VELOCITY VIEWS

Volume 19

Swertfeger's Velocity LW FG

Ken & Barb Swertfeger enjoying their newly constructed Velocity LW FG

DURING MY 32 YEARS WITH HERCULES, INC., I managed the carbon fiber production operations, and became acquainted with the Rutans. Our marketing organization was very instrumental in the utilization of carbon fiber by aerospace companies, and supported the Rutans in their use of carbon fiber. In fact, many of the structural components/assemblies of the Voyager were fabricated at our plant, with Dick Rutan and J. Yeager pitching in and getting their hands dirty.

I acquired the plans and newsletters for the Long EZ and hoped to build the EZ one day. My job was very demanding, and I never could find the time to start construction, although some of the marketing reps did. I retired from Hercules, Inc. in 1992.

My wife Barb and I attended Sun & Fun in 1994. We visited the Velocity factory at Sebastian Florida, when they were developing the new gull wing door concept. We visited the Velocity factory again on November 9, 1995, on our return to Alabama, after visiting relatives in Boynton Beach, Florida. We viewed and rode in the new 173 Elite demonstrator. It was one beautiful airplane, and the flight with Jeff was awesome. We placed our order for a fixed gear 173 Elite after Jeff parked the demonstrator.

Most of the kit was delivered on March 25, 1996, however, the transi-

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In this issue

Swertfeger's Velocity

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tion of Alexander to Spruce Aircraft delayed delivery of resin, cloth and fillers for 1 month. The shear volume of bags and parts was overwhelming, and it took Barb and I two days to check and sort the various items.

It became apparent that the detached three car garage, which housed my woodworking shop, boat and truck, would require revised thinking. We sold the boat, moved the truck onto the driveway, and cut a large hole in the shop/garage partition.

I actually started cutting holes in the fuselage for the speed brake and windows on March 28, 1996. Needless to say, I was excited and somewhat apprehensive. WHAT HAVE I GOTTEN MYSELF INTO!

I attacked each phase of construction eagerly and called Jeff, Scott, Duane and Mark Machado frequently for technnical advise and hand holding. They were always there as were other builders, such as Dave Nelson and Ken Teter.

N627KB (my birthday - Ken & Barb) was constructed according to the manual with only two exceptions. It included Mark Machado's large hatch, and a modified Glasair heating and defrost valve, to provide me with ducting for heater distribution and defrosters.

I painted the assemblies myself in my garage, and transported these items to my hangar at Pryor Field, in Athens, Alabama. Friends and neighbors, who I called my "heavy lifters" were always there to volunteer the required muscle and time.

I received my Airworthyness Certificate on February 13, 1999, and Tom Jeter flew the low envelope program March 16, 1999. Tom's remark upon taxing to my hangar was, "Ken you have built a perfect airplane and no adjustments are required". The excitement and rush seeing N627KB airborne the first time, is indescribable, and then to be followed by Tom's evaluation, was a remarkable day for me.

The high envelope flight test was accomplished without a hitch, and

we watched in awe, as Tom made many touch and goes. I can't believe I built that beautiful machine, although I pet it and shake my head everytime I look at it.

Some of the specifics are listed below:

DMO 375
Weight - 1424 lbs.
Building Time - One Man Builder 3987 Hours
Lycoming 10 360 (Moses Ezekiel Engine)
Performance Fixed Pitch Prop
Plenum Cooling System
Jeff Rose Electronic Ignition (1)
Terra Instrument Package By Velocity
Navaide Auto Pilot
Rocky Mountain Encoder
JPI Slim Lines
JPI EDM 700 With Fuel Flow
CD Player
PMA 6000 Audio Panel

The compliments we receive on our Velocity are never ending, and the smiles on our faces are never fading.

Thank you Velocity for allowing me to construct such a beautiful and comfortable airplane.

Ken Swertfeger, Decatur, Al.

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by Duane & Scott Swing

Construction Manual

We continually receive complaints from our customers about the construction manual. Complaints like extremely poor quality pictures, less than ideal flow of one construction process to another, contradictions from one section to another, and the list goes on. Some of you have made the comment that our only concern is in building new models and selling the kits with no regard to those who have already made the purchase and are having trouble understanding the manual. I know that, no matter what I say or do, some of you will find fault in whatever that is. As an example, a couple of years ago we hired an independent plans writer to completely re-do our manual and set things up in the logical order needed. This was due to complaints we had from builders not satisfied with our (then) manual. We spent $40,000.00 having the new manual written. Guess what? This is the manual some of you are telling us how poor it is. We know it isn't as good as it could be and are constantly trying to improve it. This, I know, just isn't good enough for some of you so we are going to go a few steps better. We have purchased a digital camera and are going to re-take as many color photos as is possible and put them all on a computer disk. This disk will then be sent to as many of you that want it. We are also working to get the manual converted to disk so the editing process will be much easier. Now we use the cut and paste process which is very time consuming. Hang in there all you builders, help is on the way.

Insurance Up-date

Boy what a sticky wicket this is turning out to be. My independent insurance broker just told me that Houston Casualty has purchased the company we were getting our insurance from (Aviation and Marine Insurance Co.) which now gives Houston Casualty a complete monopoly on experimental aircraft insurance. About a year ago they purchased Avemco and National Aviation Underwriters. Several of you have seen your premiums go up as much as 100% in the last couple of months as a result. The reason is quite simple, too many claims with not enough premium money coming in to cover these claims.

I sent a letter to Avemco and Aviation and Marine Insurance over two years ago pleading them not to insure a Velocity unless the pilot receives a factory checkout and his (or her) airplane be inspected by a qualified individual (not the FAA) prior to any taxi or first flights. I also suggested strongly that the $250.00 dollar deductible was totally unacceptable and should be raised to at least 5% of the hull coverage. This would force the owner/builder of the airplane to fix the "fender bender" accidents. These requests were totally ignored by both Avemco and Aviation and Marine Insurance. My reasoning was selfish: I didn't want any of our customers getting hurt flying their Velocities, and making insurance affordable to all seemed a reasonable thing to do. I can now point with some pride that to my knowledge, not one pilot who has received this factory training (in Florida or California) has been involved in a claim with either Avemco or Aviation and Marine Insurance. (or Houston Casualty for that matter) On the whole, however, this is not the case. Insurance rates are based on claims and we have had a bunch of them.

The insurance companies now require a factory check-out and the deductibles have been raised to as much as 10% of the hull coverage in some cases. We have already lost several aircraft kit sales to people who the insurance companies would not insure due to their relative low number of flight hours. We have also been chastised by potential new buyers who are being told by the insurance companies that the Velocity is a high risk airplane. These people want answers as to why. Perhaps some of you would like to put yourself in my shoes for a little while and try to come up with a good answer to this question. There is also a big problem associated with finance companies. About 1/6 of our sales involve some sort of financing. Finance companies want full coverage from the day the kit is delivered to the customer's door and demand the airplane not be flown on the first flight unless it is fully covered. From history, the first 10 hours are the most accident-prone period. In the past, almost all insurance companies would exclude these first 10 hours from and hull coverage. Not so today. Several of our accident claims were within this 10 hour period. Three of these, which I am aware of, were airplanes that were totaled.

Where do we go from here? I have requested a face to face meeting with a representative of Houston Casualty and Avemco to see if there is some common ground that we can agree on that will bring the insurance rates down. I have spoke with Avemco's risk management specialist Joe Jones and will be meeting with him here in Florida soon. He acknowledges that Avemco and Houston Casualty have not paid enough attention to the airworthiness of the airplane and too much on the pilot qualifications. In the case of the Lancair IV's, they do have an inspection process prior to the issuance of insurance and also require some sort of waiver for the first 10 hours. If you have any ideas that I need to explore before this meeting, let me know. I am open to suggestions.

