

The Vista A-20 Cruiser

As the new millennium got underway, visitors to EAA AirVenture Oshkosh 2000 examined a new aircraft from a Ukrainian company called Aeroprakt Ltd. Named the A-22 Valor, the unique side-by-side two-seat aircraft had a distinctive cabin largely covered in clear plastic. It was displayed by John Hunter and his company, Spectrum Aircraft.

The Valor has turned out to be only the first in a fleet of light aircraft that have materialized before American eyes. In 2001, another Aeroprakt model appeared on Spectrum's display space—the A-20 Vista Cruiser, one of a series of A-20 models.

John Hunter became well known in the light plane world while working for Phil Lockwood,

designer of the much-admired Air Cam. Under the Leza-Lockwood banner, John flew the Air Cam all across the country in an ambitious marketing campaign that exposed the twin-engine, ultralight-like aircraft to many aviation buffs.

After leaving Leza-Lockwood, John linked with the Dubai-based group Gulf Air Technologies, which had contracted with Aeroprakt to develop a line of light-

weight twins and other aircraft. Spectrum Aircraft became Gulf Air/Aeroprakt's partner for North American sales.

Aeroprakt was formed in 1991 as the Soviet empire collapsed. Since then, it has built an impressive catalog of designs while simultaneously honing its skills as a capitalist endeavor. Aeroprakt has delivered nearly 100 aircraft and built a new factory with funding from its Arab fi-

Eastern European designers
deliver nimble machines

& Varlet

nancier. The core of engineers who formed Aeroprakt once worked for the Antonov aircraft company, the Soviet builder of giant aircraft. Like that company, Aeroprakt identifies its models with the letter A and a number, an obvious emulation of the former USSR aircraft. Acorns don't fall far from the tree.

John's familiarity with the Air Cam

whetted his appetite for twin-engine machines. And, indeed, Aeroprakt has proven to be a company capable of designing and producing several twin-engine light aircraft. Using the well-known Air Cam as a benchmark, John has promoted the Aeroprakt twins as possessing remarkable performance, responsive handling, stable flight characteristics, and strong construction, but the

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month we'll focus on a couple of the company's single-engine light aircraft that are poised to be contenders in the upcoming light-sport aircraft scramble.

The A-20 Series

The Aeroprakt A-20 series encompasses six different aircraft models, which can get a little confusing at times. The easiest way to keep them separate is to recognize that a different engine and wing configuration denotes a different model.

The basic A-20 Vista model is powered by a Rotax 503 engine and has a 37-foot wing. The Vista Cruiser, which will be the focus of this report, uses the 912S engine with a 33-foot wing, and the Varlet, which also uses the 912S engine, has a 31-foot wingspan. Other models in the A-20 Vista line are the Vista STOL, Vista SS, and Vista Super Cruiser.

I don't mind telling you the Aeroprakt A-20 Vista Cruiser is one of the most enjoyable machines I've flown in a long career of sampling numerous light flying machines.

As always, I examine aircraft I might fly with a careful eye. I'd noted that the Vista Cruiser was a fast-climbing machine, and I assumed other performance measures would be strong with its 100-hp 912S engine. What I couldn't determine from watching the Cruiser fly was its pleasurable handling and low-speed capabilities.

My initial reaction to the aircraft was



strongly positive, and that isn't always the case. Many light aircraft require pilots to log some flight time in them to acclimate to their handling characteristics. The Vista Cruiser proved to climb as breathtakingly as I expected, and it cruised quite swiftly, but I didn't anticipate the good handling qualities it would offer at the other end of the spectrum.

For example, I was able to hold altitude at 50 mph and barely more than 3000 rpm. At this power setting, the Vista Cruiser was kind to my ears and exceedingly pleasant to fly. It was also nicely appointed, and its interior was roomier than it might appear from the outside.

Inside the Vista Cruiser

An entry step on the left side of the Vista Cruiser presents one way in, but I used John Hunter's technique. He turns around and hops up on the cockpit frame and seat back—which are about the same level—then swings his legs inside. With

feet aimed at the rudder pedals, he slides down the seat into position. Most pilots will be able to manage this maneuver; others can use the step.

