Aircraft Co. Mini-IMP

Cruise, mph	180
Stall, mph	45
Range, s.m.	500
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	800/1500
Engine Used	Continental O-200
HP/HP Range	100/80-125

Fuel Capacity, gal.	13
Empty/Gross Weight, lb.	780/1000
Length, ft.	17
Wingspan, ft.	24.5
Wing Area, sq. ft.	75
No. of Seats	1
Cockpit Width, in.	26
Landing Gear	trigear/R
Bldg. Materials	C, M

Beginner Build Time, hr.	1500
No. Completed & Flown	10
Cost	\$3450
Estimated Completed Cost	\$15K-\$27K
Quickbuild/Plans Available?	N/\$205

www.mini-imp.com
817/689-3778



M-Squared, Inc. Breese DS

Cruise, mph	65
Stall, mph	26
Range, s.m.	65
Rate of Climb, fpm	825
Takeoff/Landing Distance, ft.	165/225
Engine Used	Rotax 503
HP/HP Range	54

Fuel Capacity, gal.	6
Empty/Gross Weight, lb.	330/900
Length, ft.	21.6
Wingspan, ft.	30
Wing Area, sq. ft.	168
No. of Seats	1
Cockpit Width, in.	48
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	100
No. Completed & Flown	100
Cost (includes engine)	\$18,495
Estimated Completed Cost	\$25K-\$35K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.msquaredaircraft.com
251/957-1533



M-Squared, Inc. Breese SS

Cruise, mph	46
Stall, mph	24
Range, s.m.	60
Rate of Climb, fpm	875
Takeoff/Landing Distance, ft.	75/50
Engine Used	Rotax 503
HP/HP Range	54

Fuel Capacity, gal.	6
Empty/Gross Weight, lb.	310/900
Length, ft.	19
Wingspan, ft.	30
Wing Area, sq. ft.	168
No. of Seats	1
Cockpit Width, in.	48
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	100
No. Completed & Flown	56
Cost (includes engine)	\$18,495
Estimated Completed Cost	\$25K-\$35K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.msquaredaircraft.com
251/957-1533



M-Squared, Inc. Breese 2 DS

Cruise, mph	75
Stall, mph	32
Range, s.m.	210
Rate of Climb, fpm	825
Takeoff/Landing Distance, ft.	250/300
Engine Used	Rotax 582
HP/HP Range	65

Fuel Capacity, gal.	16
Empty/Gross Weight, lb.	550/1320
Length, ft.	21.7
Wingspan, ft.	31
Wing Area, sq. ft.	178
No. of Seats	2
Cockpit Width, in.	58
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	100
No. Completed & Flown	100
Cost (includes engine)	\$25,000
Estimated Completed Cost	\$26K-\$60K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.msquaredaircraft.com
251/957-1533

**M-Squared, Inc.
Breese 2 SS**

Cruise, mph	55	Fuel Capacity, gal.	16
Stall, mph	28	Empty/Gross Weight, lb.	540/1320
Range, s.m.	210	Length, ft.	
Rate of Climb, fpm	825	Wingspan, ft.	31
Takeoff/Landing Distance, ft.	125/375	Wing Area, sq. ft.	178
Engine Used	Rotax 582	No. of Seats	2
HP/HP Range	65	Cockpit Width, in.	58
		Landing Gear	trigear
		Bldg. Materials	F, T

Beginner Build Time, hr.	100
No. Completed & Flown	75
Cost (includes engine)	\$25,000
Estimated Completed Cost	\$26K-\$60K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.msquaredaircraft.com	
251/957-1533	


**M-Squared, Inc.
Sport 1000**

Cruise, mph	74	Fuel Capacity, gal.	16
Stall, mph	39	Empty/Gross Weight, lb.	625/1320
Range, s.m.	262	Length, ft.	22
Rate of Climb, fpm	625	Wingspan, ft.	32.8
Takeoff/Landing Distance, ft.	425/300	Wing Area, sq. ft.	180
Engine Used	Rotax 912	No. of Seats	2
HP/HP Range	80	Cockpit Width, in.	54
		Landing Gear	trigear
		Bldg. Materials	F, T

Beginner Build Time, hr.	200
No. Completed & Flown	200
Cost (includes engine)	\$34,995
Estimated Completed Cost	\$36K-\$60K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.msquaredaircraft.com	
251/957-1533	


**M-Squared, Inc.
Sprint 1000**

Cruise, mph	58	Fuel Capacity, gal.	16
Stall, mph	27	Empty/Gross Weight, lb.	610/1320
Range, s.m.	200	Length, ft.	n.p.
Rate of Climb, fpm	650	Wingspan, ft.	32.8
Takeoff/Landing Distance, ft.	135/60	Wing Area, sq. ft.	180
Engine Used	Rotax 912	No. of Seats	2
HP/HP Range	80	Cockpit Width, in.	54
		Landing Gear	trigear
		Bldg. Materials	F, T

Beginner Build Time, hr.	100
No. Completed & Flown	57
Cost (includes engine)	\$34,995
Estimated Completed Cost	\$36K-\$60K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.msquaredaircraft.com	
251/957-1533	


**Morrison Aircraft
Morrison 6**

Cruise, mph	240	Fuel Capacity, gal.	90
Stall, mph	62	Empty/Gross Weight, lb.	2197/4500
Range, s.m.	1660	Length, ft.	29.9
Rate of Climb, fpm	900	Wingspan, ft.	35.8
Takeoff/Landing Distance, ft.	900/750	Wing Area, sq. ft.	174
Engine Used	Lycoming IO-720	No. of Seats	6
HP/HP Range	400/400-450	Cockpit Width, in.	53
		Landing Gear	trigear

Bldg. Materials	C
Beginner Build Time, hr.	1500
No. Completed & Flown	1
Cost	\$115,000
Estimated Completed Cost	\$170,000-\$332,000
Quickbuild/Plans Available?	Y/N
www.morrisonaircraft.com	
570/368-3655	


**Murphy Aircraft Manufacturing
Elite**

Cruise, mph	132	Fuel Capacity, gal.	44
Stall, mph	42	Empty/Gross Weight, lb.	1100/1800
Range, s.m.	715	Length, ft.	22.3
Rate of Climb, fpm	1400	Wingspan, ft.	30.3
Takeoff/Landing Distance, ft.	600/400	Wing Area, sq. ft.	152
Engine Used	Lycoming O-320	No. of Seats	2+1
HP/HP Range	150/118-180	Cockpit Width, in.	44
		Landing Gear	tri or tail
		Bldg. Materials	M

Beginner Build Time, hr.	1400
No. Completed & Flown	25
Cost	\$34,662 (Canadian)
Estimated Completed Cost	\$75K-\$85K
Quickbuild/Plans Available?	N/N
www.pattersonaerosales.com	
905/457-5238	


**Murphy Aircraft Manufacturing
Maverick**

Cruise, mph	80	Fuel Capacity, gal.	5
Stall, mph	32	Empty/Gross Weight, lb.	440/950
Range, s.m.	280	Length, ft.	20.8
Rate of Climb, fpm	700	Wingspan, ft.	29.4
Takeoff/Landing Distance, ft.	100/200	Wing Area, sq. ft.	147
Engine Used	Rotax 503/582	No. of Seats	2
HP/HP Range	53/53-65	Cockpit Width, in.	37
		Landing Gear	tailwheel
		Bldg. Materials	F, M

Beginner Build Time, hr.	1000
No. Completed & Flown	105
Cost	\$22,344 (Canadian)
Estimated Completed Cost	\$30K-\$40K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.pattersonaerosales.com	
905/457-5238	


**Murphy Aircraft Manufacturing
Moose**

Cruise, mph	140	Fuel Capacity, gal.	80
Stall, mph	52	Empty/Gross Weight, lb.	2000/3500
Range, s.m.	1150	Length, ft.	27.9
Rate of Climb, fpm	1600	Wingspan, ft.	36.3
Takeoff/Landing Distance, ft.	600/700	Wing Area, sq. ft.	182
Engine Used	Vedeneyev M-14P	No. of Seats	6
HP/HP Range	360/250-400	Cockpit Width, in.	44
		Landing Gear	tailwheel
		Bldg. Materials	M

Beginner Build Time, hr.	3500
No. Completed & Flown	120
Cost	\$54,264 (Canadian)
Estimated Completed Cost	\$100K-\$130K
Quickbuild/Plans Available?	N/N
www.pattersonaerosales.com	
905/457-5238	


**Murphy Aircraft Manufacturing
Rebel**

Cruise, mph	120	Fuel Capacity, gal.	44
Stall, mph	40	Empty/Gross Weight, lb.	885/1650
Range, s.m.	820	Length, ft.	21.4
Rate of Climb, fpm	1200	Wingspan, ft.	30
Takeoff/Landing Distance, ft.	300/400	Wing Area, sq. ft.	150
Engine Used	Lycoming O-320	No. of Seats	2+1
HP/HP Range	150/80-160	Cockpit Width, in.	44
		Landing Gear	tailwheel
		Bldg. Materials	F, M

Beginner Build Time, hr.	1200
No. Completed & Flown	590
Cost	\$24,739 (Canadian)
Estimated Completed Cost	\$55K-\$70K
Quickbuild/Plans Available?	N/N
www.pattersonaerosales.com	
905/457-5238	





Murphy Aircraft Manufacturing *Rebel Sport*

Cruise, mph	105
Stall, mph	40
Range, s.m.	620
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	200/300
Engine Used	Rotax 912S
HP/HP Range	100/80-120

Fuel Capacity, gal.	32
Empty/Gross Weight, lb.	750/1320
Length, ft.	21.4
Wingspan, ft.	30
Wing Area, sq. ft.	150
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	tailwheel
Bldg. Materials	F, M

Beginner Build Time, hr.	1200
No. Completed & Flown	50
Cost	\$24,739 (Canadian)
Estimated Completed Cost	\$50K-\$60K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.pattersonaerosales.com
905/457-5238



Murphy Aircraft Manufacturing *Renegade Spirit*

Cruise, mph	90
Stall, mph	36
Range, s.m.	350
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	130/250
Engine Used	Rotax 912
HP/HP Range	80/65-80

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	480/950
Length, ft.	18.4
Wingspan, ft.	21.3
Wing Area, sq. ft.	153.8
No. of Seats	2
Cockpit Width, in.	22
Landing Gear	tailwheel
Bldg. Materials	C, F, M

Beginner Build Time, hr.	800
No. Completed & Flown	560
Cost	\$24,898
Estimated Completed Cost	\$48K-\$55K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.pattersonaerosales.com
905/457-5238



Mustang Aeronautics *Midget Mustang*

Cruise, mph	175
Stall, mph	57
Range, s.m.	435
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	550/680
Engine Used	Continental O-200
HP/HP Range	100/85-160

Fuel Capacity, gal.	15
Empty/Gross Weight, lb.	610/950
Length, ft.	16.5
Wingspan, ft.	18.5
Wing Area, sq. ft.	68
No. of Seats	1
Cockpit Width, in.	21
Landing Gear	tailwheel
Bldg. Materials	M

Beginner Build Time, hr.	1000
No. Completed & Flown	435
Cost	\$13,250
Estimated Completed Cost	\$25K-\$36K
Quickbuild/Plans Available?	V/\$145

www.mustangaero.com
248/649-6818



Mustang Aeronautics *Mustang II*

Cruise, mph	220
Stall, mph	58
Range, s.m.	770
Rate of Climb, fpm	1900
Takeoff/Landing Distance, ft.	500/680
Engine Used	Lycoming O-360
HP/HP Range	180/150-200

Fuel Capacity, gal.	25
Empty/Gross Weight, lb.	960/1600
Length, ft.	19.5
Wingspan, ft.	24.5
Wing Area, sq. ft.	97.1
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	1500
No. Completed & Flown	480
Cost	\$17,500
Estimated Completed Cost	\$45K-\$65K
Quickbuild/Plans Available?	V/\$265

www.mustangaero.com
248/649-6818



National Aeronautics Co. *Cassutt I/II*

Cruise, mph	190
Stall, mph	65
Range, s.m.	450
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	600/800
Engine Used	Continental O-200
HP/HP Range	100/100-200

Fuel Capacity, gal.	15
Empty/Gross Weight, lb.	500/850
Length, ft.	16
Wingspan, ft.	17
Wing Area, sq. ft.	76.5
No. of Seats	1
Cockpit Width, in.	22
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	700
No. Completed & Flown	301
Cost	\$19,000
Estimated Completed Cost	\$25K-\$40K
Quickbuild/Plans Available?	V/\$225

<http://cassutt.lornet.com>
303/940-8442



New Century Aerosport, Inc. *Radial Rocket*

Cruise, mph	230
Stall, mph	68
Range, s.m.	1200
Rate of Climb, fpm	3500
Takeoff/Landing Distance, ft.	600/800
Engine Used	Vedeneyev M-14P
HP/HP Range	360/360-400

Fuel Capacity, gal.	70
Empty/Gross Weight, lb.	1650/2450
Length, ft.	22.2
Wingspan, ft.	25.2
Wing Area, sq. ft.	90
No. of Seats	2T
Cockpit Width, in.	34
Landing Gear	tailwheel
Bldg. Materials	C

Beginner Build Time, hr.	1900
No. Completed & Flown	4
Cost	\$68,950
Estimated Completed Cost	\$95K-\$155K
Quickbuild/Plans Available?	Y/N

www.radialrocket.com
913/390-8900



Norman Aviation Int'l, Inc. *Mini Explorer Nordic 8*

Cruise, mph	90
Stall, mph	35
Range, s.m.	780
Rate of Climb, fpm	850
Takeoff/Landing Distance, ft.	250/350
Engine Used	Rotax 912
HP/HP Range	80/80-115

Fuel Capacity, gal.	28
Empty/Gross Weight, lb.	654/1232
Length, ft.	21
Wingspan, ft.	36
Wing Area, sq. ft.	180
No. of Seats	2
Cockpit Width, in.	48
Landing Gear	trigear
Bldg. Materials	F, T, W

Beginner Build Time, hr.	500
No. Completed & Flown	4
Cost	\$34,500
Estimated Completed Cost	\$60K-\$60K
Quickbuild/Plans Available?	Y/\$400
	LSA Legal

1175 St-Philippe Sud, St-Anselme, QC
G0R 2N0 Canada; 418/885-8333



Norman Aviation Int'l, Inc. *Norman VI-912-SW*

Cruise, mph	103
Stall, mph	34
Range, s.m.	460
Rate of Climb, fpm	1100
Takeoff/Landing Distance, ft.	250/350
Engine Used	Rotax 912
HP/HP Range	80/80-115

Fuel Capacity, gal.	16
Empty/Gross Weight, lb.	586/1058
Length, ft.	20.1
Wingspan, ft.	29.6
Wing Area, sq. ft.	132
No. of Seats	2
Cockpit Width, in.	39
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	400
No. Completed & Flown	253
Cost	\$19,895
Estimated Completed Cost	\$45K-\$45K
Quickbuild/Plans Available?	Y/\$400
	LSA Legal

1175 St-Philippe Sud, St-Anselme, QC
G0R 2N0 Canada; 418/885-8333

Norman Aviation Int'l, Inc. Norman VI-914

Cruise, mph	115
Stall, mph	34
Range, s.m.	460
Rate of Climb, fpm	2200
Takeoff/Landing Distance, ft.	150/350
Engine Used	Rotax 914
HP/HP Range	115/100-115

Fuel Capacity, gal.	16
Empty/Gross Weight, lb.	594/1058
Length, ft.	20.1
Wingspan, ft.	29.6
Wing Area, sq. ft.	132
No. of Seats	2
Cockpit Width, in.	39
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	400
No. Completed & Flown	3
Cost	\$19,895
Estimated Completed Cost	\$55K-\$55K
Quickbuild/Plans Available?	Y/N
	LSA Legal

1175 St-Philippe Sud, St-Anselme, QC
G0R 2N0 Canada; 418/885-8333



NuVenture Aircraft Questair Venture

Cruise, mph	276
Stall, mph	70
Range, s.m.	1150
Rate of Climb, fpm	2500
Takeoff/Landing Distance, ft.	1000/1600
Engine Used	Continental IO-550
HP/HP Range	310/280-310

Fuel Capacity, gal.	56
Empty/Gross Weight, lb.	1300/2000
Length, ft.	16.3
Wingspan, ft.	28
Wing Area, sq. ft.	72.5
No. of Seats	2
Cockpit Width, in.	48
Landing Gear	trigear/R
Bldg. Materials	M

