

# THE RV-14

TOTAL PERFORMANCE IN AN ALL-NEW 2-SEAT RV



## THE DESIGN

The RV-14 is the newest airplane from Van's Aircraft, Inc. It continues and improves on the legacy of the most successful side-by-side two-seat kit aircraft in history: Van's RV-6, RV-7, RV-9 and RV-12.

But the RV-14 is different.

Probably the first thing you'll notice is that the RV-14 sits tall. The upright seating position and large bubble canopy provide superb visibility in all directions. The large cabin (as wide as many four-seat airplanes) is truly roomy. Lots of headroom, lots of legroom, lots of room between the seats. Big people will like this airplane!

The tip-forward canopy (the only canopy possible on the RV-14 fuselage) uses a new hinge arrangement that allows it to open wide for entry and loading baggage. It also allows complete access to the back of the instrument panel and avionics connections. It is possible to stand on the ground next to the airplane and reach everything in back of the instrument panel.

Speaking of avionics, the RV-14 will include a standard wiring harness that handles the usual electric basics: lights, fuel pump, flaps, trim, etc. Our prototype uses a Dynon Skyview system, but the standard RV-14 wiring harness will provide convenient plug-and-play expansion capability for several popular EFIS systems. A blank panel for those who want to develop their own panel from scratch is also envisioned.

The relatively long wing uses the proprietary airfoil that's

proved so successful on the RV-10. The wing is constant-chord and constant thickness, so it's easy to build and completely predictable in flight. Big slotted flaps keep landing speeds low. Leading edge fuel tanks can be removed without taking the wing off the airplane. Ailerons are controlled by rigid pushrods moving on bearings and bushings — a very low friction system that helps provide the control feel for which RVs have become famous. Leading edges and wingtips have provisions for landing, position and strobe lights.

Up front, a 210 hp Lycoming IO-390 lives under the graceful cowl and supplies plenty of power! A Van's 4-into-1 exhaust system keeps exhaust noise relatively low, especially in the cabin.

RV-14 structure is typical of all RVs — and most production aircraft, for that matter. It is a monocoque aluminum airframe held together with rivets. This method has been the standard in aircraft construction for almost seventy years. It is very difficult to beat the combination of light weight, structural integrity, simplicity and affordability that aluminum provides.

Occupant protection is an important concern. A massive roll-over bar spans the cockpit just behind the seats. Seats, belts and harnesses are designed to keep pilots and passengers safely restrained.

The main landing gear is extremely simple, consisting of tapered steel leaf springs with a wheel on one end and the airplane on the other. There are no oleos, bungee cords or shock absorbers. The nosewheel rides on a robust steel strut. A tail-wheel version of the RV-14 is under development.

## **CAPABILITIES AND PERFORMANCE**

The RV-14 cabin accommodates full-sized adults — in fact, the basic idea was to provide RV-10 room and comfort in a two-seat airplane. The results are impressive. Both seats will hold people at least 6'4" tall and provide them with truly comfortable leg and headroom.

The thing that has always made RVs stand out from the original RV-1 to the RV-14, is the way they feel in flight. The famous "RV Grin" can be found on any pilot who has just taxied up in one...the result of a flight in a truly responsive, agile airplane that goes exactly where you want it to — almost as if it read your thoughts directly. The RV-14 continues this tradition. It responds almost instantly to the pilot's touch, but that response is predictable, proportional, and precise. It handles basic aerobatic maneuvers easily and gracefully. The structure meets the aerobatic category standards of +6/-3Gs when flown at the aerobatic gross weight of 1900 lbs.

RVs are known for short-field capability and the RV-14 is no exception. The generous wing area and big slotted flaps allow the RV-14 to land at virtually any small airport. It is perfectly happy on grass, dirt or gravel runways. If you can land closer to your destination, you can gain a lot of time over "faster" airplanes that must use big paved airports a long way from town. Even at gross weight, the RV-14 can operate from very short runways and climb well at high density altitudes.

