

# VELOCITY VIEWS

Volume 16

## Sign up for the Velocity River Ranch Fly-In

Imagine the perfect place for a Velocity fly-in... Well, we found it! Everything we need is all at one location – “River Ranch Resort” located in central Florida. They even have their own airport!

Rick and I flew over in the XL to check things out and meet with the group sales manager. The paved runway is plenty long and in very good condition. Besides many options on lodging (rooms, cottages, and a luxury RV park), River Ranch has its own 9 hole golf course, mini-golf course, marina with waterfront restaurant, lighted and paved airstrip (4,950'), ultra light field, restaurants, meeting facilities, rodeo, canoeing, biking, wildlife pathway, jet ski rentals, air boat rides, live bands in the River Ranch



Saloon, 4 swimming pools, tennis courts, kids playground, petting corral and pony carousel, skeet and gun range, and the list goes on and on... You could stay for quite a while and not run out of new things to do. Go to their web site at [riverranch.com](http://riverranch.com) to check it out!

Mark your calendar for **Saturday, November 14**, and **Sunday November 15**. Because there is so much to do at River Ranch, you may want to make arrangements to arrive on Friday afternoon or extend your stay through Sunday and leave Monday AM. We know of at least three couples who are going to extend on both ends (Swings & Lavoies).

River Ranch, is located about halfway between Vero Beach and Tampa on Highway 60. River Ranch has a clean



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4900 foot paved and lighted runway on the property and a beautiful RV park within walking distance to everything. If you fly in, be sure to bring your own tie downs. The airstrip identifier is 2RR, uni-com is 122.8, runways 16-34, 4,950' x 75', and courtesy transportation between airstrip and lodge is provided.

*Cost is \$56.00 per person excluding lodging.*

*(\$25.00 children under 10)*

The \$56 price includes meals & activities for Saturday & Sunday as outlined (incl. tax & tips), except Saturday breakfast. (Fees charged for golf, horseback riding, boat rental, etc., are separate; no charge for swimming, tennis, or miniature golf.) You will pay the \$56pp to Velocity Inc.

*Editors note: The Swings are once again being very generous and subsidizing part of the cost.*

#### **Prize**

There will be a prize (\$50 fuel credit) for the aircraft flown the furthest distance.



## **Velocity Aircraft's River Ranch Fly-in Activities**

### **Friday, Nov 13th**

If you plan on arriving Friday afternoon, be sure to let us know at Velocity, Inc. We can plan an airboat or pontoon boat cruise and look for gators.

### **Saturday, Nov 14th**

- Arrival between 8:00am and 11:30 am. Transportation provided between the airport and your rooms at any time (2 minutes away). Breakfast at your expense.

- 12:00 to 1:30

Lunch at the airport with BBQ Chicken, baked beans, salad, and all the trimmings.

- 2:00 to 3:30

- Spot landing contest.

(Any airplane can enter, with penalties applied based on stall speed)

- Aircraft judging.

You be the judge and select your choice of 1st, 2nd, and 3rd.

The airplanes with the most points wins.

Prizes for both contests (Spot Landing & Judging):

- 1st place winner \$50.00 gift certificate

- 2nd place winner \$25.00 gift certificate

- 3rd place winner \$10.00 gift certificate

- 4:00 to 6:30

Open time. Golf, horseback riding, tennis, swimming, boating, miniature golf, ultralight rides, relaxation.

- 6:30 to 7:30

Dinner Branding Iron Restaurant "North Corral" dining room.

- 8:15 to 9:15

Rodeo (We don't have to do anything but watch and cheer)

- 9:15 to 12:00

Live entertainment at the old Saloon.

### **Sunday, Nov 15th**

- 9:00 to 10:00

Special church services in Longhorn Center meeting room.

(Duane, Scott and Travis to sing a trio you will not want to miss)

Well, on second thought, you might. Special speaker to be announced.

- 10:00 to 12:00

Open forum with the Swing family and awards presented.

- 12:00 to 1:00

Brunch in the Branding Iron Restaurant.

- 1:00 to whenever...

Free time for golf, horseback riding, tennis, swimming, etc. and free to leave at any time. (Room check out by 1:00 PM)

## Lodging Options:

**Courtyard Suites** (Two queen beds, kitchenette, screened porch).

- \$75.00 per room per family (2 adults + children) per night
- \$85.00 per room for 4 adults

We have arranged to have 35 of their 40 Courtyard suites blocked off for our group at this special rate. These are their nicest rooms! Early bird gets the worm, so book your room right away. Once the 35 rooms are gone, you will be on your own to make arrangements in another type of room that they may have available that weekend. Also, they will only hold our block of 35 rooms until **October 30th**, so be sure to book by then!

## Other Types of Rooms

There are other lodging options available, such as 2 room cottages. Be sure to tell them you are with the Velocity



Aircraft group to get our special group rates.

*Add a 10% local/state tax to the quoted lodging rates.*

## Luxury RV Resort

\$31.50 shaded area RV parking per night. Be sure to book an RV spot close to the activity (#284 thru 383). See the map below.

## Reservations

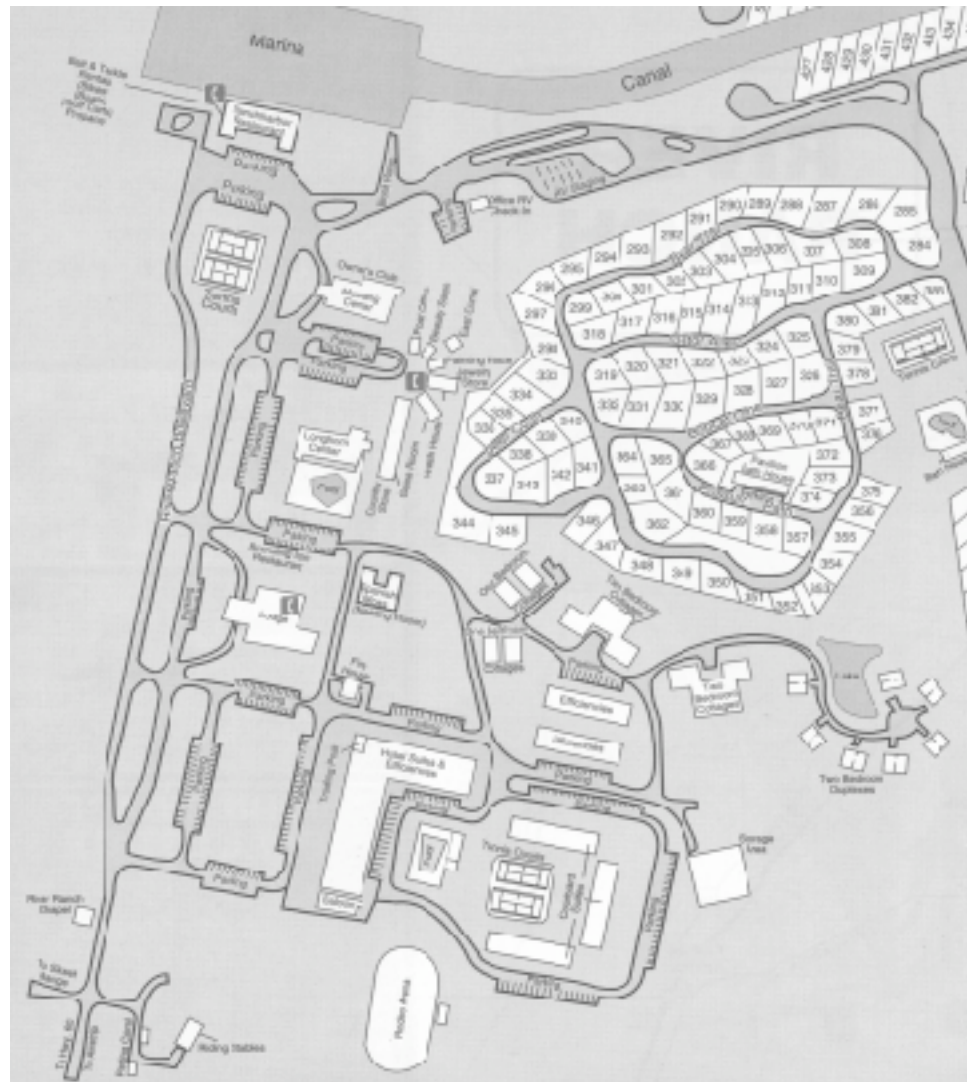
It is important that you make your room reservations **direct to River Ranch by calling 1-800-785-2102** (for RVs call 800-266-2927). This should be done as soon as possible but **no later than October 30th**.

