

VELOCITY VIEWS

Volume 28

California Wine Country Fly-in

By Scott Baker

Velocitites gathered for the California "Wine Country" Fly-In on Sept. 2nd & 3rd at the Santa Rosa airport.



Folks who live near the Sonoma and Napa County regions of northern California certainly have something special. While the rest of California baked in the summer heat, the airport at Santa Rosa, California, host location for the Second Annual West Coast Velocity Fly-In, was a comfortable 80 degrees with bright sunshine. Duane and Bonnie Swing and Scott Baker were on hand to greet about 35 Velocity owners, builders, and enthusiasts on both Saturday and Sunday during the Labor Day weekend.

Finding the EAA Chapter 124 facility on the "far side" of the airport proved to be an exercise in cross country (land) navigation ... but, once there, was an excellent location to have the program. Many thanks go to the good folks at Chapter 124 for allowing Velocity, Inc. the opportunity to use their meeting rooms, picnic tables and BBQ grilles.

Duane and Scott fired-up the charcoal grilles and cooked up BBQ

chicken and hot dogs for everyone on Saturday. We are still trying to figure out how 35 people managed to eat 70 meals ... it must have been one hungry crowd!

Sebastiani Vineyards in downtown Sonoma was the scene of a wine tour, tasting and picnic dinner on Saturday. Though the wine tasting building was closed for renovations, the hospitality folks at Sebastiani did a wonderful job of dressing up a secluded picnic area, complete with wine bar, which included a wide selection of Sebastiani wines. With glasses in hand we toured nearby vineyards and listened with interest to our host who spoke about the winery and how grapes were grown to produce the special wines from this region. After a gourmet picnic dinner (it really was delicious!), we were invited to browse through an area where Sebastiani wines were stored and to purchase wines direct from the winery.

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Wine Country Fly-in

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On Sunday we heard from Bob Van de Wille, who is an exceptionally talented graphic artist who has been involved in the development of several Velocity paint schemes. Bob presented hand-outs for the paint schemes of David Karas' XL-RG (David conducted his first-flight of his aircraft about 3 weeks ago and is currently in the Phase I fly-off), and of the new factory XL FG (see photo at bottom of this page). Van de Wille

is able to work with you by telephone and email - and is able to develop a custom paint scheme (in most instances) in less than 4 hours. If you are wondering just what paint scheme to choose for your Velocity, you might want to give Bob a call for inspiring ideas. Contact Bob Van de Wille at: bob@pixelrangers.com.

Big "thank you's" go to Tim Crawford and Doug Shell, who flew their Velocity aircraft to the program. Brendan was delayed by weather and many people were beginning to

wonder if there was such a thing as a "flying" Velocity. Because of various circumstances, all 6 of the nearby Velocity aircraft were unavailable to attend the fly-in. We are especially thankful to Tim and Doug for having their aircraft on display.

A special thank you also to David Karas for volunteering a lot of his time and energy to help coordinate the fly-in. David, your time and efforts are greatly appreciated!

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Bob Van de Wille talks about Velocity paint schemes at the Wine Country Velocity Fly-In



Doug and Jean Shell proudly display plaques recognizing their First Prize award for their Velocity at the Fresno Fly-In.



New factory XL FG paint scheme by Bob Van de Wille



Tony Babb fantasizes about his newly purchased Velocity Standard FG

Velocity Ground School at Sacramento

Velocity, Inc. recently hosted a ground school training program at Mather Field in Sacramento, California. Velocity instructors Brendan O’Riordan and Scott Baker conducted the program, which included instruction in aircraft systems, a review of operating limitations, check lists and pre-flight inspections, and weight and balance exercises. Those who complete the course now meet the insurance company requirements for the ground school portion of the Velocity Flight Transition Training Program (factory check-out). The program at Mather was a first-time program to examine the merits of offering flight and ground school training in a regional setting, making it more convenient for Velocity customers to receive training close-to-home. Based on the enthusiasm of those who attended the class in Sacramento, we hope to offer more regional programs in the future. The flight-training portion of the program was postponed due to the late date that the new XL-Fixed Gear training aircraft emerged from the



Phil Hooper and Tony Babb inspect an F-16 on display at a local flight museum

paint shop. Stay tuned for a scheduling announcement as to when we will return to the western region to offer this important training.

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Events

AirVenture Oshkosh 2001

What beautiful weather! For those who did not attend Oshkosh this year, you missed what many were reporting as the best air show weather in years. No rain, tolerable temperatures, a gentle breeze for much of the day – lots of aircraft to see, great air show performances ... just another day in aircraft paradise!

Velocity, Inc. was in attendance with the showing of the factory SUV, and Wes and Becky Roses’ beautiful XL-RG on static display at the Velocity tent. Doug Shell christened his XL-RG with a long cross-country flight from Fresno, California to Oshkosh – and then graciously allowed Velocity to show his aircraft for several days. Brendan O’Riordan and Nathan Rigaud performed demonstration rides using an XL-RG belonging to Marty Horowitz (again, thanks Marty!) from the Fond du Lac Airport.

About 100 Velocity owners, builders, and enthusiasts attended the Velocity Dinner. Duane Swing spoke briefly on the latest “happenings” at Velocity, which included the announcement that Velocity hoped to begin an engine/propeller development program in cooperation with Jabiru Aircraft. We hope to install their new 8-cylinder, 200 hp engine in the SUV in combination with a new composite 4-blade, variable pitch propeller. Duane also hinted that there might be a twin-Velocity coming up in the not too distant future.