When many pilots say "performance", they really mean "speed." By most standards the RV-14 is quite a fast airplane, but speed is only part of the story.

The RV-14 derives its high cruise speed from a light, clean and fairly small airframe, instead of from a big, consumptive engine. This means not only will it cruise at relatively high speeds, but cruise at lower speeds can be very economical. Company pilots often choose to cruise at 50-55% power and take advantage of the economy available there. At 175 mph, the RV-14 is getting better miles-per-gallon than most of the luxury cars and SUVs it is flying over.

We expect that the RV-14 will really come into its own as a sport touring airplane. The power and the wing will take a fully loaded RV-14 to cruising altitudes that easily clear any terrain on the continent. The wide cabin and large instrument panel give the occupants lots of room and lots of information. With a full fuel load of 50 US gallons, there's 510 lbs left over for people and baggage — in other words, two 200 lb people can take fifty-five pounds of baggage — each! Better yet, you won't have to leave your pocketknife or shampoo at home...

Pilot workload is very low, because the airplane responds quickly and positively to small control inputs. It is not the least bit "twitchy" and does not require constant attention to maintain heading or altitude. Cruising at 70% power and 190 mph, it can cover about 1400 nautical miles in eight flying hours with just one stop for fuel. At economy cruise, it can do thousand mile legs if you can!

A long trip in the RV-14 can be positively relaxing.



## **BUILDING IT**

The RV-14 kit has the full benefit of the RV kits that have gone before. It comes into the world ready to set new standards in completeness and accuracy. We expect that with these improvements, builders will complete RV-14s in significantly less time than the other 'driven-rivet' RVs.

All the aluminum components are formed and pre-punched for all the rivet and bolt holes. The "matched-hole" punching technology makes the airframe essentially self-jigging: when all the holes line up, the airframe *must* be straight. As with all other RV kits, all welding is complete. Wing spars come fully assembled and ready to install. The canopy has been the focus of considerable design effort. It should install with much less effort than any previous RV. Fully designed wiring, avionics and engine installation packages will be available that reduce the time spent on those traditionally very time-consuming tasks dramatically.