If you decide to arrive earlier or stay later, contact River Ranch directly. Be sure and tell them you are with the Velocity bunch.

Also you must **call the Velocity office** to confirm your attendance by Friday, October, 30. **561-589-1860**

*Duane*

*Below is a map of most of the River Ranch Resort complex.*



## River Ranch Fly-in Nov 14 & 15th "To Do" List

- ☐ Call Velocity to book attendance ASAP, at 561-589-1860 – no later than 10/30/98
- ☐ Call River Ranch at 1-800-785-2102 (for RV's call 800-266-2927) to book your room reservation ASAP, but no later than 10/30/98
- ☐ Check out the web site at [www.riverranch.com](http://www.riverranch.com)
- ☐ Bring tie downs for your airplane





## Insurance Update

I had a meeting with Avemco at Oshkosh to go over the insurance problems that they have been having. As reported in the last newsletter, they have made some major changes. As of now, Avemco will require a minimum of 500 hours flight time, completion of a Velocity East or West sponsored ground school administered by an EAA approved Flight Advisor, and the completion of a Velocity flight training course conducted by a factory authorized CFI, with, in some cases, as much as 10 hours dual required, either in Sebastian or Lincoln. For this, you will get insurance at a higher deductible than previously proposed and at a higher premium. I will expect other insurance companies to propose a similar plan with, perhaps, less total time needed. One of the problems seems to be the amount of insurance our builders are putting on their airplanes. In many instances, the builder is placing a value on their airplane equal to what it would cost to have a new one professionally built to replace a totaled airplane. This may make sense to you as the owner, but not to the insurance carrier. I have always felt that my labor was worthless and therefore did not include this as part of the airplane value. As an example, we insure our XL for \$80,000.00. This is what we put into it in actual cost, less 2 years depreciation. I look at my labor in the same way as some of you would look at 4 hours on the golf course, not worth a thing, other than, perhaps, some therapeutic value.

## Factory Open House

On August 8, we had a factory open house "workshop" that had an attendance of over 35 people. We

had the help of Rick Lavoie who showed us the proper procedure in touch-up painting and provided his Franklin Velocity RG for an inspection of the installation procedures on the Franklin engine. Scott covered painting tips and composite molding techniques.

I spoke in detail about being prepared for emergency procedures as a result of the accident of Hugh Hyde, and spent some time going over the new ground training manual we now use to prepare our builders for flying of their Velocities. This idea of being prepared for emergencies was later demonstrated when I had to land the XL with the nose gear firmly locked in the up position. One little AN 3 bolt was the culprit. More on this elsewhere. If you haven't attended one of the workshops, (open houses) either here or in Lincoln, you should try to do so soon. The next one here in Sebastian will be held November 7th.

## SUV Update

Our newest airplane, the SUV (Sports Utility Velocity), has not made much progress since the last newsletter. With Sun-N-Fun and Oshkosh, we just have not had the time to devote to this project. The engine will arrive in about a week (Lycoming IO 320 B1A) and this will probably get us motivated to get back to work on it.

## Adverse Yaw Experiment

We reported in the last *Views* about our effort to use some of the Ercoupe rudderless concept and apply it to the Velocity. The idea was to make differential ailerons that, in effect, would make the up aileron go up a lot more than the down aileron goes down. We have completed this arrangement on 81VA so that the up

aileron goes up over twice the amount that the down aileron goes down. The sole purpose of this was to create more drag on the wing that is going to go down, to minimize adverse yaw at lower speeds. It does work, however, but not without some adverse pitch up problems with aileron deflection. This is not a satisfactory condition and we will look at a solution from another angle rather than proceed with differential ailerons.

## XL Winglets

We have received a report from Mark Machado that, on the flying XL with the Fast Build Wings, there needed to be more winglet. The problem is in the total winglet area, and, with the fast build wings, we didn't change the molds. Therefore there isn't enough area to handle the larger, heavier, airplane. On our prototype XL, we extended the winglet tops to make up for this problem. Mark made some winglet bottoms for their XL and this also took care of the problem. As a result, we have made available pre-molded winglet bottom for all of the XL fast build wings at no cost. Call us when you're ready and we will ship them out to you. If you built your own wings and want the pre-molded winglet bottoms, instead of making your own, the price is \$150.00 per set.

## Newsletter Note

I received a call last Saturday from one of our flying Velocity owners and he had called me on our 589-1860 number. I ask him if he would please use the unlisted number on Saturday or after hours. He said he didn't know we had a special number after which I ask him if he ever read the newsletters. His response was, "I don't get the *Velocity Views* because there is never anything in it for me". He proceeded to ask me some questions that had been covered more than once in the *Views*. It's difficult for me to reason why anyone who owns, builds or is flying a Velocity would not want to be a part

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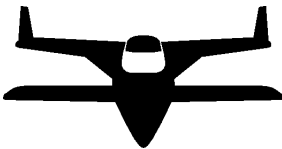
of the Velocity family. It is not just the technical stuff, not just the factory news, not just the safety corner, not just anything in particular, but the idea that once you own a Velocity you are part of the family and should want to know all that goes on here, in Lincoln, and with others who share your passion. I know I'm preaching to the choir, but I just had to say it anyway. Elsewhere in this *Views*, Scott has outlined what a true homebuilders attitude should be, I think wanting to know everything that goes on with Velocity and with other builders is also part of this attitude. I have instructed Rick Lavoie to send this volume of the *Views* to everyone we have on our kit ownership mailing list. If those of you who now read this and still decide you don't need the rest of us, then so be it. If you want to be a part of the whole, send Rick a check for your yearly dues. (Rick no longer sends you a dun notice)

### Jeff Baker Heads North

Jeff Baker served his last day with Velocity on September 18th. Due to family ties and two children who desperately need their grandparents, Jeff and Cindy have decided to go North. Jeff has been a loyal part of the Velocity family for many years and has provided us with his many talents, least of which was his ability to help you, our customers, with the answers to builders questions. He has kept your manuals up to date via the KPC's. Jeff and Cindy will be missed by all who knew them.

### New Fast Build Wing Prices

Alan Shaw of the Dynamic Wing Company has proposed new higher prices on the fast build wings. It is our desire to keep the price of the kit as low as possible and we have decided, therefore, to remove ourselves from the financial path and let you purchase the fast build wings direct from Alan instead of going through Velocity. Since about 95% of the previous fast build wings were sold with all the controls molded, it was decided to make this a part of



## November 7th Factory Open House Workshop Schedule

**Saturday November 7, 1998** - Factory's quarterly open house in Sebastian Florida (X26)

9:00am	Coffee and donuts
10:00am	Workshop: HANDS-ON ELECTRICAL (soldering, crimping wire & coax connections, terminals, AWG wire, switches, panel harness, tools, etc.) by Martin Hadley
11:00am	Workshop: PRE-FIRST FLIGHT INSPECTION CHECK LIST (What you need to do to be ready for that first flight) by Duane & Scott Swing
Noon	Lunch
1:00pm	Workshop: LYCOMING ENGINE INSTALLATION TIPS (Factory aircraft will be uncowed) by Duane and Scott Swing
2:00pm	General Q&A with the Swings
3:00pm	Demo rides in the XL

Please be sure to call the factory and **RSVP!** Friday arrivals can book a room at the Sand Dollar Motel (800-226-4546) here in Sebastian. When you call us to RSVP, let us know when you plan on arriving so we can make arrangements for transportation, etc.

the price instead of having these things priced separately. The new prices now in effect are:

Standard fast build wings Labor only \$ 10,500  
 XL or Long Wing fast build wings Labor only \$ 12,000

Other options include Dual Landing lights in canard \$600 and cavity for oil cooler or air filter in TE wing root \$300

Price includes: Winglets, wing root ribs, aileron wells, rudder wells, rudders, reinforcements, strake joggle fit and spars all co-molded and cured with main wing. Carbon ailerons, carbon elevators, winglet bottoms (LW and XL only) and complete slip on canard tips pressure

molded separate. Elevator hinge arms are jig installed into canard and wing control cut-outs are done for easy control hinge mounting. Two com and two nav antennas are installed and tested. The rudder conduits are set up for embedded rudder horns. Special hardware and fast build instructions included. All are detailed, fine sanded and final prime painted. No fill or additional primer required.

A 20% deposit is required by Alan before proceeding.

