

Glorious Summer

[By an RV builder who wishes to remain anonymous—Ed.]

Day after day this summer, I would be along side a young stud at the traffic light as he strained to blast off. I let him go. I thought back to school when teach would ask Johnny, "What did you do this summer?" "I beat old fart at street drag!" (Proudly.)

I let him have his glory. I had bigger things in mind. I was fixing to strap myself into an RV and see what 185 feels like down along the beach where you really can see what 185 means close up and personal. I would tell teach that I had a glorious Summer. First biggy was riding in an RV, second was soloing an RV, third was takeoff and landing it by myself, and last but not least, flying in company with a bud.

When I open the hangar door now my bird, with nose high, seems to want to be let out. But I wait a bit and peer into the shadows of the far bay, where sits old bud's equally beautiful RV—waiting—waiting, like a horse without a rider, like a dog who will hunt no more. Waiting. Never again will I hear that engine start and run, never again will I hear old bud call and say, "Hah, you were flying today ! I know because I went down to the hangar tonight and felt your cowl—it was warm!" Old bud is now one of the fallen. Gone but never forgotten, because I will always have the joy of knowing the supreme gift of flying close in company and seeing how truly beautiful an RV and its golden prop looks when seen at altitude in a very late sun, peaks with pink snow reaching up way above us, and dark sea and phosphorous wake trails in the water far below us. And then there are the pictures, lots of smiles—even at this distance you can see them. Just off the right wing tip. Without my old bud and my faithful RV, I wouldn't have seen this part of aviation's glory.

I grasp the roll bar, lean into the fuselage side and push out into the sunshine. She starts well and quickly, and we taxi out, run up, look once again over at old bud's hangar, throttle up and off we go.

Here goes this old fart, 3 times faster than the street rod, airborne in a twinkling and climbing for the freeway of the air. Don't wait for me! Not far off lies an old grass strip where the old and bold gather, and where the landings are the sweetest. Wheels kiss the grass as we skim past the line of trees and the sleepy cows flashing ever slower past the wing tip. The wispy green grass holds us, slowing without the need to brake, and we are soon among friends again with more smiles, and another RV to pore over. Airplanes sure have a way of gathering people and capturing the imagination. RVs, I think, even more so.

No longer will I be standing at the end of a long, empty strip wondering what could be more lonely and quietly haunting than a stadium empty of sound and people, or an airfield without the planes and sounds of engines. No longer wishing and wondering, because RV is waiting, canopy open like beckoning arms, waiting to be let off the leash. And off and up we go once again to dance and spring along the pathways of the air—homeward bound.

Yes, all in all, the good and the not so good, it was a Glorious Summer.

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Sensenich 72FM Propeller

Eustace Bowhay, Blind River, BC

Very interesting day today. Had a chance to fly in a newly completed RV-6A equipped with the 72FM propeller, and thought some of you would be interested in some numbers.

The aircraft is RV-6A serial number 23678, built by Homer Rogers of Revelstoke, BC. The empty weight is 1053 pounds, equipped with a fuel injected O-360 Lycoming A4M. The engine has 245 hrs since factory remanufacture, with differential readings of 77-78 over 80 on all four cylinders. The engine is equipped with electronic ignition. This is a very clean aircraft with a lot of attention paid to detail, and is well rigged. With Roger doing the flying and me pushing the pencil this is what we came up with.

Surface temperature was 45° F, with no wind and an elevation of 1720 ft. Static run showed 2220 RPM and 27.7 inches of manifold press. Aircraft was fueled to give us a 1600 lb gross weight. Some of the following figures

may be off a small fraction but are reasonably close.

Take-off roll, starting with full power from brake release, was 12 seconds (to airborne).

First climb to 8000 ft was done at full throttle and 120 mph indicated.

Initial rate of climb was 1600 fpm.