Beginner Build Time, hr.	3000
No. Completed & Flown	62
Cost	\$69,900
Estimated Completed Cost	\$130K-\$250K
Quickbuild/Plans Available?	N/N

www.nuventureaircraft.com
503/838-9900



nVAero, LLC KR-2

Cruise, mph	180
Stall, mph	52
Range, s.m.	1600
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	350/900
Engine Used	2100cc VW
HP/HP Range	76/76-80

Fuel Capacity, gal.	12
Empty/Gross Weight, lb.	480/900
Length, ft.	14.5
Wingspan, ft.	20.8
Wing Area, sq. ft.	80
No. of Seats	2
Cockpit Width, in.	38
Landing Gear	tri or tail/F or R
Bldg. Materials	C, W

Beginner Build Time, hr.	1000
No. Completed & Flown	1900
Cost	\$8097
Estimated Completed Cost	\$12K-\$24K
Quickbuild/Plans Available?	Y/\$205

www.nvaero.com
800/515-4811



nVAero, LLC KR-2S

Cruise, mph	180
Stall, mph	52
Range, s.m.	750
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	700/850
Engine Used	2180cc VW
HP/HP Range	76/76-100

Fuel Capacity, gal.	12
Empty/Gross Weight, lb.	520/980
Length, ft.	16
Wingspan, ft.	23
Wing Area, sq. ft.	82
No. of Seats	2
Cockpit Width, in.	38.5
Landing Gear	tri or tail
Bldg. Materials	C, W

Beginner Build Time, hr.	1000
No. Completed & Flown	100
Cost	\$17,500
Estimated Completed Cost	\$21K-\$28K
Quickbuild/Plans Available?	Y/\$275

www.nvaero.com
800/515-4811



Pacific AeroSport LLC Twister

Cruise, mph	145
Stall, mph	47
Range, s.m.	805
Rate of Climb, fpm	1275
Takeoff/Landing Distance, ft.	350/400
Engine Used	Jabiru 2200
HP/HP Range	80/80-85

Fuel Capacity, gal.	19
Empty/Gross Weight, lb.	550/880
Length, ft.	20.3
Wingspan, ft.	24.6
Wing Area, sq. ft.	93.8
No. of Seats	1
Cockpit Width, in.	27
Landing Gear	tailwheel/F & R
Bldg. Materials	C

Beginner Build Time, hr.	800
No. Completed & Flown	21
Cost	\$38,350
Estimated Completed Cost	\$65K-\$90K
Quickbuild/Plans Available?	N/N

www.pacificaaerosport.com
360/474-9394



Pipistrel Apis Bee

Cruise, mph	52
Stall, mph	36
Aspect Ratio	18.4:1
L/D	40:1
Minimum Sink, fpm	52
Engine Used	Hirth F33
HP/HP Range	28

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	473/770
Length, ft.	20.6
Wingspan, ft.	49.1
Wing Area, sq. ft.	132
No. of Seats	1
Cockpit Width, in.	32
Landing Gear	tailwheel
Bldg. Materials	C

Beginner Build Time, hr.	400
No. Completed & Flown	30
Cost (includes engine)	\$65,500
Estimated Completed Cost	\$67K-\$76K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.pipistrel-usa.com
505/269-8234



Pipistrel Apis Bee Electro

Cruise, mph	52
Stall, mph	36
Aspect Ratio	18.4:1
L/D	40:1
Minimum Sink, fpm	52
Engine Used	Electric
HP/HP Range	n.a.

Fuel Capacity, gal.	n.a.
Empty/Gross Weight, lb.	473/770
Length, ft.	20.6
Wingspan, ft.	49.1
Wing Area, sq. ft.	132
No. of Seats	1
Cockpit Width, in.	32
Landing Gear	tailwheel
Bldg. Materials	C

Beginner Build Time, hr.	400
No. Completed & Flown	30
Cost (includes engine)	\$65,500
Estimated Completed Cost	\$67K-\$76K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.pipistrel-usa.com
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Pipistrel Sinus

Cruise, mph	136
Stall, mph	39
Range, s.m.	900
Rate of Climb, fpm	1280
Takeoff/Landing Distance, ft.	288/n.p.
Engine Used	Rotax 912
HP/HP Range	80

Fuel Capacity, gal.	25
Empty/Gross Weight, lb.	626/1290
Length, ft.	21.7
Wingspan, ft.	50
Wing Area, sq. ft.	132
No. of Seats	2
Cockpit Width, in.	43.3
Landing Gear	tri or tail
Bldg. Materials	C

Beginner Build Time, hr.	400
No. Completed & Flown	300
Cost (includes engine)	\$80,200
Estimated Completed Cost	\$82K-\$100K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.pipistrel-usa.com
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Pipistrel Taurus

Cruise, mph	84
Stall, mph	39
Aspect Ratio	14.24:1
L/D	41:1
Minimum Sink, fpm	43
Engine Used	Rotax 503
HP/HP Range	53

Fuel Capacity, gal.	6
Empty/Gross Weight, lb.	615/1215
Length, ft.	23.5
Wingspan, ft.	49.2
Wing Area, sq. ft.	148
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	tailwheel
Bldg. Materials	C

Beginner Build Time, hr.	400
No. Completed & Flown	65
Cost (includes engine)	\$80,000
Estimated Completed Cost	\$82K-\$100K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.pipistrel-usa.com
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Pipistrel Taurus Electro

Cruise, mph	84
Stall, mph	39
Aspect Ratio	14.24:1
L/D	41:1
Minimum Sink, fpm	43
Engine Used	Electric
HP/HP Range	n.a.

Fuel Capacity, gal.	n.a.
Empty/Gross Weight, lb.	615/1215
Length, ft.	23.5
Wingspan, ft.	49.2
Wing Area, sq. ft.	148
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	tailwheel
Bldg. Materials	C

Beginner Build Time, hr.	400
No. Completed & Flown	65
Cost (includes engine)	\$80,000
Estimated Completed Cost	\$82K-\$100K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.pipistrel-usa.com
505/269-8234



Pipistrel Virus

Cruise, mph	140
Stall, mph	40
Aspect Ratio	13.1:1
L/D	24:1
Minimum Sink, fpm	60
Engine Used	Rotax 912
HP/HP Range	80

Fuel Capacity, gal.	25
Empty/Gross Weight, lb.	628/1235
Length, ft.	21
Wingspan, ft.	23.5
Wing Area, sq. ft.	118
No. of Seats	2
Cockpit Width, in.	43.3
Landing Gear	tri or tail
Bldg. Materials	C

Beginner Build Time, hr.	400
No. Completed & Flown	200
Cost (includes engine)	\$80,200
Estimated Completed Cost	\$82K-\$100K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.pipistrel-usa.com
505/269-8234



Pipistrel Virus SW (Short Wing)

Cruise, mph	138
Stall, mph	39
Range, s.m.	900
Rate of Climb, fpm	1220
Takeoff/Landing Distance, ft.	310/n.p.
Engine Used	Rotax 912S
HP/HP Range	100/80-100

Fuel Capacity, gal.	25
Empty/Gross Weight, lb.	637/1210
Length, ft.	n.p.
Wingspan, ft.	35.1
Wing Area, sq. ft.	96.6
No. of Seats	2
Cockpit Width, in.	43.3
Landing Gear	tri or tail
Bldg. Materials	C

Beginner Build Time, hr.	400
No. Completed & Flown	50
Cost (includes engine)	\$80,200
Estimated Completed Cost	\$82K-\$100K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.pipistrel-usa.com
505/269-8234



Preceptor Aircraft Corp. N-3 Pup

Cruise, mph	60
Stall, mph	27
Range, s.m.	179
Rate of Climb, fpm	600
Takeoff/Landing Distance, ft.	150/150
Engine Used	Hummel 1/2 VW
HP/HP Range	35/35-45

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	254/535
Length, ft.	16.5
Wingspan, ft.	30.5
Wing Area, sq. ft.	120
No. of Seats	1
Cockpit Width, in.	22.8
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	250
No. Completed & Flown	630
Cost	\$11,700
Estimated Completed Cost	\$17K-\$19K
Quickbuild/Plans Available?	Y/\$225
	LSA Legal

www.preceptoraircraft.com
828/286-1926



Preceptor Aircraft Corp. Stinger

Cruise, mph	80
Stall, mph	35
Range, s.m.	300
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	300/300
Engine Used	1600cc VW
HP/HP Range	50/35-50

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	400/660
Length, ft.	17.3
Wingspan, ft.	30.5
Wing Area, sq. ft.	120
No. of Seats	1
Cockpit Width, in.	22.8
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	450
No. Completed & Flown	2
Cost	\$17,295
Estimated Completed Cost	\$22K-\$26K
Quickbuild/Plans Available?	Y/\$250
	LSA Legal

www.preceptoraircraft.com
828/286-1926



Preceptor Aircraft Corp. STOL King

Cruise, mph	90
Stall, mph	15
Range, s.m.	700
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	50/50
Engine Used	2180cc VW
HP/HP Range	103/75-150

Fuel Capacity, gal.	20
Empty/Gross Weight, lb.	600/1200
Length, ft.	23.8
Wingspan, ft.	31.5
Wing Area, sq. ft.	158
No. of Seats	2T
Cockpit Width, in.	32.5
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	600
No. Completed & Flown	6
Cost	\$25,000
Estimated Completed Cost	\$33K-\$45K
Quickbuild/Plans Available?	Y/\$275
	LSA Legal

www.preceptoraircraft.com
828/286-1926



Preceptor Aircraft Corp. Super Pup

Cruise, mph	80
Stall, mph	35
Range, s.m.	400
Rate of Climb, fpm	1400
Takeoff/Landing Distance, ft.	300/300
Engine Used	2180cc VW
HP/HP Range	70/50-80

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	450/1100
Length, ft.	17.3
Wingspan, ft.	30.5
Wing Area, sq. ft.	120
No. of Seats	1
Cockpit Width, in.	22.8
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	450
No. Completed & Flown	55
Cost	\$17,295
Estimated Completed Cost	\$22K-\$30K
Quickbuild/Plans Available?	Y/\$250
	LSA Legal

www.preceptoraircraft.com
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Preceptor Aircraft Corp. Ultra Pup

Cruise, mph	80
Stall, mph	35
Range, s.m.	350
Rate of Climb, fpm	1400
Takeoff/Landing Distance, ft.	300/300
Engine Used	2180cc VW
HP/HP Range	70/60-80

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	450/1100
Length, ft.	17.25
Wingspan, ft.	30.5
Wing Area, sq. ft.	120
No. of Seats	2T
Cockpit Width, in.	24.8
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	450
No. Completed & Flown	200
Cost	\$17,295
Estimated Completed Cost	\$22K-\$30K
Quickbuild/Plans Available?	Y/\$250
	LSA Legal
www.preceptoraircraft.com	
828/286-1926	



Pro-Composites, Inc. Personal Cruiser

Cruise, mph	115
Stall, mph	58
Range, s.m.	500
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	400/350
Engine Used	Corvair 2700cc
HP/HP Range	100/65-115

Fuel Capacity, gal.	15
Empty/Gross Weight, lb.	775/1250
Length, ft.	17.3
Wingspan, ft.	25.5
Wing Area, sq. ft.	76.5
No. of Seats	1
Cockpit Width, in.	29
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	800
No. Completed & Flown	1
Cost	\$9910
Estimated Completed Cost	\$19K-\$29K
Quickbuild/Plans Available?	N/N
www.pro-composites.com	
847/271-4795	



Pro-Composites, Inc. Vision EX

Cruise, mph	157
Stall, mph	54
Range, s.m.	400-1000
Rate of Climb, fpm	1400
Takeoff/Landing Distance, ft.	800/900
Engine Used	Subaru
HP/HP Range	100

Fuel Capacity, gal.	22
Empty/Gross Weight, lb.	850/1600
Length, ft.	19
Wingspan, ft.	21.7
Wing Area, sq. ft.	85
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	tri or tail
Bldg. Materials	C

Beginner Build Time, hr.	2500
No. Completed & Flown	3
Cost	\$18,500
Estimated Completed Cost	\$30K-\$40K
Quickbuild/Plans Available?	Y/\$427
www.pro-composites.com	
847/271-4795	



Progressive Aerodyne Sea Rey

Cruise, mph	100
Stall, mph	38
Range, s.m.	550
Rate of Climb, fpm	980
Takeoff/Landing Distance, ft.	350/350
Engine Used	Rotax 914
HP/HP Range	115/80-115

Fuel Capacity, gal.	18
Empty/Gross Weight, lb.	850/1370
Length, ft.	23
Wingspan, ft.	31
Wing Area, sq. ft.	157
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	tailwheel/R
Bldg. Materials	C, F, M, T

Beginner Build Time, hr.	700
No. Completed & Flown	480
Cost	\$32,900
Estimated Completed Cost	\$55K-\$75K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.searey.com	
407/292-3700	



Quad City Ultralight Aircraft Corp. Challenger II

Cruise, mph	75
Stall, mph	30
Range, s.m.	210
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	200/200
Engine Used	Rotax 447
HP/HP Range	42/42-52

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	300/800
Length, ft.	20
Wingspan, ft.	31.5
Wing Area, sq. ft.	173
No. of Seats	2T
Cockpit Width, in.	30
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	350
No. Completed & Flown	2000
Cost	\$11,429
Estimated Completed Cost	\$16K-\$23K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.quadcitychallenger.com	
309/764-3515	



Quad City Ultralight Aircraft Corp. Challenger II CWLSS

Cruise, mph	95
Stall, mph	37
Range, s.m.	200
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	250/200
Engine Used	Rotax 503
HP/HP Range	52/50-75

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	425/960
Length, ft.	20
Wingspan, ft.	26
Wing Area, sq. ft.	143
No. of Seats	2T
Cockpit Width, in.	28
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	350
No. Completed & Flown	100
Cost	\$16,672
Estimated Completed Cost	\$20K-\$26K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.quadcitychallenger.com	
309/764-3515	



Quad City Ultralight Aircraft Corp. Challenger Special

Cruise, mph	90
Stall, mph	28
Range, s.m.	180
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	150/200
Engine Used	Rotax 447
HP/HP Range	42/42-52

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	260/520
Length, ft.	18
Wingspan, ft.	26
Wing Area, sq. ft.	120
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	350
No. Completed & Flown	200
Cost	\$10,540
Estimated Completed Cost	\$16K-\$18K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.quadcitychallenger.com	
309/764-3515	



Quad City Ultralight Aircraft Corp. Challenger II Special

Cruise, mph	85
Stall, mph	37
Range, s.m.	230
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	250/200
Engine Used	Rotax 503
HP/HP Range	50/50-65

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	350/850
Length, ft.	20
Wingspan, ft.	26
Wing Area, sq. ft.	143
No. of Seats	2T
Cockpit Width, in.	30
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	350
No. Completed & Flown	300
Cost	\$12,700
Estimated Completed Cost	\$18K-\$23K
Quickbuild/Plans Available?	N/N
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**Quad City Ultralight Aircraft Corp.
Challenger UL-103**

Cruise, mph	75
Stall, mph	25
Range, s.m.	110
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	200/200
Engine Used	Rotax 277
HP/HP Range	28/28-52

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	235/500
Length, ft.	18.5
Wingspan, ft.	31.5
Wing Area, sq. ft.	142
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	350
No. Completed & Flown	700
Cost	\$9,523
Estimated Completed Cost	\$16K-\$18K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.quadcitychallenger.com	
309/764-3515	

**Quicksilver Manufacturing, Inc.
GT 400**

Cruise, mph	58
Stall, mph	27
Range, s.m.	78
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	75/100
Engine Used	Rotax 447
HP/HP Range	40/40-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	276/570
Length, ft.	19.8
Wingspan, ft.	30
Wing Area, sq. ft.	146
No. of Seats	1
Cockpit Width, in.	29
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	70
No. Completed & Flown	530
Cost (includes engine)	\$16,995
Estimated Completed Cost	\$18K-\$21K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.quicksilveraircraft.com	
909/506-0061	

**Quicksilver Manufacturing, Inc.
GT 500**

Cruise, mph	79
Stall, mph	39
Range, s.m.	225
Rate of Climb, fpm	650
Takeoff/Landing Distance, ft.	220/260
Engine Used	Rotax 582
HP/HP Range	65/50-75