*Duane*

# Builder Construction Notes from Scott

## XL Winglets

Those who have the XL fast build wings will be receiving some pre-molded winglet bottoms. These will enhance low speed yaw stability due to increased area only. Rudder area does not increase with this addition. Instructions for installation are included with the parts. The advantage to these is not so much that they are winglet bottoms but that they increase the total winglet area. The same thing could be accomplished by adding more winglet to the top.

## Pre-molded nose gear doors

I had a chance to use a set of pre-molded gear doors recently because of an incident that occurred with our XL. Basically what happened is the bolts that are inserted into the axle to remove it from the fork were left in. When I made the small side supports to prevent the tire from getting caught if it happened to turn, I made them only high enough to include the fork about midway up the axle when the gear was up. You can see what is coming. During our open house, Duane, my father, was giving a demo ride and the bolt head got caught on the top of one of those side supports preventing the extension of the nose gear. After a "nose gear-less" landing, I had to fix the flat spot and got a chance to use the nose gear doors. Easy fix by the way. If you got your kit before 8-31-98 you will need to add one layer of BID on the inside surface to make it a little stiffer. You may want to fit it first to make sure the foam isn't too long. I found the foam a little long and had to grind a little off. After trimming the door you need at least 1/4" glass to glass left. If you need to grind or sand off a little, you can do this before the glass, then just glass over the exposed foam with that extra layer of BID.

## Adverse Yaw

Just read an article about the Berkut in Sport Aviation and wanted to briefly discuss the adverse yaw con-

dition that Ed found in this airplane and as well as ours. If any of you had read the article that Ed Kolano did on our XL you would recall his discussion on the ailerons at slow speed. This is precisely the same thing that he mentioned in our article, only it was put clearer. So, if you didn't understand the article on the XL, please read this one and it will become clearer. The bottom line is, at slow speed you will need to use rudder to coordinate your turns. This is obviously a normal flight characteristic, but since the plane doesn't need the rudders at cruise, it became somewhat different. The reason our prototype had better roll rates one way versus the other was simply a rigging problem and had nothing to do with torque or anything else.

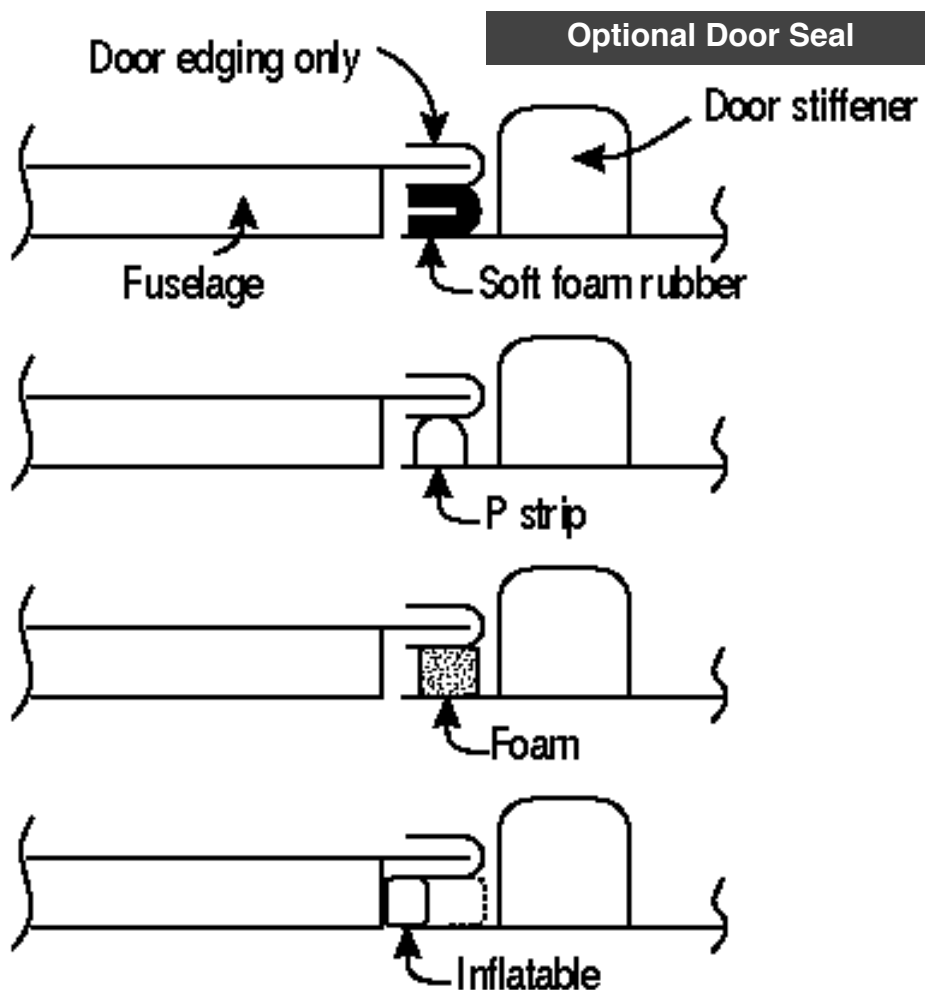
## Pre-First Flight

I want to emphasize going back and reading your old newsletters before your first flight, as there are many hints, cautions, advice, etc. on all aspects of your airplane. Sometimes

we mention them more than once in different newsletters, but some were only mentioned once. Planes come in here with problems of one sort or another that were gone over before. If you don't have time to read them and think you have a problem, let me know before you fly. Many builders think their airplanes are ready to fly just because the FAA has signed it off.

## LE Elevator Cuffs

One thing that has been mentioned more than once is dealing with the leading edge cuff that is attached to the elevator on all of the planes except the XL. This cuff was developed by Danny (the original designer) to dampen out the pitch buck. Without the cuff, the pitch buck can get fairly violent depending on the plane. Some of the early Dynamic Wing elevators had more cuff than they should. The proper gap was there, but they were just too big. Because of this, the pitch buck speed, rotation speed, and landing



speeds at forward C.G. were higher than they should be. Because of this, I told builders to either reduce the cuff or bump to 1/4" or reduce the total length until you reach the proper speed. 173 - rotation at 65 knots, STD - rotation at 70 knots. This would be two people on board with full aft stick for rotation. This doesn't mean you *must* rotate at that speed ( you may not want to, due to gusty conditions) but that you *are able* to.

#### **Optional door seal method**

If your door seems to close easily without the seal, but is tough with it, you can seal it another way. Basically, you can use a trim that does the same thing the current one does except it doesn't include the seal. This way you can close out the interior and finish off the edge so that it looks nice. Then, you find some soft seal material to put on the door that will seal up to the trim. There are many soft foam and rubber seal materials that glue in place that would work just as good as what we use now. In the sketch to the left I also include a blow up seal method that is expensive but would work very well.

#### **New Molded "Airflow" Parts**

One of our builders, Nate Calvin, has made some molded parts to smooth out the airflow around the concentric torque tube assembly and the elevator hinges. We have a set here at the shop, and, as of this writing, have not had a chance to try them out. These parts can be put on with silicon or attached permanently. Nate has attached the elevator hinge covers permanently. These covers are split, one part on the elevator and the other on the canard. From our point of view, they are mainly for looks since the speed gain will most likely be minimal. They do look very nice. Nate also has some other things that he is selling, including a different door opener arrangement to stop the twisting that occurs, and a different nose gear door closure technique. He is also working with a company that is or will be producing really neat moving map, engine and flight instrument, real time terrain with a neat fly through the hoop type IFR approach displays. This seems to be

more advanced than the Archangel systems, is cheaper, and uses smaller displays, which in my opinion are more desirable.

•••••

#### **Notice**

##### **Machining not done on elevator push rod.**

There were a few elevator push rods shipped with one of the alu-

minum inserts without the 1/4 - 28 threaded hole in the center. This is the one that is slipped in and taped to the end of the torque tube and not bolted. The adjustment is done then the hole is drilled to lock the insert into the tube. If you are one of those with the solid undrilled insert, let us know and we will send you the part. You do not need to send the undrilled insert back.

