



Solly Ferriera's new RV-12 (started in South Africa by Rudi Greyling) takes to air — the first time an RV-12 has been aloft in Zimbabwe.

TWELVE GROUP PROJECTS



Above and right:

We're very excited about the possibilities the RV-12 opens up for cooperative projects. Above: a group of South Africans, prospective pilots and RV-12 builders have banded together under the eye of multiple RV builder **Rudi Greyling**.



Their first meeting resulted in a set of excellent workbenches ... the next in an RV-12 vertical stabilizer.

Below: Project Teen Flight, in Van's shop, was featured on local television when pilot/TV weather guy Dave Salesky (tall guy in the middle) showed up with a cameraman.



PERFECT PITCH

ACCURATELY SETTING UP THE SENSENICH GROUND-ADJUSTABLE PROPELLER

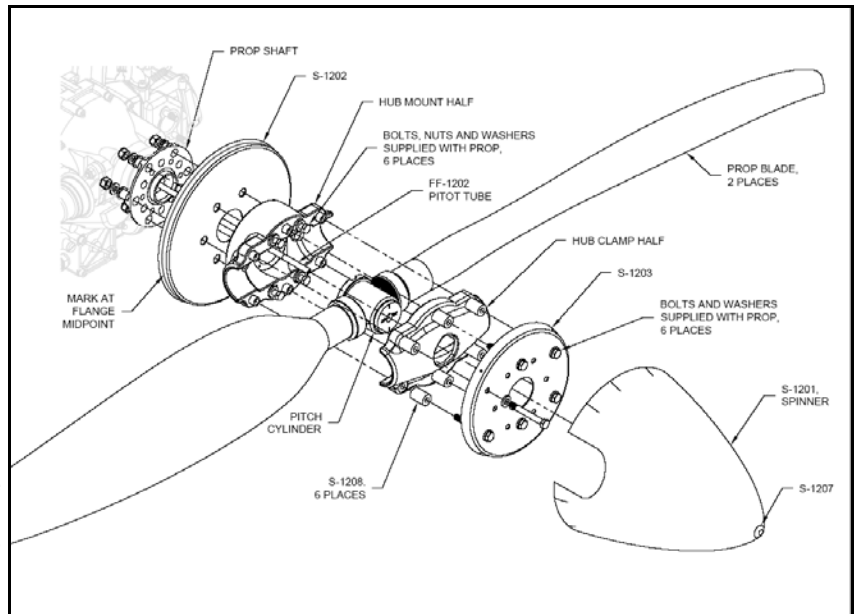
Scott McDaniels

We have liked the Sensenich composite ground-adjustable 2-blade propeller used on the RV-12 ever since we first got our hands on one. Until you hold one of the blades in your hands, you can not appreciate how truly light and solid it feels. We have also been impressed with how efficiently it seems to convert engine power into thrust. The ground adjustable feature helps, too, because it allows any given RV-12 owner to tweak the pitch and optimize it for the type of flying that it does most often. A small pitch adjustment that gives up only 5-6 MPH in cruise makes a notable difference in takeoff acceleration and climb performance.

Using a digital level/protractor to make propeller pitch adjustments is not an RV-12 maintenance requirement, which is why it is not listed in the required tools list. The indexer built into the propeller hub is adequate, but it does have a lower level of accuracy. The standard procedure -- as spelled out by Sensenich -- is, that while the blades are still loose in the hub, to rotate them both in the increase pitch direction until they hit the stop within the indexer. This is because there is a sight amount of slop/lash in the system and they want both blades to be "slopped" in the same direction to better match the pitch between the two. We discovered (once we began using the digital level to measure the angle) that the blade angles actually matched each other when both blades were rotated in the same direction (increase pitch on one, and decrease on the other). If we rotated them in the same direction before torquing, we had a blade angle difference of 0.2 – 0.3 degrees.

Therein lays the challenge; making those small adjustments...but I am getting ahead of myself.

For those unfamiliar, the RV-12 propeller blades are held to the engine with a machined aluminum hub made up of two halves. The rear half is bolted to the propeller flange of the engine with six bolts. The forward half bolts to the rear half with a separate set of six bolts that provides the clamping pressure to retain the blades in the hub. The root end of each blade is cylindrical which allows them to be rotated within the propeller hub. At the center of the propeller hub is another cylindrical device that is oriented parallel to the engine crankshaft. It has a slot in each side that receives a pin from the root end of each propeller blade. The purpose of this cylinder is to index or match the blade pitch between the two blades. If one blade is rotated the other has to rotate an equal amount also. The end of the indexer is visible and a small mark can be read on grid of hash marks to help with making pitch changes.



As we gained operational experience we discovered two things about this propeller:

1. A very small change in blade pitch angle makes a very noticeable change in static RPM (and a corresponding change in airplane performance).
2. It is difficult to accurately make a very small change.

Our private pitch-adjustment joke has become "if you need to make a pitch change, just loosen and retighten the clamps". It might give you just the change that you were wanting. I don't know if many of our RV-12 customers will ever tweak their performance as many times as we have during our testing program, but if they do, it can be very frustrating. We found that making adjustments by just referencing the indexer in the hub generally resulted in a pitch change of 1 degree or more. A pitch change of 1 degree produces less than 1/32" movement of the blade trailing edge. Pitch changes of as little as 0.2-0.3 degree produce a measurable change in RPM and airplane performance, so you can see how exacting this process can be.

We have learned a way that makes it a much less frustrating. The primary requirement is to devise a way to *accurately* measure the blade pitch angle. This can be done any number of ways. There are digital propeller protractors available, etc. We made our own measuring fixture from a couple pieces of scrap aluminum angle.

The photos show what the device looks like and how it is used with a common digital level clamped on to it. It has a short flange that rests against the trailing edge of the propeller blade. The straight edge in the second photo shows that the edge that contacts the aft face of the propeller blade has a shape to match the propeller

blade contour. What you use for the angle measurement isn't critical. What is critical is that it is repeatable and that you can measure the blade angle exactly the same way each time, on each blade. We found that the yellow stripes on our blade tips are very symmetrical between the left and right blade so we just use the inboard edge of the paint stripe at the trailing edge as our reference.