Fuel Capacity, gal.	16
Empty/Gross Weight, lb.	575/1000
Length, ft.	20.4
Wingspan, ft.	30
Wing Area, sq. ft.	155
No. of Seats	2T
Cockpit Width, in.	29
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	185
No. Completed & Flown	450
Cost (includes engine)	\$31,495
Estimated Completed Cost	\$33K-\$37K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.quicksilveraircraft.com	
909/506-0061	

**Quicksilver Manufacturing, Inc.
MX Sport**

Cruise, mph	49
Stall, mph	27
Range, s.m.	110
Rate of Climb, fpm	850
Takeoff/Landing Distance, ft.	75/70
Engine Used	Rotax 447
HP/HP Range	40

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	254/525
Length, ft.	18.1
Wingspan, ft.	28
Wing Area, sq. ft.	156
No. of Seats	1
Cockpit Width, in.	32
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	45
No. Completed & Flown	350
Cost (includes engine)	\$13,195
Estimated Completed Cost	\$15K-\$16K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.quicksilveraircraft.com	
909/506-0061	

**Quicksilver Manufacturing, Inc.
MX Sprint**

Cruise, mph	54
Stall, mph	24
Range, s.m.	100
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	65/60
Engine Used	Rotax 447
HP/HP Range	40

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	250/525
Length, ft.	18.1
Wingspan, ft.	28
Wing Area, sq. ft.	156
No. of Seats	1
Cockpit Width, in.	32
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	45
No. Completed & Flown	420
Cost (includes engine)	\$12,595
Estimated Completed Cost	\$14K-\$15K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.quicksilveraircraft.com	
909/506-0061	

**Quicksilver Manufacturing, Inc.
MXL II Sport**

Cruise, mph	54
Stall, mph	32
Range, s.m.	74
Rate of Climb, fpm	595
Takeoff/Landing Distance, ft.	155/75
Engine Used	Rotax 503
HP/HP Range	50/50-65

Fuel Capacity, gal.	6
Empty/Gross Weight, lb.	330/720
Length, ft.	18
Wingspan, ft.	32.7
Wing Area, sq. ft.	180
No. of Seats	2
Cockpit Width, in.	39
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	80
No. Completed & Flown	3525
Cost (includes engine)	\$17,595
Estimated Completed Cost	\$19K-\$21K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.quicksilveraircraft.com	
909/506-0061	

**Quicksilver Manufacturing, Inc.
MX II Sprint**

Cruise, mph	51
Stall, mph	27
Range, s.m.	72
Rate of Climb, fpm	595
Takeoff/Landing Distance, ft.	102/75
Engine Used	Rotax 503
HP/HP Range	50/50-65

Fuel Capacity, gal.	6
Empty/Gross Weight, lb.	325/720
Length, ft.	18
Wingspan, ft.	32.6
Wing Area, sq. ft.	180
No. of Seats	2
Cockpit Width, in.	39
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	80
No. Completed & Flown	720
Cost (includes engine)	\$17,095
Estimated Completed Cost	\$19K-\$20K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.quicksilveraircraft.com	
909/506-0061	

**Quicksilver Manufacturing, Inc.
Sport 2S**

Cruise, mph	59
Stall, mph	38
Range, s.m.	68
Rate of Climb, fpm	500
Takeoff/Landing Distance, ft.	250/280
Engine Used	Rotax 582
HP/HP Range	65/65-80

Fuel Capacity, gal.	6
Empty/Gross Weight, lb.	444/1000
Length, ft.	18.3
Wingspan, ft.	30.9
Wing Area, sq. ft.	174
No. of Seats	2
Cockpit Width, in.	45
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	75
No. Completed & Flown	308
Cost (includes engine)	\$21,395
Estimated Completed Cost	\$23K-\$27K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.quicksilveraircraft.com	
909/506-0061	





Quikkit Div. of Rainbow Flyers, Inc. *Glass Goose*

Cruise, mph	140
Stall, mph	42
Range, s.m.	1200
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	900/900
Engine Used	Mazda Rotary
HP/HP Range	160/160-180

Fuel Capacity, gal.	70
Empty/Gross Weight, lb.	900/1800
Length, ft.	19.5
Wingspan, ft.	27
Wing Area, sq. ft.	131
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	1200
No. Completed & Flown	8
Cost	\$35,000
Estimated Completed Cost	\$55K-\$80K
Quickbuild/Plans Available?	N/N

www.glassgoose.com
214/349-0462



RANS Designs, Inc. *RANS S-6ES Sport Wing Coyote II*

Cruise, mph	105
Stall, mph	36
Range, s.m.	385
Rate of Climb, fpm	950
Takeoff/Landing Distance, ft.	220/260
Engine Used	Rotax 912S
HP/HP Range	100/80-100

Fuel Capacity, gal.	18
Empty/Gross Weight, lb.	650/1200
Length, ft.	20.8
Wingspan, ft.	30.3
Wing Area, sq. ft.	136.4
No. of Seats	2
Cockpit Width, in.	45
Landing Gear	tri or tail
Bldg. Materials	F, T

Beginner Build Time, hr.	600
No. Completed & Flown	1600
Cost	\$21,000
Estimated Completed Cost	\$43K-\$46K
Quickbuild/Plans Available?	Y/N

LSA Legal

www.rans.com
785/625-6346



RANS Designs, Inc. *RANS S-6S Super Sport Wing Coyote II*

Cruise, mph	115
Stall, mph	36
Range, s.m.	385
Rate of Climb, fpm	1250
Takeoff/Landing Distance, ft.	220/260
Engine Used	Rotax 912S
HP/HP Range	100/80-100

Fuel Capacity, gal.	18
Empty/Gross Weight, lb.	675/1200
Length, ft.	21
Wingspan, ft.	30.3
Wing Area, sq. ft.	136.4
No. of Seats	2
Cockpit Width, in.	45
Landing Gear	tri or tail
Bldg. Materials	F, T

Beginner Build Time, hr.	600
No. Completed & Flown	500
Cost	\$21,000
Estimated Completed Cost	\$43K-\$46K
Quickbuild/Plans Available?	Y/N

LSA Legal

www.rans.com
785/625-6346



RANS Designs, Inc. *RANS S-7S Courier*

Cruise, mph	110
Stall, mph	45
Range, s.m.	341
Rate of Climb, fpm	950
Takeoff/Landing Distance, ft.	325/340
Engine Used	Rotax 912S
HP/HP Range	100/80-100

Fuel Capacity, gal.	18
Empty/Gross Weight, lb.	732/1232
Length, ft.	23.3
Wingspan, ft.	29.3
Wing Area, sq. ft.	147.1
No. of Seats	2T
Cockpit Width, in.	30
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	800
No. Completed & Flown	600
Cost	\$21,000
Estimated Completed Cost	\$47K-\$52K
Quickbuild/Plans Available?	Y/N

LSA Legal

www.rans.com
785/625-6346



RANS Designs, Inc. *RANS S-12S Super Airaile*

Cruise, mph	90
Stall, mph	35
Range, s.m.	360
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	220/200
Engine Used	Rotax 912S
HP/HP Range	100/52-100

Fuel Capacity, gal.	18
Empty/Gross Weight, lb.	575/1100
Length, ft.	21.6
Wingspan, ft.	31
Wing Area, sq. ft.	152
No. of Seats	2
Cockpit Width, in.	41
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	300
No. Completed & Flown	1112
Cost	\$20,000
Estimated Completed Cost	\$27K-\$48K
Quickbuild/Plans Available?	N/N

LSA Legal

www.rans.com
785/625-6346



RANS Designs, Inc. *RANS S-19*

Cruise, mph	133
Stall, mph	45
Range, s.m.	580
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	325/325
Engine Used	Rotax 912S
HP/HP Range	100/80-100

Fuel Capacity, gal.	24
Empty/Gross Weight, lb.	820/1320
Length, ft.	19.9
Wingspan, ft.	28
Wing Area, sq. ft.	126.9
No. of Seats	2
Cockpit Width, in.	43.5
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	1500
No. Completed & Flown	11
Cost	\$25,250
Estimated Completed Cost	\$50K-\$55K
Quickbuild/Plans Available?	N/N

LSA Legal

www.rans.com
785/625-6346



Raven Aircraft Corp. *Raven 2XS*

Cruise, mph	188
Stall, mph	60
Range, s.m.	450
Rate of Climb, fpm	3300
Takeoff/Landing Distance, ft.	530/750
Engine Used	Lycoming IO-540
HP/HP Range	280/260-400

Fuel Capacity, gal.	37
Empty/Gross Weight, lb.	1180/1780
Length, ft.	19
Wingspan, ft.	19.1
Wing Area, sq. ft.	119.4
No. of Seats	2T
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, M, T, W

Beginner Build Time, hr.	2000
No. Completed & Flown	2
Cost	\$24,000
Estimated Completed Cost	\$70K-\$150K
Quickbuild/Plans Available?	N/\$395

www.ravenaircraft.com
604/597-9296



Ravin Aircraft USA, Inc. *Ravin 500 RG/Ravin 300 FG*

Cruise, mph	220
Stall, mph	62
Range, s.m.	2200
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	1100/850
Engine Used	Lycoming IO-540
HP/HP Range	260

Fuel Capacity, gal.	160
Empty/Gross Weight, lb.	1855/3575
Length, ft.	24.3
Wingspan, ft.	35
Wing Area, sq. ft.	157
No. of Seats	4
Cockpit Width, in.	45
Landing Gear	trigear/R or F
Bldg. Materials	C

Beginner Build Time, hr.	1400
No. Completed & Flown	24
Cost	\$85,000
Estimated Completed Cost	\$150K-\$250K
Quickbuild/Plans Available?	N/N

www.ravinair.com
361/288-4558

Rocky Mountain Wings, LLC Ridge Runner Model II

Cruise, mph	90
Stall, mph	29
Range, s.m.	150
Rate of Climb, fpm	1400
Takeoff/Landing Distance, ft.	100/75
Engine Used	Rotax 503
HP/HP Range	46/46-52

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	350/900
Length, ft.	17
Wingspan, ft.	26.2
Wing Area, sq. ft.	99.4
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	375
No. Completed & Flown	15
Cost	\$12,900
Estimated Completed Cost	\$50K-\$65K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.realflying.com	
208/466-6699	



Rocky Mountain Wings, LLC Ridge Runner III

Cruise, mph	80
Stall, mph	28
Range, s.m.	275
Rate of Climb, fpm	1600
Takeoff/Landing Distance, ft.	60/75
Engine Used	Rotax 503
HP/HP Range	52/40-100

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	360/900
Length, ft.	17
Wingspan, ft.	26.1
Wing Area, sq. ft.	99.4
No. of Seats	2T
Cockpit Width, in.	29
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	375
No. Completed & Flown	59
Cost	\$14,900
Estimated Completed Cost	\$24K-\$32K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.realflying.com	
208/466-6699	



Rocky Mountain Wings, LLC Ridge Runner Ultralight

Cruise, mph	58
Stall, mph	24
Range, s.m.	175
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	50/50
Engine Used	Rotax 277
HP/HP Range	28/28-75

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	250/500
Length, ft.	17
Wingspan, ft.	26.2
Wing Area, sq. ft.	99.4
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, T, W

Beginner Build Time, hr.	375
No. Completed & Flown	68
Cost	\$11,900
Estimated Completed Cost	\$22K-\$30K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.realflying.com	
208/466-6699	



Sequoia Aircraft Corp. F.8L Falco

Cruise, mph	190
Stall, mph	62
Range, s.m.	1000
Rate of Climb, fpm	1140
Takeoff/Landing Distance, ft.	1150/750
Engine Used	Lycoming IO-320
HP/HP Range	160/160-180

Fuel Capacity, gal.	40
Empty/Gross Weight, lb.	1212/1880
Length, ft.	22
Wingspan, ft.	26.3
Wing Area, sq. ft.	107.5
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	trigear/R
Bldg. Materials	W

Beginner Build Time, hr.	3500
No. Completed & Flown	90
Cost	\$109,000
Estimated Completed Cost	\$130K-\$170K
Quickbuild/Plans Available?	N/\$400
www.sequir.com	
804/353-1713	



Sherpa Aircraft K650T

Cruise, mph	197
Stall, mph	37
Range, s.m.	1362
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	125/125
Engine Used	Honeywell TPE331-5
HP/HP Range	840/840

Fuel Capacity, gal.	346
Empty/Gross Weight, lb.	3500/6500
Length, ft.	34.1
Wingspan, ft.	47.3
Wing Area, sq. ft.	315
No. of Seats	8
Cockpit Width, in.	48
Landing Gear	tailwheel
Bldg. Materials	F, M, T

Beginner Build Time, hr.	500
No. Completed & Flown	1
Cost (includes engine)	\$695,000
Estimated Completed Cost	\$725K-\$845K
Quickbuild/Plans Available?	Y/N
www.sherpaaircraft.com	
503/543-4004	



Skykits Corporation Savannah

Cruise, mph	85
Stall, mph	30
Range, s.m.	360
Rate of Climb, fpm	1100
Takeoff/Landing Distance, ft.	90/140
Engine Used	Rotax 912S
HP/HP Range	100/80-115

Fuel Capacity, gal.	21
Empty/Gross Weight, lb.	635/1235
Length, ft.	21.3
Wingspan, ft.	29.3
Wing Area, sq. ft.	142
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	230
No. Completed & Flown	700
Cost	\$26,995
Estimated Completed Cost	\$45K-\$50K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.skykits.com	
731/642-1995	



Skykits Corporation Savannah ADV

Cruise, mph	115
Stall, mph	34
Range, s.m.	450
Rate of Climb, fpm	1300
Takeoff/Landing Distance, ft.	110/160
Engine Used	Rotax 912S
HP/HP Range	100/80-115

Fuel Capacity, gal.	21
Empty/Gross Weight, lb.	645/1235
Length, ft.	21.3
Wingspan, ft.	26.3
Wing Area, sq. ft.	102
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	330
No. Completed & Flown	250
Cost	\$36,995
Estimated Completed Cost	\$55K-\$60K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.skykits.com	
731/642-1995	



Skykits Corporation Savannah VG

Cruise, mph	95
Stall, mph	30
Range, s.m.	400
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	90/160
Engine Used	Rotax 912S
HP/HP Range	100/80-115

Fuel Capacity, gal.	21
Empty/Gross Weight, lb.	645/1235
Length, ft.	21.3
Wingspan, ft.	29.3
Wing Area, sq. ft.	132
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	225
No. Completed & Flown	500
Cost	\$26,995
Estimated Completed Cost	\$45K-\$50K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.skykits.com	
731/642-1995	





Skykits Corporation Savannah VGV

Cruise, mph	95
Stall, mph	30
Range, s.m.	420
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	90/140
Engine Used	Rotax 912S
HP/HP Range	100/80-115

Fuel Capacity, gal.	21
Empty/Gross Weight, lb.	650/1235
Length, ft.	21.8
Wingspan, ft.	29.8
Wing Area, sq. ft.	136
No. of Seats	2
Cockpit Width, in.	47
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	250
No. Completed & Flown	175
Cost	\$28,495
Estimated Completed Cost	\$45K-\$50K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.skykits.com
731/642-1995



Sky Raider LLC Frontier

Cruise, mph	105
Stall, mph	38
Range, s.m.	400
Rate of Climb, fpm	820
Takeoff/Landing Distance, ft.	250/450
Engine Used	Lycoming O-290
HP/HP Range	140/120-160

Fuel Capacity, gal.	26
Empty/Gross Weight, lb.	916/1320
Length, ft.	22
Wingspan, ft.	30
Wing Area, sq. ft.	107
No. of Seats	2
Cockpit Width, in.	47
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	400
No. Completed & Flown	2
Cost	\$24,995
Estimated Completed Cost	\$35K-\$45K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.skyraiderllc.com
208/455-6262



Sky Raider LLC Sky Raider II

Cruise, mph	80
Stall, mph	32
Range, s.m.	290
Rate of Climb, fpm	1400
Takeoff/Landing Distance, ft.	100/100
Engine Used	Jabiru 2200
HP/HP Range	80/80-85

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	450/1050
Length, ft.	18
Wingspan, ft.	28
Wing Area, sq. ft.	98
No. of Seats	1
Cockpit Width, in.	27
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	400
No. Completed & Flown	200
Cost	\$13,995
Estimated Completed Cost	\$22K-\$30K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.skyraiderllc.com
208/455-6262



Sky Raider LLC Super Sky Raider

Cruise, mph	80
Stall, mph	32
Range, s.m.	90
Rate of Climb, fpm	1400
Takeoff/Landing Distance, ft.	100/100
Engine Used	Jabiru 2200
HP/HP Range	80/80-85