The rate of climb at 8,000 feet was

required 20.5 inches MP—we had a true airspeed of 182 mph. This was verified with a hand held GPS, by flying all four headings. At a power setting of 2400 RPM and around 19 inches MP, the fuel burn was 7.2 US gallons per hour (taken from the fuel flow meter). All cruise power settings were done with the mixture leaned to peak minus 50 degrees.

My RV-6 is constant-speed equipped and is 55 lbs heavier. With the exception of the slower initial acceleration on take-off, and slightly longer run

and slightly lower initial rate of climb, I would be hard pressed to keep up with Roger's aircraft. Jim and I are just starting our fuselage for the -6A and, after today's experience, will probably go with the fixed pitch prop on our 180 hp engine rather than a constant-speed as planned. If one has special requirements—such as short field work, high airstrips, or floats—I would stay with a constant-speed propeller.

All in all, my first impression is that Sensenich have really done their homework on this one, and have given us a chance to have almost-constant-speed performance at a saving of almost US\$ 4,000.

Another interesting thing happened during our testing. We got a bit too engrossed in the numbers and let a tank run dry. Gets pretty quiet in a hurry. But what I learned from this was that after we switched tanks and put the boost pump on there was a fair delay in getting a restart. It looks to me with this particular fuel system that a blown tank below 1000 ft could prove quite interesting.

“All in all my first impression is that Sensenich have really done their homework on this one, and have given us a chance to have almost-constant-speed performance at a saving of almost US\$ 4,000.”

still 1200 fpm.

Leveling of at 8200 ft and flying into 8000 ft, the RPM quickly built to the red line of 2700. With everything stabilized, power had to be reduced to 21 inches MP to keep from running over 2700. The indicated airspeed at this point was 190 mph.

The second climb was done at 25 inches MP and 120 mph to 6000, with 2280 RPM showing going through 4000 ft at 1200 fpm. Leveling at 6000 and maintaining 2500 RPM—which

Altitude	Manifold Pressure	RPM
3000	26.3	2350
4000	25.4	2350
5000	24.4	2350
6000	23.7	2340
7000	22.7	2330
8000	22.0	2320

RV-6A, 72FM prop, O-360 A4M Lycoming, 1600 lbs GTOW.

How to rivet in tight places

*John Ammeter, Seattle, WA
Puget Sound RVators*

[This was originally posted to the RV List in July, 1996. John won a Snap-On tool kit from Sport Aviation for this tip.—Ed]

Several postings have dealt with the difficulty involved in riveting the skin to the rib at the trailing edge of the control surfaces. The following is an article I wrote a few years ago to help with that problem. I'm sorry but the graphics didn't paste into the email document. The original article, complete with graphics, is in the "Best of Puget Sound RVators" available for \$10.00 plus \$2.50 shipping/handling from me.

Several of the flush rivets near the trailing edge of the control surfaces are very difficult to install; there isn't room to use either a rivet gun and bucking bar or the conventional rivet squeezer. Some builders have taken Vise Grip pliers and ground the jaws flat to use as a rivet squeezer. This is entirely adequate but, with the price of even the inexpensive import pliers nearing \$5.00 or \$6.00, there has to be a cheaper way.

Even on the RV-6, which is almost all aluminum, there are fewer than 50 (out of 12,000) rivets that are located in such tight quarters. Since most of the control surfaces will have been back-riveted, it is likely that you will have a large, heavy, flat piece of steel around the shop someplace. If your shop is as organized as mine, take a few days off and find it; it is sure to be somewhere logical, like under the scrap aluminum pile.

Put the flat steel plate on the bench and carefully place the control surface (with the rivet in place in the hole) on it; you will probably have to block up

the far end so it will sit flat on the plate. Now take the square bar and carefully put the formed end on the working end of the rivet. The other end of the bar will sit on the flat plate. At this point you have realized that you are about to use a hammer in close proximity to the piece of aluminum you have spent 2 weeks building. This is not the time for shaky hands; if you value your airplane parts as much as I do there is a very simple way to shield the control surface from harm. Either place your extra hand (whichever is not holding the hammer) on the control surface to act as a cushion in case you happen to come too close to the aluminum (this is guaranteed to increase your anxiety and make you even more shaky), or place a large piece of wood over the aluminum. Personally, I prefer the use of wood over flesh; so does my wife and dog—fewer sound effects when I slip. Now, very carefully, strike one

blow with the hammer on the bar near the aluminum. If all went as planned you now have a perfectly formed working head on the rivet.