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Factory News

Continued from previous page

Big Engines in Little Airplanes

Many of you have ask for our opinion on putting the IO 540 260 horsepower Lycoming in the smaller airplanes. Let me clear the air on this for those of you who are asking, "can I do it?"

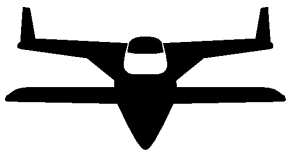
The wing on the standard (small wing) Velocity was designed in the beginning for the 0360 180 horsepower Lycoming. It wasn't long before the customers were putting in the 200 horse IO 360. This engine was about 25 lbs. heavier than the 180 and seemed to be OK until a customer managed to get one into a deep stall. After this, Danny took N81VA, and, with the 200 horsepower engine and a professional pilot at the controls, flying at the aft CG limits, flew a series of tests to determine why the Velocity got into a deep stall and, if it could be duplicated, what can be done to fly out of it. After many many tries, he managed to get N81VA into a deep stall and the pilot and airplane ended up in the ocean. After this, the wing aft foam cores were cut with 2" more cord, the aft CG was moved forward 3/4" and the aft fuel baffle was move 2" further forward. With these changes, we all feel comfortable that even with a 25 lb. additional weight of the M-T prop, that the Velocity will not get into a deep stall.

Now let's look at the IO 540 260 horsepower engine. According to the Lycoming specification sheet, the 260 horsepower engine weighs 88 lbs. more than the 200 horsepower engine. One must also add the additional oil carried in this engine of 12 lbs. Let's also not forget that the 6 cylinder engine CG is almost 5" further aft than the 4 cylinder. Will the standard wing carry an additional 100 lbs. further aft? I don't believe it will safely. Some believe that by adding ballast in the nose that this will take care of the problem. There is a down side to this approach and it has to do with the momentum of the ballast not wanting to stop moving once it is started, such as in low speed turbulence. If the nose can be rotated further up than normal, then it could be possible to stall the rear wing and thus the "deep stall".

Now let's look at the long wing (LW) Velocity. The LW wing has 20% more flying area than the standard wing and, in fact, is. pretty much the same wing as used on the XL. Why, then, can't I put the 540 engine in my long wing Velocity? The real answer to that question is "I don't know". Will that bigger wing carry the additional 100 lbs. safely? The first question is, how much further aft can I go on the LW wing and still be safe? In some tests Scott and I did several years ago, we feel comfortable moving the aft CG on the LW Velocities from 120.75 to 122.0. This is 1 1/4" further aft. Is this enough for the big engine? To keep the airplane from dropping down on the tail at this new CG, the landing gear would have to be moved back a couple inches or more ballast needed in the nose. The ballast, we have just learned, is not a good answer, and moving the gear back on an RG is not possible the way the gear is made. On the XL, we moved the canard, along with the battery, and everything else from the front seats, forward 10". The canard being 10" further forward moves the canard center of lift forward 10" and allows the use of the heavier engine.

I know, Alan said he done some pitch buck testing on the LW he installed this engine in and said everything seemed OK. As I recall, an additional battery was installed in the nose to compensate for the added weight in the back. Was the testing enough? I don't know.

The question stays the same. Can



August 14 Factory Open House Workshop Schedule

Saturday August 14, 1999 - Factory's quarterly open house in Sebastian Florida (X26)

9:00am	Coffee and donuts
10:00am	Workshop: "Hands on" composite basics, including layup procedures and use of various materials (micro, flox, cab-o-sil, fiberglass cloth, epoxy).
11:00am	Workshop: "Hands on" composite - how to make custom parts (plugs and mold making).
Noon	Lunch
1:00pm	Workshop: Building 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.

I put the bigger engine in my LW and fly safely? If you are willing to be the test pilot and do the necessary aft CG testing with this added weight, and if your testing is similar to what the original testing was all about, and you're willing to lose your airplane if things don't work out right (and possible more) then, because this is, in fact, an experimental airplane, you have the FAA's blessing to try...but not mine.

SUV Update

The wings are done and we are nearing completion of N101VA. Many of you saw the plane at Sun-N-Fun and were curious as to when we were going to fly. This was especially important to some of you who want to know about the NACA scoops on the roof that feed cooling air to the engine. Let me say again, assuming this works OK, we will still need to test this system on a larger engine (200 horse) and on our XL to be sure it works well on these airplanes. After this, we will make the necessary plugs and molds to provide the parts to those who want to go this direction. It will also become standard equipment for the engine install kit, in the future, depending on the engine.

We are also finishing up on the dual yokes that some of you have ask about. In the final design, we made some modifications that would make it usable for any of our models including the XL in both fixed and retract gear. One major change in using the dual yokes is the need to keep the radio stack flat instead of the cant we now use. This has to do with the space needed behind the panel that will interfere with back end of the radios.

Builders' Hot Line

Just a reminder to those who can't get through to us on our 561-589-1860 regular phone number. On the weekends and holidays, call us on 561-589-0309. If we are here, we will answer. If you try us on the -1860 number, forget it – we will NOT answer.

Dallas Fly In

We are still short of the number needed to proceed with the Dallas area Fly-In scheduled for the long weekend of October 22nd, 23rd and 24th.

The previous *Views* (Volume 18, page 8) contained information on this fly-in and you need to let us know a couple of things if you are planning to attend. We are still working on the final price and this has a lot to do with how many of you are planning to attend. We can negotiate much better if we are talking 50 people instead of 10.

Please call the factory to sign up right away!

Duane

Oshkosh 1999

• July 28 through August 1, 1999
Oshkosh Velocity Demo Rides
Demo flights will be conducted out of Fond du Lac airport (near Oshkosh). Demo rides last between 20 to 30 minutes. The cost is $150 for up to 3 people. Transportation is available between Oshkosh and Fond du Lac airports. Please contact Velocity Inc. to sign up.

• July 29th (Thursday)
Velocity Aircraft Forum
1:00pm - 2:15pm in Tent #3

• July 30, 1999 (Friday)
Velocity's Oshkosh Dinner
Held at the Oshkosh Hilton and Convention Center's LaSalle Ballroom. Social time starts at 6:00pm with dinner served at 7:00pm. Cost per adult is $20. Family style dinner with three entrees to choose from. Cost per child (age 4 - 10) is $10.
Call the Velocity office, put on a sign up list, or stop by the Velocity booth prior to 5:00pm on July 28th (Wednesday).

Thanks,
Bonnie

Safety Corner

Accident & Incident Reports, Maintenance & Service Difficulties

Lycoming AD Notes and Service Bulletins

I am always getting service bulletins and AD notes regarding the Lycoming engines and some are worth looking at.

SB1-98 is in reference to the Slick mags used on most all models of the Lycoming 540 engines and is considered mandatory. The bulletin requires an inspection of the impulse coupling on this mag. It is a repetitive type inspection that is to be performed at 250 hour intervals.

SB342B is also mandatory and has to do with the proper clamping of the stainless steel fuel lines that go from the fuel spider to the injectors. This SB applies to all the IO360's and most of the IO540'S.

SB388B is mandatory and has to do with how to inspect the valves if there is a suspected valve-sticking problem.

SI1492B, which I understand is now an AD note, affects just about all Lycoming engines which have had Lycoming cylinder kits installed after January 1, 1994. Included are factory overhauled and factory new engines. This has to do with excessive wear of the piston pin plugs. Detection of the problem starts with an oil analysis to determine if excessive aluminum is found in the oil. If so, the piston plugs have to be removed and a new style installed. Check with your local FBO to get the full report.