Fuel Capacity, gal.	14
Empty/Gross Weight, lb.	450/1050
Length, ft.	19
Wingspan, ft.	28
Wing Area, sq. ft.	98
No. of Seats	2T
Cockpit Width, in.	27
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	400
No. Completed & Flown	50
Cost	\$15,995
Estimated Completed Cost	\$24K-\$32K
Quickbuild/Plans Available?	Y/N
	LSA Legal

www.skyraiderllc.com
208/455-6262



Slip Stream International Genesis

Cruise, mph	75
Stall, mph	40
Range, s.m.	350
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	150/200
Engine Used	Rotax 582
HP/HP Range	64

Fuel Capacity, gal.	20
Empty/Gross Weight, lb.	595/1200
Length, ft.	n.p.
Wingspan, ft.	30.7
Wing Area, sq. ft.	154
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	C, F, M, T

Beginner Build Time, hr.	450
No. Completed & Flown	200
Cost (includes engine)	\$26,935
Estimated Completed Cost	\$28K-\$32K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.slipstream.bz
608/362-3137



Slip Stream International Revelation

Cruise, mph	66
Stall, mph	37
Range, s.m.	350
Rate of Climb, fpm	600
Takeoff/Landing Distance, ft.	100/150
Engine Used	Rotax 503
HP/HP Range	52

Fuel Capacity, gal.	20
Empty/Gross Weight, lb.	495/1100
Length, ft.	n.p.
Wingspan, ft.	30.7
Wing Area, sq. ft.	154
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	C, F, M, T

Beginner Build Time, hr.	150
No. Completed & Flown	150
Cost (includes engine)	\$20,940
Estimated Completed Cost	\$22K-\$32K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.slipstream.bz
608/362-3137



Slip Stream International Ultra Sport

Cruise, mph	70
Stall, mph	40
Range, s.m.	400
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	150/200
Engine Used	HKS 700E
HP/HP Range	60

Fuel Capacity, gal.	20
Empty/Gross Weight, lb.	595/1150
Length, ft.	n.p.
Wingspan, ft.	30.7
Wing Area, sq. ft.	154
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	C, F, M, T

Beginner Build Time, hr.	150
No. Completed & Flown	1
Cost (includes engine)	\$27,735
Estimated Completed Cost	\$28K-\$32K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.slipstream.bz
608/362-3137



Sonex Aircraft LLC Sonex

Cruise, mph	130
Stall, mph	40
Range, s.m.	550
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	500/400
Engine Used	AeroVee 2.1
HP/HP Range	80/80-120

Fuel Capacity, gal.	16
Empty/Gross Weight, lb.	620/1100
Length, ft.	18.1
Wingspan, ft.	22
Wing Area, sq. ft.	98
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	600
No. Completed & Flown	304
Cost	\$13,995
Estimated Completed Cost	\$26K-\$40K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.sonexaircraft.com
920/231-8297

Sonex Aircraft LLC Wailex

Cruise, mph	130
Stall, mph	40
Range, s.m.	550
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	500/400
Engine Used	AeroVee 2.1
HP/HP Range	80/80-120

Fuel Capacity, gal.	16
Empty/Gross Weight, lb.	620/1100
Length, ft.	18.1
Wingspan, ft.	22
Wing Area, sq. ft.	98
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	600
No. Completed & Flown	33
Cost	\$14,395
Estimated Completed Cost	\$26K-\$40K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.sonexaircraft.com	
920/231-8297	



Sonex Aircraft LLC Xenos Sport Motorglider

Cruise, mph	100
Stall, mph	44
Aspect Ratio	13.2:1
L/D	24:1
Minimum Sink, fpm	215
Engine Used	AeroVee 2.1
HP/HP Range	80/80-120

Fuel Capacity, gal.	16
Empty/Gross Weight, lb.	750/1275
Length, ft.	19.8
Wingspan, ft.	45.6
Wing Area, sq. ft.	158
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	tailwheel
Bldg. Materials	M

Beginner Build Time, hr.	900
No. Completed & Flown	7
Cost	\$19,495
Estimated Completed Cost	\$31K-\$50K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.sonexaircraft.com	
920/231-8297	



Tapanee Aviation Levitation 2

Cruise, mph	115
Stall, mph	35
Range, s.m.	875
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	350/300
Engine Used	Lycoming O-320
HP/HP Range	160/150-220

Fuel Capacity, gal.	65
Empty/Gross Weight, lb.	1276/2300
Length, ft.	23.8
Wingspan, ft.	31.5
Wing Area, sq. ft.	166
No. of Seats	2
Cockpit Width, in.	48
Landing Gear	trigear
Bldg. Materials	F, M, T

Beginner Build Time, hr.	1750
No. Completed & Flown	1
Cost	\$35,000
Estimated Completed Cost	\$60K-\$170K
Quickbuild/Plans Available?	Y/N
www.tapanee.com	
819/586-2059	



Tapanee Aviation Levitation 4

Cruise, mph	120
Stall, mph	38
Range, s.m.	575
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	400/300
Engine Used	Lycoming O-360
HP/HP Range	180/150-220

Fuel Capacity, gal.	55
Empty/Gross Weight, lb.	1368/2500
Length, ft.	24.5
Wingspan, ft.	33.5
Wing Area, sq. ft.	180
No. of Seats	4
Cockpit Width, in.	48
Landing Gear	tailwheel
Bldg. Materials	M, T

Beginner Build Time, hr.	2000
No. Completed & Flown	3
Cost	\$40,000
Estimated Completed Cost	\$65K-\$180K
Quickbuild/Plans Available?	Y/N
www.tapanee.com	
819/586-2059	



Tapanee Aviation Pegazair 100

Cruise, mph	105
Stall, mph	28
Range, s.m.	630
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	300/300
Engine Used	Continental O-200
HP/HP Range	100/85-115

Fuel Capacity, gal.	36
Empty/Gross Weight, lb.	825/1450
Length, ft.	22.5
Wingspan, ft.	29
Wing Area, sq. ft.	150
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	tailwheel
Bldg. Materials	F, M, T

Beginner Build Time, hr.	1000
No. Completed & Flown	35
Cost	\$27,000
Estimated Completed Cost	\$45K-\$125K
Quickbuild/Plans Available?	Y/\$410
www.tapanee.com	
819/586-2059	



TEAM Tango Foxtrot 4

Cruise, mph	220
Stall, mph	62
Range, s.m.	1680
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	600/800
Engine Used	Lycoming IO-540
HP/HP Range	300/200-300

Fuel Capacity, gal.	100
Empty/Gross Weight, lb.	1710/3200
Length, ft.	24.8
Wingspan, ft.	33
Wing Area, sq. ft.	132
No. of Seats	4
Cockpit Width, in.	46.5
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	1500
No. Completed & Flown	3
Cost	\$45,000
Estimated Completed Cost	\$100K-\$180K
Quickbuild/Plans Available?	Y/N
www.teamtango.com	
352/528-0982	



TEAM Tango Tango 2

Cruise, mph	210
Stall, mph	63
Range, s.m.	1440
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	500/800
Engine Used	Lycoming IO-360
HP/HP Range	180/150-210

Fuel Capacity, gal.	58
Empty/Gross Weight, lb.	1150/2000
Length, ft.	20.7
Wingspan, ft.	26
Wing Area, sq. ft.	78
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	1500
No. Completed & Flown	17
Cost	\$29,750
Estimated Completed Cost	\$70K-\$110K
Quickbuild/Plans Available?	Y/N
www.teamtango.com	
352/528-0982	



Texas Sport Aircraft Company Texas Sport TX-3

Cruise, mph	98
Stall, mph	38
Range, s.m.	270
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	200/205
Engine Used	Continental O-200
HP/HP Range	100/85-120

Fuel Capacity, gal.	20
Empty/Gross Weight, lb.	850/1320
Length, ft.	22.4
Wingspan, ft.	35.5
Wing Area, sq. ft.	178.5
No. of Seats	2T
Cockpit Width, in.	28.5
Landing Gear	tailwheel
Bldg. Materials	F, T, M

Beginner Build Time, hr.	500
No. Completed & Flown	16
Cost	\$39,000
Estimated Completed Cost	\$55K-\$84K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.txsport.aero	
866/746-6159	





Texas Sport Aircraft Company Texas Sport TX-11

Cruise, mph	98
Stall, mph	38
Range, s.m.	270
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	200/205
Engine Used	Continental O-200
HP/HP Range	100/85-120

Fuel Capacity, gal.	20
Empty/Gross Weight, lb.	850/1320
Length, ft.	22.4
Wingspan, ft.	35.5
Wing Area, sq. ft.	178.5
No. of Seats	2T
Cockpit Width, in.	28.5
Landing Gear	tailwheel
Bldg. Materials	F, T, M

Beginner Build Time, hr.	500
No. Completed & Flown	16
Cost	\$39,000
Estimated Completed Cost	\$55K-\$84K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.txsport.aero	
866/746-6159	



The New Kolb Aircraft Co. FireFly

Cruise, mph	65
Stall, mph	30
Range, s.m.	90
Rate of Climb, fpm	750
Takeoff/Landing Distance, ft.	150/150
Engine Used	Rotax 447
HP/HP Range	40

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	252/500
Length, ft.	19.5
Wingspan, ft.	22
Wing Area, sq. ft.	117
No. of Seats	1
Cockpit Width, in.	22
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	300
No. Completed & Flown	500
Cost	\$9600
Estimated Completed Cost	\$20K-\$22K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.kolbsport.com	
606/862-9692	



The New Kolb Aircraft Co. FireStar

Cruise, mph	80
Stall, mph	27
Range, s.m.	180
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	150/200
Engine Used	Rotax 503
HP/HP Range	52/40-60

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	325/725
Length, ft.	22.6
Wingspan, ft.	27.8
Wing Area, sq. ft.	140
No. of Seats	2T
Cockpit Width, in.	23
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	350
No. Completed & Flown	3500
Cost	\$10,675
Estimated Completed Cost	\$19K-\$28K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.kolbsport.com	
606/862-9692	



The New Kolb Aircraft Co. Mark III Xtra

Cruise, mph	90
Stall, mph	38
Range, s.m.	230
Rate of Climb, fpm	1100
Takeoff/Landing Distance, ft.	175/200
Engine Used	Rotax 912S
HP/HP Range	100/100-120

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	550/1000
Length, ft.	24
Wingspan, ft.	30.3
Wing Area, sq. ft.	165
No. of Seats	2
Cockpit Width, in.	43
Landing Gear	tailwheel
Bldg. Materials	F, M

Beginner Build Time, hr.	450
No. Completed & Flown	100
Cost	\$12,814
Estimated Completed Cost	\$32K-\$45K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.kolbsport.com	
606/862-9692	



Thunderbird Aviation Hiperlight SNS-8

Cruise, mph	62
Stall, mph	27
Range, s.m.	150
Rate of Climb, fpm	700
Takeoff/Landing Distance, ft.	175/175
Engine Used	MZ201
HP/HP Range	40/28-45

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	247/500
Length, ft.	16
Wingspan, ft.	22
Wing Area, sq. ft.	140
No. of Seats	1
Cockpit Width, in.	21
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	150
No. Completed & Flown	603
Cost (includes engine)	\$16,900
Estimated Completed Cost	\$18K-\$25K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.hiperlightaircraft.com	
586/212-5862	



Thunderbird Aviation Hiperlight SNS-9

Cruise, mph	85
Stall, mph	39
Range, s.m.	260
Rate of Climb, fpm	600
Takeoff/Landing Distance, ft.	300/300
Engine Used	Rotax 503
HP/HP Range	52/50-100

Fuel Capacity, gal.	10
Empty/Gross Weight, lb.	360/814
Length, ft.	18
Wingspan, ft.	23.3
Wing Area, sq. ft.	148
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	300
No. Completed & Flown	26
Cost (includes engine)	\$24,900
Estimated Completed Cost	\$27K-\$30K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.hiperlightaircraft.com	
586/212-5862	



Titan Aircraft T-51 Mustang

Cruise, mph	150
Stall, mph	42
Range, s.m.	600
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	300/300
Engine Used	Rotax 912S
HP/HP Range	100/80-115

Fuel Capacity, gal.	25
Empty/Gross Weight, lb.	850/1450
Length, ft.	23.5
Wingspan, ft.	24
Wing Area, sq. ft.	118
No. of Seats	2T
Cockpit Width, in.	24
Landing Gear	tailwheel/R
Bldg. Materials	C, M, T

Beginner Build Time, hr.	1600
No. Completed & Flown	25
Cost	\$54,900
Estimated Completed Cost	\$80K-\$100K
Quickbuild/Plans Available?	Y/N
www.titanaircraft.com	
440/275-3205	



Titan Aircraft T-51 Mustang LSA

Cruise, mph	140
Stall, mph	42
Range, s.m.	600
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	300/300
Engine Used	Rotax 912S
HP/HP Range	100/80-115

Fuel Capacity, gal.	25
Empty/Gross Weight, lb.	850/1320
Length, ft.	23.5
Wingspan, ft.	24
Wing Area, sq. ft.	118
No. of Seats	2T
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	C, M, T

Beginner Build Time, hr.	1600
No. Completed & Flown	25
Cost	\$53,400
Estimated Completed Cost	\$80K-\$100K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.titanaircraft.com	
440/275-3205	

Titan Aircraft Tornado I Sport

Cruise, mph	95
Stall, mph	30
Range, s.m.	250
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	250/250
Engine Used	Rotax 503
HP/HP Range	40/40-80

Fuel Capacity, gal.	15
Empty/Gross Weight, lb.	375/750
Length, ft.	18.3
Wingspan, ft.	20
Wing Area, sq. ft.	93
No. of Seats	1
Cockpit Width, in.	26
Landing Gear	trigear
Bldg. Materials	C, M, T

Beginner Build Time, hr.	400
No. Completed & Flown	180
Cost	\$11,649
Estimated Completed Cost	\$20K-\$35K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.titanaircraft.com	
440/275-3205	



Titan Aircraft Tornado II Trainer

Cruise, mph	110
Stall, mph	35
Range, s.m.	275
Rate of Climb, fpm	1600
Takeoff/Landing Distance, ft.	300/250
Engine Used	Rotax 582
HP/HP Range	65/52-100

Fuel Capacity, gal.	15
Empty/Gross Weight, lb.	440/1000
Length, ft.	19
Wingspan, ft.	23.5
Wing Area, sq. ft.	108
No. of Seats	2T
Cockpit Width, in.	28.5
Landing Gear	trigear
Bldg. Materials	C, M, T

Beginner Build Time, hr.	400
No. Completed & Flown	510
Cost	\$14,949
Estimated Completed Cost	\$35K-\$45K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.titanaircraft.com	
440/275-3205	



Titan Aircraft Tornado MG

Cruise, mph	100
Stall, mph	35
Aspect Ratio	5.62:1
L/D	15:1
Minimum Sink, fpm	322
Engine Used	Rotax 503
HP/HP Range	42/42-100

Fuel Capacity, gal.	15
Empty/Gross Weight, lb.	360/750
Length, ft.	18.3
Wingspan, ft.	24
Wing Area, sq. ft.	118
No. of Seats	1
Cockpit Width, in.	26
Landing Gear	trigear
Bldg. Materials	C, M, T

Beginner Build Time, hr.	400
No. Completed & Flown	5
Cost	\$13,189
Estimated Completed Cost	\$16K-\$25K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.titanaircraft.com	
440/275-3205	



Titan Aircraft Tornado S Model

Cruise, mph	125
Stall, mph	35
Range, s.m.	500
Rate of Climb, fpm	1800
Takeoff/Landing Distance, ft.	300/250
Engine Used	Rotax 912S
HP/HP Range	100/80-120

Fuel Capacity, gal.	15
Empty/Gross Weight, lb.	590/1140
Length, ft.	19
Wingspan, ft.	23.5
Wing Area, sq. ft.	108
No. of Seats	2T
Cockpit Width, in.	28.5
Landing Gear	trigear
Bldg. Materials	C, M, T

Beginner Build Time, hr.	450
No. Completed & Flown	55
Cost	\$18,139
Estimated Completed Cost	\$35K-\$50K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.titanaircraft.com	
440/275-3205	



Titan Aircraft Tornado SS

Cruise, mph	125
Stall, mph	40
Range, s.m.	475
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	250/250
Engine Used	Rotax 912S
HP/HP Range	100/80-120