To make an adjustment, first decide whether you need more or less pitch.



1. Rotate the propeller so that it is horizontal.
2. Measure the height of the right side blade tip off of the floor/ground (referencing the blade tip to a button on your shirt while standing next to it will get you close enough).
3. Measure the current blade angle of the right side blade. Loosen the clamp bolts on the propeller hub and move the blade to the desired new pitch value. I would suggest you never change more than 0.5 degrees at a time unless the adjustment is way off from what you want. Changes of 0.2 degrees, when you are doing some final tweaking, would not be unusual.
4. Tighten the center two clamp bolts just enough to prevent the blade pitch from changing and rotate the propeller 180 degrees so that the opposite blade is now on the right side.
5. Position the blade at the same elevation as the first one (using your measurement or reference to your shirt button, etc.)
6. Check the angle of the second blade and adjust it to match the angle of the first. Slightly loosen the middle clamp bolts if necessary, then retighten them slightly after getting the angle set correctly.
7. Rotate the propeller again and recheck the first blade to make sure that the pitch value hasn't changed.

*Top: The protractor guide used in Van's proto shop
Left and bottom: two different versions of smart level being used with the guide.*

The long one uses a clamp to hold the level and guide together. Tony Tessitore found a shorter level with a tripod mount and used a bolt to fasten the guide directly to the level.

8. Torque all the hub bolts, ground run the engine and recheck the torque per Sensenich's documentation.

If you always position the airplane on the same spot in your hangar, etc., you can record the pitch value and the resultant full throttle static RPM, flight performance, etc. After just a little bit of adjusting you will get a good feel for how much pitch change produces what amount of performance change. You may find this helpful later make a seasonal adjustment between cold winter temperatures and hot summer temperatures. Just keep in mind that even modest variations in density altitude at ground level and the actual operating temperature of the engine will effect the measured static RPM slightly.

Fly the airplane and decide whether further adjustment is needed. You may find that you even need to fly it for a few hours in a variety of temperature and loading conditions to decide whether you want to make further changes.

WORKIN' ON THE RV-12

KEN SCOTT

Every once in while, you get the gift of a really good day. I had one last Saturday.

Spring had finally sprung (at least for one day), the sun was shining and the garden was sprouting from the dew-covered beds on the south side of my taxi-way. Best of all, my buddy Mike was spending a few days. We've been friends all our lives, but now he lives in Alaska and I live in Oregon, so chances to get together are few and all the more important because of that.

We've always worked well together, and we've tried all sorts of different projects. We built surfboards in the 60s, fishing rods and bicycles in the 70s, Volkswagens in the 80s. There's been a couple of house projects in there, too. Last year I spent a few days helping on the new home he was/is building in Alaska. But now he was on my turf and the project du jour was my RV-12. We threw open the hangar doors to meet the sunshine and prepared to put the wings into the fuselage for the first time.

After just a few minutes of fitting and filing the fuselage skin to clear a rogue rivet head, the wing pins were in. I was finally able to stand back and admire something that really looked like an airplane.

By afternoon, we'd fitted the flaperons and drilled the torque arms to the torque tubes – an operation that fixes the relationship of the flaperons to the control system. Move the flap handle up and down, and the flaperons move down and up together, just as they are supposed to. Leaving the flaps down and moving the stick side to side made the control pushrods move fore and aft and the flaperons deflect just like they are supposed to. Retracting the flaps and moving the stick... uh, oh. What's that grating noise?

One of the few drawbacks to the RV-12 is that there are a LOT of items crammed into the central tunnel. Wiring runs, fuel supply and return lines and pushrods all share this limited space. Also in the tunnel, aft of the wing spars, lives the fuel boost pump. This is the same almost-cubical little Facet pump we've used in carbureted RVs for twenty years. Running alongside and over the pump are the two pushrods that drive the flaperons. There isn't much clearance, and in my airplane – at least with the flaps up – there wasn't any. Moving the stick produced a significant interference between pushrod and fuel pump.

Here was a new and puzzling development. After a day and a half of working on other things and periodically moving the sticks, hearing the scrape of badness from the aft fuselage and shaking our heads, we finally decided that the fuel pump was just too big or the bracket it was mounted on was just too high. I knew this was unlikely because I handle a lot of the RV-12 questions at work and I'd never heard of this problem before. But I also could think of several cases where suppliers had changed their products

and shipped the new version to us without warning. Finally I got the bright idea to measure the similar fuel pump in my RV-6. It turned out to be identical...so there went *that* idea. A complete review of the control system showed that all the components were installed correctly. Nothing was upside down or backwards. Faced with the seemingly insoluble problem of a correctly installed system that didn't work, I did what RV builders always do. I called tech help at Van's.

I may never live it down.

On the other hand, Gus and Joe 1) hadn't heard of the problem either, and 2) didn't have a solution.

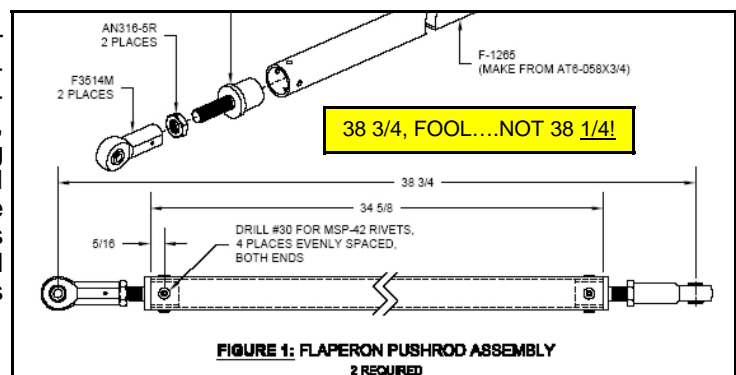
I went back and stared at the system some more. Nothing. So I went one step up the ladder and trespassed on Scott McDaniel's good will. Scott and Ed Chesney are the very skilled duo in our prototype shop and they built our red RV-12. As I described the problem to Scott over the phone, I could see Mike's eyes pointed up and to the left while his hands made motions suggestive of the workings of the control system. Nothing in my explanation jumped out to Scott. "Let me talk with Ed," he said. "A lot of times we come up with ideas just talking things over."