Just for the record, as I understand the FAR's, an experimental airplane does not have to comply with AD Notes or SB's. Once the Lycoming engine is installed in an experimental airplane, the engine can also be considered experimental and the above does not apply. Just remember, you can be dead right. There is not much comfort in that thought.

Service Warning

Performance Propeller

Don White, our XL builder/pilot sent me a letter he had received as a result of a Central States Association meeting he attended. Central States is an organization of Canard Pusher type airplane builders/pilots who, through their newsletters and meetings, speak about problems and service difficulties associated with this design. Many of the Velocity family are also members. If your interested in joining, let me know and I'll get you the phone number. (or refer to *Velocity Views* Vol 1 page 7 for details of how to join).

In this letter, three Long EZ pilots had experienced blade failure on the Performance three bladed propellers (less than 100 hours) and were less than happy when they were told the failures were a result of a bird strike. In one case the failure happened at 8000 feet altitude while the pilot was making a two "G" tight turn for formation flight and had just pulled the throttle back when the heavy vibration started consistent with a blade separation. It was found one blade separated about 2/3 out from the hub. The prop was sent to Performance where the bird strike conclusion was reached. The same prop was then sent to Catto Propellers for a second opinion. Craig Catto's conclusion was that the propeller suffered a classic case of high frequency cyclic fatigue. There was a lot of technical stuff from here on which is available for you to read if you want. The important thing for those of you now flying with a Performance propeller, as we do here on N81VA, is to inspect your propellers VERY carefully before every flight. Especially important is the area about 1/3 and 2/3 out from the prop hub. The failures start as cracks at right angle to the leading edge and continued until the blade will depart the airplane. All this has to do with the use of the multi-laminate "golf club" type wood and the "cyclic fatigue thing". Again, this is part of the technical stuff that I don't have the time to go into now. The main thing is to watch the blades carefully. To be quite honest with you, I can't even prove that what Mr. Catto has said is a fact. After all, he is in the propeller business. That ounce of prevention thing goes a long way, however.

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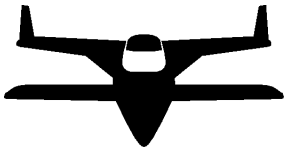
Sign up for the Velocity July 30th Oshkosh Dinner
See Page 5 for details

Sign up for the Factory's August 14th Open House / Workshops Sebastian, Florida
See page 4 for details



Safety First

Get a factory check out prior to your 1st Flight!

Flight training is available at both the Velocity factory in Sebastian Florida, and at Velocity West in Lincoln California..

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 101
Affects: All Elite and XLs - Fixed gear and Retract
Manual sections 14.5.2, 14.5.4 (RGs), 14.4.2, 14.4.4 (FGs)
Date of change: June 14, 1999

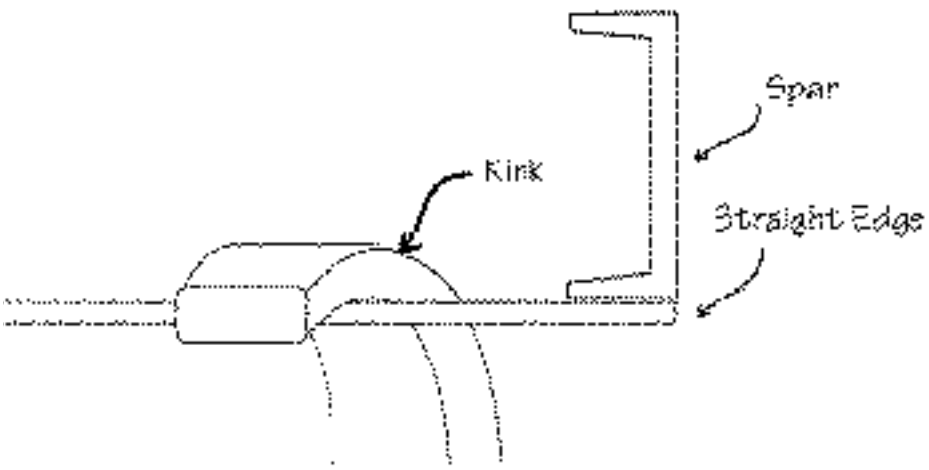
Do not install the mounting tabs for the sump tank until the sump tank cover is installed.

KPC 102
Affects: All non fast-build RG planes.
Manual section: 5.3.3
Date of change: June 14, 1999

When fitting the gear bulkhead, remove the inner skin and foam to allow the upper section to fit in the correct position.

KPC 103
Affects: XLRG
Manual section: 9.2.2, page 9-10
Date of change: June 14, 1999

Change in figure 9-11 to show the kink that is mentioned above that. (see diagram below)



Construction Notes

by Scott Swing

1. Questions have been asked about covering the exposed door hinge in the fuselage to prevent rain from coming in. We tend to wait until just before the headliner is going in to do this but it can be done at any time after the doors are finished. Find some foam and cut 4 squares the approx. size of the hole. Sand them down to about 1/8" thick. Sand and fit them until they fit flush with the inside skin of the fuselage. Hot glue them in place and micro and glass over with 1 BID. Now you can install the door by sliding the hinge into the slot.

2. Water level usage. Basically a water level is simply a long piece of 3/8" or 1/2" clear tubing with water inside that you stretch from one spot to another to see if those two ends are at the same level. You can put some food coloring inside to see it better. Before you use it, you always want to put the two ends together to make sure the water is at the same level. Sometimes a bug will crawl inside and the two won't read the same.

3. We accidentally shipped some Plenum chambers that were supposed to be for the 260 HP Lycoming but was for the 300 HP Lycoming. If your plenum is two wide for your engine let us know.

4. If I have said this once, I have said this a thousand times, the epoxy that comes in the kit won't necessarily be enough to finish it. More than half of our customers end up throwing epoxy away because they waited too long to use it. I hope you understand this.

5. Concerning the door latch system, we believe a few inner door handles were shipped with the holes in the wrong position. It is very obvious so when you get to that point check it out. If you want to check yours now, just grab the outer handle, the bearing carrier, latch crank, and the inner handle, put them all together and check it for alignment. It should be very close.

6. An XL RG customer asked about wheel alignment information in the manual as they couldn't find it. It is located on the first real page of the Wheels / Axles chapter. It mentions a long straightedge on the wheel but this could also be on the side of the tire. "At the nose" means the nose of the airplane. If you measure the distance between the tires at the tires and check it at the nose using the straightedge, you would need to be 2" narrower. (1" per side) One straightedge is enough since you can mark the floor and move to the other side.

7. We have decided that it would be a good idea to change all of the screws that hold the bearings in place to the round head screws. All together including the elevator and aileron systems, you should have 4 bearings and 8 screws.