Fuel Capacity, gal.	15
Empty/Gross Weight, lb.	640/1200
Length, ft.	20
Wingspan, ft.	26
Wing Area, sq. ft.	120
No. of Seats	2T
Cockpit Width, in.	28.5
Landing Gear	trigear
Bldg. Materials	F, M, T

Beginner Build Time, hr.	450
No. Completed & Flown	20
Cost	\$21,439
Estimated Completed Cost	\$38K-\$60K
Quickbuild/Plans Available?	Y/N
	LSA Legal
www.titanaircraft.com	
440/275-3205	



Ultimate Biplane Corp. 10-200

Cruise, mph	170
Stall, mph	60
Range, s.m.	500
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	450/500
Engine Used	Lycoming O-360
HP/HP Range	180/180-240

Fuel Capacity, gal.	25
Empty/Gross Weight, lb.	950/1350
Length, ft.	17.4
Wingspan, ft.	16
Wing Area, sq. ft.	96
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, M, T, W

Beginner Build Time, hr.	700
No. Completed & Flown	40
Cost	\$38,000
Estimated Completed Cost	\$60K-\$90K
Quickbuild/Plans Available?	N/\$300
www.ultimatebiplane.com	
905/643-9133	



Ultimate Biplane Corp. 10-300

Cruise, mph	190
Stall, mph	60
Range, s.m.	500
Rate of Climb, fpm	2500
Takeoff/Landing Distance, ft.	450/500
Engine Used	Lycoming IO-540
HP/HP Range	300/300-380

Fuel Capacity, gal.	25
Empty/Gross Weight, lb.	1150/1650
Length, ft.	20
Wingspan, ft.	19.5
Wing Area, sq. ft.	120
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, M, T, W

Beginner Build Time, hr.	900
No. Completed & Flown	15
Cost	\$55,000
Estimated Completed Cost	\$95K-\$190K
Quickbuild/Plans Available?	Y/\$350
www.ultimatebiplane.com	
905/643-9133	



Ultimate Biplane Corp. 20-300

Cruise, mph	190
Stall, mph	58
Range, s.m.	500
Rate of Climb, fpm	2500
Takeoff/Landing Distance, ft.	500/550
Engine Used	Lycoming IO-540
HP/HP Range	300/300-380

Fuel Capacity, gal.	25
Empty/Gross Weight, lb.	1150/2000
Length, ft.	20
Wingspan, ft.	21
Wing Area, sq. ft.	136
No. of Seats	2T
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	C, M, T, W

Beginner Build Time, hr.	900
No. Completed & Flown	3
Cost	\$68,000
Estimated Completed Cost	\$108K-\$213K
Quickbuild/Plans Available?	Y/\$350
www.ultimatebiplane.com	
905/643-9133	





U.S. Aviation Cumulus

Cruise, mph	75
Stall, mph	32
Aspect Ratio	13.1:1
L/D	20:1
Minimum Sink, fpm	190
Engine Used	Rotax 447
HP/HP Range	45

Fuel Capacity, gal.	3
Empty/Gross Weight, lb.	360/640
Length, ft.	20
Wingspan, ft.	43
Wing Area, sq. ft.	140
No. of Seats	1
Cockpit Width, in.	23
Landing Gear	tailwheel
Bldg. Materials	C, F, M, T

Beginner Build Time, hr.	250
No. Completed & Flown	5
Cost	\$9995
Estimated Completed Cost	\$12K-\$19K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.ultralightsoaringaviation.com
218/444-7364



Van's Aircraft, Inc. RV-3

Cruise, mph	196
Stall, mph	51
Range, s.m.	715
Rate of Climb, fpm	2050
Takeoff/Landing Distance, ft.	300/350
Engine Used	Lycoming O-320
HP/HP Range	150/118-160

Fuel Capacity, gal.	30
Empty/Gross Weight, lb.	750/1100
Length, ft.	19
Wingspan, ft.	19.9
Wing Area, sq. ft.	90
No. of Seats	1
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	M

Beginner Build Time, hr.	2000
No. Completed & Flown	269
Cost	\$14,495
Estimated Completed Cost	\$35K-\$63K
Quickbuild/Plans Available?	N/N

www.vansaircraft.com
503/678-6545



Van's Aircraft, Inc. RV-4

Cruise, mph	192
Stall, mph	51
Range, s.m.	790
Rate of Climb, fpm	1650
Takeoff/Landing Distance, ft.	450/425
Engine Used	Lycoming O-320
HP/HP Range	160/125-180

Fuel Capacity, gal.	32
Empty/Gross Weight, lb.	906/1500
Length, ft.	20.3
Wingspan, ft.	23
Wing Area, sq. ft.	110
No. of Seats	2T
Cockpit Width, in.	22
Landing Gear	tailwheel
Bldg. Materials	M

Beginner Build Time, hr.	2000
No. Completed & Flown	1320
Cost	\$16,470
Estimated Completed Cost	\$37K-\$73K
Quickbuild/Plans Available?	N/N

www.vansaircraft.com
503/678-6545



Van's Aircraft, Inc. RV-7/7A

Cruise, mph	206
Stall, mph	51
Range, s.m.	935
Rate of Climb, fpm	1900
Takeoff/Landing Distance, ft.	500/500
Engine Used	Lycoming IO-360
HP/HP Range	200/150-200

Fuel Capacity, gal.	42
Empty/Gross Weight, lb.	1114/1800
Length, ft.	20.3
Wingspan, ft.	25
Wing Area, sq. ft.	121
No. of Seats	2
Cockpit Width, in.	43
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	1500
No. Completed & Flown	953
Cost	\$20,240
Estimated Completed Cost	\$41K-\$97K
Quickbuild/Plans Available?	Y/N

www.vansaircraft.com
503/678-6545



Van's Aircraft, Inc. RV-8/8A

Cruise, mph	212
Stall, mph	51
Range, s.m.	940
Rate of Climb, fpm	1900
Takeoff/Landing Distance, ft.	500/500
Engine Used	Lycoming IO-360
HP/HP Range	200/150-200

Fuel Capacity, gal.	42
Empty/Gross Weight, lb.	1120/1800
Length, ft.	20.9
Wingspan, ft.	23
Wing Area, sq. ft.	121
No. of Seats	2T
Cockpit Width, in.	25
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	1600
No. Completed & Flown	998
Cost	\$21,135
Estimated Completed Cost	\$41K-\$98K
Quickbuild/Plans Available?	Y/N

www.vansaircraft.com
503/678-6545



Van's Aircraft, Inc. RV-9/9A

Cruise, mph	188
Stall, mph	50
Range, s.m.	860
Rate of Climb, fpm	1450
Takeoff/Landing Distance, ft.	475/450
Engine Used	Lycoming O-320
HP/HP Range	160/118-160

Fuel Capacity, gal.	36
Empty/Gross Weight, lb.	1043/1750
Length, ft.	20.5
Wingspan, ft.	28
Wing Area, sq. ft.	124
No. of Seats	2
Cockpit Width, in.	43
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	1500
No. Completed & Flown	622
Cost	\$20,765
Estimated Completed Cost	\$44K-\$82K
Quickbuild/Plans Available?	Y/N

www.vansaircraft.com
503/678-6545



Van's Aircraft, Inc. RV-10

Cruise, mph	197
Stall, mph	63
Range, s.m.	950
Rate of Climb, fpm	1450
Takeoff/Landing Distance, ft.	500/650
Engine Used	Lycoming IO-540
HP/HP Range	260/210-260

Fuel Capacity, gal.	60
Empty/Gross Weight, lb.	1600/2700
Length, ft.	24.5
Wingspan, ft.	31.8
Wing Area, sq. ft.	148
No. of Seats	4
Cockpit Width, in.	48
Landing Gear	trigear
Bldg. Materials	C, M

Beginner Build Time, hr.	2000
No. Completed & Flown	323
Cost	\$41,860
Estimated Completed Cost	\$95K-\$121K
Quickbuild/Plans Available?	Y/N

www.vansaircraft.com
503/678-6545



Van's Aircraft, Inc. RV-12

Cruise, mph	131
Stall, mph	52
Range, s.m.	530
Rate of Climb, fpm	900
Takeoff/Landing Distance, ft.	700/525
Engine Used	Rotax 912S
HP/HP Range	100/80-100

Fuel Capacity, gal.	20
Empty/Gross Weight, lb.	740/1320
Length, ft.	19.9
Wingspan, ft.	26.8
Wing Area, sq. ft.	127
No. of Seats	2
Cockpit Width, in.	43
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	800
No. Completed & Flown	60
Cost (includes engine)	\$60,990
Estimated Completed Cost	\$61K-\$65K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.vansaircraft.com
503/678-6545

Velocity, Inc.
Velocity SE-FG

Cruise, mph	184
Stall, mph	70
Range, s.m.	1000
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	1500/1500
Engine Used	Lycoming IO-360
HP/HP Range	200/160-260

Fuel Capacity, gal.	60
Empty/Gross Weight, lb.	1300/2300
Length, ft.	19
Wingspan, ft.	29.4
Wing Area, sq. ft.	122
No. of Seats	4
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	1600
No. Completed & Flown	88
Cost	\$33,000
Estimated Completed Cost	\$70K-\$140K
Quickbuild/Plans Available?	Y/N

www.velocityaircraft.com
772/589-1860

**Velocity, Inc.**
Velocity SE-RG

Cruise, mph	200
Stall, mph	72
Range, s.m.	1200
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	1500/1500
Engine Used	Lycoming IO-360
HP/HP Range	200/160-260

Fuel Capacity, gal.	60
Empty/Gross Weight, lb.	1300/2300
Length, ft.	19
Wingspan, ft.	29.4
Wing Area, sq. ft.	122
No. of Seats	4
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	1800
No. Completed & Flown	180
Cost	\$42,000
Estimated Completed Cost	\$75K-\$150K
Quickbuild/Plans Available?	Y/N

www.velocityaircraft.com
772/589-1860

**Velocity, Inc.**
Velocity TXL-RG-5

Cruise, mph	288
Stall, mph	72
Range, s.m.	1320
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	1300/1600
Engine Used	Continental TS10-550
HP/HP Range	310/260-310

Fuel Capacity, gal.	92
Empty/Gross Weight, lb.	1700/2900
Length, ft.	20
Wingspan, ft.	31
Wing Area, sq. ft.	145
No. of Seats	4
Cockpit Width, in.	50
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	1800
No. Completed & Flown	18
Cost	\$53,000
Estimated Completed Cost	\$175K-\$250K
Quickbuild/Plans Available?	Y/N

www.velocityaircraft.com
772/589-1860

**Velocity, Inc.**
Velocity XL-FG

Cruise, mph	213
Stall, mph	75
Range, s.m.	1150
Rate of Climb, fpm	1700
Takeoff/Landing Distance, ft.	1500/1500
Engine Used	Continental IO-550
HP/HP Range	310/260-310

Fuel Capacity, gal.	92
Empty/Gross Weight, lb.	1700/2700
Length, ft.	20
Wingspan, ft.	31
Wing Area, sq. ft.	145
No. of Seats	4
Cockpit Width, in.	50
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	1800
No. Completed & Flown	40
Cost	\$44,000
Estimated Completed Cost	\$110K-\$180K
Quickbuild/Plans Available?	Y/N

www.velocityaircraft.com
772/589-1860

**Velocity, Inc.**
Velocity XL-FG-5

Cruise, mph	200
Stall, mph	75
Range, s.m.	1150
Rate of Climb, fpm	1400
Takeoff/Landing Distance, ft.	1500/1500
Engine Used	Continental IO-550
HP/HP Range	310/260-310

Fuel Capacity, gal.	92
Empty/Gross Weight, lb.	1750/2900
Length, ft.	20
Wingspan, ft.	31
Wing Area, sq. ft.	145
No. of Seats	5
Cockpit Width, in.	50
Landing Gear	trigear
Bldg. Materials	C

Beginner Build Time, hr.	1600
No. Completed & Flown	21
Cost	\$47,500
Estimated Completed Cost	\$110K-\$185K
Quickbuild/Plans Available?	Y/N

www.velocityaircraft.com
772/589-1860

**Velocity, Inc.**
Velocity XL-RG

Cruise, mph	219
Stall, mph	75
Range, s.m.	1200
Rate of Climb, fpm	2000
Takeoff/Landing Distance, ft.	1500/1500
Engine Used	Continental IO-550
HP/HP Range	310/260-310

Fuel Capacity, gal.	92
Empty/Gross Weight, lb.	1700/2700
Length, ft.	20
Wingspan, ft.	31
Wing Area, sq. ft.	145
No. of Seats	4
Cockpit Width, in.	50
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	1800
No. Completed & Flown	150
Cost	\$53,000
Estimated Completed Cost	\$125K-\$195K
Quickbuild/Plans Available?	Y/N

www.velocityaircraft.com
772/589-1860

**Velocity, Inc.**
Velocity XL-RG-5

Cruise, mph	230
Stall, mph	75
Range, s.m.	1270
Rate of Climb, fpm	1800
Takeoff/Landing Distance, ft.	1500/1500
Engine Used	Lycoming IO-540
HP/HP Range	310/260-310

Fuel Capacity, gal.	92
Empty/Gross Weight, lb.	1750/2900
Length, ft.	20
Wingspan, ft.	31
Wing Area, sq. ft.	145
No. of Seats	5
Cockpit Width, in.	50
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	1800
No. Completed & Flown	65
Cost	\$56,500
Estimated Completed Cost	\$125K-\$195K
Quickbuild/Plans Available?	Y/N

www.velocityaircraft.com
772/589-1860

**Viper Aircraft Corp.**
ViperJet Mk II

Cruise, mph	400
Stall, mph	88
Range, s.m.	800
Rate of Climb, fpm	8000
Takeoff/Landing Distance, ft.	1200/2500
Engine Used	GE J-85-17A
HP/HP Range	2850 lb. thrust

Fuel Capacity, gal.	260
Empty/Gross Weight, lb.	3000/5200
Length, ft.	27.5
Wingspan, ft.	30
Wing Area, sq. ft.	135
No. of Seats	2T
Cockpit Width, in.	30
Landing Gear	trigear/R
Bldg. Materials	C

Beginner Build Time, hr.	4250
No. Completed & Flown	5
Cost	\$396,000
Estimated Completed Cost	\$650K-\$795K
Quickbuild/Plans Available?	Y/N

www.viper-aircraft.com
509/543-3570





W.A.C.O. Aircraft Company Ohio, Inc. WACO M-F

Cruise, mph	120
Stall, mph	48
Range, s.m.	460
Rate of Climb, fpm	1500
Takeoff/Landing Distance, ft.	350/500
Engine Used	Jacobs R755
HP/HP Range	275/220-340

Fuel Capacity, gal.	50
Empty/Gross Weight, lb.	1600/2500
Length, ft.	22.6
Wingspan, ft.	30
Wing Area, sq. ft.	n.p.
No. of Seats	3
Cockpit Width, in.	26.5
Landing Gear	tailwheel
Bldg. Materials	F, M, T

Beginner Build Time, hr.	600
No. Completed & Flown	3
Cost	\$79,500
Estimated Completed Cost	\$120K-\$150K
Quickbuild/Plans Available?	N/N

174 Barklow Rd., Portsmouth, OH 45662
740/821-8248



Wag-Aero Group, The Sport Trainer

Cruise, mph	85
Stall, mph	38
Range, s.m.	310
Rate of Climb, fpm	450
Takeoff/Landing Distance, ft.	375/375
Engine Used	Continental C-85
HP/HP Range	85/65-85

Fuel Capacity, gal.	12
Empty/Gross Weight, lb.	720/1220
Length, ft.	22.3
Wingspan, ft.	35.2
Wing Area, sq. ft.	178
No. of Seats	2T
Cockpit Width, in.	24
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	2000
No. Completed & Flown	250
Cost	\$21,000
Estimated Completed Cost	\$35K-\$45K
Quickbuild/Plans Available?	V/\$125
	LSA Legal

www.wagaero.com
262/763-9586



Wag-Aero Group, The Sportsman 2+2

Cruise, mph	124
Stall, mph	38
Range, s.m.	770
Rate of Climb, fpm	800
Takeoff/Landing Distance, ft.	230/340
Engine Used	Lycoming O-320
HP/HP Range	150/125-200

Fuel Capacity, gal.	39
Empty/Gross Weight, lb.	1080/2200
Length, ft.	23.4
Wingspan, ft.	35.8
Wing Area, sq. ft.	171
No. of Seats	4
Cockpit Width, in.	39
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	2800
No. Completed & Flown	40
Cost	\$23,000
Estimated Completed Cost	\$45K-\$60K
Quickbuild/Plans Available?	N/\$125

www.wagaero.com
262/763-9586



Wag-Aero Group, The Wag-A-Bond

Cruise, mph	124
Stall, mph	43
Range, s.m.	710
Rate of Climb, fpm	850
Takeoff/Landing Distance, ft.	390/760
Engine Used	Continental O-200
HP/HP Range	100