This is a very simple solution to a very vexing problem. I want to credit this idea to Mike Adams of Vancouver, WA. He and his friend, Russ Parr, stopped by my shop recently and, seeing that I was building a new elevator for my RV-6, mentioned this method of riveting. Thanks to both of them, my rivets turned out perfectly.

The square bar referred to is a 1/2" x 1/2" x 6" bar with one end tapered down to about 1/4" high. Before you ask whether a hammer will give you a quality rivet, let me tell you that one of our local T-18 builders built his airplane using 'pop-rivets' and hammer driven rivets. It flies fine and looks great. I certainly wouldn't recommend using a hammer more than necessary but it is a cheap method; I like that.

Wing rib cut-outs

John Ammeter, Seattle, WA

[This was originally posted on the RV List in July, 1995—Ed.]

I thought everyone knew what the aluminum cut-outs from the wing ribs were for. In fact, I expect Van's to supply cut-outs with the new kits (the ones with the pre-cut ribs). Everyone wants the instrument panel to be both original and functional. However, few of us want the expense of buying a new panel blank because we don't really like the way the instruments are situated. The easiest solution is to label the appropriate cut-outs with the names of instruments. Put the blank panel where you will see it whenever you enter or leave your shop. Place the labelled cut-outs on the panel. Keep moving the cut-outs (instruments) around until you feel you have the Perfect Panel. Now leave it alone for a while. If you can walk by it for at least a month without moving any instruments around, maybe it is the Perfect Panel. In any case, it is a lot cheaper and easier to move cut-outs than instruments.