8. Mark Machado and his crew found and interesting thing happening on an XL RG that is worth mentioning. They found that the over-center linkage lock arms outer slot, the one that locks the system, cannot have much gap on the outside (toward the end of the lock arm) between the pin and slot. If you do, the linkage will come

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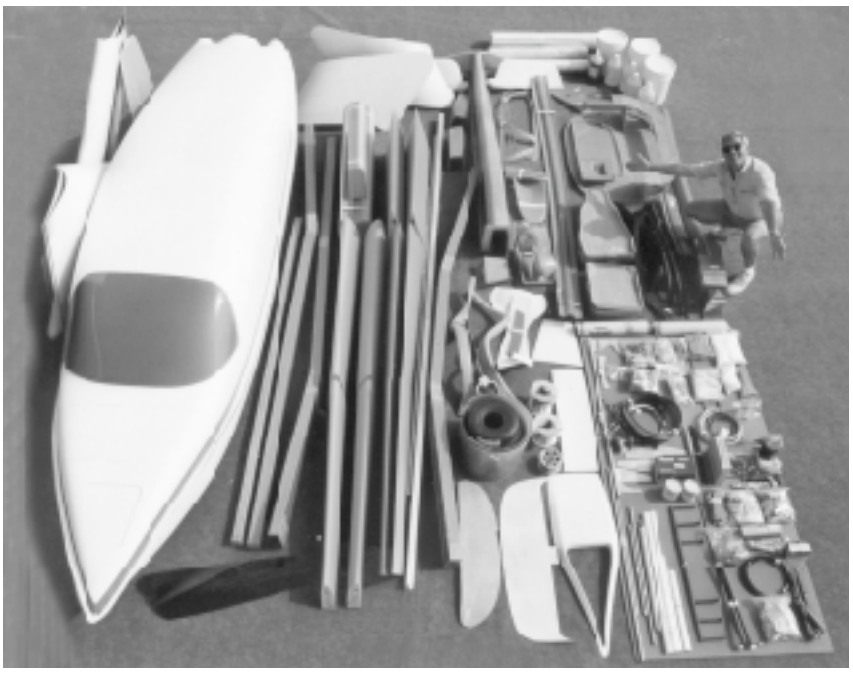
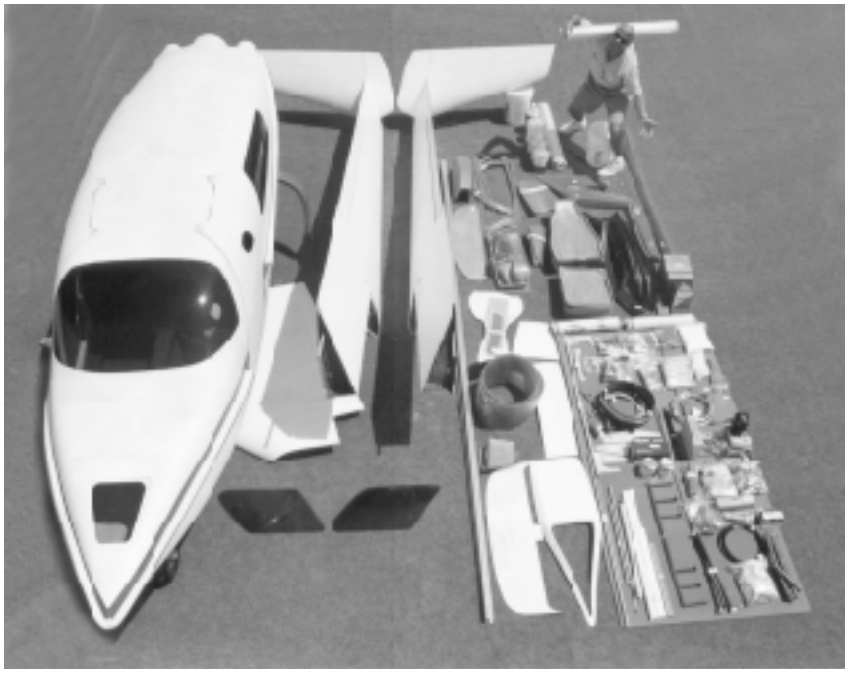
Parts, parts, parts... and more parts!



The above photo shows all the parts that a builder receives for a standard "non-fast-build" Velocity kit. Fuselage and wing strakes come in two halves (upper & lower), spars (center, 2 wing, 1 canard) are completed, all wing foam cores are pre cut, windows, center keel, a host of pre-molded parts, epoxy, fiberglass rolls, and lots of hardware! Duane is pictured as well... does he come with the standard kit too?



Above is a photo of what a builder receives when ordering a "fast-build" Velocity kit. Wings and canard are completed, ailerons and elevators molded and finished through primer. The fuselage is assembled with the following installed: gull wing doors, bulkheads, conduit ducts, main and nose gear, windshield and two side windows, and the engine cowling removed and flanged. The fast build options can reduce building time by as much as 700 hours.

Construction Notes

Continued from prior page

up to unlock, and as soon as it pops up it goes back down, and when it does, it can re-lock. If you have a gap in yours or you have seen this happen, there is a simple fix. You will need to shorten your lock arm. Using a vice and 3 3/16" bolts, position two bolts on the forward face of the lock arm about midway down its length and the 3rd on the back side between the others. When you squeeze this together, you will put a joggle in the arm, which will shorten it. You can adjust it easily if it is now slightly too short by just taking some of the joggle out.

9. The rear bracket that holds the main gear hydraulic cylinder barrel comes in two sizes. The XLRG was using a taller one because of the curvature of the fuselage and length of the cylinder. Many customers were saying it was too tall and wanted the shorter one. Because of this we had stopped producing the taller one. Just yesterday the shorter one was too short and the long one was needed. Because of this, there are two sizes available but we will ship the short ones with the kit and if you have a problem you can call and get the other size. The reason for the differences is in the lay-up that goes in the floor and also the pulley placement.

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Intertested in attending
Velocity's Dallas, Texas Fly-in?
October 22 - 24, 1999

Call the factory to get your name on our list. Please do this today so we can move ahead for planning purposes. Refer to page 5 of this issue and page 8 of Vol 18 for more details...

Views from the West

By Mark & Nancy Machado

Greetings from all of us here at Velocity West. With the airshow/fly-in season fast upon us, there is much activity around here to clean up our flying LW demo airplane and also to try and finish up our new XL-V8 demo Velocity before the season is over!

With all of this activity centered around building and/or upgrading of Velocitys, I thought we might talk about a few ideas that may make your "airplane building life" a little easier.

UPSIDE DOWN

Most everybody knows that eventually, especially with the RG's, a plan will need to be formulated to turn your project on its backside. I have built a fixed gear without doing so, but it was clumsy. Turning your Velocity over puts everything you need to do on the bottomside at easy reach (i.e., you don't have to hold a 10-pound sander over your head for as long as you can stand it . . . and then repeat the exercise!).

The real trick with the upside-down arrangement is also attaching the wings. Understand, this is not required – nor for the faint-of-heart. But, if you have the room (big IF!) and feel you can craft a support system that will do the job, this can be real slick. As the picture shows, we have recently done just such with our XL-V8 project. It really makes working on those wing-to-fuel strake intersections a real breeze! Again, don't even attempt this unless you seriously think you can pull it off. On the other hand, if you can, you'll like the results!

<See photos to the left>

BONDO HOG

I love that term! Sound vicious...and that it is! The term "Bondo Hog" is actually an industry nickname for an air-driven, 8" circular disk sander. They are real Tim "The Toolman" Taylor type tools! Personally I think the best ones are manufactured by National Detroit (P/N 4080 PSA). You can equipped these with self-adhering sand paper that comes in a variety of grits.

I just recently purchased one and wished I'd learn about them years ago. You can almost (repeat...almost) replace your long board/block sanders with one of these tools. After a little practice, it is amazing how smooth a surface you can attain, even over a broad, expansive area. For re-preping an old primer'd surface for new primer, try some 180 grit on the hog and let it rip! We do this and then finish paint right over the fresh primer. Works great!

Continued on the next page

Views from the West

Continued from previous page

Naturally, they aren't a bargain. You'll probably pay in the $200 range for a good one or something less for an import. Regardless, if you are like me, you'll wonder how you ever lived without one.