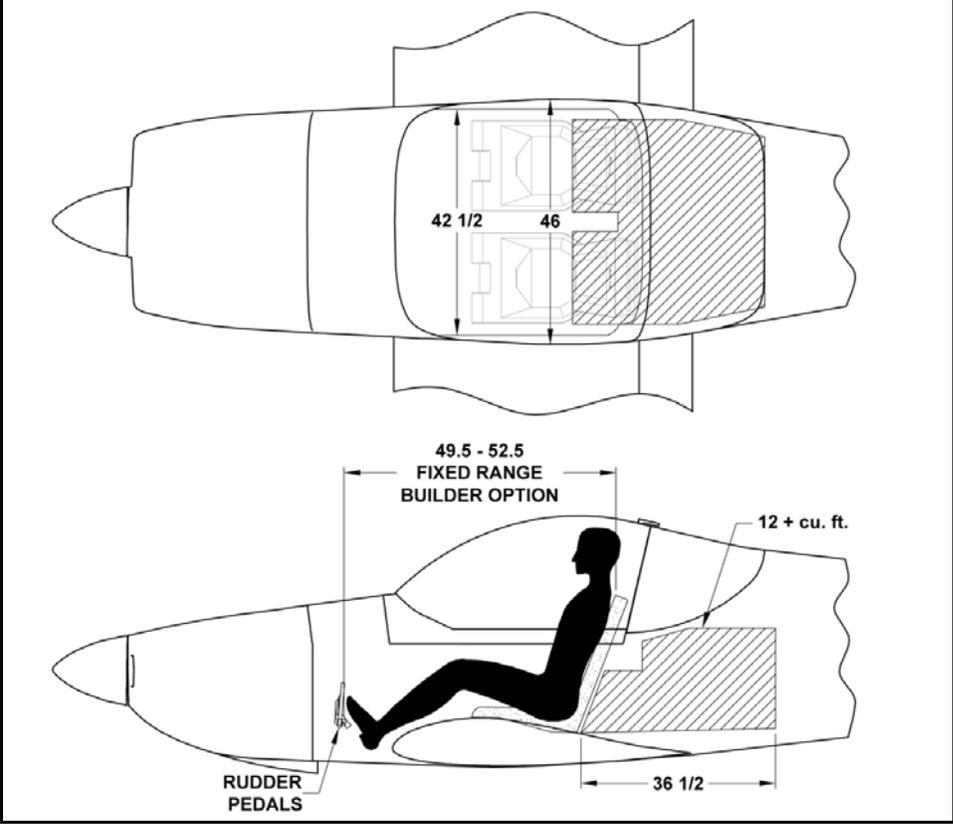
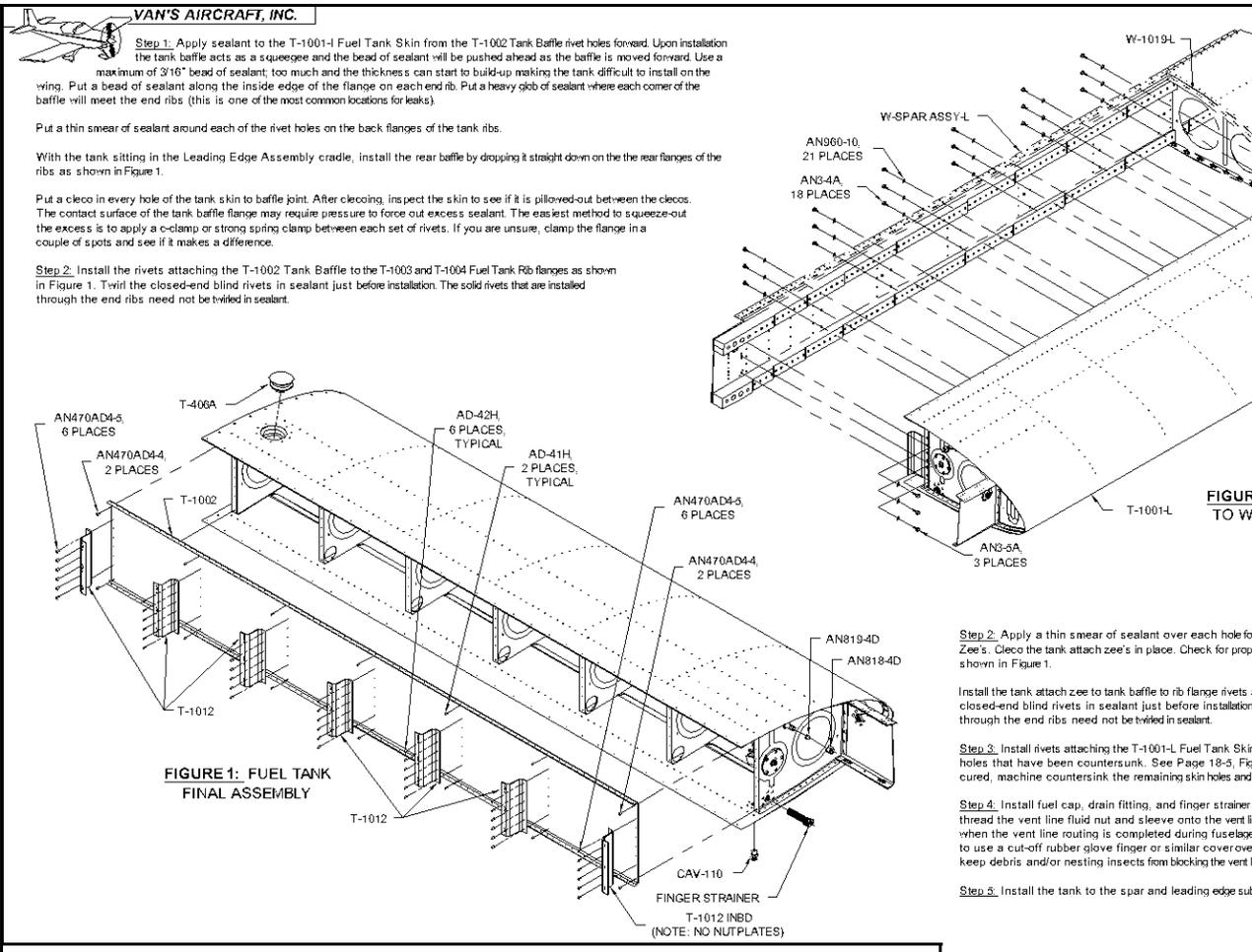
A QuickBuild (QB) will become available after Standard Kits are released.