Fuel Capacity, gal.	26
Empty/Gross Weight, lb.	700/1320
Length, ft.	18.6
Wingspan, ft.	29.3
Wing Area, sq. ft.	147.5
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	2000
No. Completed & Flown	722
Cost	\$15,000
Estimated Completed Cost	\$29K-\$40K
Quickbuild/Plans Available?	N/\$125
	LSA Legal

www.wagaero.com
262/763-9586



Wings of Freedom LLC Flitplane

Cruise, mph	63
Stall, mph	28
Range, s.m.	80
Rate of Climb, fpm	600
Takeoff/Landing Distance, ft.	250/300
Engine Used	Hirth F33
HP/HP Range	28/28-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	240/600
Length, ft.	15.8
Wingspan, ft.	27
Wing Area, sq. ft.	145
No. of Seats	1
Cockpit Width, in.	23
Landing Gear	tailwheel
Bldg. Materials	F, T

Beginner Build Time, hr.	150
No. Completed & Flown	50
Cost	\$8999
Estimated Completed Cost	\$14K-\$19K
Quickbuild/Plans Available?	N/\$100
	LSA Legal

www.wingsoffreedomaviation.com
330/534-5548



Wings of Freedom LLC Phoenix 103

Cruise, mph	63
Stall, mph	28
Range, s.m.	100
Rate of Climb, fpm	1100
Takeoff/Landing Distance, ft.	200/200
Engine Used	MZ201
HP/HP Range	45/28-50

Fuel Capacity, gal.	5
Empty/Gross Weight, lb.	254/600
Length, ft.	17
Wingspan, ft.	26.8
Wing Area, sq. ft.	124
No. of Seats	1
Cockpit Width, in.	23
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	100
No. Completed & Flown	8
Cost	\$9589
Estimated Completed Cost	\$12K-\$20K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.wingsoffreedomaviation.com
330/534-5548



X-Air USA Standard

Cruise, mph	65
Stall, mph	30
Range, s.m.	200
Rate of Climb, fpm	980
Takeoff/Landing Distance, ft.	227/227
Engine Used	Rotax 582
HP/HP Range	65/50-85

Fuel Capacity, gal.	13.2
Empty/Gross Weight, lb.	495/1179
Length, ft.	18.5
Wingspan, ft.	32
Wing Area, sq. ft.	160
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	100
No. Completed & Flown	800
Cost	\$12,800
Estimated Completed Cost	\$21K-\$25K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.southernxair.com
843-240-8450



X-Air USA X-Air F

Cruise, mph	68
Stall, mph	27
Range, s.m.	200
Rate of Climb, fpm	980
Takeoff/Landing Distance, ft.	227/227
Engine Used	Rotax 582
HP/HP Range	65/50-85

Fuel Capacity, gal.	13.2
Empty/Gross Weight, lb.	495/1179
Length, ft.	n.p.
Wingspan, ft.	32
Wing Area, sq. ft.	160
No. of Seats	2
Cockpit Width, in.	42
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	100
No. Completed & Flown	4
Cost	\$13,800
Estimated Completed Cost	\$22K-\$26K
Quickbuild/Plans Available?	N/N
	LSA Legal

www.southernxair.com
843/240-8450

**X-Air USA
X-Air H**

Cruise, mph	95
Stall, mph	33
Range, s.m.	300
Rate of Climb, fpm	940
Takeoff/Landing Distance, ft.	265/227
Engine Used	Jabiru 2200
HP/HP Range	85/80-100

Fuel Capacity, gal.	20.5
Empty/Gross Weight, lb.	578/1235
Length, ft.	20.5
Wingspan, ft.	32
Wing Area, sq. ft.	147
No. of Seats	2
Cockpit Width, in.	45
Landing Gear	trigear
Bldg. Materials	F, T

Beginner Build Time, hr.	200
No. Completed & Flown	216
Cost	\$17,590
Estimated Completed Cost	\$33K-\$35K
Quickbuild/Plans Available?	N/N
	LSA Legal
www.southernxair.com	
843/240-8450	

**Zenair Ltd.
Zodiac CH 640**

Cruise, mph	150
Stall, mph	47
Range, s.m.	510
Rate of Climb, fpm	950
Takeoff/Landing Distance, ft.	990/1150
Engine Used	Lycoming O-360
HP/HP Range	180/150-240

Fuel Capacity, gal.	38
Empty/Gross Weight, lb.	1147/2200
Length, ft.	23
Wingspan, ft.	31.5
Wing Area, sq. ft.	150
No. of Seats	4
Cockpit Width, in.	46
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	1250
No. Completed & Flown	50
Cost	\$28,995
Estimated Completed Cost	\$45K-\$100K
Quickbuild/Plans Available?	Y/\$495
www.zenair.com	
705/526-2871	

**Zenith Aircraft Company
STOL CH 701**

Cruise, mph	90
Stall, mph	30
Range, s.m.	350
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	90/140
Engine Used	Rotax 912S
HP/HP Range	100/50-100

Fuel Capacity, gal.	20
Empty/Gross Weight, lb.	580/1100
Length, ft.	20.9
Wingspan, ft.	27
Wing Area, sq. ft.	122
No. of Seats	2
Cockpit Width, in.	40
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	450
No. Completed & Flown	870
Cost	\$13,990
Estimated Completed Cost	\$30K-\$50K
Quickbuild/Plans Available?	Y/\$425
	LSA Legal
www.zenithair.com	
573/581-9000	

**Zenith Aircraft Company
STOL CH 750**

Cruise, mph	100
Stall, mph	35
Range, s.m.	400
Rate of Climb, fpm	1000
Takeoff/Landing Distance, ft.	100/125
Engine Used	Continental O-200
HP/HP Range	100/80-120

Fuel Capacity, gal.	24
Empty/Gross Weight, lb.	775/1320
Length, ft.	21.8
Wingspan, ft.	29.8
Wing Area, sq. ft.	144
No. of Seats	2
Cockpit Width, in.	50
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	350
No. Completed & Flown	45
Cost	\$19,480
Estimated Completed Cost	\$38K-\$65K
Quickbuild/Plans Available?	Y/\$495
	LSA Legal
www.zenithair.com	
573/581-9000	

**Zenith Aircraft Company
STOL CH 801**

Cruise, mph	105
Stall, mph	39
Range, s.m.	315
Rate of Climb, fpm	720
Takeoff/Landing Distance, ft.	375/400
Engine Used	Lycoming O-360
HP/HP Range	180/150-220

Fuel Capacity, gal.	30
Empty/Gross Weight, lb.	1150/2200
Length, ft.	24.5
Wingspan, ft.	31.3
Wing Area, sq. ft.	167
No. of Seats	4
Cockpit Width, in.	44
Landing Gear	trigear
Bldg. Materials	M

Beginner Build Time, hr.	750
No. Completed & Flown	160
Cost	\$24,990
Estimated Completed Cost	\$40K-\$80K
Quickbuild/Plans Available?	Y/N
www.zenithair.com	
573/581-9000	

**Zenith Aircraft Company
Zodiac CH 650**

Cruise, mph	138
Stall, mph	44
Range, s.m.	662
Rate of Climb, fpm	1200
Takeoff/Landing Distance, ft.	490/500
Engine Used	Jabiru 3300
HP/HP Range	105/85-125

Fuel Capacity, gal.	24
Empty/Gross Weight, lb.	695/1320
Length, ft.	20
Wingspan, ft.	27
Wing Area, sq. ft.	132
No. of Seats	2
Cockpit Width, in.	44
Landing Gear	tri or tail
Bldg. Materials	M

Beginner Build Time, hr.	500
No. Completed & Flown	100
Cost	\$18,500
Estimated Completed Cost	\$35K-\$65K
Quickbuild/Plans Available?	Y/\$495
	LSA Legal
www.zenithair.com	
573/581-9000	



Did you know that the KITPLANES® Kit Aircraft Buyer's Guide is the only place where you can find comprehensive specifications and photos for over 300 aircraft kits? Look for our Plansbuilt Aircraft Buyer's Guide in the January 2011 issue, the Rotorcraft Buyer's Guide in February and the Engine Buyer's Guide in April. All Aircraft Buyer's Guide information is also available online for subscribers at www.kitplanes.com.



Morning sickness: It's about sticking valves.

Valve sticking, also called “morning sickness” because it often shows up at the first engine start, is the result of “reduced valve stem to valve guide clearance syndrome.”

This is not new. During the mid-1960s, Lycoming increased the valve stem size (from $\frac{7}{16}$ to $\frac{1}{2}$ inch) and, beginning in the mid-1990s, also replaced the original bronze valve guides with Hi-Chrome guides to improve wear characteristics. All engines, cylinder kits and piece parts shipped by Lycoming since March 1998 have had these new guides. Still, some Lycoming engines suffer from sticking valves, especially engines with the old-style guides.

Valve sticking comes from excessive clearance between the valve stem and guide, which introduces contaminants into the guide and can promote cocking of the valve in the guide; when the valve doesn't seat squarely, trouble begins.

There's an SB for That

Lycoming's service bulletin 388C says that “valve-guide wear (bell-mouthing) occurs on the inside diameter of the valve guide in a straight line with the centerline of the rocker arm. Valve-stem movement must be measured by moving the valve stem along this line.” Service bulletin 388C recommends that valve-to-guide clearance checks be done every 330 hours on Lycoming engines installed in helicopters, and every 440 hours for fixed-wing aircraft.

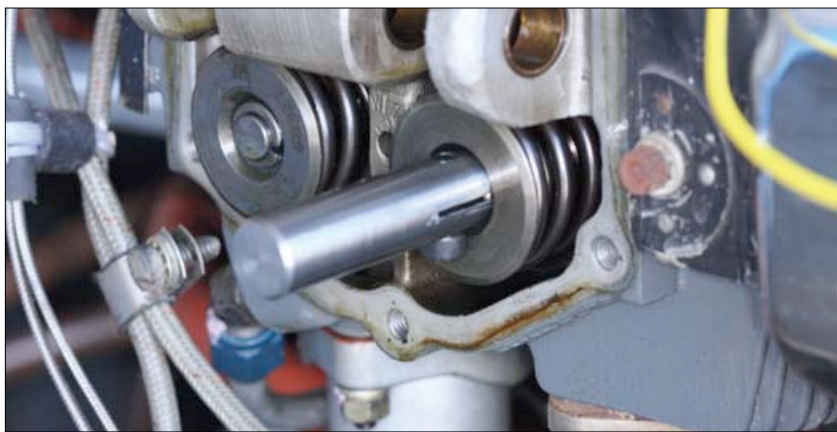
According to service instruction 1485A, these inspection intervals increase to

1000 hours when Hi-Chrome guides are installed on all cylinders. Lycoming cylinders with Hi-Chrome guides have a small C inside a circle stamped on the boss above the oil drainback tube fitting.

In addition to the service bulletin that describes methods for checking

of the valve stem. Then a fixture is put in place, secured using valve-cover screws.

Where do you get the fixture? Lycoming sells it as part number ST-71, list price \$550 for parallel-valve cylinders, and ST-310, list price \$1709 for angle-valve cylinders. If you're put off by the



The Lycoming stem tool aids the measurement of valve-to-guide clearances.

the valve-to-guide clearance (SB 388C), there's also one that describes methods that can be used for reaming the valve guides back to size (SI 1425A) without removing the cylinder from the engine. All of these documents are available from Lycoming as PDFs.

Service Bulletin 388C

This bulletin details three methods for conducting “valve wobble” checks. After removing the valve actuating parts, a “gage” (Lycoming spelling) adapter is installed on the top of the valve stem. This gage adapter acts as an extension

price of the Lycoming tools and you're not a machinist, don't despair. There's still a relatively inexpensive way to get your hands on the tools needed for these tests. Aircraft Spruce sells a fixture (p/n 12-21500) that will work on both angle-valve and parallel-valve cylinders for less than \$150 if you already have a dial indicator, or less than \$200 with a brand new dial indicator (part number 12-21505).

Back to the process. The exhaust valve is then pushed toward the exhaust port by applying force to the valve-spring retainer with a flat-blade screwdriver, and a set screw on the fixture is turned

Steve Ells

is what you call a gen-u-ine mechanic, a bonafide A&P with an Inspection Authorization. Former West Coast editor for AOPA Pilot and tech guy for the Cessna Pilots Association, Ells has flown and wrenched on a wide range of aircraft. He owns and wrenches (a lot!) on a classic Piper Comanche. But don't hold that against him.



Measuring valve “wobble” involves the use of a special tool and a dial indicator. The basic idea is to determine how much the valve moves inside the guide from a fixed reference (from the end of the valve stem). This helps you understand valve and guide condition.

in and out until a 0.010-inch feeler gage just slides between the set screw and the gage adapter. Then force is applied to the opposite side of the valve-spring retainer to push the valve the other way, and the distance between the set screw and the gage adapter is again measured with feeler gages. The 0.010-inch starting measurement is subtracted from the second measurement to get the measured stem movement, and this value is compared to a chart in the service bulletin.

Too little clearance means the valve guide must be reamed in accordance with the procedures in SI 1425A. Too much clearance means the valve guide is worn beyond the allowable limits and the cylinder must be removed for guide work. The service bulletin also details how to perform this procedure using a dial indicator with both the parallel-valve and the angle-valve fixtures.

Part 2 describes another testing method using a Go/No-Go gage. This method requires that the exhaust valve be dropped down into the cylinder bore—details for this procedure are in SI 1425A—before running the gage the full length of the valve guide. The last part of the service bulletin describes an alternate method of performing the test using tools you make yourself—with detailed drawings and materials listings for the construction of these tools.

The Rope Trick

Lycoming Service Instruction 1425A describes how to drop a valve down into the cylinder, ream the guide in place and then reinstall the valve, valve operating

mechanism and hardware. In the initial telling this sounds impossible, but it isn't. All that's required is patience, a length of soft rope—the “rope trick” you've heard about—a set of mechanical fingers, a pencil magnet and the proper size reamer. After the valve is dropped down into the cylinder, the guide is hand-reamed to size and the valve is reinstalled. Reamer sizes are listed in the bulletin. (We'll walk you through the procedure in a future issue.)

It's a Wrap

ASL CamGuard is an engine oil additive that appears to be helpful in addressing some of the classic Lycoming engine problems such as guide coking and camshaft-to-lifter distress due to corrosion. According to reports from the field, this stuff is the real deal. It's especially helpful when added to the engine oil of infrequently flown aircraft. But there's no fix in a bottle. If your Lycoming already exhibits morning sickness, take steps to find out exactly why. ✈

RESOURCES

Abnormal Valve Guide Wear in Parallel-Valve Lycoming Engines
<http://egaa.home.mindspring.com/engine1.htm>

ASL CamGuard
www.aslcamguard.com

Lycoming Service Bulletin
www.lycoming.texttron.com/support/publications/service-bulletins

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Reinventing the wheel.

We all know the old saying about reinventing the wheel. The wheel is a tried and true device for conveyance, and it works pretty well for everything we ask of it, so why try to develop something completely new and potentially end up with the same thing?

As homebuilders, we are all experimental by nature, and it is not uncommon to see someone attempting to “reinvent the wheel” on a daily basis. On one hand, there is always the possibility that you might come up with a better wheel. On the other, it is highly unlikely that the new wheel will be superior enough to the old wheel that the effort will be justified. Observers less involved with the experiment may see this, but not the

person who is deeply into the project. I find it a little sad when a creative person wastes energy and potential recreating something that has already been done. When I see this in engineers who work for me, I try to stop it and redirect their energy toward a useful solution for, one hopes, an unsolved problem.

Case in Point: Static Port

In short, some things just work. A good example would be the static ports on a Van's RV. Those folks who build RVs but don't have a background in aeronautical engineering or flight test might not realize the amount of effort that goes into finding a good static location and building static ports that will work accurately.

Hundreds of hours of flight testing on a new design can sometimes not turn up the right place to put them, or the right shape. The plans for RVs show the recommended location, and the kit supplies a shape that works—it is, in fact a large-head pop rivet. But many decide that they can do better, or use the static port on a pitot mast. To what end? You can't get a more accurate location or installation than the original—it is generally good to ± 1 knot—so why go to the effort for no gain and potential hassle?