NUTPLATES

I've had a rash of people call and inform me they have installed all of their nutplates and are real pleased with the results. My response is usually "You're already painting your airplane ?...you just got the kit 2 months ago!" There is usually a pause on the other end and then the question, "Did I do something wrong?"

Well, in my opinion, yes! Nutplates are finish items. After you have done everything else, including initial fitting, sanding, filling, sanding, filling, sanding, filling... even final painting, in some cases, then install your nutplates.

In the meantime, use clecos. If you aren't sure what they are, check them out in the Aircraft Spruce catalog. I have pretty much standardized on the 1/8" size and use them constantly. They are quick, durable, can be painted upon, hit with fillers and still function. They are a quick way to check a fit, make that fit even better and not potentially ruin or wear-out a nutplate "before its time."

Well, that about wraps it up for this time. Sincerely hope these comments help someone. Before I conclude, would like to remind you about the article Scott Baker, our resident CFI here at Velocity West, wrote last quarter regarding rudders. He's followed it up with another article related to rudders, or at least the rudder pedals, and their function in taxiing. For those of you who "have it down", it may be old hat. On the otherhand, for those of you who haven't tried it yet, take a look... it's good stuff!

Until later, remember, not necessary to be perfect, just precise!

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Velocity and the Rudder

Part 2

by Scott Baker, CFII

"Velocity 2468V, Big City Tower, Is everything all right down there?" "Ahh … Big City Tower, Velocity 68V (frantically jabbing the brake while the aircraft circles uncontrollably in the run-up area), just checking for traffic!" Some call it humbling, others befuddling - one thing's for certain, learning to taxi the Velocity with its fully castering nose wheel usually turns out to be a challenging learning experience.

The Velocity nose wheel has no steering linkage and so differential (left/right) braking is used for directional control during taxi. Although this sounds simple, learning to taxi the Velocity with precision takes practice and learning some important do's and don'ts.

• Forward motion is needed for the brakes to affect steering. Stay off the brakes until the aircraft is moving (about 3mph) before initiating a turn.
• Once a turn has started, little additional braking is needed to continue the turn. Holding the brake pedal down during the turn only serves to tighten the turning radius.
• Whenever possible, take your feet off the rudder pedals to avoid riding the brakes and over steering.
• Opposite brake is needed to stop turning while taxiing. Learn to lead the application of opposite brake to "roll out" on the desired heading.
• The application of brake(s) slows the momentum of the aircraft while taxiing. Be ready to add power during turns to keep momentum, especially during slow taxi.
• Abrupt braking (jabbing the brakes) during slow taxi usually leads to over control and sometimes causes the nose wheel to caster to a full left/right position.
• When entering or leaving a tight parking space, it is often easier to maneuver the aircraft by hand rather than under power.

An important note when taxiing: Make sure the nose wheel is pointing straight ahead before taxiing the aircraft to a stop. If the aircraft should come to a stop with the nose wheel cocked to one side (even just a little), then this is the direction the aircraft is going to head when you resume taxing. If the nose wheel is cocked too far, the aircraft - as if it had a mind of its own - will enter a right angle turn that virtually no amount of brake is going to stop without a large blast of power and a good bit of forward momentum. In such situations it's often best to admit defeat, shut down the engine, jump out of the aircraft and manually straighten the nose wheel. During ground handling and taxi, make sure the nose wheel is pointing straight ahead before beginning to taxi.
• While taxiing, try using a smooth application of brakes (as opposed to jabbing) for steering control. It's easier on the brakes and on your passengers!
• Sometimes a crowned or slopped taxiway requires the prolonged use of brakes for directional control. If it is safe to do so, try taxiing to the extreme left or right of the taxiway to see if this improves the way the aircraft is tracking.

During the preflight run-up, make it a practice to put one foot on the brake while the other tests/inspects the opposite rudder for proper movement - and then vice-versa.

The rudder during take off

When taxiing onto the runway, allow the aircraft to roll down the centerline a few yards to ensure the aircraft is pointing down the runway. Many students tend to over steer themselves onto the runway and begin their takeoff roll heading to one side of the runway or the other. This inevitably calls for a lot of extra braking action at a time when we want maximum acceleration.

During the takeoff roll, use the minimum amount of braking that is needed to maintain safe directional control. If you're one of those space shuttle pilots who demands perfection in keeping the nose wheel glued to the centerline - relax a little! The

extra braking needed to maintain absolute perfection (especially during the beginning of the take off run) translates into a lot of extra runway being consumed during takeoff. As the air speed begins to build during the takeoff roll, less and less braking is needed as the rudders become effective for steering control. Use whatever rudder travel is necessary for directional control, but try pushing the rudder pedals – three-quarters of the way when the airspeed reaches about 40kts, and then one-half way down as you accelerate to rotation.

The rudder during climb out

The left turning forces in a Velocity are practically non-existent when compared to most high-performance general aviation aircraft. Depending upon how the aircraft is rigged, little and possibly no rudder at all will be required for coordinated flight during climb out.

Students on their first takeoff often struggle to gain flight control as the aircraft wallows about in its bank axis during climb out. They do not realize that they themselves are the source of "the problem" which has come about because of mismanagement of the rudders. Remember when we talked earlier (see last quarter's edition of *VelocityViews*) about the lack of rudder feedback in the Velocity? It is natural for students in stressful situations to push one or both rudders, keeping them near the floor. The application of rudder in the Velocity induces not so much yaw as it does a rolling action around the longitudinal axis (bank). Sometimes the desire to push the rudder pedals is so strong that I teach students to place both feet on the floor following rotation and during climb out. It's amazing how takeoffs seem to miraculously smooth out following this bit of coaching advice!

In the next issue of *Velocity Views* we'll discuss the use of rudder during cruise, slow flight and when in the pattern. Until then, have fun and remember - a good pilot is always learning!

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Softer Landings

by Brendan O'Riordan

Landing a Velocity smoothly and gently is not something that takes thousands of hours. It just takes a little practice. This is something that both the new Velocity pilot and the guys who have been flying their planes for years can practice. A common mistake I have noticed with pilots learning to land the Velocity is that they tend to let the nose of the airplane smack the runway right after the main gear touch. To overcome this tendency for the nose to pendulum forward, give a quick tug aft on the stick as the main gear touch. Use just enough to stop the momentum of the airplane from bringing the nose down, remember too much back stick and you will start flying again. This is something that takes the new pilot a little practice to get his/her timing down because you have to know when the mains are going to touch so you can be ready with the stick input. Once the main gear is on the ground you should not stop flying the airplane. Now you have to fly the canard. For practice, when I land, I keep the nose wheel off the ground as long as I can and let it down just before the canard stops flying. This is a good technique to practice because it gets you in the mindset of not letting the nose wheel smash into the runway. Some of you may be thinking " I do that and my nose wheel still bangs into the runway." First, airplanes that have everything and the kitchen sink thrown in for instrumentation tend to be very nose heavy. The heavier the nose is the more of a "tug" on the stick aft you will need to keep the nose in the air. Second, if you are one of these pilots who are landing their plane at higher speeds than normal (around 75 kts. at touchdown), the plane's momentum forward when the mains touch is greater, and everything is happening faster. So be kind to your nose gear and passengers and practice.

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Short Circuit

by Martin Hadley

CONNECTORS

There are many several different styles and sizes of quick disconnect connectors used in aircraft. They range from single wire to large, multi-wire cable capabilities. Use of quick disconnect connectors provides for ease of removal and installation of objects and devices that may require repairs that are not easily made while in or on the aircraft.