1998 Reader Survey

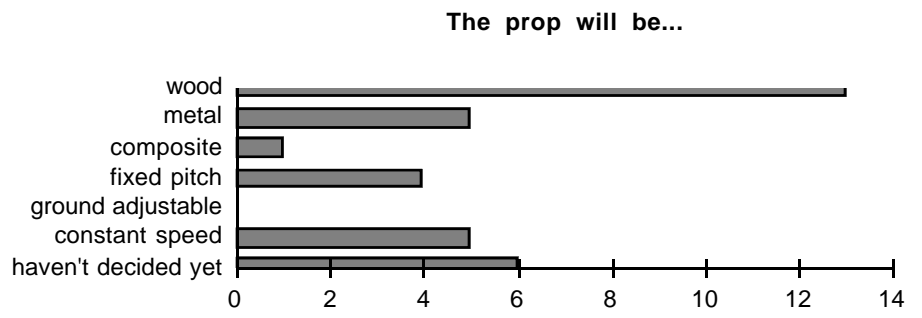
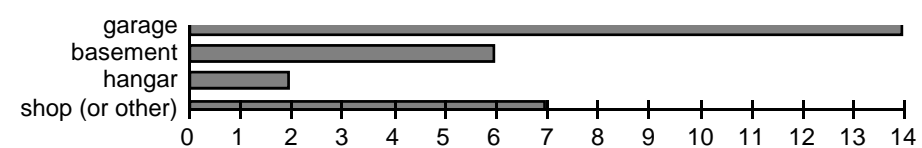
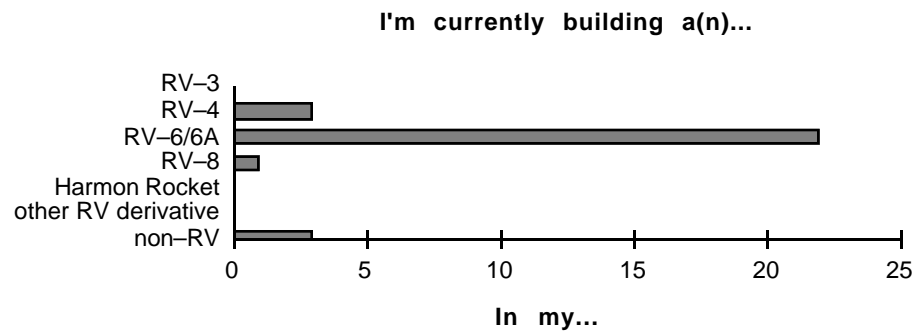
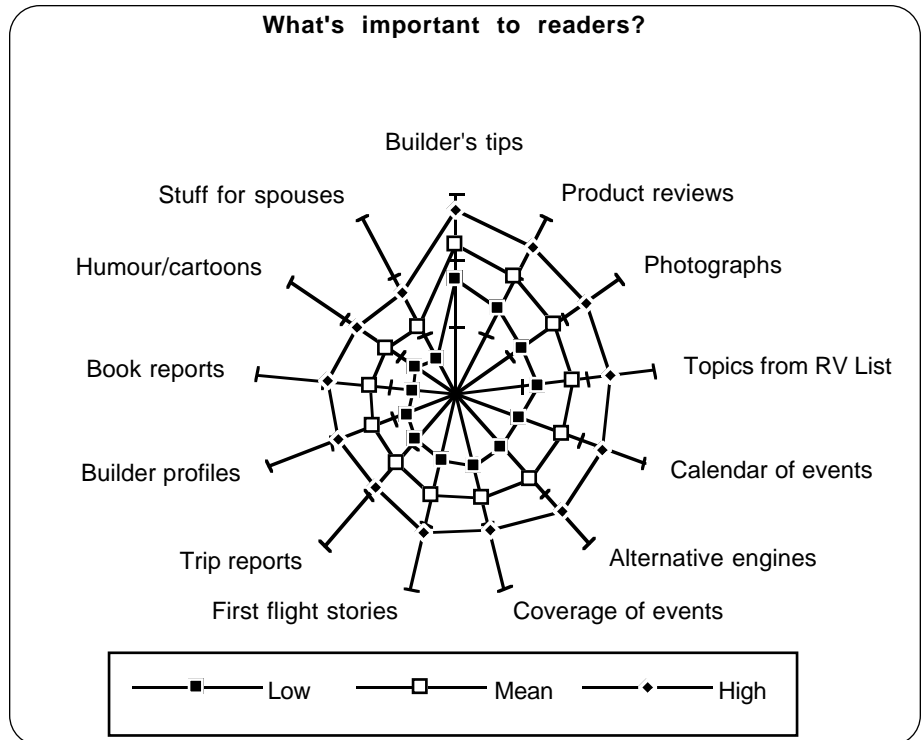
Tedd McHenry

I was really pleased with the results of the reader survey. Within two weeks I received over 30 responses—nearly half what I sent out—and by the end of the month, over 40. Perhaps I should give a little background on the survey—why I did it, and what I hoped to learn.

When I took over the newsletter from Ken, I didn't feel that I had a clear understanding of who the readers were, and what they wanted. I pretty much filled my first issue (April) with stuff I thought was interesting. But, by the second issue, which was supposed to come out in July, I was floundering. I kept pursuing all sorts of ideas, but I didn't feel confident that anything I was doing would be what readers wanted to read. It's clear to me now that that was a big factor in delaying the last issue. Now that I have the results, it's amazing how much more confident I feel.

I'll begin with "What's important to readers." A quick explanation of the chart. The mid point for each item is the average score of everyone who rated that item. The items are ordered clockwise, highest to lowest, based on the average. The upper point for each item is mean plus one standard deviation. The lower point is mean minus one standard deviation. I've deliberately left off the scale, because it's totally relative and arbitrary.

"What's important to readers" is the key piece of information, for me. The number one pick, *Builder's tips*, is no surprise. And you will get a lot more



builder's tips from now on, beginning with this issue.