Once seated, the Vista Cruiser takes on the feel of a sailplane. I'm a sailing enthusiast, so this first impression was a good one. I found all controls conveniently located, but these Ukrainian-designed aircraft don't follow the standards used by American engineers. For example, the Vista Cruiser's flap lever is quite different than most American designs. The lever—or perhaps it should be called an "arm"—can be accessed from either the front or rear seats, an unusual yet very useful feature. The control slides fore and aft in a track supported by rollers that provide fluid movement. You lift the lever up (out of the detent position) and slide it to a new position for whatever degree of locks into place.

I didn't notice much air load on flap deployment (as I was flying slowly), but in my first retract experience with the flap handle, I didn't maintain a firm grip and the handle shot forward, slamming into a fully retracted position before I could catch it. I was caught off guard as many ultralight-type flap handles have to be retracted with some deliberate or muscular effort. Rarely do they exhibit a spring-loaded action like the Vista Cruiser's handle.

Aeroprakt's designers opted for full-

span flaperons, so roll control is modestly affected by flap deployment. Yet even with full flaps deployed, roll control remained quite effective. My Dutch roll coordination exercises in this configuration required more aileron movement than when the flaps were not used.

The Vista Cruiser's trim lever worked well. Many ultralights hardly need trim, but I used trim on the Vista Cruiser as its powerful engine is mounted above the aircraft's center of gravity. Positioned at the base of the joystick, the trim lever functioned easily, though I had to stretch to reach the control. Trim was effective without being sensitive throughout its movement range.

A sight-gauge fuel indicator is installed along the rear occupant's right side. From the front or rear seat, it was easy to determine remaining fuel quantity.

Looking Out

The Vista Cruiser's sailplane feel comes partly because you sit several feet out in front of the wing. With its wraparound canopy, visibility from the Cruiser is enormous, even to the rear, although I had to twist considerably to check the rudder movements before takeoff. The canopy has an opaque "cap" inside that keeps the sun off your head and also helps to cool the enclosure somewhat. You might choose Aeroprakt's topless windscreen on warm, sunny days. I would have loved this feature on the warm day I flew the airplane. John says the change from the wraparound canopy to the windscreen only is literally a one-minute task using removable titanium pins at two hinge points on the aircraft's right side.

Because the summer screen was not fitted on the Vista Cruiser I flew, I became busy propping open the canopy with one hand while working the throttle and brakes with the other. I really needed three hands because even at idle thrust, the potent 912S gently pushed the Cruiser forward.

Rather reluctantly in the steamy heat of the day, I worked the canopy lockdown system. It is very secure and latches with reassuring authority, but it takes a little jockeying to position it for latching. A small cord restrains the canopy when fully open, and John asked that I make



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sure this cord did not get caught when closing the canopy. On the day I flew the Vista Cruiser, its single fresh-air inlet wasn't enough, so I kept sticking one hand or the other out to direct more air inside. Owners in warm climates will want to add further ventilation.

Once aloft, you can rest your throttle hand on either the flap linkage arm or on the aluminum tube linking front throttle to aft throttle. The Vista Cruiser and Varlet's 25-inch-wide cabin should prove sufficiently roomy for most pilots.

No-Doubt Takeoff

Taxiing out for takeoff, I found the aircraft's steering authoritative, though on a crowded airport ramp you might wish for differential brakes.

I've experienced several Rotax 912S takeoffs when flying light planes, so I gradually added power to the Vista Cruiser. The 912S engine provides much more power than is needed for this aircraft—remember, it will operate fine on engines as small as the 50-hp Rotax 503—but like that stereo system with wattage you never fully use, many pilots find it's better to have too much power than too little.

Throughout my several touch-and-goes, I commonly used only 4500 rpm

for takeoff; more is simply excess for a single occupant. In one takeoff, I used only 3910 rpm (according to the digital engine information system John had installed), and I was still climbing at 500 fpm. No wonder the Rotax 503 can adequately power the Vista Cruiser! For that low-power takeoff experiment, I used two notches of flaps throughout the pattern.