There are three important decisions to make about selecting any connector. First, how many different size wires will be run through the connector? Select a connector that will meet your needs with regards to current requirements of the wires going through the connector. Second, can the connector be secured into place? Aircraft are inherently wonderful at vibrating things loose. Make sure the connector has some mechanical means which will prevent it's separation from the connector it is attached to. And last, does it need to

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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.

Ideas for Fitting Doors

Al Gietzen, Vista CA
ALVentures@msn.com
Velocity, RG Elite

CUTTING THE RIGHT HOLE

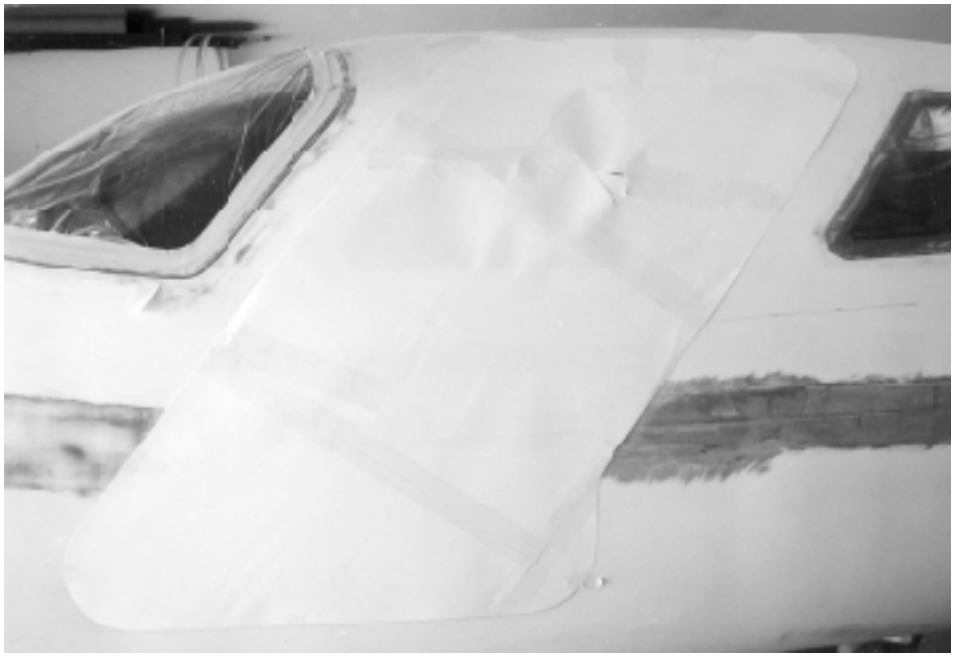
I would suggest not relying on the pre-drawn lines for the door cutout; and with that frame on the door, it's hard to get a good idea of the door outline by holding the door up on the fuselage. After trimming up the door flange, I taped together a few pieces of 18" x 24" drawing paper and then laid that over the outside surface of the door. After a little fitting to account for the slight compound curvature I cut around the edge to give me a nice template.

Tape this onto the fuselage using the existing lines as a reference (like maybe one of the bottom corners) and complete the alignment by holding the door over the template against the fuselage; making sure the door is properly flat against the top in the hinge area. Once you've placed the template (photo at right top), drawing a line around it gives the outline where you will eventually cut through the outer skin and foam. Using some fine-line tape, define your cut line 5/8" inside the template line and go for it with the saber-saw (photo to right bottom). Once you set the door into that cutout you can see if any adjustment is necessary. My line deviated from the predrawn line by more than 1/2" in the top area. I was very pleased with the fit.

USING SOLAR HEAT TO BEND THE DOOR. SAY WHAT?

My pilot side door fit nice and flush, surfaces within about 1/16" all the way around (I got lucky). Not so lucky on the other side. It conformed nicely to the fuselage except for the lower part from the lower front corner, around to that inside corner part way up the back. At the bottom rear corner the mismatch was 1/4" too far in.

I marked on the door how much it was off at a few points. Then I cut a 3/4" plywood piece roughly the shape of the bottom part of the door. Stiffened that up with a couple pieces of 2 x 4, and, with the appropriate spacers, clamped the door to it (inside of the door up), pulling it to the right shape. Then painted the lower portion of inside of the door



black with washable poster paint. Drilled a hole into the edge of the door frame for a thermometer just in contact with the inside surface of the door frame. Put this setup out in the Southern California sun on a 80 degree day.

I was pleased (amazed, actually) that the temp came right into the 135-145 degree range where I wanted it. Released the clamps after 3 hours and found it about corrected about 1/3 of the way. Next day put it out for 5 hours. Viola! Door now fit just as nicely as the pilot side. Novel; but it worked. Your mileage may vary.

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Fuel Tank Leak Repair

From Al Gietzen, Vista CA.

I did (I thought) a thorough sealing of the strakes with three coats of epoxy, and used my "foolproof" closure method (see also http://home.utm.net/alventur/strclos.htm). Yet a leak test with air at typical fuel pressure had shown a small leak. Leak rate of air was somewhere around 0.5 to 1 cu. in./hr; small enough to be very hard to find, but too large to ignore; especially if it might be coming into the cabin area.

I decided the best way to find it was to use a bit of detectable gas in the tank and a leak detector. The EPA not withstanding; a bit of freon works well. After searching all around the tank for a couple of hours (mostly eliminating false alarms), I found a couple of pinhole exits coming through the inner skin of the lower strake near the outboard end, about 7" outboard of the outboard bulkhead. This was near the leading edge of the foam core where the inner and outer skins come together.

I chose to cut in through the outside skin under the outboard bulkhead, to head it off at the pass, as it were. I ground in just to the inner skin from just below the leading edge of the strake, down and back about 3 inches into the foam sandwich area. With the leak detector it was very easy to find that the leak was a single channel (maybe less than a square millimeter) between the skins of the lower strake right at the edge of the foam where the two skins come together.

It continued inboard right along the leading edge of the foam where I chased it inboard for about 10". At that point it diffused into the foam a bit, so I pulled about 0.5 psi negative pressure in the tank and applied thickened epoxy. This stopped the leak; and I then back filled the cutout with microglass. After cure I sanded flush and covered it all over with a couple plies of fine BID.

Somewhere along/near the leading edge of the foam I obviously had a pinhole entrance through the inner skin. My guess is that the little continuous channel between the skins in that location is not unusual in the Velocity strakes. It is a natural path for air to exit when the skins are bonded. I suggest it worthwhile for a builder to apply 4-5" strip of fine BID on the strakes from the leading edge back over the tapered area of the foam core to preclude the problem.

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The Insurance Issue

From Ray Flade, Los Angeles, CA

Just a short note to provide your readers with some additional info regarding Insurance on Velocity Aircraft.

I just purchased Velocity-173/FG Elite (N137V) from Wes Rose in Michigan, who did a beautiful job of building this aircraft! Wes is now starting the build on an XL/RG, which he is planning on powering with a Lycoming IO-540.

Anyhow, I remembered the article Duane Swing wrote in a previous *Velocity Views* regarding the problems folks might face trying to properly insure their Velocity aircraft. Since I had to procure insurance before I could fly my new Velocity home from Michigan to California, I called AOPA Ins. and asked for a quote. YIKES!

Needless to say, since I'm a low-time pilot (Just over 300 hrs), and with only about 10 hours in type (including Velocity-West Factory Training by Scott Baker at Lincoln) I only got two companies even willing to give me a quote, Avemco WAS NOT one of them, And the quote was very expensive, at least for this beginning year of coverage.

In an effort to get a somewhat lower quote I decided to call Avemco myself to see if I could do any better on a lower premium. Here's what the Avemco Broker told me:
- They won't even speak to anyone who doesn't have at least 500 hours total as a pilot.
- They won't take anyone who doesn't have at least 100 hours in type (Velocity)
- They WILL NOT accept anyone who runs an Automotive Engine in their Velocity.
- They WILL NOT accept anyone who uses an IVO Prop on their Velocity.