Product reviews was a bit of a sur-

prise for me but, in retrospect, it seems like a fairly obvious choice. I'll endeavour to come up with as many

product reviews as I can, from credible sources. Perhaps one day I'll feel credible enough to review something myself.

Photographs are a high priority to me, too. I haven't managed to do very well with them yet, but hope to improve in the near future. I have a new (to me) printer that should be able to produce good halftones. But I don't have a driver for it yet.

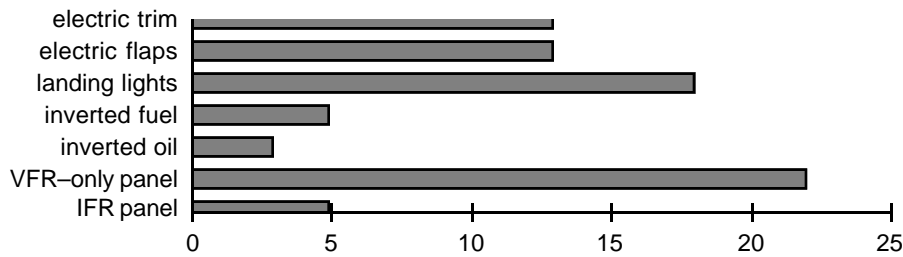
Topics from the RV List is a bit vague. But it was a popular choice. What I will do, and have already begun with this issue, is reproduce builder's tips and product reviews from the RV List. There's a wealth of information there. Nearly everything in this issue came from the RV List. (Maybe I shouldn't tell you that. Y'all might just join the list and not want the newsletter anymore!)

Calendar of Events was another pretty popular choice, especially among those who've already finished their RVs. I feel really bad about the poor job I've done so far in promoting upcoming events. If you know of events in your area that you think WCRVator readers would be interested in, please send them to me.

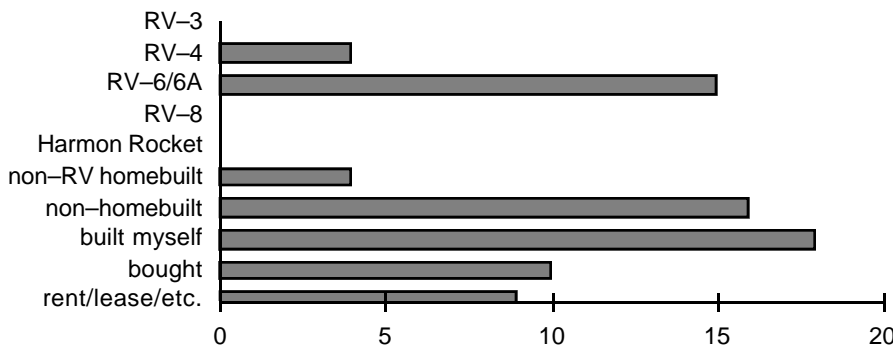
For the next year, I plan to focus on these most popular choices. I'll run

more on page 8...