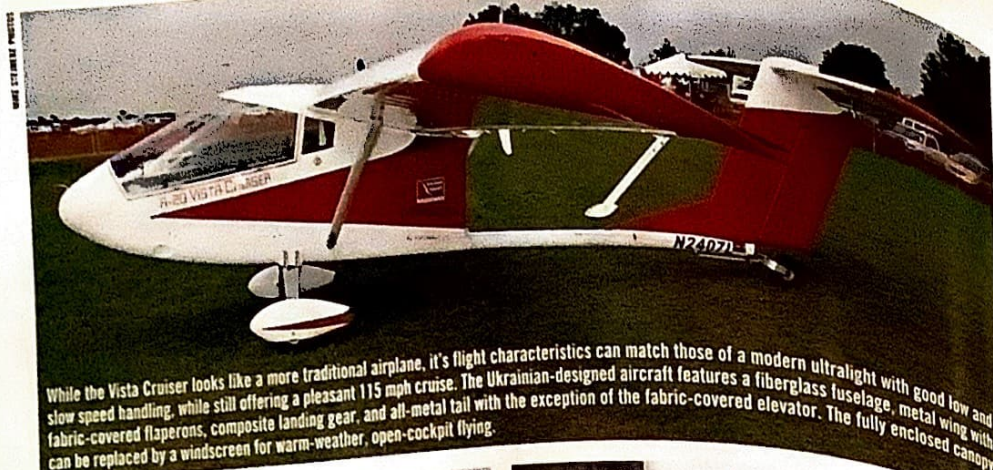
In general, takeoffs were effortless as long as you didn't overuse the 912S's power. Landings were just as easy but you must plan ahead. I can sum up landing approaches in the Aeroprakt with this comment: I had to use slips on every landing I made in the Vista Cruiser. I prefer high approaches, but as I wanted to do touch-and-goes, landing in the first third of the runway is wise. Getting the Vista Cruiser down in the first 1,300 feet of a 4,000-foot turf strip while using high approaches demanded a different technique than landing many slower ultralights.

However, the Vista Cruiser's long gliding quality is certainly not a bad thing. Should you lose your engine over some inhospitable terrain, you'll be very glad this Aeroprakt model can reach the safety of those fields you've should have kept in sight. Even when I used full flaps, the Cruiser wanted to linger in the sky, a fact most pilots will appreciate.

Fortunately, the aircraft's authoritative handling and generous side area make for highly effective slips that allowed me to angle the airplane 30 or 40 degrees to either side.

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While the Vista Cruiser looks like a more traditional airplane, its flight characteristics can match those of a modern ultralight with good low and slow speed handling, while still offering a pleasant 115 mph cruise. The Ukrainian-designed aircraft features a fiberglass fuselage, metal wing with fabric-covered flaperons, composite landing gear, and all-metal tail with the exception of the fabric-covered elevator. The fully enclosed canopy can be replaced by a windscreen for warm-weather, open-cockpit flying.



The Vista Cruiser we flew for this flight report was powered by a 100-hp Rotax 912S engine; however, the various Vista models will fly well with engines from 50 to 100 hp. The nicely cowled engine gives a sleek and clean look to the aircraft and helps provide less disturbed air to the propeller.



The wide composite landing gear offers good, stable handling characteristics.



With both occupants seated well forward of the wing, the Vista Cruiser offers the feel of a sailplane. A step on the side of the fuselage facilitates entry and exit from the cockpit. Note the cap at the back of the canopy, which provides sun shielding for the pilot and passenger's heads.



While the instrument panel area isn't expansive, it offers plenty of room for required instruments. The use of a digital engine instrumentation system helps keep the panel clean.

My early slip trials produced a sink rate beyond 1,000 fpm, good enough for most situations where you want to get the Vista Cruiser down on a short run-

way. More experience will help you make even slower approaches, but moderate slips and flaps worked well together.

In later slips I applied so much slip-

ping force that I actually had to brace myself in the seat; I recorded a descent rate of 1,800 fpm. With good technique and some practice, short field or emer-

gency landings won't present problems. The steepest of my slips were done with no flaps.

One criticism I have focuses on the close proximity of the flap handle to the throttle handle. During final approach, you may sometimes feel for the knob you want. You can learn the difference between the specially shaped handles designed for tactile feel, but at first I grabbed the flap handle thinking it was the throttle. Keeping your hand on the throttle on final approach, as most instructors advise, solves the dilemma.