Mike and I headed down to the hangar and about half way there I had a thought. As it turned out, I was about three seconds behind Mike. "You know," he said slowly, "if those pushrods were too short, it might explain why the arms at the back are too low..."

"Yeaaaaah....and if the aft ends are too low, then..." I muttered, trying to visualize the whole system, yet again. "Well, let's measure them." While we were sliding the tape through the tunnel, my cell phone rang. It was Scott. "The only thing we can think of is that maybe your pushrods are too short," he offered. Four different people with the same idea within five minutes. *That's* a good sign.

So we pulled the pushrods out of the airplane, compared them to the plans and found that they were built exactly to plans...except for one small detail. The center-to-center measurement between the rod-end bearings was 1/2" too short.

We twisted them out to the correct dimension, tightened the jam nuts, re-installed them, and tried the sys-



tem again. It worked as The One We Call The Designer intended, with no interference between rod or pump. A couple holes in the steel torque tubes would have to be welded up and re-drilled, but that, at this point, was trivial.

So we spent the last hour of daylight on the deck, sipping a microbrew, knowing the problem was solved. As we'd done so many times over the last fifty-one years, we'd spent the day working together, laughing, thinking and enjoying. The Violinist joined us with a plate of apple slices and chips and we all watched the sun set behind the alfalfa field on the far side of the runway.

It was a really good day.

FURTHER TWELVE TIDBITS

Since resolving the Great Pushrod Crisis, I've learned a few more things about building the RV-12:

If you're considering the lighting kit, it's better to do it as you go than as a retrofit. That's probably no surprise... the surprise is that the cabin light is more difficult than the wing lights. I finally got the wires run from the roll bar through the depths of the belly tunnel to the instrument panel. I connected the newly run wires to the wires left open in back of the panel, once I finally found them and fished them out of the wire bundle coming from the "optional" plug on the back of the switch panel. The process was neither fun nor quick.

I went from cranky to depressed when I turned on the master and nav/strobe switch – and nothing happened. I had continuity though the newly run wires to the light, so the problem had to be in the factory wiring or switch. But no matter what I tried, the cabin light remained stubbornly dark. I was ready to blame a mis-wired harness, but I knew better: the odds were far higher that the problem was something I had (or hadn't) done than something Stein or Van's were responsible for.

Well, it was...but who knew the *Dynon* had to be on to make the cabin light work? Turns out the cabin lighting uses a dimming circuit contained in Dynon's magic box, so not only do the master and nav/strobe switches have to be on, so does the avionics switch.

Upcoming plans/parts revisions will make the cabin light retro-fitting and testing tasks quicker and easier. You can thank me later.

Once the lighting was sorted out, I went back to work on the cowl. I'd put that aside a month or more ago in hopes of doing all the sanding outside in better weather. Better weather, at least this year, hasn't come so I gave up and returned to the project. I have found:

You'll want to have *all* the fasteners in the cowl when you position and drill the cooling duct. This is mentioned in the instructions, but the reason I bring it up is to re-emphasize that the cowl *must* be completely attached to the fuselage with *all* the pins and screws whenever a new piece is bonded on. It's the only way to make sure that cowl will fit when it's finished. If you forget those little screws on the bottom the cowl can shift and once the duct is bonded on, it won't fit the fuselage the way you so carefully made it do, so long ago.

Put the cowl back on the airplane when you bond the fiberglass interface piece (the rectangle that faces the coolant radiator) to the cowl duct. I was able to "tack-weld" these components together with the cowl on by reaching down the air duct and applying pieces of wetted fiberglass cloth. The gap between the components was about ½" with the cowl off the airplane and about ¼" with it on. Bonding the parts together off the airplane would have resulted in a significant mis-match to the fuselage when the cowl was re-installed.

With the cowl on, I opened the propeller box. Everything was there – including a baggie of hardware containing about three dozen odd washers. There was a pattern of serrations on one side and a series of wedge shaped "ramps" on the other. I'd never seen anything like them before. The RV-12 drawings were "generic" and didn't show the orientation of the washer. Finally I noticed (well, ok...Gus noticed) the brief note tucked down at the bottom of the third page of the Sensenich instructions: "Hubs use hex head mounting bolts with special lock washers. Each lock washer works in pairs with the "ramped" sides facing each other."

Further discussions with our prototype shop provided somewhat more specific directions: Pairs of washers are used under both the nut and bolt heads on the six bolts that attach the rear prop hub to the crankshaft flange. Another pair is used under the heads of the bolts holding the two hub halves together. Total 32. Don't lose any.



Tight serrations to the outside, ramps together...that's the Sensenich way.

Sensenich notes that it takes two people to install the prop blades. Scott McDaniels tells me it's possible with one, but I was glad to have The Violinist's help for few minutes. I was also paranoid enough to put a foam pad underneath the engine. I really *don't* want to know what kind of sound a composite blade makes when it is dropped on a concrete floor.

There's a bunch of spinner plates, hub components, drive lugs and spacers to get in the right order, so pay attention.

ALIGNING GEAR LEG FAIRINGS WITH A LASER

PETE JAMES

I tend to stress about things that are not as complicated as they seem. In this case, how to simplify the alignment of the gear leg fairings? Per Van's plans, you need to create centerlines, artificial centerlines, Points, A, B, and X. Huh? What? This looks tough. Well it's not if you are willing to spend \$30 on something you can leave in your shop and use another day. Here is what I did:

1. Drop a plumb bob from the front and rear of the plane, per plans, and snap a centerline.
2. Use a tape measure to measure out 27" from that centerline on both sides at the front and at the rear of the plane.
3. Snap a chalk line on both sides, parallel to and 27" outboard of the original centerline.
4. Here's the expensive part - Buy a laser like the one pictured for less than \$30 - mine came from Home Depot.