There were no winners in the Photo Contest. What was hoped to be a great gathering of photographs turned out to be a big disappoint-

ment. Only one builder bothered to send a few snapshots. Perhaps some other day ...

It was great to reunite with Velocity friends and catch up on the latest building developments. It sounds like quite a few Velocity aircraft will be making first-flights in the coming year!

Virginia EAA Fly-In

Velocity recently attended the Virginia State EAA Fly-In hosted at the Dinwiddie County Airport in Petersburg. This was a first-time event for Velocity and we were pleasantly surprised at the level of activity and interest. Velocity had planned to bring two aircraft to the program, but the SUV was blocked by bad weather in northern Florida that persisted throughout the event. Lots of folks saw the Velocity XL-RG up-close – and as always, the comments were most favorable! Look for Velocity to attend the Virginia program next year!

A special thanks goes to Jack Sheehan for volunteering to help host the Velocity area. Jack lives in the Yorktown area and is presently building a XL-RG.

Northwest Regional EAA Fly-In

Number three in size behind Oshkosh and Sun ‘n Fun is the Northwest Regional EAA Fly-In, which is hosted at Arlington Airport (just north of Seattle, Washington). Velocity instructor Nathan Rigaud and Mike Snyder (Inspector and the lead A&P in the Velocity Service Center) teamed up for a “west coast adventure” – which was a first time west-of-the-Rockies flight experience for the both of them. Says Mike during a take-off at an airport with a 5,000’ density altitude “Ahhh ...Nate, shouldn’t we be airborne by

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Events

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now?" Those of us who have flown in the western states smiled at their stories and wished we had a few 100-mile visibility days here in Florida!

Nathan performed a dozen demonstration rides during the program (was the aircraft ever on static display?) and, with the cooperation of local controllers, ended each flight with a fly-by over the field.

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Production News

by Scott Baker



Important Announcement to those who have purchased a Split-Kit

Velocity, Inc. offers customers who have purchased a Split-Kit, price protection towards the purchase of the second part of the split kit for a period of 12 months from the delivery of the first kit. After a two-year stay, Velocity kit prices were increased an average of \$2,000 per model on August 1, 2001. To those who have purchased their Split-Kit and have yet to exercise their option to purchase the second part of their kit within the time period allowed, we would like to extend the deadline to October 15, 2001 in order to give you a little extra time to make your purchase without being subject to the price increase. Please call Duane Swing or Scott Baker for



Sonny Eymann from Key West, Florida with his Continental IO-550N engine

more details on moving ahead and saving money on the second half of your Velocity building project.

Continental 310hp Engine

Development work on the Continental IO-550N engine continues as molds are made to fabricate the engine cooling plenum; engine mounts are constructed; and a new exhaust system is put together. We were hoping to have this power plant first flown in the new factory XL-RG demonstrator, but it looks like Sonny Eymann (see photo above) from Key West, Florida, is going to beat us to the punch. Sonny is working on completing the finishing touches of his XL-RG at the Velocity Service Center – which includes the installation of the new Continental. For those who plan a future visit to the Keys, be sure to look up Sonny Eymann, owner and operator of Sunny Days Catamarans, a first-class operation that specializes in providing day trips to the Dry Tortugas and snorkel trips to the reefs south of Key West.

Epoxy Shelf Life

Do the epoxy components that come with the kit have shelf life? Yes, they do! The manufacturer of the EZ84 hardener (the caramel colored liquid) says that the product has a one-year shelf life - adding, "...however, it typically will continue to perform long after that." Hardener tends to become thick and even crystallize after long periods of storage, especially at temperatures below 100 degrees F. If the hardener becomes thick, lumpy, or crystallized, you might want to try to put it back into solution by heating the product in a "hot box" or hot water bath. Bring the temperature up to 100 to 130 degrees and allow the product to warm overnight. Stir occasionally. Inspect the bottle to make sure that the entire product goes back into solution. If it appears to be lumpy or to have a consistency of thick syrup, then discard the hardener and purchase new components. If everything looks "normal", be sure to mix several test batches to make sure the components mix together and cure properly. Let your test batch cure in an elevated tempera-

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Production News

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ture (80 degrees or higher) overnight – and give it the “scratch test” the next day. If you are able to scratch a groove in the surface of the cured epoxy, you should be “good to go!” The guidelines for the DER324 resin are much the same as the hardener. If things don’t look “normal” after reheating, be suspect. If in doubt, replace your old epoxy with fresh components.

Brazil Wings

As Duane mentioned in his report, the fastbuild molded wings have been structurally tested and flown on the newest addition to the Velocity fleet – an XL Fixed Gear model – which will be used as the primary transition training aircraft at the Velocity Service Center. We expect to begin shipping the new wings in October. Our first priority is to fulfill the needs of our several customers who have had their wings on back-order. It is important to note that the pre-molded winglets have undergone an extensive redesign with respect to their internal structures. The finished shapes of the rudders were also altered to provide more loads on the winglets. The winglets will be detached from the wings to make things easier for shipment.

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Daren Johnson and Jim Parrott working on fastbuild wings



Dave Griffin sanding a canard spar

New Faces

We would like to introduce Tonya Hiscott and Rhonda Simmons. Both are employees who you will be dealing with in the Velocity front office.