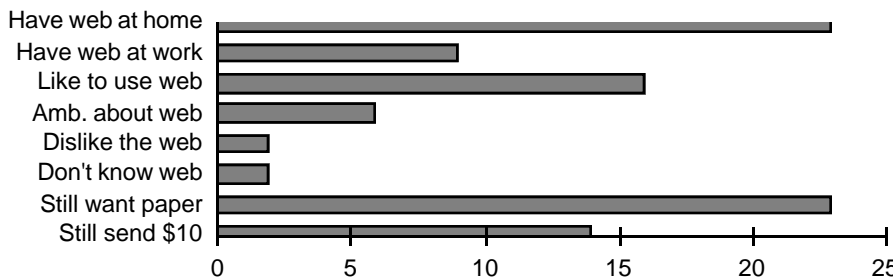
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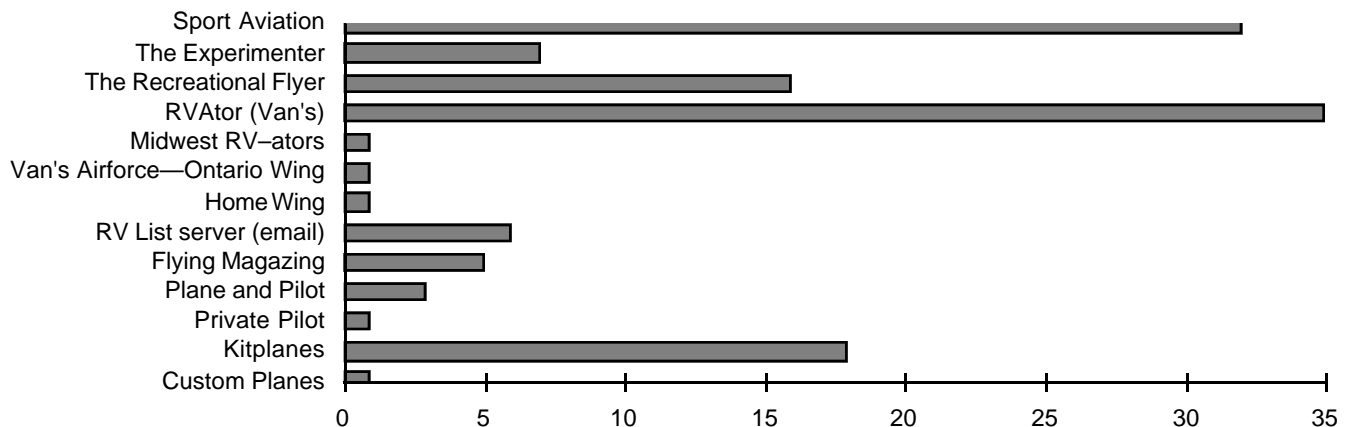
I'm currently flying a(n)...



Do I want a web-based newsletter?



I also read...



A dirty job made easy

*John Ammeter, Seattle, WA
Puget Sound RVators*

What is your least favourite job? No, I don't mean mowing the lawn; what part of aircraft maintenance is the least favourite yet can be the most important job you can do?

We all hate to change the oil in our engines, yet it must be done. What if I told you that changing the oil filter would not spill a drop of oil, the filter would screen out particles as small as 3 microns, and you wouldn't need to buy any more filters? Not only that but the oil filter will help cool your engine, and there is a warning light to be installed on your panel that will warn you of possible engine problems or that your filter needs to be cleaned.

You may already have guessed that I am speaking of the ADC-Oberg filter. One of our local RV-6 flyers has been using this filter on his aircraft for some time now. He is totally satisfied with it and since his engine has over 2100 hours on it he is checking it every 25 hours for any contamination of metal particles.

This filter has been used in high performance and racing circles for over 10 years. The University of Utah tested it against the best spin-on filters on the market and not only did it filter out particles that the spin-on filters missed but it also filtered out fibres which were part of the filter medium of the spin-on filter. The filter will

clean 100% of the oil 100% of the time until the screen is contaminated; at this time the filter by-pass will open and a panel mounted caution light will come on to alert the pilot that the screen should be cleaned at the next convenient opportunity.

The Puget Sound RVators have contacted the Aviation Development Corporation about a discount for our RV builder/flyers. The list price of the ADC-Oberg filter is \$450.00 and the adapter needed if you now have a spin-on filter is \$95.00. If you mention the Puget Sound RVators when you order the

prices are \$385.00 and \$85.00. The filter assembly includes mounting brackets and needed hoses. This offer is not limited to members of the Puget Sound RVators. Any RV builder/flyer may take advantage of this offer; you must mention the Puget Sound RVators to get the special price, though. [This offer may not still be available—Ed.]

Contact the Aviation Development Corporation, 1305 NW 200th ST, Seattle WA 98177 (206) 546-3011; Joe Breuer, owner.