For either kit, you'll need a shop about the size of a two-car garage, an air compressor, bench grinder and a set of aircraft hand tools like rivet guns, dimple dies, etc.

## **BUYING IT**

We expect RV-14 wing kits (which will work for either tail-wheel or nosewheel versions) to become available in the autumn of 2012. These will include everything necessary for a complete set of wings: fuel tanks, control surfaces, completely assembled spars, molded wingtips, etc. The price is yet to be determined, but a preliminary estimate is around \$9000.00. After that, empennage, fuselage, and finishing kits will be released in due course.

We think the RV-14 will be a great addition to the RV story — adding its new abilities and features to what is already the most successful line of kit aircraft in the world.



Above: an excerpt from the plans. Each part has a part number and is provided in the kit. Step-by-step construction sequences are shown and described on the same page

At left: Room. All kinds of room. The RV-14 boasts one of the widest and tallest cabins in any two-seat airplane. A generous baggage compartment behind the seats has space and structure enough for each occupant to take fifty pounds!



### PRICES

Wing kit (estimated price). We hope to open orders in September, 2012. Both price and date subject to change.	+/- \$9000.00
Other kits to be announced	

LIGHT WEIGHT PERFORMANCE		GROSS WEIGHT PERFORMANCE		RV-14 SPECIFICATIONS	
<i>1700 lbs. Speeds and ranges in statute mph</i>		<i>2050 lbs. Speeds and ranges in statute mph</i>		Span	27'
Top Speed	205	Top Speed	203	Length	21' 1"
Cruise (75% @ 8000')	195	Cruise (75% @ 8000')	193	Height	8' 2"
Cruise (55% @ 8000')	172	Cruise (55% @ 8000')	169	Wing Area (sq.ft.)	126.1
Stall Speed	56	Stall Speed	56	Engine (hp)	210
Takeoff Distance (ft)	525	Takeoff Distance (ft)	630	Gross weight (lbs)	2050
Landing Distance (ft)	545	Landing Distance (ft)	715	Wing Loading (gross)	16.25
Rate of Climb (ft/min)	1800	Rate of Climb (ft/min)	1500	Power Loading (gross)	9.76
Ceiling (ft)	26,000	Ceiling (ft)	18,000+	Empty Weight (lbs)	1240
Range (75% @ 8000')	938	Range (75% @ 8000')	925	Propeller	Hartzell c/s
Range (55% @ 8000')	1103	Range (55% @ 8000')	1080	Fuel Capacity (US gal)	50
				Baggage (lbs)	100

On the 'Other' Coast? Van's is located in the Northwest corner of America, so we've enlisted an East Coast Representative. **Mitchell Lock** offers sales assistance and demo rides in the RV-10 and RV-12 from his home base at St. Mary's Regional Airport (2W6), Hollywood, Maryland, near Washington, D.C. He will have an RV-14A sometime in 2013. Contact Mitch for an appointment. **E-mail: [mitchl@vansaircraft.com](mailto:mitchl@vansaircraft.com) Phone: 240-427-8847**

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