## **Builder Mentality**

*by Scott Swing*

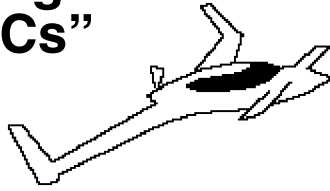
I have been interested in airplanes as long as I can remember and have been actively involved since I got out of grad school. Back in 1983 when I went to work for Quickie Aircraft Company in Mojave, California, Experimental Aviation and the aircraft kit business were quite different. I was out there in Mojave in the days of the Voyager and the prototype Starship and there were only a few companies producing kits. Our builders were different and they had a different mind set. They had a desire to learn and tended to be more hands-on. Some of this was because the kits were cheaper and the builders didn't have knowledge of any other ways of doing things. Now kits are more expensive, people expect more (they should), they don't want to do as much, they don't want to have to think a whole lot, they are in a hurry because building doesn't thrill them, flying does, etc.

What I am trying to say is that we, as builders, need to gain some of that old builder mentality. You can get all the books, have a great set of plans, great set of video tapes, have the knowledge, but not be a very good builder because the attitude or mentality is not there. To my knowledge, there has never been a book or discussion on the subject of the builder's mentality. I will try and relay what I feel is the anatomy of a true homebuilder. A true homebuilder:

- A. Can visualize the project as a whole not just one part of it. They can see where they are going and the path that leads them there.
- B. Is willing to learn new things as well as modify what they think they know based on experience. This experience doesn't have to be their own.
- C. Has the ability to look at something that was done correctly and judge their work accordingly. I have seen many poor projects that the builder felt were good even though they had seen workmanship of others that was obviously much better. The "can't see the forest through the trees" thing.
- D. Is somewhat artistic. This goes along with visualization.
- E. Needs to have some pride in their work. If they don't think they did a very good job then they are not going to be proud of it. If they are proud of it but it is not something to be proud of, then they probably didn't meet the objectives above.
- F. Wants to get involved with their local EAA chapter to get advice from experienced builders as well as share what they have learned.
- G. Has the ability to read between the lines in a set of plans. The writer doesn't always explain things the way some builders need it explained. What are they trying to say? Remember that there are many ways to get to the final destination and we don't always need to take the same path.

These are some of the things that make a good builder. Even though you are building a kit, you still need to be able to do the same things that a scratch built builder does...just less of it.

## Kit Plans Changes “KPCs”



*Note: Check the date at the bottom of your page. If it matches the “Date of Change” shown in the KPC, your manual has already been corrected.*

### KPC 089

Affects: All Velocities without Fast-Build wings

Manual section: page 13-3

Date of Change: 01 September, 1998

In section 13.1.1, change the text to read, “Put three torroids around the cable...”

Note that Figure 13-1 correctly shows three torroids on the Com antenna.

Change the first paragraph of section 13.1.2 to read:

“See Figure 13-2. We found that the Nav antenna works well and fits on the bottom of the inboard leading edge wing core. It is in the shape of a “V”, with the angle of intersection being 150 degrees and the ends no more than 1/2” apart. When placing it, don’t forget that the inboard section of the wing root gets cut off to make the wing’s root rib.”

Change the second paragraph of section 13.1.2 to read:

“ Run the RG-58 cable down the conduit hole in the wing towards the root and leave approximately 18” hanging out the end of the core.”

Delete the third paragraph, which says: “ Cover with one ply of fine BID”

### KPC 090

Affects: All RG’s

Manual Section: 6.2.5

Date of Change: 01 September, 1998

We have added a section describing “Nose Gear Guides.” The text reads as follows:

“The purpose of these guides is to keep the nose fork straight as it goes into the wheel well.

First lay up 7 plies of BID or its equivalent (about 1/8” thick) on a piece of plastic on a flat surface and let cure.

Each guide consists of two pieces, one rectangular and one triangular. Using the figure below, mark and cut out two of each piece.

Position the rectangular guide flush with the edge of the opening and trim the bottom of the triangular support as necessary to fit the bottom of the fuselage. You can let it span across the joggle near the edge of the door opening.

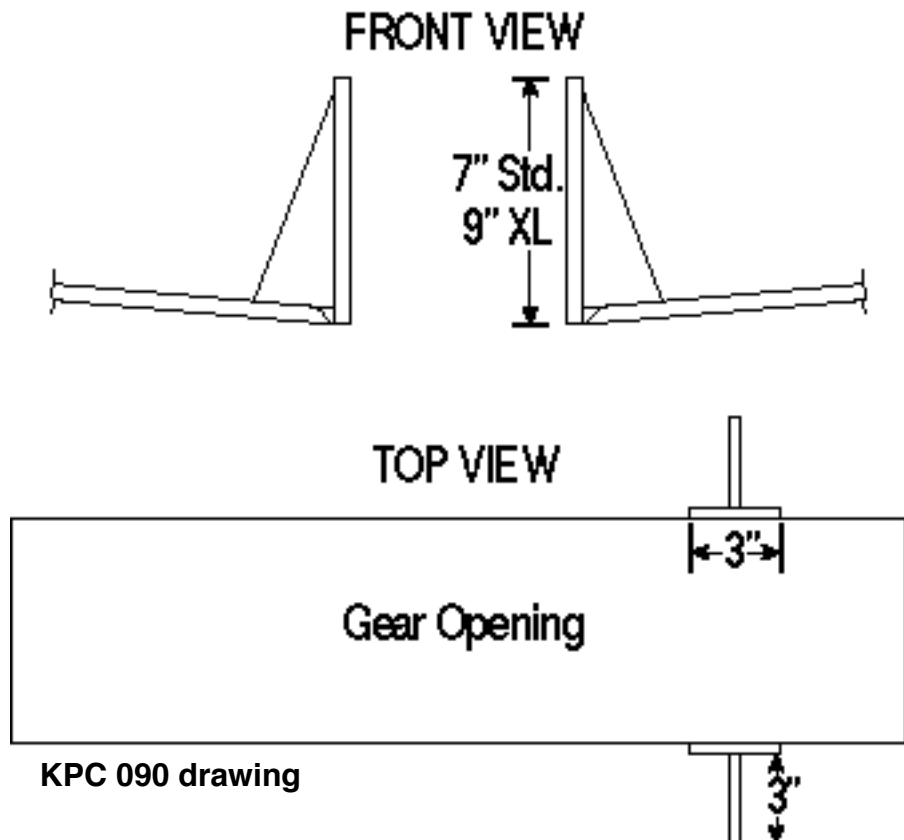
Hot glue or bondo the pieces in place so that they are centered at the axle location when the gear is retracted and glass them in with two BID all the way around. No glass is needed on the face that is at the edge of the opening.

Refer to the drawing below.

## Alexander SportAir Workshop Specific for Velocity Builders

Alexander SportAir announced the first workshop devoted to the building and assembly of the Velocity Airplane. The Velocity workshop will concentrate on the composite techniques required in construction of all models of the Velocity. The majority of the time will be spent actually doing “hands-on” activities. You will learn by experiencing the actual fabrication skills needed and then practicing them on a class project. General information such as tools and workspace, FAA certification procedures, ways to involve your family, FAR’s involving flying experimental aircraft, etc., will be part of the curriculum. A concise course designed to provide an overview of all the neces-

*Continued on next page*



KPC 090 drawing



## SportAir Workshop

*Continued from previous page*

sary information to build your own Velocity will be presented (including basic composite construction, finishing, electrical). Scott Swing, President of Velocity Aircraft, will be the primary instructor.

The 3 day workshop will begin on December 4th, 1998, and conclude on Sunday, December 6th. It will be held in the Atlanta Georgia area at the SportAir facility located on the Griffin, Georgia airport. If you are considering the purchase of a Velocity, or already have a kit, but need more confidence to get started, then this 3 day weekend event is for you.

For reservation, cost, and more info, call SportAir at 1-800-967-5746, or visit Alexander's website at [www.sportair.com](http://www.sportair.com)

Also, if you visit SportAir's web site, you'll find a host of various builder type workshops being held all over the country. Check it out!

♦♦♦♦

## INVOICE NOTICE

- **Your 1999 Calendar year subscription is due ASAP, but no later than December 15, 1998**
- **If I already have your information correct in my data base, then all you need to do is mail me a check.**
- **No invoice will be mailed. If you do not renew, then you will stop receiving the newsletter.**
- **See page 17 for details of renewal.**



## Safety Corner

**Accident & Incident Reports,  
Maintenance & Service Difficulties**

### Accident Report

Many of you have already heard about the accident that Hugh Hyde had in his Velocity. It all started with a little cotter pin. This, however, is not the full story. In a previous *Views*, Mark Machado told us all about the necessity of checking the cotter pin that keeps the castellated nut from unscrewing off the fuel servo throttle arm. This had happened to Mark, however, Mark made a successful landing at his home airport. Hugh was not so fortunate. Now that we are, again, reminded of the need to check to make sure this cotter pin is in place we find yet another Velocity that has been flown 90 hours without this cotter pin. As it turns out, Travis Holland was about to ferry a Velocity to Florida for some work and removed the cowling to check things out. Guess what he found, no cotter pin. Fellows, this is just not acceptable.