Velocity welcomes our new office receptionist, Tonya Hiscott. In addition to telephone duties, Tonya is responsible for Info Kit and Merchandise sales. She is also your contact person for Construction Videos and Construction Manuals.



Rhonda Simmons joins Velocity, Inc. as our bookkeeper and accounts payable person. Rhonda recently completed her academic education, earning a degree in accounting from the University of Southern Mississippi.

Time to Renew for Your 2002 Calendar Year Newsletter Subscription!

See Invoice on Page 17 of this issue (or the last page of any issue) for details.

Payment is **due no later than December 15th**. Renewals received after December 31st will be assessed a **\$5 late charge fee**.

Thank you for your support!

Rick Lavoie



by Duane Swing

Brazil Wings

In the last newsletter we informed you that we had completed the load testing of the new winglets for the Brazil wings. This was accomplished by standing the wing on edge (winglet horizontal at the top) and stacking 1080 lbs. of concrete on it. The calculated lift on the winglet under the worst case in flight would be about 200 lbs. We loaded it to OVER FIVE TIMES what it will ever see flying. We also tested for twisting strength to insure a flutter-free surface.

Flight tests to well over 200 knots have confirmed our calculations and we will soon be sending out the new winglets as soon as they arrive from Brazil. For those waiting for the Brazil wings and winglets, your wait is just about over. Again, as soon as we receive the new winglets, everything will be coming your way.

New XL Trainer

N271TC is now flying and will be used for demos and flight training. This is a fixed gear Velocity with

dual throttles and dual airspeed indicators. One special feature is the Retract Gear control panel. Our instructors have complete control of what lights come on, when the gear horn blows and generally can make your life miserable if you fail to put the gear switch down and confirm gear down and locked. This feature is, of course, for those of you who have an RG Velocity and come to us for training.

NACA Engine Cooling System

We have been criticized for having an inferior design on our NACA designed cooling ducts and that some of our customers were experiencing very high cylinder head temperatures as a result. The NACA ducts and plenum system in our new trainer is stock, out of the box system and is being used on a Fixed Gear XL Velocity. Installation is probably the most important element of any cooling system and we were not clear enough on the importance of sealing the plenum and all the component

parts to insure that all the air available for cooling is actually passing through the fins and not blowing out some holes. This is especially true on cylinder #6 (co-pilot side closest to the firewall) where it is necessary to prepare an aluminum baffle to cover the fins on this cylinder. The plenum could not be installed with the cylinder cover built into the fiberglass part. We will be revising the instructions to clarify these points. On our freshly overhauled Lycoming IO540 260 horsepower engine, we see maximum cylinder temperatures of 380 degrees in cruise and no more than 405 degrees in prolonged climb. Red line on the Lycoming IO540's is 500 degrees. These measurements are with a JPI EDM 700 gauge with a guaranteed error no greater than 4 degrees.

Vortex Generators

One of our builders called me and mentioned that the plastic VG's were breaking off quite easily and perhaps some of the materials were not up to specification. After checking some of them here on our ramp, it was discovered that the sun's ultraviolet rays destroy the compounds in these VG's. Conclusion: If you have not yet installed the plastic VG's, rough them up with some Scotch pads and give them a good UV-protecting paint prior to installation. If you have already installed the VG's and find them to be brittle, remove them and give us a call and we will replace them with a new set at no cost. Remember the new ones also need a UV-protected paint.

Matco Compound Brakes

After a great deal of testing of the Matco Compound brakes, we wish to report that there are some unresolved problems with their function. Stopping power is just fine and we are able to control the (low) transfer of heat to the fiberglass gear leg. The major problem is that the heat build-up internally causes swelling of major components and creates a dragging



Factory's new XL FG to be used for demo flights and flight training

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Factory News

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brake. After just several months of use, we found that our take-off roll was increased by a good 30% – due entirely to distortion of internal components that caused the brake to drag. We have yet to identify the cause of this problem with Matco – and so we do not know what the “fix” is at this time. Pending the final outcome with our discussions with Matco, we suggest that builders who have ordered the Compound brakes please keep them in new condition in the event that they must be returned to Matco. For those who are operating the Matco Compound wheel and brake, we suggest that you monitor the performance of your brakes and frequently clean the brakes to ensure that brake dust does not build-up and become compacted. We are testing the Matco W600XT brakes with semi-metallic brake pads and the Grove twin puck brakes on two different XL’s and will let you know which of them gives us the best brake for the buck.

Replacement Tires

One of our builders had an interesting (and costly) thing happen to him. He replaced the main tires on his XL RG and did not do a retract test prior to flight. You guessed it... the tires were slightly larger than the ones that came with his kit and stuck in the wheel wells. He tried everything to get them down but it was just not going to happen. The cost and time to repair the damage to the airframe is not much. The cost of repairing the M-T constant speed propeller, however, is high. Several of you will probably point out that Lycoming requires a complete tear down inspection of the engine for any prop strike. Keep in mind that Lycoming is making the assumption that you are flying with an aluminum propeller and it is the aluminum propeller that can do damage to the crankshaft and cam gear if a prop strike happens. The cost of a complete tear down inspection can run as high as \$5,500. We have yet to

see any damage to a Lycoming engine as a result of an M-T prop strike. Remember the M-T uses a wood core for the blades.