This is not an indictment of all modifications! There are lots of places where real improvements can be made in any number of ways. But it is important to really look at the changes that you intend to



The standard callout in the Van's Aircraft plans is to use a large-head pop rivet for a static port in a specific location. Can you do better? The short answer: Probably not.

Paul Dye

is an aeronautical engineer, commercial pilot and avid homebuilder with 30 years of leadership experience in aerospace operations and flight testing. He is also an EAA tech counselor and flight advisor who currently flies an RV-8, which he built, and is working on an RV-3.

make and ask yourself a few questions:

- What am I going to get out of it?
- What might it cost me in terms of performance, dollars and time?
- What are the potential compromises it might make in the aircraft flight envelope?
- Has anyone else already done what I want to do, and can I simply copy it?
- Are there any safety implications to this modification?

These and other questions can be used to temper the desire to work outside the box, or at least to give a person a realistic perspective. Many kits are never finished because people get so involved in modifications that they work themselves into a costly corner, or spend so much time beyond what the kit build time should be that they lose interest. Of course, it all depends on your own personal goals for building. Some folks are just using the kit as a platform for trying out new ideas, and they don't really care if the project is ever finished—the tinkering and building are more important than the flying.

Better By Design

Because airplanes are by nature point designs, most flying aircraft are pretty much optimized as is. It is hard to get a performance gain in one area without compromising something in another. You can go faster, but the range might suffer. If you increase high-altitude performance with a different wing, handling may be degraded. And little mods will almost always result in increased build and debugging time. There is nothing inherently wrong with any of this, it is simply important for builders to be realistic about what they are getting into when they change an existing design. They need to go into such an effort with their eyes wide open, or disappointment can easily be the outcome after a long struggle.

Inventing things, trying out new ideas and expanding an aircraft's capabilities are all great goals. But it's important to put a little check on ourselves and ask whether what we are doing is truly new. Only when you have asked and answered this question honestly can you decide if what you want to do is worth the cost in time and effort. ✚

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THE DAWN PATROL



We're going to have to count that as two landings.

Ground loop: a sudden departure from the desired direction of horizontal travel when an aircraft is rolling on the ground. Ground loops can occur at any time, but they usually occur when landing a conventional gear (tailwheel equipped) aircraft. The aircraft will depart the desired direction, and in some cases a complete 360° turn will be the result. More extreme ground loops can result in dragging a wingtip on the runway.

We in The Dawn Patrol have all experienced sudden and exciting departures from the desired direction of horizontal travel when landing our nimble little 1916 Graham Lee Nieuport 11 replicas. We call them "Whifferdills." In our minds, it's not a *real* ground loop unless you drag a wingtip on the ground.

Which leads us to our latest adventure. For the past 18 years we have been invited to the annual Salute to Veterans Air Show held at Columbia Regional Airport just south of Columbia, Missouri.



Mark Pierce, Tom Glaeser and Dick Starks make a three-Nieuport smoke pass for the audience.



The A-10 and the SPAD, nose to nose. The best of 1918 and the best of 2010 staring each other down.

This is the largest free airshow in the U.S. and is dedicated to the men and women of our armed forces.

Sometimes the weather has been horrible, and we only display. Sometimes we get to fly for the crowd. At other times, we've actually helped out Kevin Nowack, the Air Static Boss, by being the only planes that can fly due to very low ceilings. (Nowack calls us the "stop leak" airshow guys that can buy time while they're waiting for the clouds to lift so the big boys can fly. His other job is an Army Chief Warrant Officer Four (CW4), in the Missouri Army National Guard, and he's an Instructor Pilot Supervisor.)

Anyway, this was a banner year for us. The convoy of six planes to Columbia didn't have any flat tires like last year, and

we got to fly *twice* both days of the show, which rarely happens due to weather.

We opened the show at zero-nine-thirty with a salute to WW-I aviation and again at twelve-hundred while the Canadian Forces Parachute Team, The Skyhawks, were clawing up to altitude for their jumps to open the show.

Saturday morning winds were light and right down the runway. While this is a good thing, it doesn't mean The Dawn Patrol's show won't be memorable.

Excuse Me, Mister

First, we were landing on pavement. Second, the runway is 150 feet wide. We're used to a grass runway that's 50 feet wide. This year, these two factors led to some real "Don't look, Ethel!" moments.

Dick Starks

has written two books about the joy of flying; "You Want To Build And Fly A What?" and "Fokkers At Six O'clock!!" He was the recipient of Flying's 2001 Bax Seat Award "for perpetuating the Gordon Baxter tradition of communicating the excitement and romance of flight." Dick and his wife, Sharon, both fly WW-I replica aircraft.

(Tom Glaeser, Mark Pierce and I have all had our fleeting moments of fame in front of the crowd. What's worse, they have all been recorded on thousands of video cameras.)

Back to the landing on pavement factor. Landing a short-coupled taildragger such as any WW-I aircraft is a challenge in any circumstance. Landing on pavement just adds more "zing" to the experience. Grass is a joy! Gravel is OK. The wheels will slide on grass and gravel, but they just grab ahold on pavement. You have to be going straight down the runway and keep your head out of the cockpit so that you can anticipate any swerve that might develop on rollout. Landing with a tiny amount of sideways drift (that you wouldn't even notice on grass) will suddenly make you wish you were not in front of a crowd of thousands eagerly watching you screw up.

All the World's a Stage

This year there was a record crowd at Columbia Regional Airport. More than 30,000 people had come out to see the USAF, USMC and USN big iron strut their stuff. Then there we were, the paper clips trying to strut our stuff.

My wife, Sharon, was flying her Air-drome Aeroplanes Morane-Saulnier Parasol on pavement for the first time. She'd flown great at the U.S. Air Force Museum's biannual World War I Rendezvous, but that was on a big, wide grass strip. All of us had tried, in a gentle, non-threatening way, to warn her to keep her head up, land as straight as she could and stay on those rudder pedals.

Conditions for the first flight were pretty good. We were using runway two-zero and the winds were one-eight-zero at 8. The runway is so wide and we get off the ground so quickly, we all were going to make diagonal takeoff rolls right into the wind. No problem.

We were all staged and ready to be turned loose by Nowack. He came by for a final ramp check and cleared us to fly. Nine-thirty rolled around and he told us to climb in and light 'em up. Hot dog! We had a good crowd flying this time: four Nieuport 11s, a SPAD XIII, a Boredom Fighter and the Morane.

Everyone got the engines started except for Pierce, who broke his chain-saw starter rope on the first pull. This resulted in a roiling little cloud of purple language erupting from his cockpit. But again, this was no problem. His brother ran up and gave the prop a flip, and that little booger started on the first try. I was amazed. For some reason the aviation gods wanted us to fly. Later we found out they had big plans for Sharon's first experience with landing her hot little warbird on pavement. Yes, sports fans... the moment had arrived. Her time in the spotlight had finally come.

We all waddled out to the active and got lined up. The tower came on over the radio, "Dawn Patrol, the air is yours!"

Yee haw! Away we went. Everyone got off fine, and for the next 30 minutes we had a ball flying a tight left-hand pattern over the field. The tower operator had talked to me during the pilot briefing and requested some close smoke passes

for a bunch of professional photographers shooting stills and movies from the catwalk. After we'd all gotten settled in the pattern I got on the radio and said, "Tower, this buzz is for you."

Then we made close-in smoke passes by the tower. The photographers were so excited I almost expected one of them to fall off the catwalk.

Finally, the Air Boss got on the radio and told us to start to recover. Everyone's pucker-factor went up a notch or two. All pilots know it's a proven fact that you can make numerous perfect landings when no one is watching. But let one person show up at the airport, and you'll bounce one in higher than the hangar roof.

Wherefore the Whifferdill

There were more than 30,000 people watching. This made what happened next almost a sure thing. I landed first and made a classic seven-point landing. I was all over the place. (Please note: A point is

a single contact between a wheel and the ground.) Then Glaeser topped me with an 11-point landing. The guy that was staged in the P-51 Mustang was laughing his head off as we went bounding by him.

Pierce and Dick Lemons landed with no problem. So did the SPAD and Jerry

Marvin Berk and Joe "Rifle" Shetterly talk over old times.



Jerry Guyer in his Boredom Fighter with its Australian colors makes a pass by the crowd.

THE DAWN PATROL continued



Being chased by the C-130, Sharon Starks heads back to the ramp after her memorable landing (the video is available).

Guyer's new Boredom Fighter. Then here came Sharon down final like she was on rails. It was a perfect approach. She made a perfect, straight-as-a-string wheel landing. It was beautiful.

But...she landed hot, and while she was still rolling at a good rate of knots, she hauled back on the stick to plant the tailwheel. Normally this works fine, but when you're still at flying speed, hauling back on the stick pops you right back up in the air.

The resulting Whifferdill, do-si-do, wing-rocking, almost-dragging-both-wings-on-the-ground, off-in-the-grass, around-a-runway light and back-onto-the-runway extravaganza was a delight to the eyes. As soon as she got settled down, the tower got on the radio and said, "We're going to have to count that as two landings."

We all taxied in together with Sharon bringing up the rear. The C-130 Hercules was right behind us, and we could hear its engines over the throaty roar of our own little powerplants. When we reached our parking area on the flight line, all of the engines were shut down and deep breaths were taken by all. Sharon taxied in last to be greeted by a cheering throng of pilots and ground crew. One of them was even thoughtful enough to bring her a roll of paper towels, "Just in case."

Into the Midst

I did mention that we had a SPAD in our group this year. It is a beautiful replica built and flown by Marvin Berk of Louisburg, Kansas. However, for this first flight at the Salute to Veterans, he wasn't flying it. Unbeknownst to us, he had a "ringer" flying his SPAD.

The pilot flying the A-10 Thunderbolt demonstration at the show was Captain Joe "Rifle" Shetterly of the U.S. Air Force. He and Berk go back to 1995 when then 16-year-old Shetterly was learning to fly. His dad taught him and his mom to fly in a Citabria. Besides hundreds of hours in the Wart Hog, including a tour of duty in Afghanistan, Shetterly now has hundreds of hours in taildraggers. The two of them got together the Friday before the show

and were talking old times. Berk asked Shetterly if he'd like to take the SPAD for a spin, which was a no-brainer. Shetterly had a great time and the upshot was that he would fly the SPAD for The Dawn Patrol's first flight Saturday morning.

I didn't know any of this. I did notice a tall, good-looking pilot in a flight suit joining in the Air Boss's ramp check before the flight but thought nothing of it.

It wasn't until we'd landed that I realized that a hard-as-nails, kick-butt-take-names A-10 Wart Hog driver had been flying with The Dawn Patrol. What a deal! He stepped back and forth between the two planes as if it was a normal day at the office. This was a first for us, and we all felt kind of special afterward. We'd had a *real* pilot as part of our WW-I demo team.

Also attending the Salute to Veterans show this year was Marvin Story's Graham Lee Siemens-Schukert replica, Butch Witlock's Airdrome Aeroplanes Fokker D-7 replica, Sharon's Airdrome Aeroplanes DH-2 replica and Jeff Given's finished-and-ready-to-fly Airdrome Aeroplanes Nieuport 11 replica. Eleven planes total set a new all-time record. One year, we had only two planes show up. Since we built our trailers (Trailer weenies rule!), we've made every one.

The other new display we unveiled at Columbia was my replica 1916 WW-I British "Trench Cat" front-line dispatch motorbike with sidecar. It has already proven its worth in getting our tired feet around the field at airports. ✚



Captain Shetterly poses with Marvin Berk's SPAD replica after a most successful flight.

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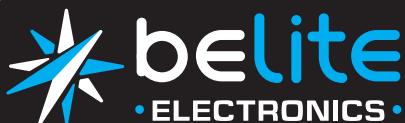
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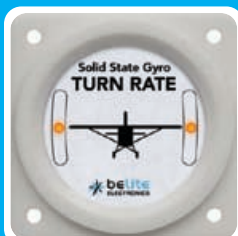
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To fly right, maintain your energy.

For most airplanes, the majority of a mission is spent in level flight at 1 G. To get to its cruise point, the airplane must climb, and to get where it needs to go, it must turn at some point during the flight. Both climbs and turns place greater energy requirements on the airplane than cruise. In climb, the airplane must gain potential energy by increasing altitude, and this energy must come from the engine. In turns, the total drag is higher than it is in cruise. The energy to overcome this drag must come either from the engine, or from sacrificing potential energy by descending. The total energy available to the pilot to climb and maneuver the airplane is a critical parameter for safe flight.

Specific Excess Power

At any given flight condition, the engine can provide a certain amount of thrust, and the airplane has a certain amount of drag. The thrust from the engine can be used to overcome the drag. The excess thrust is the amount of thrust available above that required to overcome the drag. If there is excess thrust available, it can be used to climb.

The standard way of measuring excess thrust is to put it in terms of the rate of climb that could be generated at that flight condition at full throttle. This is called Specific Excess Power (P_s) and is expressed in feet per minute (fpm) of potential climb. If an airplane has positive P_s , it can climb at the airspeed and load factor at which it is flying. If P_s is zero, the airplane can maintain its altitude, airspeed and load factor, but it cannot

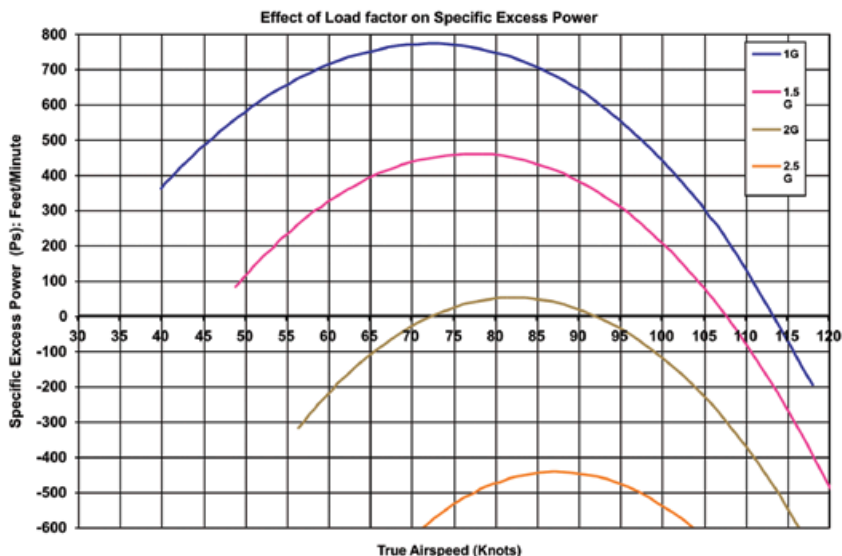


Figure 1.

climb. If P_s is negative, the airplane cannot maintain its altitude, airspeed and load factor at full throttle. It must either descend or unload to maintain airspeed.

It is important for a pilot to have a sense of the energy state of the airplane and be aware of how much P_s is available at any point in the flight.

Understanding the Physics of Turns

The velocity of an object is a vector quantity; it has both a magnitude and a direction. An acceleration is a change in velocity, and can be a change in either the direction and/or the magnitude of the velocity. A turning airplane is continuously accelerating toward the center of the turn even though its speed, which

is the magnitude of the velocity, is constant. A force must act on a mass to cause acceleration. In the case of a turning airplane, this force is the lift of the wings. By banking the airplane, the pilot aims some of the lift horizontally in the direction of the desired turn. It is this component of the lift that curves the flight path in the direction of the bank.

While the horizontal component of the lift is curving the flight path, the vertical component is still holding the airplane up against gravity. In a level turn, the vertical lift component must equal the weight of the airplane. The total lift required to perform the turn is the vector sum of the horizontal and vertical lift components. The total lift in any level turn is greater than the weight of the air-

Barnaby Wainfan

is a principal aerodynamics engineer for Northrop Grumman's Advanced Design organization. A private pilot with single engine and glider ratings, Barnaby has been involved in the design of unconventional airplanes including canards, joined wings, flying wings and some too strange to fall into any known category.

Bank Angle	Load Factor
10	1.015
20	1.064
30	1.15
40	1.305
50	1.556
60	2.0
70	2.924
80	5.76

Table 1: The effect of bank angle on load factor. As bank angle increases, the load factor rate also increases.

plane. As bank angle increases, the horizontal component of lift gets larger in relation to the vertical component. The vertical lift component is constant, so the total lift required increases with increasing bank angle.