Crisp Control Qualities

One distinguishing feature of all the many Aeroprakt designs appears to be the common use of a large tail volume. Certainly, the Ukrainian designs are not alone in this characteristic, but I felt the big tail accounted for some of the superb handling qualities experienced in the Vista Cruiser. After performing various evaluation maneuvers, I can attest to its fine handling characteristics. All movements were fluid and light while still providing some feedback. The ailerons and rudder seem beautifully harmonized.

I nearly always use Dutch rolls to discover the basics of handling a new aircraft; the non-aerobatic maneuver offers an excellent chance to feel control authority and harmony. In my first trial, I did them successfully to 45 degrees each way—a steep bank that proves handling is intuitive and responsive.

Later in my test flight, I slowed the airplane down, deployed full flaps, and again tried Dutch rolls. This time I had to limit the bank angles as the flaperons consumed some of the aileron range, although I was still able to bank back and forth 30 degrees in a ball-centered fashion.

By bringing the flaps back up and increasing my speed to about 50 mph, Dutch rolls once again became very light and easy to do. The aileron range shortfall experienced with full flaps went away and the coordination improved. Pilots rarely do Dutch rolls with flaps fully extended, but doing so will identify control effectiveness at slow, approach-like speeds.

The Vista Cruiser flew so well—so like an ultralight—with full flaps that I spent



John Hunter welcomes visitors to Spectrum Aircraft's offices on Sebring Airport in Sebring, Florida.



Inside the Aeroprakt Ltd factory. One work area houses all the equipment needed for composite work—note the oven at the rear of the room, while the company's engineers, many of whom previously worked at the Soviet Antonov factory, are located in the office area.



an unusual amount of time in this configuration.

At 50 mph, I found surprisingly little adverse yaw. Once banked without rudder the nose comes around to the desired direction quite quickly. In this regard, the Vista Cruiser was superior to most ultralights I've flown.

Full power stalls never broke, even well down into the low 40-mph range. A distinct buffeting tells you you're slow—you'd have to be asleep to miss it. Down into the high-30s, power-off stalls did break modestly, and Vista Cruiser be-

came somewhat neutral laterally during the highest deck angles.

My evaluation of push- or pull-and-release from level flight showed a neutral longitudinal stability that tended to decay very slowly. With only myself in the front seat, the Vista Cruiser did not fully recover to level flight without input. The high thrust line placement of the engine was one influence. I did not feel any uncertainty with this characteristic, but it did hunt somewhat in gentle pitch oscillations.

Giddy Up

Though one day I look forward to flying a Rotax 503-powered Vista, I have to admit to a lot of excitement about experiencing the Rotax 912S. With this engine, the Vista Cruiser is a climbing wonder; I saw a sustained 1,700 fpm rate. The Cruiser, as belies its name, also cruises fast, but power isn't only for speed and climb.

At the other end of the spectrum, I was also able to fly low over open fields while using full flaps at power settings as low as 3200 rpm and at speeds in the higher 30-mph range. This is a wonderful demonstration from an aircraft that can also zoom to 120 mph. In one maximum power run, I didn't trim the nose down enough and gained 700 feet, yet I still saw a 115-mph indicated airspeed.

Backing off the throttle, I used 3800 rpm, which produced about 60 mph. At this setting, the Vista Cruiser could stay aloft a long time. At more than 100 mph, you feel the bumps more noticeably; flight in the 50-70 mph range is smoother.

At a mere 3400 rpm, I saw 42 mph while staying fairly level. Though Vista Cruiser looks quite different than most American ultralights, it can clearly fly as slowly as many ultralight designs. Operating at low power settings made for a very quiet cabin.

With the throttle near idle thrust (about 1750 rpm) and at about 50 mph, the Vista Cruiser produced a descent in the 300-500 fpm range. The measurement was inexact as the day was full of convective lift, but this slow a sink rate compares to all ultralights I've flown. I flew at well under the aircraft's 1,000-pound gross weight, which obviously



Specifications

Aeroprakt A-20 Vista Cruiser/Varlet

(All specifications and performance figures provided by factory. Figures are unverified except as otherwise stated in this article. First figure is for Vista Cruiser, second for Varlet.)