I had been disappointed with the spin-on filter that I had originally installed on my RV-6 and decided to convert to the ADC-Oberg filter. As promised, the conversion was relatively simple and took only about 1-1/2 to 2 hours; much of the time was spent draining the oil and removing the oil

that spilled down the rear of the engine when I unscrewed the spin-on filter. This was the main reason that I was changing to the ADC-Oberg filter; there is very little room between the engine and the firewall and whenever I unscrewed the spin-on filter about two or three tablespoons of oil leaked down the back of the engine. As you can imagine, that created quite a mess and the smell of burning oil during flight can be extremely unnerving.

One disadvantage of the ADC-Oberg filter is the weight. It weighs about 2 1/2 lbs with the associated hoses. If you're trying to keep your RV as light as possible you might want to use some other filter. The effect of the extra weight is to move the CG forward which can help those RVs that have a rear CG problem.

One of the advertised benefits of this filter is reduced oil temperature; I experienced an increase in oil temperature. The oil temperature in my RV-6 rarely reached the green arc before installation of this filter. After the conversion, the oil temperature stays in the low range of the green arc. However, I also changed from a single viscosity oil (40 weight) to a multi-viscosity semi-synthetic (15-50 weight) oil at the same time I changed to the ADC-Oberg filter. My guess is that the multi-viscosity oil is more fluid and has a tendency to splash onto the cylinders and is absorbing more heat than the single viscosity oil that was in the engine before the filter conversion.

I'm sure the prices are not the same but if you do order the filter be sure to ask for the discount. Remember every dollar saved goes for gas when your RV is flying.

“What if I told you that changing the oil filter would not spill a drop of oil, the filter would screen out particles as small as 3 microns, and you wouldn't need to buy any more filters? “

First Flight Technique

Eustace Bowhay, Blind River, BC

[Eustace was replying to a question, from an RV-4 builder on the RV List, about first flights—Ed.]

For what it's worth this is how I would handle the first flight.

After satisfying myself that everything with the aircraft is okay, I would get a long-time, experienced A&E to do one last inspection. Then, I would ask myself if I am ready. Am I taildragger qualified and current? Have I got some recent time in an RV-4? Am I relaxed enough to handle an emergency? If I have satisfied these requirements, I would pick a day with good weather conditions and no wind so I could land either way on the runway in case of a problem.

With a new or overhauled engine you don't have the opportunity to do any ground handling practice without the risk of glazing the cylinders.

I feel the greatest risk for any pilot flying a new type for the first time is the unfamiliarity coupled with some kind of

emergency. I know we all want to fly our bird for the first time. But if we are uncomfortable there is a lot to be said for getting someone you are comfortable with who is willing and is flying the same type—in your case the RV 4—regularly, to do the first flight or so. This way you can clear all the snags, if any, and do any adjustments necessary before you go for the first time. This way the only thing on your mind will be flying the aircraft.

On my first flight with C-GHAY, I had to shut it down on the first take-off because I was over controlling with the rudder. I wasn't used to that kind of sensitivity, had the tail wheel springs too tight, and most of my recent tail wheel time was on a DC3 (three or four inches of rudder either way didn't bother the old girl).

Please don't think I'm telling you how to fly your aircraft. I'm sure you'll make the right decision. In any case you are ready to launch into one of the greatest experiences of your life.

Fuel Management Technique

Eustace Bowhay, Blind River, BC

[Another fine posting by Eustace to the RV List—Ed.]

Over the years I have found aircraft fuel gauges leave a lot to be desired, and have long since used them only as a general reference. I have no experience whatsoever with the new electronic stuff so I won't comment on them. I think all will agree that fuel management is one of the most important parts of flying. At the risk of being a bit long-winded, this is how I have handled it with light, single-engine aircraft—including the RV.

On opening the hangar door and before moving the aircraft, with a clear sight tester, check both tank drains and gascolator for water and any sign of foreign material. (I have my gascolator mounted in the gap between wing and fuselage so that it will drain without the boost pump.) The reason

for not moving is that any water will have accumulated at these low spots, and you don't want to disturb it. If you are wondering how any foreign material could get in with fuel from our modern filtered fuelling facilities, I made the big mistake of sloshing my tanks when I built them and about a year later it started coming loose—but that is another story.