The warning nature of this story is quite clear: Do a retract test every time you replace the tires on your RG airplane.

Service Center News

We have seen four Velocities take to the skies after completion in the Service Center. We have four more that are very near to completion and at least one, possibly two, of them will have flown by the time you read this. These are airplanes that have spent their entire life here at the Center and most are being worked on full time.

We have also worked out a good deal on having the airplanes painted in a large paint shop near us. They specialize in large corporate jets, however, we have a great working relationship with the manager who has worked for us in the past and likes the Velocity. The primary advantage of having the work done by this company is that he will move us up to the front of the schedule. In the past, we would have to give the paint shop at least a three month advanced notice for painting. Most of us don’t know closer than a year when our airplanes will be done and ready for paint. Price of a paint job will vary with the complexity. Expect to pay close to \$4000 for a three-color professional job. If a lot of filling and sanding is required, expect to pay more. He also has a computer generated paint scheme that his girl can work with you to design exactly what you want and be able to see it in color on the screen before you give them the go-ahead. Look at our latest paint colors and scheme for our XL FG on the web site to see what kind of work he can do. Our newest XL design was done using an Apple computer and a special program.

Insurance Stuff

Avemco is still offering insurance

on the Velocity, as before, but it has been reported that their rates are just too high. We have found yet another source for insurance. This company does not cover in every state and you would have to give them a call to see if your state is OK. The major difference is that the premiums are much lower due to the deductible being much higher.

Expect deductibles to be 10% of your insured hull coverage. The liability was also quoted lower than Avemco. Expect the same pilot training requirement and airframe inspection as before.

Call Pam at AUA Inc. 1-800-727-3823 for a quote.

Unlisted Builders Number

Don’t forget to use the 561-589-0309 number when calling on the weekends, after hours and holidays. We will not answer the 589-1860 number except during regular working hours.

Parts Orders

Please don’t call for parts after 4:00pm ET. All our production and shipping people leave at this time and someone who knows nothing about the parts department will probably get your order messed up or you will not get it at all. Many of you know first hand what I am talking about. While I’m talking about parts, please don’t expect Scott, Brendan, Nathan, me, or anyone except our parts department to fill out your parts order. If your call is for tech support and you also need parts, ask whoever your talking to, to switch you over to the parts department. This will create some problems for you if you’re calling on a Saturday for tech support and also want to order a part. I highly suggest you wait until Monday, in this case, to place that part order. Remember, all the tech support people are in a different building and it isn’t easy for us to fill parts orders.

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Safety Corner

Accident & Incident Reports,
Maintenance & Service Difficulties

Service Caution Secondary Door Lock

We have had another customer lose the co-pilot door due to improper latching prior to take-off. In this case the door stayed attached throughout the pattern work and made the airplane almost uncontrollable. A safe landing was made but in all the excitement, the pilot did not lower the gear and a gear up landing was the result.

I just inspected an XL that had no secondary latch on the pilot door. The builder (not the owner) told me the owner absolutely did not want the 3/16" rod sticking through the door and refused to let the builder put it on. From our point of view, the airplane will not get an insurance OK unless some sort of secondary lock is provided. If you don't like the 3/16" rod idea, then come up with something of your own but provide SOMETHING.

I would suggest strongly that a door unsafe warning light be placed in plain view of the pilot to insure that the locking pins are fully engaged and the secondary latch is in place. We do this by installing a micro switch at the base of the lower rear steel pin retainer on each door opening and connect them in series with a ground wire to a light. The light is wired to a 12 volt source. If either door pin is not fully engaged, the warning light will be illuminated. Short wooden pegs are necessary to gap the distance between the bottom of the pins and the micro switches. They can be trimmed to the right length to activate the micro switches that are mounded just under the steel retainers.

Another practice that we enforce here is to leave the doors open at all times. If, for some reason, the doors

must be closed, it is important that the co-pilot door be closed AND LATCHED. It isn't difficult to see what would happen if the pilot got in and went flying thinking the door was latched but in fact it was only closed and only partially latched or not latched at all. Believe me, we all know about checklists but things like this will happen to the most cautious pilots.

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Service Warning

By Scott Baker

In the last 12 months we know of 3 incidents where pilots have started flights with a door not latched and at least 2 flights where the landing gear on retract aircraft were not extended for landing. Thank goodness, there were no injuries – however, in each instance, substantial damage was done to the aircraft.

Are we becoming too complacent in our piloting behavior that we are forgetting some of the fundamentals of flight safety? It happens. And when it does, the consequences (more often than not) are costly and sometimes life threatening.

When we jump in the left seat of our Velocity (or any other aircraft), we become what the FAA describes as the "Pilot-in-Command" ...the person responsible for the safe operation and outcome of the flight. What an awesome responsibility! Are we too focused in family business or job business, that we are excusing attention to piloting business? How well have you prepared yourself to act as Pilot-in-Command?

Are you able to reply

"Affirmative" to the following basic questions?

- Am I safe to act as PIC of this flight? Is my Medical Certificate current? Have I had my Flight Review within the last 24 months? Am I feeling okay physically? Am I taking any medication that might affect my ability to safely conduct this flight and make the right decisions? Am I alert? Are weather and flight conditions within my piloting capabilities and those of my aircraft? If I am to fly at night or carrying passengers, have I logged the flight experience within the last 90 days as outlined in the FAR's?