Empty weight—535/515 pounds
Gross weight—1,000/1,000 pounds
Wingspan—33.4/31 feet
Length—22/22 feet
Height—5.9/5.9 feet
Wing area—151/140 square feet
Wing loading—6.6/7.1 pounds/square foot
Kit type—Quick-build available
Powerplant—Rotax 912S/Rotax 912S
Power—100 hp/100 hp
Power loading—10.0/10.0 pounds/hp
Max cruise speed—115/132 mph
Never exceed speed (VNE)—143/180 mph
Rate of climb at gross—1,200/1,400 fpm
Takeoff distance at gross—200/280 feet
Landing distance at gross—250/300 feet

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affects parameters like sink rate, yet the Cruiser's descent was so slow I was tempted to shut down the engine and try some soaring. Glide and sink rate are superior to most other machines in this class.

For those who don't care about slow speed flying or soaring flight, the 912S-powered Vista Cruiser is an excellent cruiser. It can zoom to a VNE of 143 mph and can easily sustain 115-120 mph. The A-20 Varlet that Spectrum Aircraft has also begun importing can do even better, reaching 132 mph on shorter 31-foot wings, thus both models are candidates for the proposed light-sport aircraft (LSA) rule.

At the other end of the spectrum, fortunately—as sport aircraft aren't always driven from Point A to Point B—I found the 912S-powered Vista Cruiser to be lots of fun at the low-over-the-field flying, which I consider an essential light aircraft attribute. Using full flaps and after practicing slow flight at a higher altitude, I was able to drift lazily over my favorite Florida fields at around 40 mph.

One of Your Own?

Anyone who experiences flight in it may fall in love with Aeroprakt's A-20 Vista Cruiser. Its great aerodynamic efficiency and its hard-working wing should impress just about any pilot.

Buying a Vista Cruiser, however, means you need to spend some time with John Hunter. Aeroprakt makes so many design variations of the A-20 series alone (plus numerous other models of interest) that you may have trouble deciding which model is right for you. I'll give some information, but a call to Spectrum is necessary.

The aircraft I flew was the A-20 Vista Cruiser, but since that evaluation Spectrum has started importing the cantilever-wing A-20 Varlet. John says the Varlet was developed specifically for the proposed LSA rule.

In the three years since the A-20 series

was introduced to the United States market, the series has seen a few design changes. For LSA, the wingspan has been reduced to 31 feet from 33.4 feet to assure it can reach the maximum speed allowed under the proposal: 132 mph versus 115 mph in the longer-winged version. With the shorter wing, stall also rises but by a very small amount—perhaps from 36 to 39 mph depending on airspeed indicator accuracy. Buyers who don't care about hitting the maximum LSA speed limit can select a longer wing for superior slow speed performance; Aeroprakt makes a 37-foot span wing for the A-20 Vista model in the series in addition to the 33.4-foot version I flew.

With its 100-hp Rotax 912S, the A-20 Vista Cruiser sells for \$42,500, while the Varlet sells for \$48,000 as a "quick-build final assembly" kit. Because Aeroprakt has always performed a generous amount of factory pre-assembly, you can be sure the most challenging parts have been professionally done. Buyers are typically left to do the time-consuming tasks that make up the 51-percent portion for the experimental amateur-built rule, but these tasks don't commonly require great precision. To be sure how your A-20 can meet United States regulations, you'll need to discuss the final configuration with John.

Nearly \$50,000 is certainly more than some American designs will sell for, but the Vista series comes well equipped. For this money, you get the 100-hp Rotax 912S, a three-blade composite prop, electric starting, altimeter, airspeed indicator, vertical speed indicator, digital engine instrumentation, the "hardtop" canopy, wheelpants, all fabric work, and factory paint. The price tag does not include shipping.

Before you get too deeply into kit or ready-to-fly purchase options, I recommend you arrange a flight with John. Unless I miss my guess, most pilots will truly enjoy a flight in the A-20 Vista Cruiser or Varlet. ✈

Dan Johnson has been flying for more than 35 years, logging more than 5,000 hours in flying machines from paragliders to twin-engine general aviation aircraft. An FAA commercial instrument and multiengine pilot and certificated flight instructor, Dan is focused today on ultralights and light-sport aircraft. He has flown and photographed nearly 300 aircraft in a writing career spanning more than 25 years. He serves as vice president for recovery parachute maker BRS. You can review all of Dan's pilot report articles at www.ByDanJohnson.com.