If my previous flight or flights add up to over two hours, I will refuel to full tanks. I prefer to refuel before hanging to cut down on condensation. If flying without refuelling, I visually check the fuel levels. When refuelling I visually check the fuel level and, by seeing how much fuel each tank takes, you soon get used to judging how much fuel is remaining. Leave the fuel down a half inch below the filler for expansion. I take off on the left tank and change tanks every

half hour to equalize weight. I try to keep my flights to a maximum of around three hours. There are a couple of reasons for this, the most pressing is the range of my bladder at my age, and the other is that I like to have around an hour of fuel remaining on arrival for safety.

Why switch every half hour? This effectively eliminates the need for a wing leveller and means that at the end of every hour you have about the same amount of fuel in each tank. At the end of three hours you have a good solid hour's fuel left and it would not matter which tank you are on for landing but the fuel selector will automatically be on the right tank for that occasional side slip.

You may say that the hour's reserve is overkill, but how many times have you tried to stretch it a bit and wound

more on page 8...

...Reader Survey

other things too (especially first flight stories), but not as often.

Some of you expressed concern about a web-based newsletter. I want to be clear that I have no plans to stop putting out a paper newsletter. A web site is a pretty pie-in-the-sky idea right now—I don't even have web access at home, at the moment! But I was very encouraged to see how many readers have access to the web.

I'm not going to comment much on the other stuff. You can see for yourself what readers are building or flying. Everyone who has decided, save one, is using a Lycoming engine, so I didn't even bother printing that chart. You can nearly say the same thing about the RV-6/6A. I wish now that I had differentiated between the two, it would be interesting to know how many of each is being built.

Thanks to everyone who responded. Your efforts will help make Western Canada RVator better for everyone.

...Fuel management (from page 7)

up maybe close to dark, or with the weather not so swift, and wishing you had that hour's fuel? Besides, after three hours it is time to stretch, climb out, and kind of grin to yourself and say, "I am 600 miles farther down the road since I took off."

Following this procedure one could do away with the fuel gauges, but the final inspector would probably get upset. Also we still have to remember to change tanks. This is all based on power settings in the 65-70% range. I am not saying this the way to do it but it works for me and blowing a tank is never on my mind.

From the RV List...

Kevin Horton (khorton@cyberus.ca)

I discovered a neat product made by Lee Valley Tools, a local company that sells quality woodworking and gardening tools.

They make knurled brass nuts that have a second hole drilled through them at a slight angle to the first. This allows the nuts to just slide along a threaded rod if they are tipped slightly sideways. Once they are in position against a leading edge rib, they stay in position and hold the threads like a regular nut. The big advantage is that if you use a threaded rod to hold leading edge ribs, you don't have to turn

each nut a gazillion times as you push the rod through the ribs.

These things fit a 1/4-28 thread and are sold in packages of four for \$CDN 9.95 (that is about \$US6.50). The part callout is 05F01.03 Speed Nuts. Two packages are enough to do wing leading edge ribs. They won't quite replace every nut, but you can use them for the ones that you would have to thread the longest distance.

Lee Valley takes mail orders at (613) 596-0350 or 1-800-267-8735 (USA) or 1-800-267-8761 (Canada). Web page <http://www.leevalley.com> They ship US orders from a US warehouse, so you don't have to deal with customs. They have great customer service - if you don't like a product, they give a refund, no questions asked, including paying for your return shipping.

Missing Issues

Tedd McHenry

A couple of sharp-eyed people expressed concern about missing issue number 3. Don't worry, you didn't miss it—there wasn't one! I accidentally numbered the last issue 4 when it should have been 3. This issue is also numbered 4, so there's Issue 4 in October, and Issue 4 in December. Sorry for the confusion.

Letters

Spencer Davies writes that he has finished the wings and tail on his RV-6, has the engine mounted, and is working on the cowl.

Western Canada RVator

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