Place the Laser at the front of the chalk line. Turn it on. Level the laser per the bubble guides on the laser itself - and voila! A laser mark on the step, and the gear leg fairing **IN THE RIGHT PLANE, PERFECTLY VERTICAL, and PERFECTLY PARALLEL** to the centerline. No plumb-bobbing from the step or fairing required!

Stretch the strings off the bottom of the step where the laser light hits, around the gear leg fairing, where the laser light hits. Hold the string in place with small strips of electrical tape in a cross fashion per pictures attached.

Measure up from the floor to both points of light. If the height does not match, adjust the laser left and right of the displaced centerline of the chalk line. Keep in mind the step itself is level to the floor, so moving left and right of the chalk line moves the distance to the floor up and down as you move across the leg fairing. It's easy to see if you are parallel to the line, as you can measure to and from the chalk line to the laser line. If none of this makes sense, it will be readily apparent once you set it all up.

I got a near perfect result, with very little effort in just a couple of minutes. 27" off centerline was exactly what I needed.

The attached pictures have a stool at the end of the chalk line in order to show where the

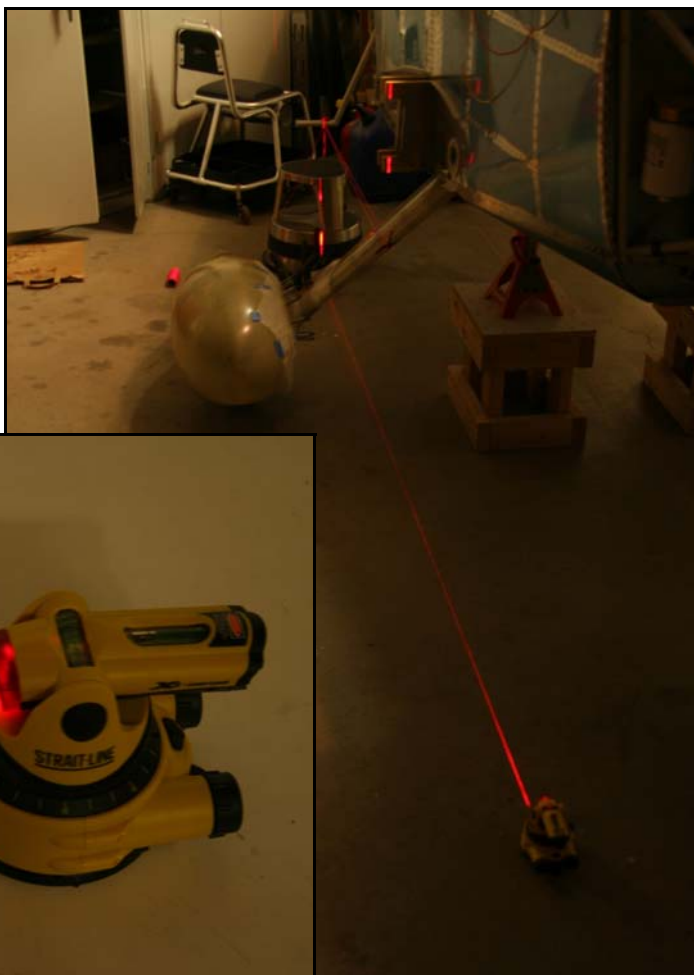
light is lined up. All you have to do is put a small object on the chalk line to make it more readily visible when making the initial laser alignment.

Note that I drilled holes and cleco'd the fairing onto the wheel pant. I colored a black sharpie dot on the cleco holes prior to laying up the wet glass layers. The black dots make it simple to find the cleco holes through the wet layers. Once the wet layers are on, use a very sharp pick or awl to separate the weave **BEFORE** you try and put the cleco in, otherwise, the cleco will grab a fiber and pull bubbles into the layup. I placed wax paper down between the pant and between the rear of the fairing. Worked great!

I shot the pictures in a darkened shop so the results would be more apparent in the pictures. The laser works fine in a normally lit shop.

No, when the police came slowly driving by, I had NOT been shining the laser at airplanes...only the neighbor's house a block away!

Hope this helps!



RV BUILDER RECEIVES TONY BINGELIS AWARD

James Baldwin, of Pickerington, Ohio, will receive the Experimental Aircraft Association's 2010 **Tony Bingelis Award** recognizing his many contributions to EAA and the aviation community.

Baldwin (EAA 110713) has dedicated more than 60 years to the aviation community, encouraging builders and their projects as well as promoting aviation safety. As a frequent contributor to EAA Chapter 443's monthly newsletter, Baldwin has reported on his EAA Technical Counselor visits and has made himself available at each chapter meeting for an open forum of dialogue.

Since becoming a tech counselor in 1993, Baldwin has conducted sheet metal construction workshops at the Mideast Regional Fly-In, been a flight line safety volunteer at AirVenture, and has advised many builders in Ohio on construction, design, and weight and balance.

A retired aeronautical engineer for North American Rockwell, Baldwin has performed several weight-and-balance programs over the years. He's flown 332 Young Eagles and helped send 18 youths to the EAA Air Academy in Oshkosh.

Baldwin, who received his private pilot certificate the day before he reported to the U.S. Air Force in 1948, built the second Van's RV-6 kit to ever fly in 1989, then built an RV-10 in 2007. Baldwin has also owned and maintained several aircraft, including a BC-12D Taylorcraft and three Cessnas, C-140, C-120, and C-170. Baldwin has invested time in rebuilding and maintaining aircraft owned by The Historical Aircraft Squadron in Lancaster, Ohio, most notably a North American B-25 and Douglas B-26.

Baldwin will receive the Bingelis award during the annual Homebuilder's Dinner on Thursday, July 29, during AirVenture. Tickets for the dinner will be available at Homebuilder's Headquarters on the EAA grounds.