- Is my aircraft safe and legal to fly? Has it been properly maintained? Have I done a thorough pre-flight inspection using a checklist? Is there enough fuel on board – have I personally checked the level and verified that the caps are secure? Have I checked the fuel sump for water? Have I checked to make sure the pitot heat and aircraft lights work? Are the tires inflated to the proper pressure? Are the tires and brakes in good condition? Geesh!...When was the last time I checked the brake fluid level?

- Am I following safe habits in the cockpit? Is everyone wearing a seat belt? Are the doors safety latched before flight? Are my charts and airport guide stowed within easy reach? Have I conducted my pre-flight checks according to a checklist? Have I reviewed emergency procedures before beginning my flight? Am I looking out for other traffic? Do I practice a "sterile cockpit" within 5 miles of the airport (total focus on flying; passengers quiet and looking for traffic)? Am I totally in control of the approach and landing – or would it be better to go-around?

Obviously this is just a sampling of the many things that we should be doing as pilots to make our flights more safe. I would encourage each

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Safety Corner

Continued from previous page

of us to do more to prepare ourselves to be better pilots. Develop checklists – then follow them! Hire an experienced instructor to fly with you – to make observations – and to suggest areas in need of improvement (don't just chip away at the rust – remove it and make yourself shine). Be critical. Practice and drill emergency procedures. Close your eyes ... can you touch and identify every switch and control knob in the aircraft ... or did you just turn on the pitot heat instead of the fuel pump?

This is a friendly reminder and admonition that we all can be better – and by that I mean more professional – in our pilot responsibilities. Don't be a complacent pilot ... a safe pilot is always learning!

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**Visit
the Factory's
Official Web Site:**

velocityaircraft.com

Flight Check! Be Safe!

Velocity Service Center Inc. offers flight training for builders/pilots to safely learn how to transition into flying a Velocity. Get a **Flight Check Out** prior to your first flight! Flight training is available from:

- Nathan Rigaud, CFII
- Brendan O'Riordan, CFII
- Scott Baker, CFII

The following instructors have also been approved by Avemco Insurance:

- Sam DaSilva
- Mike Gunvordahl
- Mack Murphree

Don't take a chance, get checked out prior to your first flight. Please note that you should be current in some other type of aircraft prior to your Velocity check out. The purpose of the "flight check" program is to transition you from flying other aircraft types (like a Cessna) to a canard pusher (Velocity).

We need your input for this newsletter to be a success!

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

PLEASE!

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

26 Marshview Drive
St. Augustine FL 32080
USA

Factory Authorized Insurance Inspectors

Please make note of these individuals:

Name - Location Home Phone / Work Phone

Brian Gallagher - Murrieta CA 909-461-9990 / 909-696-0160

Barry Gibbons - Colorado Spr CO 719-683-8659 / 719-572-8627

Don Pearsall - Owasso OK 918-272-5551 / 918-474-2610

Mike Pollock - Sachse TX 972-530-8400 / 972-728-2725

Glenn Babcock - Tampa FL 813-677-2543 / 813-604-2637

Wes Rose - Grand Rapids MI 616-772-7235 / 616-530-0255

Jean Prudhomme - Boca Raton FL 954-559-4988

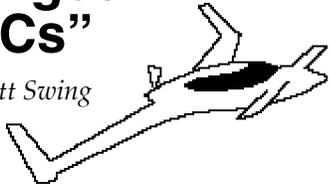
Mack Murphree - Dayton NV 775-246-9364

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2002 Calendar Year
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Velocity Views
Newsletter**

Send in your check today. See page 17 of this issue or the last page of any issue for details. Thanks...

Kit Plans Changes "KPCs"

by Scott Swing



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 146

Affects all non-XLs with overhead cabin vent system.

Manual section 15.2.6

Date of Addition 9-11-01

Overhead fresh air duct affects all aircraft. The XL was the first aircraft to be shipped with an overhead vent system. We have since started to supply overhead vent system on all kits. We supply the original XL system to non-XL aircraft and supply a new shallower style with the XLs. The main reason for the new style is that it is shallow enough to clear the overcenter linkage of the main gear without being modified. Also, this one comes with a flange that allows most of the overhead duct to be glued in instead of glassed in like the other one. In any case, if you have the top NACA and duct and do not have plans for it and cannot figure it out, we can send you some. You would have to mention which plane you have. The change is basically for the XL since there are no instructions for this in the other manuals. First paragraph - The overhead duct comes to you flanged and almost ready to install. It should fit from against the firewall to the overhead switch panel. Sixth paragraph - Fit the duct into position over the NACA scoop and overhead carbon beam. Trim the rear of the duct so that it butts up against the firewall nicely and notch the duct to fit around the beam. Insure that the Triax lay-up for the upper engine mount is installed on the aft side of the firewall, (fuselage completion chapter). Trim the front so you only have about 1/2" of flange left. This

will leave a little more room for the switch panel housing. If that is not already into position, check to see how the two fit together. In the back, you may have to trim the flange away to insure that the forward section of the flange lies onto the top fuselage all the way. When satisfied with the fit, cleco the duct into position. Remove the duct and sand the contact area of the fuselage and duct. Also sand the rear of the duct for glassing later. You should have at least 3/4" of flange (except for the front). Mix up some adhesive and install the duct with clecos. Add additional clecos as needed. Sand where needed and glass around the carbon beam onto the duct and around the back end to the firewall. You may also need to micro and glass over any area back there where you removed the flange. This duct needs to be fairly sealed especially at the back to ensure that water does not enter the cabin. The back of this duct at the firewall needs to have some tubing installed to drain it of any water that may accumulate in it when parked outside in the rain with no cover. Use 1/4" or 3/8" tubing glassed onto the duct at the back and run it down to the floor and out. It can be flush with the outside. Make sure it doesn't interfere with the operation of the gear system. The only thing left to do is to mount your vents and lights. It is up to you where you want to install these things but obviously they should be functional for the front and rear seat passengers.