### Service Warning

We have received another report of an Elite pilot door working open in flight. After over 300 hours on the original Elite and now over 300 hours on our XL we have just not seen this problem. We just don't know why in some cases this has happened but don't want to wait any longer to do something about it. We are building a spring loaded safety latch into the pilot's door similar to that on the co-pilot side with one major exception, the pilot's door will have the added feature of being able to unlock this safety latch from the outside. This is to allow, in an emergency, the ability for someone to open the door from the outside without some special key. Give us a call and we will provide this lock at no cost along with the instructions necessary. For those of you who are flying your Elite without some sort of positive lock on the pilot door, it

would be a good idea to make some sort of wedge to jam between the handle and the fiberglass cover, or some other positive lock, until we can get the new lock to you.

### Service Notice

We recently had a Matco Brake Disc break into two pieces. We are not sure why it happened and it didn't result in any damage to the airplane but it is a concern. We think that after heavy braking, we went through water that could have made it very brittle. The disc distorted before it broke. We didn't have much warning but we had just giving 20+ rides at Oshkosh and a couple back at home so that may have had something to do with it as well. We will wait for an explanation from Phil at Matco. In the mean time, check your discs on your pre-flight.

### Lycoming Service Bulletin & AD Notice

Once an engine is installed in an experimental airplane, the engine no longer qualifies as a "certified" engine. This means that the owner of this experimental airplane does not have to comply with Lycoming, or Franklin service letters and FAA AD Notes. In some cases this is a financial blessing for us, in other cases, it may be foolish to ignore. For the most part, mandatory factory service bulletins are issued directly to users to provide a more urgent message that almost always will be followed later with the FAA AD note. I just received a Mandatory Lycoming Service Bulletin that indicated compliance due at engine overhaul or earlier at owner's discretion. The bulletin No is 530A and involves crankshaft removal and a coating of Urethabond be applied in the hollow area of the

*Continued on the next page*

## Safety Corner

*Continued from previous page*

crank.

I also received from the FAA a Special Airworthiness Information Bulletin that indicates the MANDATORY use of only new "star washers" when installing the oil pressure screen housing or anywhere else that uses these "star washers". Simply put, don't reuse the old locking washers. At least one airplane crashed as a result of the failure of these reused washers. I have always felt that the FAA and Lycoming are wrong in using these "star washers" in conjunction with the flat washers commonly seen. If the "star washer" is going to do its job, then it needs to bite into something other than a flat washer to prevent the nut from backing off. This is just my opinion and not a suggestion.

The FAA has issued an AD note No. 98-17-11 regarding the replacement of certain crankshafts repaired by Nelson Balancing Service, Bedford, Mass. The real problem with this AD note is the fact that if you know your crankshaft was repaired during a certain time period but cannot determine if Nelson was the repairing agency, then you must remove the crankshaft from service. You might want to get a hold of this AD note and see if your engine qualifies.

The FAA has also issued an AD note regarding the pitting that can take place on the inside of the "hollow" crankshafts as used on just about all Lycoming Velocities. This was a very controversial AD and was fought by Lycoming and others as being unnecessary. If interested in checking it out, talk to your local mechanic and read what the AD has to say.

## PZL Franklin Service Letter

PZL- Rzeszow SA (Franklin engine manufacturer) has issued Service Letter number PZL-F/1/98 dated 31 July, 1998.

The subject is the "readjustment of the differential valve of the by-

pass for the 6A-350-C1R engines on the Velocity plane":

"The analysis of the oil flow resistance in the aircraft oil system of the Velocity plane has shown that the differential valve opening pressure of 10-14.7 psi is too low. The decrease of the aircraft oil system pressure causes (for such pressure) the valve opens partially and portion of the hot oil flows directly to the engine passing by the cooler. Then, the input oil temperature becomes too high.

### RECOMMENDATIONS:

It is recommended to readjust the differential valve to 19-23 psi using the

spring, p/n 26.11.1252.

### PROCEDURE:

1. Unsecure the washer 26.21.0349.
2. Unscrew the bolt 26.21.0348.
3. Remove the spring of the differential valve.
4. Install a spring 26.11.1252.
5. Install the washer 26.21.0349.
6. Screw the bolt 26.21.0348.
7. Test of the engine.
8. Check for oil leakage near the bolt. If any, screw in the bolt and retest the engine and check for oil leakage.
9. Secure the washer.

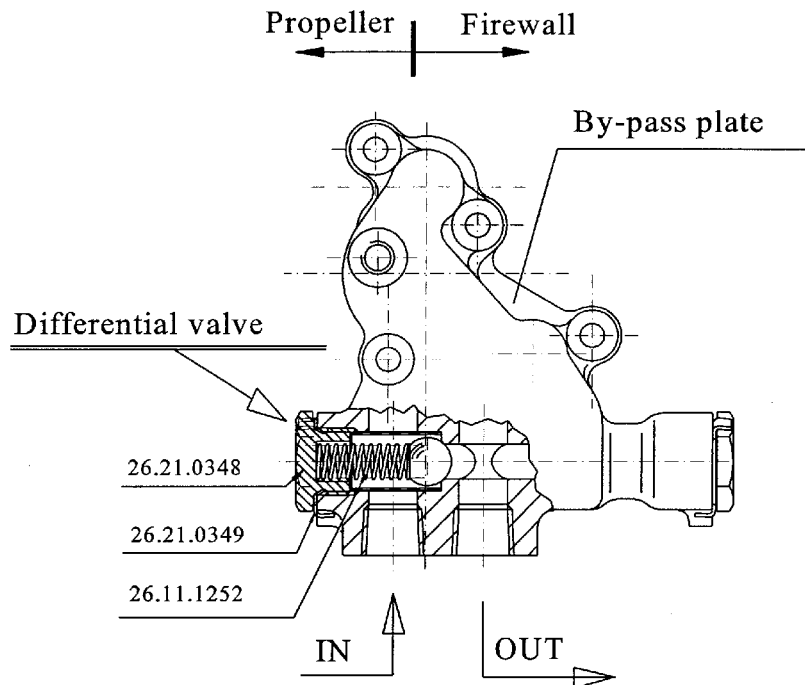
Refer to the diagram."



## SERVICE LETTER

DATE :31 July, 1998

NUMBER: PZL-F / 1 / 98



The by-pass valve adjusting kit, No. 26.09.0290 includes the following parts:

- |           |     |            |         |
|-----------|-----|------------|---------|
| 1. Spring | No. | 26.11.1252 | 1 piece |
| 2. Washer | No. | 26.21.0349 | 1 piece |

Orders may be given to:

Mr. Wojciech Kutta  
"PZL-RZESZÓW" S.A.  
ul. Hetmańska 120  
35-078 RZESZÓW  
P.O.BOX 340  
POLAND  
FAX(48) (17) 625-325

# Short Circuit



by Martin Hadley



For those of you who do not live in the South, it is said that there are two seasons here...summer and swel-

ter. Trust me, it is now swelter time in the ole South! When I first moved to Florida from Memphis, TN, my mother asked me how could I stand the heat and humidity?! Having been born and raised in Wichita, KS, and working summers in the agricultural industry, I told her that when it came down to sweating, if I had a choice between sitting on a combine cutting wheat or watching bikini clad girls while sitting on the beach, I'd much rather sweat on the beach! Which brings me to my topic. Heat!

There are several reasons why heat can build up in an electrical system. Some of it is not bad. In fact, there are certain forms of electronic devices that generate heat on purpose! Most common is the encoding

altitude digitizer. Electronic altitude encoders typically have a very temperature sensitive device in them for converting altitude to an encoded digital signal that can be transmitted in Mode C through the transponder. There is a temperature controlled, heat generating resistor near this device so as to maintain a close tolerance operating temperature. That is why most of the electronic digitizers require a 'warm up' period before it will operate. Those of you with the AT-3000 from Trimble know that it takes up to 5 minutes after turning on your avionics master before the transponder will report Mode C.

But there can also be heat generated in electronics and electrical systems that is not wanted and could become a potentially serious problem. This heat is caused by several different factors. Loose connections, undersized wire, and improper routing and bundling of wires in the aircraft.