The Tony Bingelis Award was created in 2002 to recognize a member from the aviation community who has contributed to homebuilt projects and safety promotion while maintaining EAA values. The award honors the late Tony Bingelis, who was noted as a homebuilding authority and EAA *Sport Aviation* columnist.



TIME TO THINK ABOUT THE 2011 CALENDAR

Every year I swear I'm going to get ahead of the game...no more last minute scrambling to get photo submissions, make selections, write captions and get the calendar to the printer before year's end rolls around.

This year I mean it. Really, I do. Deadline: October 8, 2010.

We are encouraging readers to submit their best RV photographs. We prefer flying shots, although we will consider a good ground shot if it "tells a story." We would rather that all parts of the airplane be included...no clipped off wingtips, missing empennages, etc. Focus is crucial. We get many shots that are slightly blurry and they don't reproduce well. Some of the really good air-to-air photographers send in shots where we can read the script over the pocket on the pilot's shirt...that's what we're looking for.

We'd like to include all models on the calendar, so we'd encourage builders of every model to submit. (Last year was noticeably lacking in RV-9s, for instance)

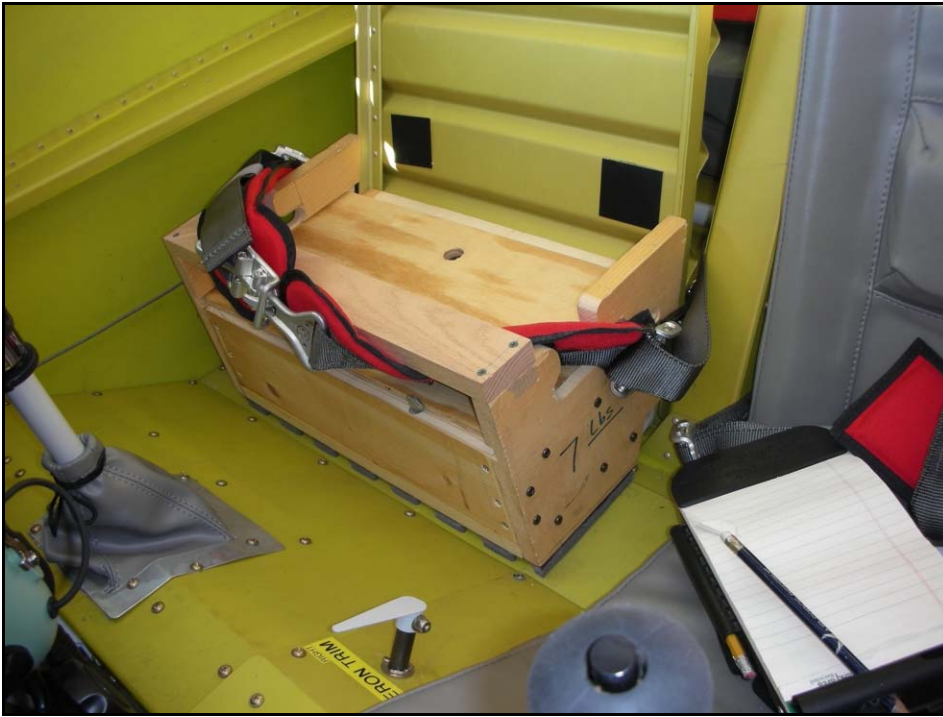
Almost all photos are digital, so you can email a relatively low file size "teaser" to kens@vansaircraft.com with "calendar" in the subject line. We'll ask for the full size files after we make our initial choices.

We'll need to know the airplane's builder, owner and pilot, as well as the location and approximate date of the photograph and the photographer's name.

If your photo is chosen, you'll receive everlasting fame...and several copies of the calendar.

WEIGHT BOX

NOEL FALLWELL



When it came time to do the testing on my new RV-6A N6NF (24916) decided to fabricate a wooden box that could be secured in the passenger seat position of my RV-6A.

The box contains removable dividers that allows the addition or removal of lead weights to accommodate different gross weight loading scenarios, including max gross weight. The overall dimensions of the box were established to exactly fit and conform to the passenger seat bottom profile. The box aft wall was angled to exactly rest against the angled seat back, with the width dimension set to fit within the seat back side support aluminum angles.



The sides of the box were fabricated to accept the lap seat belt so that it could be positioned and wrapped around the entire sides and top of the box. I did not want the box to shift at all during any flight testing.

A removable, sliding top cover is used to enclose the lead weights. The upper photo shows the weight box firmly positioned in the passenger seat, and a 1/4x20 inch winged fastener is inserted into a threaded insert positioned in the top front edge of the box. This fastener is used to keep the box top from sliding open while in flight. On the ground, this fastener can be removed, the top slid forward to open the box, and weights added or removed as needed.

Part of the flight test program requires loading the aircraft to max gross weight. Some folks I know have done this with bags of sand or gravel. This was not only fairly bulky, but tended to make a mess and securing the bags was somewhat problematic.

I chose to use 5 pound lead dive weights for ease of handling. Don't forget to account for the weight of the wooden box in the W&B calculations — mine weighed seven pounds. You can see the "tare" marking on the side of the box, written large so I wouldn't forget it.

VANS GOES PAPERLESS

A long behind-the-scenes project at Van's reached the final stage today. A large box truck pulled up to the back door and somewhere deep inside, a big motor started to rumble. Soon, shipping crates full of paper files dating back to the 1980s were being fed into the maw of a powerful shredder. Rows of empty file cabinets looked on with sorrowful expressions. Their day is done.

For the last 18 months or so, Van's has been in the process of scanning our customer files into



a computerized database system. Joe Blank masterminded the long, sometimes tedious process involving going through every file, page by page. Each page was scanned, preserved and filed electronically.

We can find the data we need faster, back it up safely and store it in far, far less room. And anything that makes us more efficient makes your airplane kit cost less...