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Please check your mailing label to see when your NEWSLETTER subscription expires...

"Paid Thru Vol xx" indicates the last issue you are paid through. Please renew as soon as possible, but no later than Dec 15th.

Thanks!



Builder Hints & Information

by Scott Swing

It has come to my attention that some of our customers have had problems cooling with the down draft system using the armpit scoops and fiberglass runners. If you have this system and are having problems, please let us know. I have been in contact with some of you with good results but very few with poor results. What I mean by good results is having temps under 400 degrees. I talked to a customer yesterday that added an extra outlet in the bottom of the cowling and is running in the 350 to 360 range.

The engine installation instructions do not outline the importance of sealing the plenum or flanging the runners. One of the reasons we went to a plenum chamber was to eliminate the problems of poor baffle sealing. If we are going to have consistent results with cooling we felt that a plenum would be the answer. Well, we still need to follow some basic rules. First, the plenum needs to be tight and secured to the engine so that, when pressurized, it doesn't open up. We have found that many of you have not secured the front and back flanges of the box to the cylinders. Even without the heat the plenum can be very easily pulled away from the cylinders. This can be done with a small hole in a cylinder fin wired to the plenum, or with silicon around the plenum. Also, the 4 wraps that are called for in the instruction are not actually necessary but the one on the passenger side toward the firewall is, since there is no fiberglass there to keep the air from leaving. We couldn't mold that IO540 plenum with that area built in. In any case, think about your installation and what you are trying to do

Continued on next page

Builder Hints and Information

Continued from previous page

and you should be in good shape. We have added an extra outlet on the bottom of the XL cowling to let more air out. This is not necessary on all installation but it sure doesn't hurt. Our new XLFG trainer has temps in the 360 degree range with no modification made. We did put the extra outlet in this cowling. This airplane does have the NACA scoops in the top of the fuselage.

We are working on the engine install instruction to try and standardize things. When we supply an engine install package, we have to assume a few things about your engine and what you already have. Because of this you may end up short a few things or have a few things left over. This has to do mostly with fittings. We have just started to supply the #4 servo fittings that go to your spider valve and to your fuel pressure sender. We also supply the #4 45-degree fitting that goes to your oil pressure sender. Both the fuel pressure fitting and the oil pressure fitting must be welded shut and drill out with something less than or equal to a 1/16" drill. The reason for this is that, in the event of blown sender, you wouldn't lose all your oil and pressure right away. If you are flying right now and you have not done this to your fittings, we highly recommend this as a safety measure. Only the fittings to the pressure senders should be done like this. If the fitting for the fuel pressure sender accidentally was used in the fuel outlet to the spider, your engine will most likely not run correctly and, if it seems to, will run very lean.

The fuel pressure fitting and the 45 degree AN 823-4 fitting for oil pressure need to be welded shut and drilled out to no bigger than 1/16". You may be flying your aircraft now without this being done. If you are not sure that your fittings for these senders have the small hole in them,

you need to check them. The reason for this is that if your senders spring a leak, you won't dump all your oil or fuel. Obviously there is a fire issue as well.

Some of you have made your nose access covers removable with a latch mechanism and no screws. If you are not using 4 screws to hold your nose access cover on, you should stiffen the cover so that it cannot flex and pop off. This can be done by gluing 1/4" x 1/4" foam strips around the perimeter of the cover on the inside. Micro the foam with a small radius and glass over them with 1 BID. This should stiffen it sufficiently.

Please do not drill the fixed nose gear for installation of the fairing. Because of the hardness of the gear leg, there is always a chance of the hole causing a stress riser.

We have had some reports of the bushing in the nose fork wearing prematurely. Please check yours for wear and maintain that whole assembly as far as slop, dampening pressure, lubrication, etc.

One of our builders was having trouble rotating the aircraft for take off. Turns out, his nose tire was very low on pressure and when loaded with people would flatten out. On the walk around you should put some weight on the nose to find out if pressure is low since there is little weight on the tire when the aircraft is empty. Low air pressure can increase your take off distance significantly so maintain those tires as well.

One of our XL customers was trying to lower his CHT's and tried two VG's placed about 1" forward of the inlet ramp. He said it lowered the temps by 50 degrees. Word of caution, if you do it on one you should do it on the other. You may be able to generate enough pressure to push air out the other scoop. More on this later.

•••

Maintenance Notes

*by Michael J. Snyder
Private Pilot, A&P, IA*



I would like to offer some hints on Installation and Operation of your RG system.