This seems pretty tough on us folks who need to build some Velocity-type time. How are we supposed to get our experience if we can't get insurance? I will tell you that the two quotes I received were not even close to each other, which is even more confusing to me. One was $9850/Yr. and the other is $5450/Yr. ($1,000,000 MAX, $100,000/Per Person) Plane covered for $90,000, with 10% deductible.

I should do better next year since I'm flying alot, and should have the minimum 100 hrs in type, and maybe even the 500 total by then. I've got almost 35 hours in the Velocity already, thanks in large part to the long round-about route I had to take flying from Michigan to California via Louisiana & Texas due to mid-west weather!

We were even shot at by US ARMY Artillery fire over Fort Sheppard, Texas, but that's another

Continued on next page

Builders Forum

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story... (The ARMY forgot to tell ATC that they were activating the MOA...as if the weather wasn't enough of a challenge, eh?)

Well, gotta run for now. I hope some of this info is useful. As I write this, my wife Donna and I are planning to bring our new Baby to the Velocity-West Fly-In, June 12th, at Lincoln, Calif. We're looking forward to meeting new family.

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VELOCITY + 100 RACE = FUN

From Don White, Orchard Park, NY

This story began as a challenge tossed at me by airport friend , Rich Jankowski. Here at my home base of North Perry (Hollywood) HWO, Florida, Rich has a beautiful and very fast RV-6 which he flew in last year's race. "Don, how about entering your Velocity in the Sun-N-Fun 100 mile Race, it is REALLY a lot of fun."My log book showed about 55 hours since first flight on Aug 8, 1998, with virtually no time at full throttle, low level, so seemed to be a good time for a REAL TEST. Mailed my $20 fee check to Aircraft Spruce and requested entry in 4 seat canard class.

The course was take-off 27L, turn to 220 heading for 38 miles, turn at high smoke stacks on edge of a lake to 095 heading. At 30 miles , cement plant, turn to 356 heading and 32 miles back to Lakeland, Runway 27. Rich gave me all info and said second turn, cement plant, is a little hard to find from the air. So on my way to Lakeland, I scouted both turning points which helped me for the race. If you believe in problems that come in "3's" then here were mine. Was late for my first briefing, as misread info, was late for second briefing, as was at my plane talking and lost track of time, misplaced keys and had to disconnect mag wire and jump starter to start engine. Fortunately Aircraft Spruce briefer gave me late private briefings and allowed my entry to stand. Finally I added a big number "5" with black tape on pilot side of fuselage for turning point observers to spot.

Race day, Monday April 12th, dawned with some fog so our take-off time was delayed till about 10 am. Was quite exciting to line up and prepare for take-off surrounded by legends such as Klaus Savier and his VariEze. Was also a little nervous time as my N19DW had never flown full power for any length of time. We were lined up 3 abreast on 27L, then every 20 seconds, a flag was dropped and timer started for the next take-off. I firewalled throttle and mixture and prop were already at firewall. Immediately retracted gear and turned to 220 heading just after campground. Throttle and mixture remained firewalled for whole race, but backed off on prop to just under 2700 rpm to stay out of red. Originally MT prop maxed out at 2670 rpm so I had adjusted governor up to 2730 max. My altitude was 800 to 1000' above ground and seat belt real tight. Still hit the ceiling twice with my head due to rough air. At two turning points and crossing finish line I announced my plane number and race number on the race frequency. The timer stopped when I crossed starting line at 500' agl and full throttle. My airplane performed flawlessly with every gauge in green and oil temp max 200F.(Have only one large oil cooler in the nose). You burn a LITTLE more fuel at this speed, fuel flow reading was 24.5 gph. So I was very happy with the airplane performance.

My elapsed time from standing start to crossing finish line was exactly 27.00 minutes for an average speed of 182.22 knots or 209.82mph. As you may have guessed, my plane was the only 4 seat canard in the race so I was placed in 250-300HP class with a Questair. two SX-300's, a Berkut, and a 260HP RV-6. I believe the only other 4 seater in the whole race was a White Lightning. A little ironic since I picked the name for my plane over 25 years ago," WHITES LIGHTNING",so am often confused with that "other" Lightning. The Questair was overall winner at 298mph, Claus Savier's VariEze did 234mph and friend Rich was happy with his 220mph in his RV-6.

This story is ending with a CHALLENGE. Let's see how many Velocitys we can have in the S-N-F 100 race in 2000???? The rule is there must be 3 or more entries to have a class, and therefore a trophy awarded for the winner. Hope the NACA engine cooling scoops on top of fuselage being tested by factory work out. Eliminating air scoops under wings should increase top speed. So start planning now and hope to see you at the drop of the flag in 2000.

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Update on my Ivo Prop and Franklin engine

From Rick Lavoie, St. Augustine FL

Having just completed yet another long cross country trip, I now have 320+ hours on my Ivo prop / Franklin engine combination. Both are performing to my expectations.
Ivo Prop:

Ivo Zdarsky is now confident that he has the bugs worked out of the motor that turns the Magnum blades. He now uses new larger hardened gears. Also, they now use epoxy to prevent a wire from coming loose due to vibration. My present motor has been working just fine, but to be on the safe side, I sent it to Ivo to verify that all the new mods had been installed. Ivo recommends that you do the same with yours.

Ivo also has a new method of securing the leading edge protectors. I also sent my blades in for this upgrade as well and recommned you do the same.

Regarding the brushes wearing out, Ivo has addressed this with a lighter spring that slows down the wear greatly.
The "lamp shade" wire has been replaced with aviation grade wire as well.

It is clear to me that Ivo has and

continues to try to resolve any problems that I (and others) have encountered. For this reason, I have stayed with my Ivo Prop. I still check the blades, tape, and torque prior to each flight, to be on the safe side.

The Franklin engine continues to perform fine. About 75 hours ago, I ended up pulling the #6 cylinder and found a busted oil control ring. The ring was probably busted during my first few hours of flight, due to the high oil and engine temps I was then experiencing. I had suspected a problem with the oil control ring for quite some time. The odd thing was that my compression was so good (79/80), that my local IA mechanic insisted that all the rings had to be fine. The signs all added up to pulling #6 for a look. I was burning 1 quart of oil every hour and a half, there was dark soot on my cowl near the left exhaust pipe, dark soot on one of three prop blades, and #6 plug kept on fouling (gap got bridged) every 25 hours or so. Prior to pulling the cylinder, I borrowed a scope and took a look inside each of my cylinders. The #6 was missing "cross hatch" marks, that show the rings properly seated. At that point, I new that I'd find a problem with my oil control ring for sure!

On another subject, I want to share an experience that I had while running straight mineral oil. On a cold morning, immediately after take off, I noticed that my oil temps were going way up. I reduced power and landed. I shut down for a while, and gave her a good inspection. Finding nothing wrong, I re-started and took off. All was back to normal again with my oil temps. I figured out that the mineral oil was much heavier than the 50/15 that I had been running, thus increasing the resistance to the oil by-pass group. The next time this happened (next time at take off), I simply reduced the throttle all the way back for a few seconds, then when I increased power again, I noticed that in a few minutes, my oil temp was back on its way down. Sounds crazy... but the combination of straight mineral oil, plus a cold morning, increased my pressure differential enough above 19-23 psi (psi with newer PZL spring - see PZL Service Letter published on page 10 of Vol 16), to stop the oil from flowing to my oil cooler (cold made the mineral oil even thicker). Since then, I am back to using AeroShell 15-50 semi synthetic, and I have not seen this problem again.