BLUE WATER, FAST AIRPLANE

RIAN JOHNSON

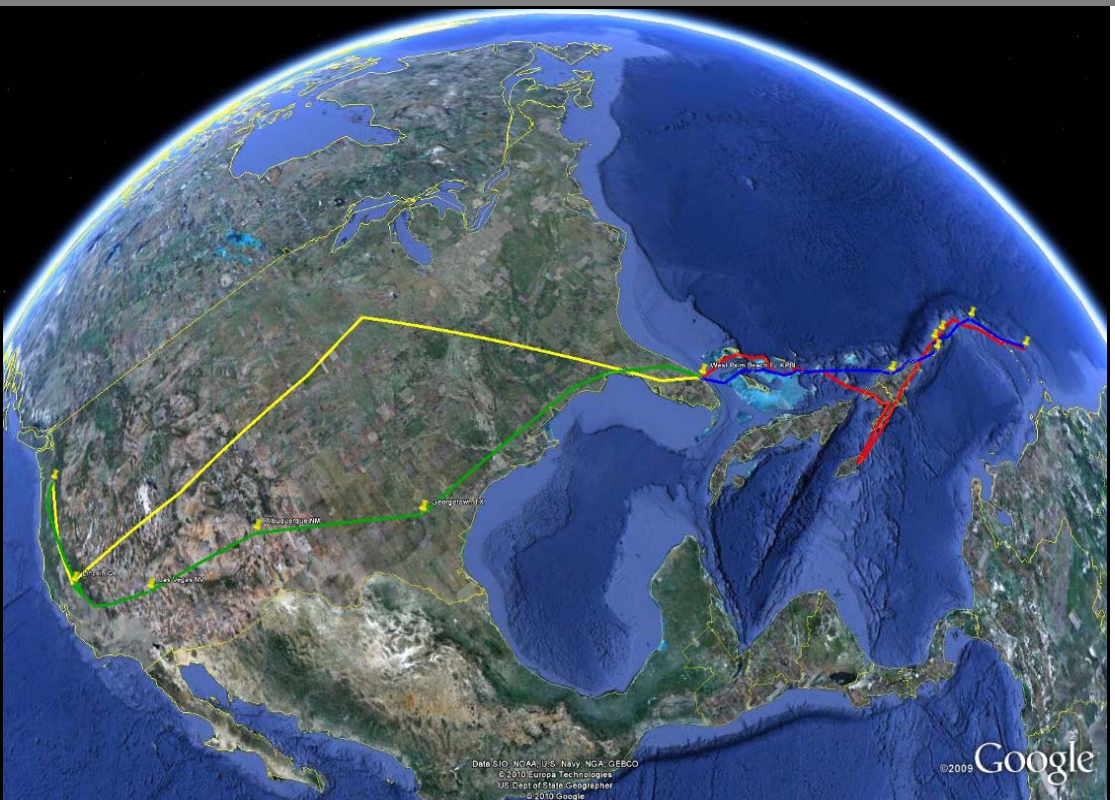
We usually don't run travelogues in the RVator, but recently Van's engineer Rian Johnson took a trip in his RV-7A that seemed particularly adventurous. We decided to make an exception.

Rian carefully prepared for a trip to the Caribbean – but not to the usual resorts. His eventual destination was post-earthquake Haiti. Not a place the average tourists would think to visit – Rian isn't your average tourist, as you will see:

The trip to visit friends after Sun'n Fun turned into an adventure that took me to the Bahamas, Haiti, Jamaica, Puerto Rico, St. Thomas, Martinique, Barbados, Antigua and the Dominican Republic. My co-pilot was my friend Alec Smidt. Alec and I had traveled to Africa a couple years ago, but this time we'd be spending a month in the same two-place cockpit.

When we were planning the trip with maps and charts, the Caribbean appeared vast, with long nail-biting legs over water. Once there we realized how small the whole area was. The longest legs were shorter than typical hops we make in the western states. We found no need at all for extended range tanks. Airports are numerous and fuel is available most places, although it can be expensive. By the end of day one I was saying to myself, "I would make this trip all the time if I didn't have to trek across the entire U.S. first!" A must-have book for planning and is *Bahamas & Caribbean Pilots Guide* available at flytheislands.com. You will use it more than the WAC charts! Our thanks to Paul Rosales, who has traveled this way in his RV before use, for all his input into our flight planning and for recommending this book.

My airplane is an RV-7A serial no. 70000. I built



it from extra RV-7 prototype parts – sort of a lunchbox kit. The cowl encloses a basic O-360. I flight planned for 150 knots, which turned out to be about right for the typical headwinds out of the west. Our longest leg was from Kingston, Jamaica to Santa Domingo DR at 406 nm. A headwind that reduced our groundspeed to 118



knots made this the longest time over water. The greatest distances over water were Bahamas—Hispaniola (Haiti/DR) and Martinique—Barbados.

FLYING FACTS OF LIFE IN THE CARIBBEAN

After enjoying a great showing of RV-12's at Sun'n Fun, it was off through the rain to West Palm Beach, home to restaurants with kosher hotdogs and filet mignon next to each other on the menu. Here we tracked down the cheapest raft rental (and believe me we checked around) at \$15 dollars a day, Survival Products in Fort Lauderdale. You may not feel a raft is necessary but it would be much easier for the Coastie helicopter to spot a yellow rectangle than a bobbing head. A local RV grin representative, "Turbo" Eddie, rented us a great set of inflatable life vests. Two thin strips come down over the front with a ripcord and you hardly know they are on. We each carried a locator beacon in case we floated away from one another.

How do you get into and out of a country?

First, there is the all-important general declaration form; where from, where arrived, who, what aircraft, health info. This is the same form filled out by commer-

cial airlines. These are not always provided so print a few with your info – quite a few -- before you go and save time. Countries will require three to eight copies, sometimes more.

Second, an international flight plan must be filed. There is usually an office to do this at larger airports. If at a small airport, let's say in a remote island in the Bahamas, there will be a landline phone for filing in the airport office.

Third, upon entry immigration will require one of those long rectangular info cards that you use on international commercial flights.