First, let's discuss the heat itself. Whenever electrons start to move from one atom to another, friction is encountered and heat is developed. In a conductor carrying electricity, electrons are being transferred from one atom to another and the ability to dissipate the heat generated determines how much current the conductor can handle before it becomes self destructive. Stated in simpler terms, current in any circuit generates some amount of heat. It is usually so minimal and manageable that it is never noticed. It gets noticed though when the heat generated by the current exceeds the current rating or capability of its wire, connections, or components in the pathway and is given off as excessive heat.

Let's talk about loose connections, since these seem to create more than their share of problems. Think of an electron as a basketball for the moment. It takes considerably less energy to throw that "electron" six feet than if it had to be thrown sixty feet. The farther the "electron" has to be thrown from one atom to the next, the more energy is needed to make the throw. Now then, relatively

## Workmanship Caution

Why is it that we would never accept shoddy work from an A & P mechanic on a certified aircraft, yet are willing to risk our lives and the lives of friends and loved ones by flying our homebuilt airplanes with such disregard to the airworthiness of these machines. Another case in point. This week a Velocity was flown in from some 1000 miles away for a "factory" evaluation. The airplane was left with us and the pilot went back home. The owner/builder has lost his medical and the airplane is up for sale. This airplane has about 155 hours of flight time on the hobbs. Among other things, the canard has been modified and the canard tips have been removed as a speed mod. In his words, the airplane lands "very hot". There are signs in the fit and finish that this airplane needs lots of work to put it into a saleable condition. There are other signs that the builder took many liberties in building, because, after all, it is an experimental airplane. Another very disturbing fact is that I can find NO paperwork on the airplane. no Airworthiness, no Registration, no Operating limitations, no Weight and Balance (your basic Arow) and no logs to show if the airplane is currently in license. Put yourselves in our shoes: If we say to a prospective purchaser that the airplane needs a lot of work and it isn't airworthy as it sets, then we just made an enemy with the owner. If, on the other hand, we tell the prospective purchaser that the airplane is airworthy because, after all, it just flew in here from 1000 miles, and after purchase the new owner finds out about the canard modification, and some of the other changes, he is going to be ready for a lawsuit against Velocity for not telling him all these things in the beginning, or, at the least, expect Velocity to fix everything that is wrong with the airplane. Due to the present unairworthy condition, what if the airplane is sold and the new owner crashes? Who should be held accountable? The builder - after all the airplane has 155 hours on the hobbs without problems? Velocity - for not being firm about the condition of the airplane? And what about the poor pilot, he could have just lost his life savings or worse. Should he have been more cautious about purchasing this airplane? Of course the answer to this is yes. The problem is the new owner is somewhat awe struck by his new toy and assumes all is OK. This is why we just don't want to get into evaluating and fixing a customer's airplane for the purpose of resale. This is also why we don't want to sell your airplane. In some cases, you shouldn't want to sell it either.

Duane

*Continued on next page*

## Short Circuit

*Continued from previous page*

speaking of course, for one amp (1 coulomb) of electricity, we need to throw 62,400,000,000,000,000 basketballs (electrons) past any given cross sectional point in a conductor in one second ! Talk about a sore arm! Since these "basketballs" need to go from one atom to another, the shorter the distance need to throw them, the less energy is required.

Now we have to deal with the heat generated by all of this energy. In electricity, that is the natural generation[MAH1] of thermal energy produced by an electric current in a conductor as a result of the electric resistance of the conductor. This is known as the Joule's effect. Joule's Law says that the rate at which heat is produced in an electric circuit of constant resistance is equal to the resistance value times the square of the current. 1 Joule is equal to .00094845 BTU per second. (1 watt)

How is this heat buildup minimized? The more metal to metal contact area available means more electrons can pass through the cross sectional point of the path at any one time. The shorter the distance the electrons have to be "thrown" across these two metal surfaces produces less energy which has to be dissipated. Bottom line is, short of material compression fracture, the tighter the electrical connection, the better the electrical properties of that connection are.

Undersized wire is merely a matter that the amount of heat generated in the conductor can not be dissipated quickly enough to prevent the resistance of the conductor from increasing. (Remember, Joule's Law is based upon the fact that the resistance of the conductor is constant!) (Quick test...get a 100 ohm 1/4 watt resistor and connect an Ohm meter to it. Set the Ohm meter on the 1,000 Ohm scale. Light a match and place it slightly below the resistor so that the resistor is gradually heated up. Watch the meter change as the resistor heats up!) Two great charts are provided in AC 43.13-1A & 2A (available from



# Views from the West

*By Mark & Nancy Machado*

Greetings one more time from all of us here at Velocity West. As Velocity Inc's only representative in the Western United States, we are very proud to be associated with the entire extended Velocity family, including you the builders!

It has now been some three years since the Velocity West office was opened here at the Lincoln Regional Airport in Lincoln, California. Needless to say, much has happened. Aside from the sale of kits, the builders support, attending countless fly-ins and air shows, and lots of long hours, the most remarkable aspect of our work is the people we have met.

Someone asked us the other day "What's a typical Velocity buyer like?" My answer...I haven't a clue.

Velocity, Inc.) for determining the right size (gauge) wire for the amount of current needed, based on the length of wire to be used.

Routing and bundling of wire can become critical when too many wires are too tightly bundled in a closed environment. The total amount of heat generated from the warmer wires begin to heat the cooler wires, increasing the resistance in them which in turn causes them to start generating more heat. Vicious cycle, isn't it!?

Simple rules to follow... 1) Make sure all of your connections are tight! 2) Don't use too small a gauge wire for the amount of current and length of wire needed. 3) Don't 'smother' your wiring up in excessively tight bundles or ducts without providing some reasonable means for heat transfer.

By the way, just how big is an electron? If you could blow up a single hydrogen atom so that the orbit of the only electron in this atom was the size of a basketball, the electron itself would be about the size of a single grain of salt! WOW!

A typical Velocity buyer doesn't exist! There is very little that is typical about our builders. No common thread, no similar characteristics, nothing that would allow you to pick them out in a crowd.

Since Nancy and I have been selling Velocity kits for the Swings, we have sold Velocities to retired dentists, college professors, computer whiz-guys, people who make artificial limbs, FAA employees, ex-fighter pilots, doctors, auto mechanics, psychologists, attorneys, architects, people who won't tell me what they do, and many, many more. You tell me what's typical about this group of folks! Not much!

During one of our high-level discussions at lunchtime the other day, we decided the common link was that they were all crazy...just kidding! Well, not entirely. Do some of your friends think you're a little "off" because you like the look of a Velocity? The first time I saw a canard airplane, I fell in love with the "look." I knew it was what I wanted. No doubt about it...just a matter of time.

It's that "look" that ties us all together! Has nothing to do with what you do in life. Nothing to do with how much money you make or what side you get out of bed in the morning. Must be something in our genes...because we all like the look!

Nancy and I spend a lot of time these days "looking" at our builders projects. This gets me back to the proud thing I was talking about when I started this message. What we have been seeing lately looks real good! We've been harping and nagging about quality and integrity almost constantly these past few years and by gosh...it's there! It makes us very proud!

Without a doubt, quality and safety go hand-in-hand in the exper-

*Continued on next page*



## Views from the West

*Continued from previous page*

imental, homebuilt airplane business. When we see a quality-built project, we usually see an individual (or team) who is well prepared when they are ready to start flying. Both the home office and us here at Velocity West offer pilot check-out services for builders who are about ready to fly. Take advantage of this. It's the quality thing to do!

The look of a Velocity, with its smooth contours, soft edges and sleek appearance, lends itself to showing off quality work. On the other hand, when it isn't done right, it shows! Take time to do it right. Make sure every aspect of your work shows a sense of precision that's a little better than the rest. If it takes you a little longer...so be it! You won't regret it.

What's going to keep the entire Velocity family strong, keep that "look" in the forefront of the aviation community and benefit everybody, is quality! Let that good sense of quality permeate everything you do, from unpacking your kit, to your first flight, to many years of flying. Again, you won't regret it!

Take Care  
Mark & Nancy Machado

P.S. I promise next time, lots of "tech" talk!