The nose gear casting that you receive in your kit has some sharp edges. I would suggest you sand and polish all the edges to provide a 1/8" radius to eliminate any stress risers in the casting. Stress risers are microscopic flaws and cracks that are normally found on all rough castings. So by providing this 1/8" radius you eliminate any microscopic cracks on your fork. This operation can be done in about 1/2 to 1 hour's time. I would also recommend this to those who have flying airplanes. If you can devote more time you could sand out scratches and polish the entire fork for the "show-plane" look.

When finalizing your mechanical installation of your retract system pay careful attention to the lengths of the bolts you use. For example, the bolts used for attaching the over-center linkage to the gear leg. Make sure that the rotating parts are bearing on the shank of the bolt, not the threaded section. Refer to publication AC43.13-1B chapter 7 which all of you should have a copy of.

In final assembly, lubricate all

Continued on next page

Maintenance Notes

Continued from previous page

moving parts with engine oil. I use engine oil because it penetrates into parts where needed and has more body than something like WD-40. After lubrication, have an assistant operate the gear and inspect to see that moving parts, in transition, do not foul or rub any hoses, parts, etc. throughout the complete travel of the gear. Also check to see that free fall cycle operates smoothly and locks overcenter without any assistance.

♦♦♦

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A&P Talk

by Brendan O'Riordan, CFII, A&P



In the last views Nathan wrote an article on the basic operation of the Retract system on Velocities. I would like to go into a little more detail on how the system works so that you, as a pilot of a Velocity, will have a better understanding of this system and be able to determine when the system may need unscheduled maintenance.

The basic components of the RG system are 3 hydraulic cylinders, 2 overcenter links and a pump/motor. When the gear is down and locked we have two forces keeping it down. First we have 550 pounds of pressure that the hydraulic pump puts into the system after the gear has reached its down position. The down pressure switch comes from the factory with this limit preset for us. The down pressure switch is on the right side (furthest inboard) looking at the pump from the front. The second thing keeping our gear down are two overcenter locks, one for the nose the other for the main gear. The main gear OC link is set from the factory and just needs to be installed as is. The nose however has a stop that is made of 1/4" thick aluminum that is 1" wide and is bent at both ends to be able to fit in the keel. This stop has to be positioned so that when your nose gear is down the joint between the shock and the OC link is allowed to go between 1/8" and 1/4" up (overcenter.) This will keep the gear down even if the

550psi of down pressure is lost.

There are no uplocks on a Velocity. The gear is held up by 1050psi. Once the gear reaches its up limits (the up travel is set by stops that are put around the shafts of the cylinders, not by your gear hitting the top of your wheelwell) the system continues to pump pressure until 1050psi is reached. This will assure the gear will stay tucked up even in turbulence.

Most systems in airplanes will give you signs when components are becoming worn out and the Velocity RG system is no different. The first thing a Velocity pilot must understand is that the RG system is always under hydraulic pressure. One common thing you may find on your airplane is after it has parked on the ground for a day or so and you turn on the master switch you may hear the gear pump kick on for a second or so. What is happening is the 550 psi is leaking out of the down side of the RG system and there are two ways it can go. First off you may have an external leak in your system so check all your fittings and see if you can see any red fluid leaking out. The other place you may have a leak is internally in one of your RG cylinders. The cylinders work by putting pressure to one side of the piston or the other, inside the cylinder. If the o-ring that seals the piston is leaking the pressure in the system may be allowed to leak past the piston to the other side of the system. We have found that the small nose gear cylinder gets a lot of abuse in a Velocity and more times than not is the cylinder that needs to be rebuilt. One other place to check is your "dump" valve. With it located on the passenger's side in most airplanes it may get bumped slightly and just allow a little pressure to bleed from one side of your system to the other.

Another common sign of wear in the RG system is your RG pump turning on momentarily in flight from time to time. The reasons men-

Continued on next page

A&P Talk

Continued from previous page

tioned above are still applicable to this situation. A smaller internal leak might show up earlier when the gear is up because the pressure used in the up system is twice that of the down system. The pump coming on momentarily every half an hour or so may not cause any problems and your system will operate properly but if you happen to be on a long flight and you have an internal leak you could have trouble extending the gear. What happens is the pressure bleeds into the down system. The pump will kick on and the pressure bleeds down again. On a long enough flight you may bleed enough pressure into the down system so you now have over 550psi in the down system. You go to select gear down and nothing happens. In this situation you first need to hit the reset switch. This bypasses the down pressure switch and starts the pump running. Once there is flow in the system the pressure is relieved so you do not have to hold the reset switch. In the event that the pump still does not work you will need to freefall the gear. Leave the RG switch in the down position and push your dump valve open. This will relieve the pressure on the high side and allow the gear to freefall into position.

The point of this article is "Listen to your airplane." If things have changed since your last flight, investigate and don't stop till you have found an answer. This has to do with the entire airplane not just the gear system. If you continue to operate an airplane after you have noticed changes in flight controls, engine temperatures or pressures or gear operation, you are putting yourself, your passengers and people on the ground at risk.

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CFI Notams

by Nathan Rigaud, CFII



As a flight instructor, I have been teaching since 1993 both primary and advanced aerobatic training and have had the pleasure of flying with many pilots. I find that students that come here for our transition course into the velocity, are having trouble with the simplest maneuvers such as slow flight, stalls, etc, that pilots are not able to hold airspeed, altitude, heading. These are the basics and you will lose the feel if you are not taking the time to stay current and train. Most builders take a year or more to complete their project and do not fly in the process, and this shows in training.