The load factor, or G load, of the airplane is the total lift divided by the weight of the airplane. It is in units of gravities or G. In a constant-altitude turn, the load factor is given by:

$$N = 1 / (\cosine(\text{bank angle}))$$

$$N = \text{load factor in G.}$$

Table 1 shows the influence of bank angle on the load factor required to maintain a level turn. Note that as bank angle increases, the rate of load factor increase with bank angle also increases. Going from zero bank to 10° increases load factor by only 0.015 G. Adding 10° of bank to go from 70° to 80° increases load factor by 2.84 G.

This is critically important, not only from the viewpoint of avoiding an accelerated stall, but also from an energy perspective. As the load factor increases, the total lift increases. This increases the induced drag, and because induced drag increases with lift squared, the effect on P_S can be dramatic.

Effect of Maneuvering on Specific Excess Power

The following example illustrates the effect that the drag increase due to maneuvering can have on aircraft performance. Our example airplane is representative of a Light Sport trainer. It has a wingspan of 30 feet, weighs 1320 pounds

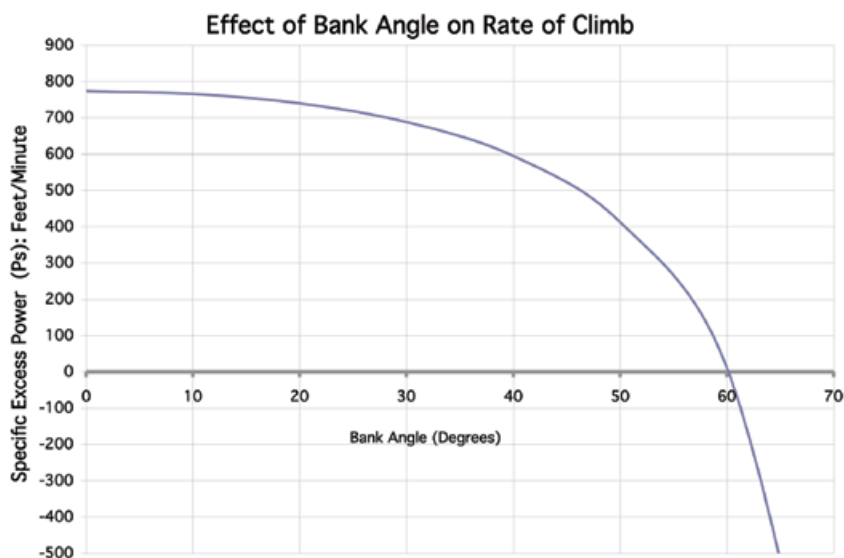


Figure 2.

and has a 100-horsepower engine.

Figure 1 shows curves of full-throttle P_S for this airplane at several load factors. Looking first at the 1 G curve, we note that the airplane has a top speed of 113 knots (zero P_S) and a maximum climb rate of about 770 fpm at 73 knots.

Looking now at the 1.5 G curve, we see that performance has dropped significantly. Maximum P_S is only about 460 fpm, and zero P_S now comes at 107 knots. Note also that the airspeed for maximum P_S has increased from the 1 G case. This last item is important because the maneuver will typically be initiated from level flight, so the airspeed may have to change to get maximum performance from the airplane.

At a load factor of 2, the airplane is nearing its performance limits. It has positive P_S only from 73 to 93 knots, and the maximum P_S has dropped to about 50 fpm. At load factors greater than 2, the airplane cannot simultaneously maintain airspeed and altitude, and it must descend to avoid decelerating.

To see how this change in performance with load factor can affect safety in a normal flying situation, we now turn our attention to Figure 2, which shows the effect of initiating a turn when our example airplane is flying at the airspeed for best rate of climb after takeoff.

As long as the pilot keeps the turn gentle, the effect of the turn on the airplane's climb rate is relatively small. In a 30° banked turn, the maximum rate of climb degrades about 10%, from 770 fpm to about 690 fpm. The pilot can hold airspeed and attitude, and nothing dramatic will happen.

As the bank angle exceeds 30°, the ability of the airplane to keep climbing degrades rapidly. At 45° bank, the climb rate has decreased by more than 200 fpm. If the pilot does not lower the nose significantly, the airspeed will start to drop.

Beyond 45° bank, the airplane's performance decreases rapidly. By the time a 60° bank is reached, the airplane can no longer climb. If the pilot were to attempt a steep turn shortly after takeoff, the airplane would stop climbing during the turn. If the pilot continued trying to hold attitude during the turn to force the airplane to climb, the airspeed would decrease rapidly, and a departure stall would ensue.

Particularly in low-powered aircraft, increasing the load factor erodes the airplane's ability to climb and maintain airspeed relatively quickly. Pilots should learn the capabilities of their airplanes, and always be aware of the amount of energy they have available to maintain flight. ±

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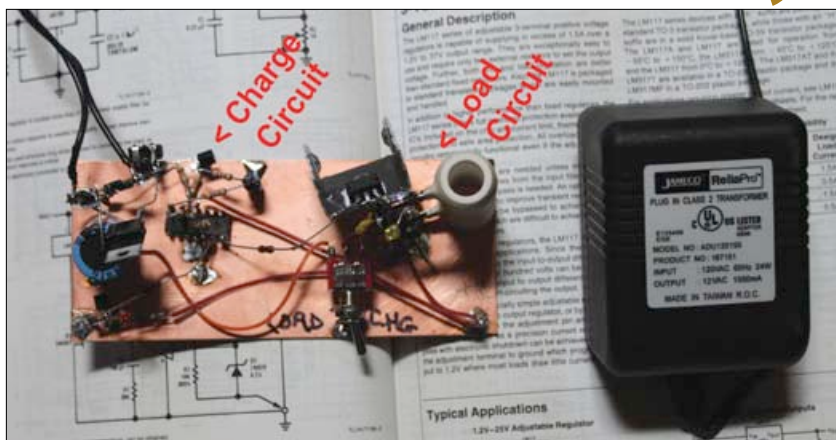
The most difficult thing about teaching? Some say it is standing in front of a classroom doing public speaking for hours at a time. Others say it is the hours of preparation required for a single hour of classroom work. Me? I'd say it's remembering all the time that the students most likely don't know what I know.

Every month when I sit down at the KITPLANES® design bench, I have to remember that the odds are you probably have never fooled around with (or, as we say when we are writing our monthly job report, "heuristically researched") what I'm going to show you. And so it is this month.

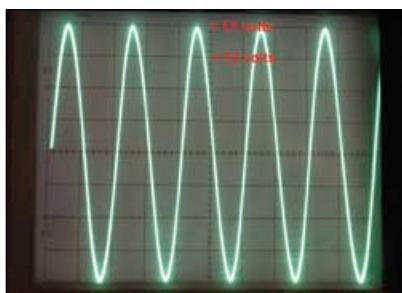
Last time we figured out how to run the battery down flat with some load resistors. This month we go the other way and figure out how to make a charger that takes that flat battery and puts some juice back into it.

As I explained, the folks at Concorde have written a treatise on how to recondition one of their AGM (absorbed glass mat) sealed aircraft batteries using relatively expensive equipment. Being on the cheap side, I have experimented (see "experimented" you Cess-Bee-Moo drivers?) and found that there are other ways to recondition these batteries using less expensive equipment. This article will show how to recharge the battery, albeit slowly, to pretty much the same condition as when using the pricey stuff.

Enter the LM317, my variable voltage regulator of choice for the last 35 years or so. This little gem is totally tolerant of over-current, over-temperature and a lot



Load and charge circuits.



A sine wave on an oscilloscope showing 12-volt and 17-volt levels.

of other "overs" that make it just about the most bulletproof device in my arsenal. There have been a lot of "317-killers" introduced to the market, and as yet none of them has made the A list.

So what do we have? We have an integrated circuit in a power package that will, if asked, deliver an amp and a half at any voltage from 1.2 volts to about 1.5 volts below the primary power supply. It is adjustable anywhere in that range. Just for grins, let's say that the power supply

puts out about 17 volts. (You can have any output voltage you want from 1.2 volts to 15.5 volts. In particular, you can have 14.1 volts with one simple adjustment.)

An aside: This 17 volts is an interesting voltage. A lot of the wall-wart power supplies put out "12 volts AC." This "12 volts" is a sine wave that contains as much power as a DC supply of the same voltage. The sine wave is continuously varying voltage, so there has to be compensation for the fact that there is a point where the voltage is zero, a point halfway up to 12 volts, 12 volts itself and then some more voltage to compensate. The "compensation" voltage lets the sine wave go up to 1.414 times the 12 volts on the nameplate, to 16.97 volts. When we use diodes to "rectify" this voltage to produce the DC necessary to charge the battery, the diodes rectify to the *peak* voltage, not the 12-volt (RMS) voltage.

Why do many wall-warts put out 12 volts RMS? Because in the transition from

Jim Weir

began acquiring Aero'lectrics expertise in 1959, fixing Narco Superhomers in exchange for flight hours. A commercial pilot, CFI and A&P/IA, Jim has owned and restored four single-engine Cessnas. These days, he runs RST Engineering and teaches electronics at Sierra College. Ask him questions at rec.aviation.homebuilt or visit his site at www.rst-engr.com/kkitplanes.

vacuum tubes to transistors, there were 12-volt filament transformers on the surplus market, and we just got used to using them for a low-voltage power supply. The 12-volt filaments in vacuum tubes are there because if you wanted to be able to use the tubes in both a home as well as a car radio, you ran the filaments from the 12-volt battery supply in the car and from a 12-volt filament transformer at home.

The Details

So much for ancient history. We're going to use a 12-volt wall-wart and a bridge rectifier to convert that 12 volts into 17 volts DC. The wall-wart is rated for 1.5 amps, and the only diodes I have are rated at 1 amp. That's good in that I'm going to have to choke the output of the regulator down to about half an amp if I don't want to have to buy a big, fancy heat sink. That doubles the amount of time it will take to charge the battery, but this project isn't concerned with time; heat is the enemy of all things electronic.

Mostly I don't recommend any particular parts source for you, but here Jameco (www.jameco.com) has the best prices on wall-warts by far. One in particular (#167151 at \$10) is a real bargain.

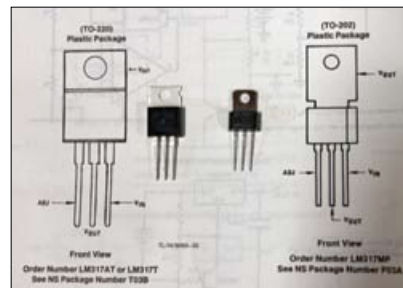
The diode bridge? Four plain old 1N400x rectifier diodes will do the job, but if you want to get tricky, you can use one of those snazzy “all in one package” bridge rectifiers like the Jameco #145129. Your choice. The 1N4001s are about 2¢ apiece (8¢ total for the four) or 40¢ for the

prepackaged bridge. C1 takes the pulsed DC provided by the bridge and smooths it to low ripple while also providing a low impedance to the Vin (input voltage) terminal to prevent oscillations. U1 is a plain-Jane LM317 in what is called the TO-220 plastic package with a metal heat-sink tab. This charger has been shut down to about half an ampere, so there won't be any additional heat sink necessary.

Here is how the LM317 works. Inside of the LM317 is a precise voltage regulator with a fixed voltage of 1.2 volts. You can get the LM317 hot or cold, high current or low, and that precision regulator doesn't move a bit. It takes good, solid engineering to make this "band gap reference" so stable. The deal, then, is that the ADJ terminal (output voltage adjust) will always track the output voltage *minus* the band-gap 1.2 volts. Thus, when the output is 14.1 volts, you should measure 12.9 volts on the ADJ terminal.

R2 and R3 set the output voltage; R2 is going to be somewhere around 5kΩ, so the 10kΩ potentiometer should be set to half-scale as a starting point. Concorde recommends that the battery be brought back up to 14.1 volts after draining it, so that is what the output voltage should be set at.

U2A takes the voltage drop across R1 and turns “on” when that voltage gets to what corresponds to 500 mA (half an amp). That, in turn, biases Q1 on and shuts down the bias on U1, keeping the voltage below this current level.



The TO-220 and TO-202 packages.

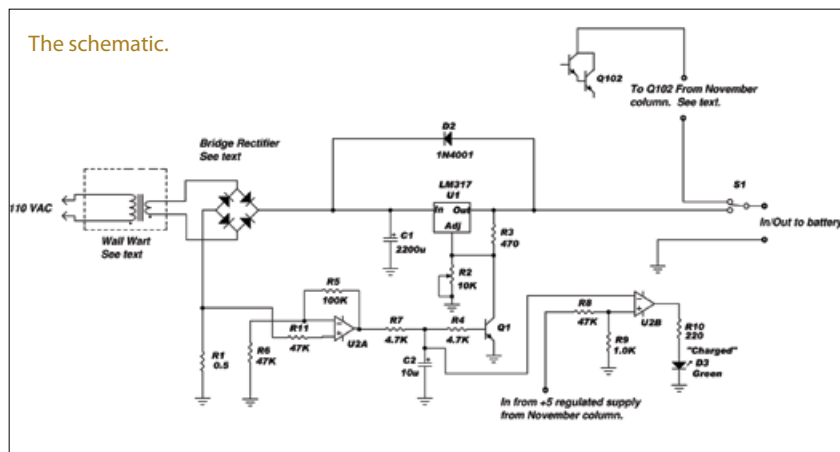
As U1 fully charges the battery, the voltage out of U2A drops to the point that U2B turns on and lights D3, the green “fully charged” light.

Companion Piece

This charger could be part of a stand-alone battery charger, but we said last month that we wanted it to be the companion to the battery load circuit described in the November 2010 issue. With the addition of S1, we can drain the battery, flip the switch, and then charge the battery. This is what Concorde calls “conditioning” the battery when it has been allowed to sit for a long time between charges.

If that is how you want this device to work, connect the output of this charger to one of the outside terminals of a single-pole double-throw (SPDT) switch (S1). Remove only the lead to the collector terminal of Q102 of the load circuit, leaving all the rest of the power-supply wiring intact. Connect a wire from the collector terminal of Q102 to the other outside switch terminal. Connect the pole (center terminal) of the switch to the power-supply wiring that connects to the (+) positive terminal of the battery being reconditioned.

Now for the surprise of the month. First, let me tell you a little secret. There is another version of the LM317 that comes in the very small TO-202 package and regulates output to 500 mA. Remember how I said that the output tracks the ADJ terminal precisely? Well, it tracks it as well for an AC signal as it does a DC signal, and I'm going to leave it at that. Tune in next month to see how this plays out. ±



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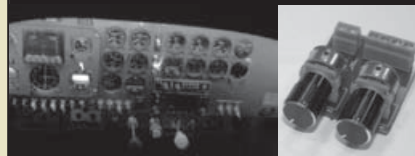
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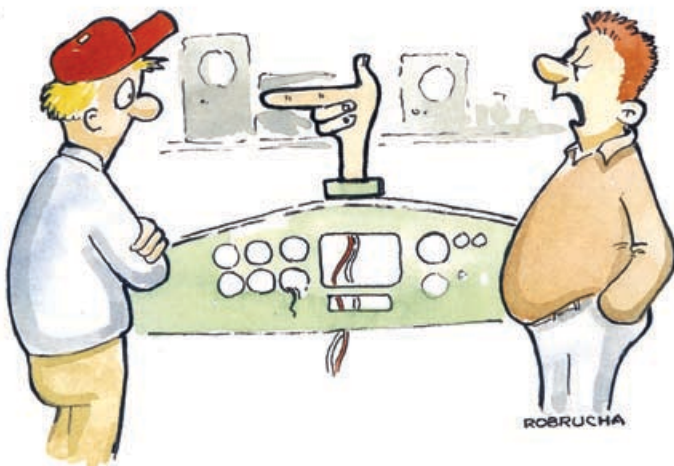
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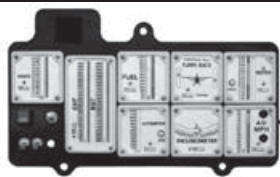
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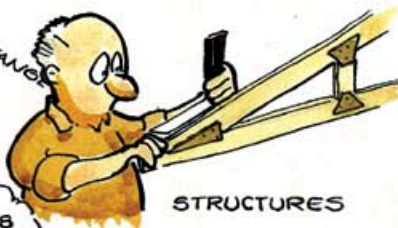
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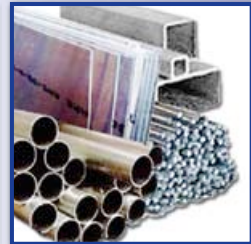
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