## Sign Up for the Velocity "River Ranch" Fly-in

- **Weekend of Nov 14**
- **Reservations ASAP but no later than Oct 30th!**
- **Come by air or come by ground, but be sure to come!**

## Another Velocity Flying Adventure

*by Rick Lavoie*



*Judy and Rick Lavoie with their English Springer Spaniel "Darla" embark on yet another fun Velocity flying adventure covering 5,500 NM*

We have returned home from yet another Velocity flying adventure in our Velocity RG. Our "British Columbia" trip was over 5200 nautical miles, while logging 33 hours of flight time. During the 9 day trip, we flew in 21 US states plus our final destination, British Columbia, Canada. There is no way for me to tell you all the wonderful things we saw, but here goes nothing.

We took this vacation with our best friends, the Tuckers (Len, Jean & their 8 year old daughter Julianna). They flew in their turbo charged Twin Comanche, while Judy, Darla (our Springer Spaniel), and I flew in our Velocity RG. Len and I were able to fly in VFR formation for all but 3 legs, due to IMC weather. The two planes ended up quite compatible for the trip. At take off, climb, and lower altitudes, I can report that the Velocity blows away the Twin Comanche. At about 8 - 10,000 ft., Len could dial in his turbos, and we ended up just about at the same speed. Our plan was to fly VFR as much as possible, since we had the safety of two airplanes in formation. We ended up filing IFR for just 4 of the legs on the entire trip.

We departed St. Augustine on Thursday, June 18, and landed in

Albuquerque NM. It was a long (9 hours flying) hot day of flying, but what kept me going was the thought of eating some of that great New Mexican food and a cold margarita! We had dinner with fellow Velocity builders Lino Moya, Jeannine Cde Baca, and Gary & Cheryl Simpson in the Old Town section of Albuquerque. The next morning, Jeannine & Lino made us all a wonderful breakfast, complete with Jeannine's homemade red and green chile sauce. Jeannine's cafe latte is too die for!

We headed out the next morning (Friday) for a short 2-1/2 hour flight to Sedona, AZ, since our friends had never been there. When we arrived, we did some scenic flying around the beautiful red rock canyons of Sedona. This is one of the most beautiful spots on earth! Landing at the Sedona airport is quite a thrill, as the airstrip is perched up on a mesa. It is almost like landing on a long aircraft carrier. We found a wonderful restaurant for lunch. You can tell where my priorities are. Yes, I admit it, I gained about 5 lbs on this vacation.

The next morning (Saturday) we headed out to the Sedona airport for an early start. Unfortunately, one of

*Continued on next page*



## Velocity Flying Adventure

*Continued from previous page*

Len's starters was bad, so we ended up having to pull and change a starter. We were lucky and found another pilot who tracked down a used starter that we were able to borrow. We were ready to depart west for our next stop, Monterey, California. We flew west toward the coast just north of Los Angeles. California is very beautiful. The mountains and coastline are just magnificent! Flying VFR, we were free as birds to take it all in. While in Monterey, we rented a car and toured the 17 mile drive in Pebble Beach. Judy, Darla, and I most definitely plan to return to California and spend more time flying around. We loved it!

Sunday morning, we loaded up and left Monterey. When I gave it full throttle rolling down the runway, I knew that I had a problem with my Ivo prop electric motor, as I did not develop my usual takeoff RPM. I had plenty of runway, so I continued my takeoff safely. I decided to continue the next leg of the trip as a fixed pitch prop. That sure slowed me down, and forced Len to throttle way back on my account.

We flew north along the California coast across San Francisco Bay. The whole west coast is breathtaking, especially from 800 ft!

We ended up heading inland a bit and landed in Eugene, Oregon for lunch. The new CANPASS customs system is great. We telephoned Canadian customs, & simply answered their questions. They told us that when we landed in Victoria we would be directed to a phone at the customs building.

The leg north into Victoria was my favorite. We flew by Mt. Hood and around Mt. St Helens. After Mt. St. Helens, we picked up an airborne IFR "flight of two" clearance into Victoria. It is just easier crossing lines with an IFR clearance. Washington state was very scenic, but flying over Vancouver Island, landing Victoria Int'l airport was just unbelievably beautiful.

When on the ground at Victoria Int'l, they directed me to taxi to cus-



toms. I exited my plane and called customs on a phone outside on the wall. I figured that someone would come over and make me empty the plane, etc. But to my surprise, the customs officer told me over the phone to write down a number and that was it! I had just cleared customs. I handed the phone to Len, and he was done in the same 60 seconds that it took me.

We stayed three nights in Victoria. There was so much to do that we ended up not leaving the city area. The city lives up to its name in grand Victorian style. We found the people very friendly. It stayed light until after 10:00pm, which made it great for a late dinner and walking around the inner harbor area. The highlight of our stay in Victoria was a Killer Whale (Orca) boat excursion. We spent about 2 hours with about 80 Orcas.

I can report first hand that the Velocity is a very good cross country machine! We flew 2 legs in IFR conditions. The legs from Victoria to clear customs in Portland OR, and then from Portland OR to Jackson Hole WY (over Rockies) were hard IFR. Everything worked great and went very well. With one exception; remember my Ivo prop motor failed while taking off from Monterey CA. I continued the remainder of the trip as a fixed pitch prop. Ivo sent me a loaner motor to Victoria, but conditions were IFR the day the motor arrived, thus I decided to leave things alone for safety reasons.

Changing the motor would involve removing all three blades, which requires a complete torquing sequence. Not a good idea in IFR conditions. So I made sure that my airports had good long runways and sacrificed on cruise and climb performance for the remainder of the trip. It sure did slow us down plenty!

The weather started to break out when we reached eastern Idaho, so I cancelled IFR and continued east to Jackson Hole. The Grand Tetons are beyond description. You just have to fly over them. They are huge, high, rugged, and jagged peaks that beckon you to return. We stayed two nights in Jackson Hole, renting a car for a day trip to Yellowstone.

Friday morning, we got an early start on our final "3 leg" day back home to St. Augustine Florida. It ended up being a very long day of flying, as I really slowed us down with my prop being in fixed pitch. Nine hours of flying turned into 11. We ended up landing at SGJ at about 10:00pm that night. Len showed true friendship and kept his throttle back so I could keep up.

I just thought I'd pass on some fun experiences to those of you still "in labor" building your dream machines. Get out there and work on your project every day, so you too can have some fun flying adventures! And when you do, please take the time to write an article about it. I bet people are sick of hearing about my flying adventures and want to hear about yours!

# Builders Forum

Builders Forum is full of tips, information and letters ("material") supplied to *Velocity Views* Newsletter from individuals that are Velocity builders (or want to be builders). It is provided as **"USE AT YOUR OWN RISK"** material. Neither Velocity Inc. (The Velocity Factory) nor *Velocity Views* Newsletter (Lavoie Graphics & Rick Lavoie) have endorsed this material, and disclaim any liability for the use of this material. Individuals who use this material for the operation, maintenance, or construction of their homebuilt aircraft do so at their own discretion and at their own risk. Any variance from the builders manual is high risk.

## Elite Door Tips

*From Dennis Martin, Provo Utah*

Malcolm Collier (Hangar 18) gave me some excellent tips on persuading the doors to fit much closer to the fuselage contours.

1. Use halogen lamps (I used twin 500 watts) on one door at a time to relax them into place. Lamps go **INSIDE, YES INSIDE** the cockpit. Do this at least over night. Be sure to lock the door handles tight. Next, use 2 X 4s to force the bulges in the right direction. Both my doors bulged outward. (Many doors are opposite). So, I put several 2 X 4s against the garage wall to force the door inward in three spots.

2. If your door is an "outy" (bulges outward), another trick really helped me. I carved a dozen small (1" long X 3/8" wide) pieces from a paint stick. I then used duct tape to secure these little pieces inside the door lip (the lip on the fuselage). I taped these pieces all around the door lip to help force the door to bend properly with the fuselage contours.

3. I also hot-glued some 1" pine boards on some of the bulges before I installed the 2 X 4s. This helps spread out the pressure of the 2 X 4s. Use any small pieces of 1" board to do this. This serves two purposes: 1) If your door is an "outy", align the 1" piece so it overlaps the door edge slightly. It stops the door from going too far inside the fuselage. 2) It also keeps the 2 X 4 from gouging the door as you make adjustments to slide it into place.

4. Halogen lamps are clamped **VERY SECURELY** inside the plane, and focused directly on the inside of the stubborn, sinner door. (Be sure you

don't secure the lamps with duct tape. It won't take the heat). Also be sure to shut both doors and cover the front hatch if it's open. I placed a candy thermometer at the hottest point on the door, and checked it once or twice during the night. Lamps were kept about a foot away from the door surface.