For those of you that have not followed the oil temp problem of installing a Franklin on a Velocity, here is a very brief summary. Unlike the Lycoming, the Franklin has no "vernatherm". Instead the Franklin uses a bypass group and has two ways to bypass oil from getting to the oil cooler and oil filter. Both are pressure sensitive (not temperature). The one we are concerned about is the "differential valve" which normally bypasses oil at or above 10-14.7 psi. The unique Velocity set up of having an oil cooler in the nose adds resistance to the oil lines, due to the length and diameter (1/2") of the oil lines. Another words, the Franklin normally has an oil cooler installed close to the engine (within the engine compartment). Thus I believe the problem is the flowing of oil measured by resistance (pressure differential of the oil leaving the engine and re-entering back to the engine). Dave Lincoln proved this mathematically! I proved it practically by measuring the differential pressure with two pressure gauges.

If you have the original spring, then this pressure differential is set at 10-14.7 psi. If you have installed the new PZL spring, then the pressure differential is set at 19-23 psi.

So the real problem is having the oil cooler in the nose... this causes the extra resistance. If you leave the oil cooler in the nose (which is what I did), then you need to address the resistance. What I did is documented in great detail in past newsletter articles (starting with Vol 12 page 16), so I will not go into much detail. But here is a summary of what I did:
- Complied with PZL-F/1/98 and changed the stiffer spring to p/n 26.11.1252
- Replaced 1/2" with 5/8" oil lines
- Replaced original oil cooler with the next larger size (1" taller).

If you are planning on installing a Franklin, you may want to become familiar with the background on all this. Start with Vol 12, and follow the thread of information that continues with subsequent volumes. You should also download the PDF files (faxes from PZL). Instructions for this are printed on page 13 of Vol 14. Everything that I know about this problem has been documented in writing. So please do not call me with questions unless you have read all of this information first.

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Short Circuit

Continued from page 11

provide for environmental protection"? An open shell connector exposed to the outside elements, such as in a wheel well, will deteriorate much faster than one that is environmentally sealed. Environmental connectors get very expensive very quickly, so try to limit their use if you are building on a budget.

One of the more common locations and applications of quick disconnect connectors is in the wing root areas to allow ease of removal of the wing(s). Disconnecting position and strobe light wiring, as well as potentially pitot heat, landing light, or even taxi light wiring when removing a wing can be greatly simplified with the use of a wing root disconnect connector.

The three most common quick disconnect connectors are the Molex, D-Sub, and Circular "C" styles.

Molex connectors are generally identified as the white square or rectangular plastic housing type. These type connectors can be purchased in many different electrical and electronic supply shops, including Radio Shack. While many people tend to want to turn their nose up at these connectors, I would point out that Cessna has used these as wing root connectors in virtually every single engine aircraft they have produced since the 50's!

Molex connectors, as it is with most quick disconnect connectors,

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MARKETPLACE

MARKETPLACE

Marketplace Advertising Info

Commercial vendors wishing to place an ad in the Velocity Marketplace (includes ad on the internet web site) should contact Rick Lavoie by:

E-mail: rick@lavoiegraphics.com
fax: 904-461-3146
voice: 904-461-6912

Short Circuit

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are "keyed" so that the male and female connectors with not 'mate' together incorrectly. They typically have a snap lock mechanism incorporated in the outside of the housing to prevent the two connectors from coming apart.

I must concede that over a long period of time, this style connector is prone to intermittencies due to corrosion, or oxidation to the contacts. But that usually takes about 25 years to come into play. When an investment of $6 -$10 for this style connector is pro-rated over that length of time vs. a connector that would cost $40 to $100 that would eliminate that problem, I would opt to save a few bucks here.

D-sub connectors are one of the most common connectors used today, even if you don't know them by name. They are used in computers, radios, airplanes, industrial equipment, everywhere! These are most often characterized by the two rows of contacts in a housing that is slightly wider across the top than at the bottom. If you have a computer, remove the printer cable connection on your computer and look at it. D-Sub! Most game port connections are D-Sub. The connections in the back of a Trimble (Terra) radio or a Century Autopilot rack is a D-sub style connector. They usually come in 9, 15, 25, 37, and 50 pin configurations with contacts that are good for 3-5 amps per contact.

It is virtually impossible to connect a male and female D-Sub connector incorrectly due to the external physical dimensions of the connectors. These connectors all come with a mounting plate (of sorts!) integrated into the connector. There are several different ways to lock the male and female connectors together. The most common is by using short threaded spacers and screws which are usually provided or made readily available. Another way is to merely run a small ty-wrap or string tie through the two mounting plates.

D-sub connectors are readily available at all electronic shops. Again, Radio Shack is a good source for these connectors up to 25 pins. If you elect to use this style connector, be sure to incorporate the backshells offered with them to provide for proper strain relief on the wires entering the connector itself.

Circular "C" connectors are characterized by their round black plastic housings with a rotating 'collar' lock. The molded connector housings and "keyed" so that when you connect the male to the female connector, they cannot be incorrectly connected.

These connectors are not readily available to the general public, by can be purchased through many mail order electronic supply catalogs. Many AMP electrical dealers can also order these for you. These connectors come in a wide variety of configurations. Some come with all the same size pins and sockets for systems with the same current requirements, some come with several different size pins and socket arrays for multiple current requirements.

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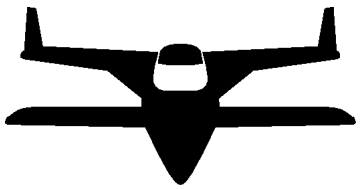

Soundproofing Insulation For Sale

Purchased from Wicks catalog (p169) - closed cell vinyl/nitrile insulating foam:
#SP-250 1/4" thick foam
#SP-500 1/2" thick foam
Have 10 linear feet of both, paid $210, will sell for $125 plus shipping.
Call Joe Vittone at 305-374-0401 (Florida)
giuseppe27@aol.com

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!

Velocity For Sale Sealed Bid

United States Marshals Service sealed bid sale of forfeited aircraft. Velocity Fixed Gear, minimum bid $35,000.00, minimum bid deposit $8,750.00. Serial Number DMO-073, N57V, approx 75 hours total time, Engine 1928 SMOH. Viewing will be in Midland Texas July 26 & 27 with Bid opening July 28, 1999, 12:01 PM, CST. Contact Aero Mod Service for Bid package, terms and conditions. 915-563-1666

Newsletter... Please Help!

Publishing a newsletter with such a small subscriber base is quite a challenge. Keeping cost (and hours spent) down are important. Here are two things that you can do to help Velocity Views:

- **Renew on time!** When you renew late, you cause me all sorts of extra work, as I now need to process each late renewal by hand. Next year, there will be a **$5 late charge fee** for renewals that come in after December 31, 1999.

- **Pay by check**...Credit card option is only for international subscribers (to make currency exchange easy). The time it takes to process credit cards is very very inefficient and costly.

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Factory Information

Velocity Inc.
Factory & Home Office:
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Sebastian FL 32958
Ph: 561-589-1860
Builder Assist Ph: 561-589-0309
Fax: 561-589-1893
Internet web site:
http://www.velocityaircraft.com
E-mail address:
anyone@velocityaircraft.com

Velocity West (Sales & Service)
1850 Flightline Dr
Lincoln CA 95648
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Lavoie Graphics
26 Marshview Dr
St. Augustine, FL 32084-5873
Rick Lavoie,Editor
904-461-3146 (fax)
e-mail: rick@lavoiegraphics.com

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