Last, pay landing fees, parking fees, handling fees (you can sometimes avoid these by inquiring where to park without them), departure fees. The pirates of the Caribbean have not disappeared...they have just relocated to airports. Remember: you are on island time. Getting anything done will seem painfully slow, especially if you are type A. Just plan on losing half a day every time you fly into a country.

Getting back into the US is easy. File an E-APIS from your internet capable iPhone or equivalent, or call

Something unusual...an RV-7A on the ramp at Port au Prince



(no exaggeration) someone finally found an English speaking security guard who said "just scratch out crew and write passenger." We replied, "no extra fees?" "Nope"...

Fuel prices on average were in the \$6 - \$7 range with our highest fuel price coming in Martinique at \$9 a gallon. Because the Caribbean is so small it is easy to only pick up a minimum amount of fuel in these places, and postpone the fillup. Fuel is *always* paid in cash and

every fuel operator will have forgotten his small change that day, so bring lots of US one dollar bills.

What about insurance? Double-check yours. Mine only went down to a longitude of 13.5 deg N, which is why we only went as far south as Barbados. If yours does not cover the upper Caribbean it is easy to add.

Cell phones? Yes if you are on a GSM network (that's most every major carrier except Verizon and Sprint). Get a phone that allows you to swap out the SIM card. If you are running an iPhone you will have to unlock the phone to use an alternate SIM card. I recommend Lime which offers the only SIM card that works across all the non-US islands of the Caribbean. DigiCell cards only work on the island that you purchase them.

Government aviation weather is not always avail-



Two views of Haiti — above: earthquake destruction in the streets that nobody can fix. At right: terraced farms in the steep hills where people can still provide for themselves

back to the states and have a friend file for you. Remember you still need to call customs...and why did I just fill out this electronic form with the same info I just told you...?

In the gen-dec, the duties of the "who" part matters. In some countries there are fees for passengers but not for crew. If your crew does not have a pilots license just calling them a steward / stewardess without one of those little laminated picture i.d. cards will result in a humorous time. In the Dominican Republic we spoke nada Espanol. After an hour and a half being led around customs





The center of the country which you may have seen in National Geographic is dry and devoid of vegetation, but the north and south coastal mountain areas have gorgeous terraced mountain farming, forests, coffee, cocoa, friendly mountain farmers and refreshing temperature in the 60's. Customs was one of the easiest in the Caribbean even though we spoke no Creole. Your airplane will be quite safe if tied down near MAF (I am not affiliated with MAF but they were very helpful, thanks again).

The only ATC in the country is Port au Prince approach and tower. Traffic is numerous with no radar, so keep your eyes peeled like you would approaching Oshkosh (I was cleared for a downwind

able but Wi-Fi is pretty easy to find. I used Weathermeister.com on my iPhone for flight planning. The only radar is on Puerto Rico so there's no coverage for most of the Caribbean. A typical forecast for an island would include MVFR conditions. In most cases this is just the typical daily buildup over an island and is easy to fly beneath or around (still good to verify real conditions at the other end).

DIFFERENT PLACES, DIFFERENT ATMOSPHERES

Bahamas: Before we left Van mentioned the Exumas would be one of the most visually stunning places we'd fly and there were no disappointments. The water is shallow and crystal clear, with varying hues of turquoise bordering white sandy beaches.

Haiti: An atmosphere so completely devoid of materialism that it will be a shock coming back into the third world, much less any other island in the Caribbean or the USA. Unlike what is portrayed in most of the news, the government officials are professional beggars trying to make the country appear poorer than it is. They then receive aid money which gets siphoned off leaving those in real need with a smaller portion of the intended pie. President Preval is, at least, doing a great job building roads. The people have been given everything (Haiti has received international aid since 1905). Almost all projects of any scope have been built for them so they have never received any education in how to build an infrastructure, much less maintain it. The people love the United States and paint the stars and stripes on most all of their tap-taps (taxis). This is a nice change from other third world locations I have traveled in.

departure for Runway 10 at the same time another aircraft was cleared for the 28 downwind with the instruction look out for each other). As with the rest of the Caribbean your radio will not have sufficient range. Commercial airline flights are more than willing to relay your transmissions.

Jamaica: Home of Port Royal, the once capital of Piracy in the Caribbean (a short trip from the main airport). Ocho Rios and the obligatory Duns River Falls climb were worth the drive but if time permits don't miss Y.S. Falls. Montego Bay has its allure (mostly to golf fans) but get away from the crowds in Negril. We asked around and bought a day pass to the most highly recommended resort there to have access to their catamarans. It is a great place for the money and we did run into a young couple building an RV-6. Customs was very friendly – they even came out to wave goodbye to us.

Puerto Rico: Old San Juan, the Fort El Morro almost taken by Sir Francis Drake, phosphorescent night kayaking, the caves at Rio Camuy, the only US national tropical rain forest and let's not leave out King's homemade ice cream parlor in Ponce. (The taxi driver asked us twice "you flew...to Ponce, just for the ice cream?") Check the plume from Montserrat Volcano and watch for dust storms from the Sahara desert from here on down the Caribbean. After a short night flight across Puerto Rico (flying at night is not permitted island to island within the Caribbean) the moisture on the plane was coated in the dust thick enough I could not see to taxi and by the next morning the aircraft had to be washed.



St. Thomas/ U.S. Virgin Islands: Tower: "American flight Yada Yada blah blah...and seven romeo victor what engine do you have? That was an impressive takeoff!" From tower operator to the clerk at the hardware store where I was buying parts to clean mud daubers out of my pitot tube, everyone was friendly. (My pitot tube now has a 2 foot length of copper tube from a Texaco gas pump repairman, flared onto the pitot AN fitting with a large Philips screw driver and spliced to the main line with fuel hose. Thanks Lee!) Don't miss the aquarium, the view from Drake's seat where he watched for the next Spanish ships to plunder, great food, and the best beaches on this trip.