5. My highest temp was about 140 degrees F on a hot August day. Doors and windows will take a lot higher temps than that. (I've forgotten the limits, but I think Malcolm said it's mucho higher than 140 F). The next morning the unruly door was repentant. I re-adjusted the 2 X 4s, and heated it another 24 hrs. It got much better. I think I even did it a 3rd time, and each time it came much closer to the fuselage contours.

6. Remember that the door surfaces should not be faired if at all possible. Wherever perfect fit is impossible, adjust door so fairing will be done on the fuselage, not the door.

7) Put the pilot side on first; it's a slightly better fit. (Worked for me)

8) I used Aeropoxy ES 6279 A & B kit (Structural Epoxy Jim Agnew recommended) to achieve the flat surface when doing the final hinge installation. I used it on both the door tabs and the top of cabin. Mix it with micro glass to add strength, and it dries in one hr. This way I installed a door in one day without having to wait for regular Alphapoxy to dry. I waxed some clecos, drilled a couple holes in each hinge, duct taped the hinges, and the clecos held my hinges in place while drying.

Good luck. Let me know if you have any questions. Be sure to check your Halogen lights often, and secure them well. I'd hate it if someone

melts or burns a plane down because a lamp wasn't secured well.

•••••

## Building an Airtight Sump Tank

*From Bill Schweitzer, San Jose California*

I was able to get the sump tank built airtight on the first try. I did that by increasing the mechanical connection between the pre-molded tank and the flat firewall side. I cut a piece of 1/4" plywood as shown in

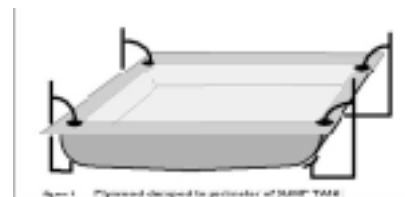
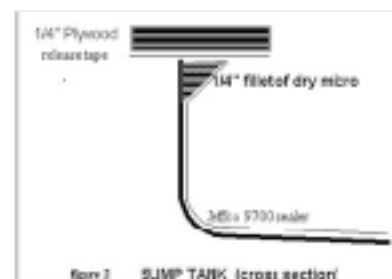


figure 1 to act as a form for laying down a fillet of dry micro around the edge of the molded piece. After cure the fillet provided an extra 3/16" of contact when bonding the bottom in place.

I coated both the molded piece and the bottom with two coats of Jeffco 9700 (figure 2). This was done

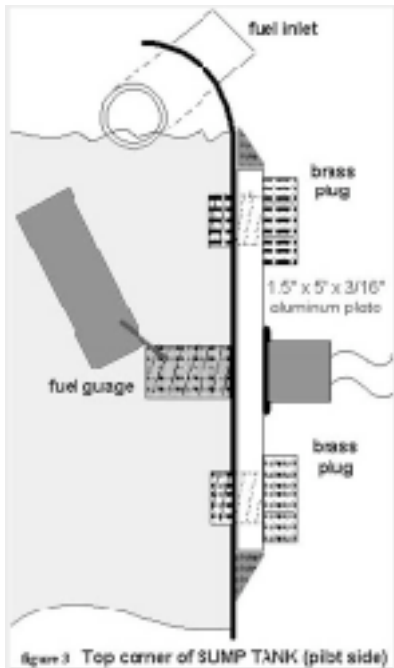


after the fittings were all in place. Plastic plugs and plastic wrap were sufficient to prevent the Jeffco from flowing into the fittings. The Jeffco was a terrific filler for the rough fin-

*Continued on next page*

ish of the tank and it also sealed all the edges of the fittings.

I used the factory supplied fuel level gauge, I think successfully. It was not obvious from the directions, but the gauge has to float up above horizontal to turn off the light. I



found this out by testing the gauge after I had mounted it the other way. Figure 3 shows how I mounted an aluminum plate on the side of the tank with Aeropoxy adhesive and 2 plies of bid. I put three holes in the plate (and sealed two with brass plugs) to allow moving the float gauge if it gives false readings in the middle hole. I also want to avoid the flickering light syndrome. The hardest thing to seal was the gauge itself,

because of the plastic threads and the lack of an outside lip to tighten against. A little Jeffco and an o-ring on the shaft eventually gave a good seal.

When I finally bonded the tank pieces together I placed a bead of Jeffco and a little cabosil on each surface. I pressed the two pieces together over night and got a 1/16\"

The Jeffco also made a good (but small) smooth spout at the bottom of the tank so there are no nooks and crannies for gunk to collect. I decided to use a straight exit from the tank through the fuselage for the drain. And I decided I did not want the drain projecting below the body when I make that inevitable "forced", wheels-up landing. I used a half of a very small paper cup as a form inside a 2 1/4\"

After I mounted the tank I was

able to verify the seal on a hot day when the firewall was very warm. The air inside the tank pressurized but did not escape until I released the Curtis valve.

Notes on RG mounting:

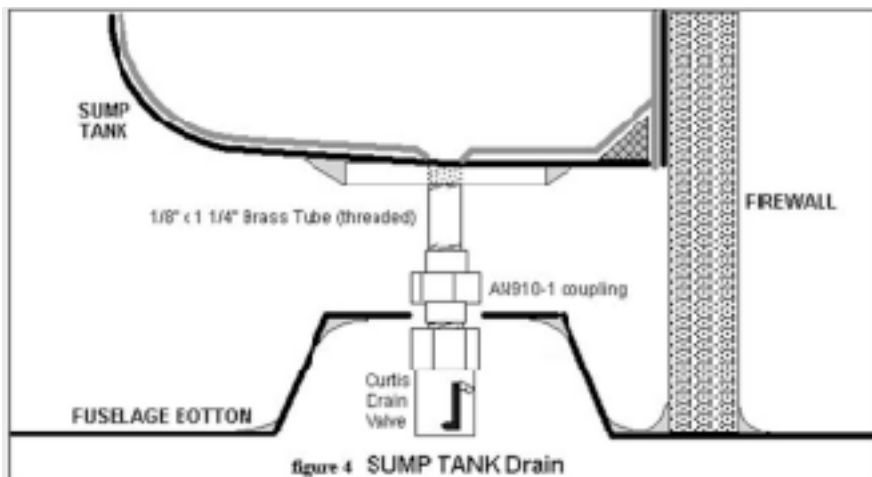
- 1) The center bolt on the main-gear overcenter linkage must be reversed (the bolt entering the linkage from the back) to avoid hitting the 1/4\"
- 2) The 3/8\"
- 3) You may want to remove the tank sometime, put a 3/8\"

.....

## We need your input for this newsletter!

- Builder Forum Input
- First Flight Photos
- First Flight Stories
- Velocity Flying Adventures
- Velocity Fly-in Suggestions

Send your photos / stories to Rick Lavoie for the next newsletter!



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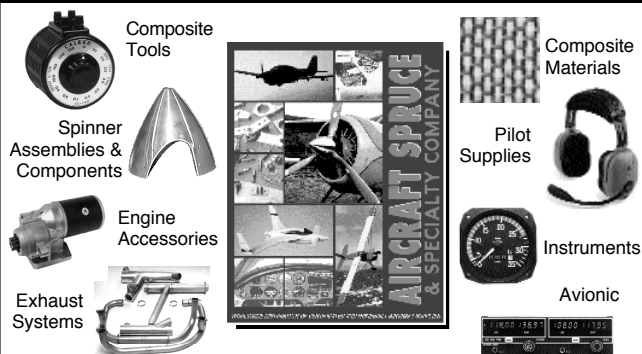
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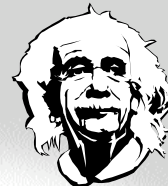
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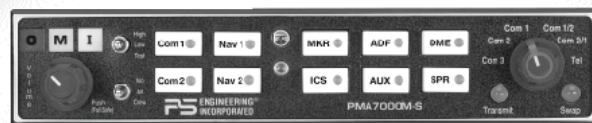
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Companies interested in advertising can contact me by:  
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fax 904-461-3146  
e-mail: [rick@lavoiegraphics.com](mailto:rick@lavoiegraphics.com)

Thanks,  
Rick Lavoie  
Velocity Views Editor

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### Factory Information

#### Velocity Inc.

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#### Velocity West (Sales & Service)

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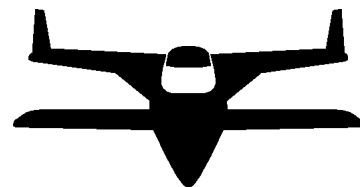
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