Martinique: After paying the fuel bill, head to one of the famous rum distillery's tours. In the north, visit Saint Pierre which melted in 1902 when the volcano erupted. Hike to the volcano's summit to stretch the legs out. Most of all practice your French and bring your Euros (the dollar is not used here). You may then claim, truthfully, that you have landed your RV on French soil at the next EAA breakfast.

Barbados: Extortion is the only word that comes to mind. No help was available getting through immigration and officials were uniformly rude. We ran out of gen-decs and were forced to wait – as far as I could tell

as punishment, until a kind security guard found us extra copies. When we arrived at customs to hand over our gen-dec the lady said "I am not permitted to enter that info you must hire one of the three handling companies to do that". There is no set fee for this "help". We bartered them down from \$100 to \$40. On the bright side the system is so confused they forgot to charge us any fees when we left the country.

The world cricket championships (yes, they had vuvuzelas) were on and the island was packed. The people are very friendly, great beaches, windsurfing, catamaran tours, swim with the sea turtles, Oistin's Fish market at night, Huntington caves (the island is made of limestone), and overall the best food we had on the entire trip.

Leaving the country (don't even start your engine without permission from ground control) I climbed through clouds starting around three thousand, then broke out on top around 10,500' The lady on ATC informed me about 40 miles out from the control zone with Martinique (the island chain is divided into zones who pass you off just like flight following in the U.S.) that I was not permitted to fly above 8500' in Barbadian airspace without having first filed an IFR flight plan before departure. I explained that if I went below the

300 TH RV-10 FLIES

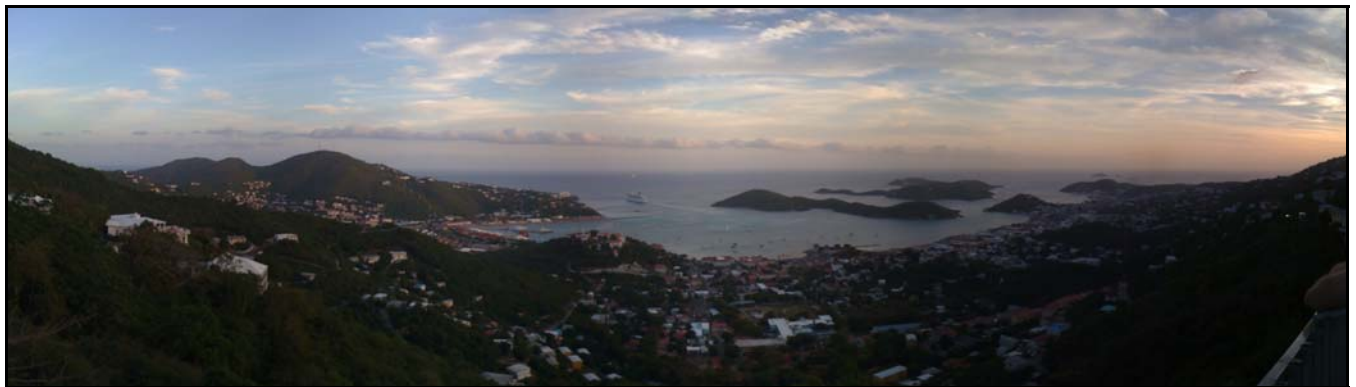
The three hundredth RV-10 customer to notify Van's of his first flight turned out to be **Nigel Lamping of Cheshire, England**, builder of serial number 40665. Nigel's is the third RV-10 to fly in the UK — and the fact that there are any at all represents some new thinking. Not so long ago, amateur-built aircraft of the RV-10's size and power were not permitted under the British system.

Starts for eleven hundred RV-10s have been shipped, so 300 represents about 27% . A completion rate of 27% would be pretty good for many homebuilt designs, but it's even better than it seems, because many kits have shipped recently enough that they could not reasonably be expected to have flown.

The next milestone coming up: 1000 flying RV-8/8As. And sometime around the end of 2010, SEVEN THOUSAND flying RVs.



N410RV, the first RV-10, flies every day. Now it has over 300 brethren.



clouds I would not have any radio contact with her or in an emergency (unless you make a 121.5 call people will not necessarily respond). She explained I would need to immediately descend. Turning to Alec, I asked "Do you remember a Barbadian air force?" I somehow lost contact with Barbados by radio, but managed to contact French ATC who cleared me to 12.5.

Antigua: Three hundred beaches — yet we only had time to visit our friends there. From the air it is a beautiful island. Customs took 5-10 minutes. These people are laid back.

Dominican Republic: "N157RV to Approach (again) now over the heart of Santa Domingo. I am 7 miles out going 3 miles a minute. When are you going to hand me off to the tower?" ATC "Spanish Spanish Spanish Cactus flight Blah Blah...Spanish Spanish...ok N157RV contact tower 118.1" N157RV "Tower N157RV with you at three thousand five hundred" Tower "N157RV what is your present position?" N157RV "Right over you, ma'm" In short, don't depend on ATC, and double check your own separation with Cactus heavies. There might be a language barrier but these are friendly people.

DR has canceled **all** fees for private aircraft flying in and out of the country (sometimes you'll have to remind them of the fact, though), and priced avgas at a reasonable level to promote tourism. This the most progressive, fastest growing nation in the Caribbean — they are even building a subway in Santa Domingo. Talking to young pilots in a growing economy there it seems this country could be a hot spot for RV's in the future.

Resorts on the East Coast are reported to be very nice. Don't miss Christopher Columbus's house and the abundant history in Santa Domingo. Beware there is a reason why DR is green and central Haiti is in perpetual drought. We were in Santiago three days waiting for rain to clear. Airplanes may not be fueled if it is even drizzling so remember to get fuel when you land.

Overall, it was an adventure to remember. We covered 10,750 miles and put 67 hours on the Hobbs. That is an average of 160 miles per hour counting taxi time at large complex airports. I love this plane!

Try it yourself -- your RV is more than up to the task of cross wind landings on a small island strips and traveling in it lets you see parts of the world commercial travelers will never see.