At the Velocity Service Center, we require that you have logged 10 hrs in the past three months. If you are building a velocity RG, we require a complex sign-off before we start training you in the velocity. I would suggest more time if you have been away from flying for three months or more.

When you arrive for training at the Velocity Service Center, we start off with the basic ground school. I highly recommend looking over and studying your operating manual. V-speeds are expected to be known off the top of your head. If you need these faxed to you, let us know. We will then have you sit in the training aircraft for us to point out all controls and instruments. I would then expect you to be able to touch and move each switch and control with

no hesitation. The first flight will start with the basics, turns, slow flight, stalls on and off, turning stalls, emergency procedures. We will then return to the airport for full stop landings. Some of the things I look for in the pattern are, entry, altitude, airspeed, and distance for the runway, aircraft spacing. Remember we are VFR (visual flight rules), look outside and do not get buried in the cockpit.

The rest of the flight time will most likely be in the traffic pattern practicing take-offs and landings, go arounds, and emergency procedures.

Do yourself a favor and practice, practice, practice. Aircraft rental at your local flight school will be a big help. Take time to fly with a current CFI and make the flight worthwhile, maybe he or she can let you in on a few pointers.

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- **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. There is now a **\$5 late charge fee** for renewals that come in after December 31
- **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.

Electric Buzz...

by Wayne Lanza



wiring or face the woes of radio problems... NEVER use television type coax!!!! It looks, smells and tastes the same but if you eat it you'll get sick, so will your avionics.

Antennas are another issue for consideration. As they are shown in the plans, they work fine. But if you really want to mess them up I'd suggest adding carbon where it is not needed, using the wrong kind of wire, not installing the ferrite cores, using 1/4-20 nuts instead of the ferrite cores or using acid core solder or plumbing flux on the foil ribbon. The acid flux is great for a down the road problem, it stays active and will probably eat it's way through the foil in 5-10 years.

The transponder antenna can be easily mounted in the nose of the aircraft but there might be some residual radiation issues. The easiest and in my opinion best place to mount this antenna is in the back of the aircraft either under or next to the sump tank. You can glue the ground plane to the floor and let the antenna stub stick through a hole in the belly, easy

to install and wire plus low radiation effects. Putting the antenna out in the end of the strake is not recommended for some transponders as the wire run is too long. The GPS antenna is best located just above the landing light in the nose. You've got no metal or interference from A/C systems or other wiring and the wiring runs will be fairly short.

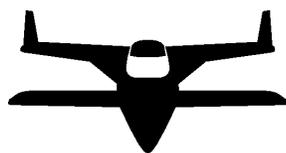
If you are using a storm scope of some sort, special considerations will need to be made for these systems to work properly. I am working with BF Goodrich regarding the installation of several WX500's in Velocitys. I will report on this effort in the future after we are confident with the operation of the equipment.

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Editor's note:

For a detailed electrical article (6 pages long) about electrical wiring, switches, supplies, tools, etc., refer to Vol 3, page 11 "Electrical System: Where Do I Start" by Martin Hadley.

There are a few wiring issues that keep coming up that I'd like to discuss. First let's talk about coaxial cable and some antenna issues. Coax cable is designed to maintain a 50 ohm environment, this is required for antennas in our general aviation type equipment. It is absolutely imperative that the proper cable, connectors and preparation be used in these applications. We use ONLY RG58U/C cable to wire our aircraft, it is 50 ohm, has plated shielding and STRANDED center conductor. Avoid using RG58U with the solid center conductor, it will eventually work harden and cause an intermittent connection. An open on a transmitter antenna wire will in short order smoke the RF power finals in the radio - big bucks! Another word of advise is to get some training in the proper preparation & crimping of coaxial connectors. The tools will cost you about \$50 if you can't find a set to borrow. There are impedance issues that I don't want to elaborate on but trust me when I tell you that you can't simply solder two pieces of coax together and expect to maintain a 50 ohm system. Oh yes, you will have a good continuity check but the RF "node" could cause 'bad things'. Spend the money on the proper RF



November 3, 2001 Factory Open House Workshop Schedule

Saturday November 3, 2001 - Factory's quarterly open house in Sebastian Florida (X26)

9:00am	Coffee and donuts
10:00am	Workshop: TBA
Noon	Lunch
1:00pm	Workshop: Building Q&A
3:00pm	Demo rides in the XL

Please be sure to call the factory and RSVP! Friday arrivals can book a room at the Key West Inn at Captain Hiram's here in Sebastian. Call 800-833-0555 and mention Velocity to get a corporate rate. When you call the factory to RSVP, let us know when you plan on arriving so we can make arrangements for transportation, etc.

Check velocityaircraft.com for up-to-date details

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.

"On Final" at the Velocity Service Center

From Nate Gutwein

We were starting out on a new venture when we arrived at Velocity on January 2, 2001. And now – in our 30th week of experience building our Velocity XL-RG aircraft – we are excited to report that we are in the test-flying phase! Scott Swing performed the (uneventful) first flight of our Velocity on August 31st. This has been quite a thrill for Rhonda and me. We can not wait to finish the interior and painting of our Velocity and to begin enjoying flying and doing other things!

Working on our aircraft at the Velocity Service Center has been a great experience! We have met new people sharing common goals – and we have met many new friends. Our work week is normally Monday through Friday, then we "vacation" over the weekend on the Gulf Coast.

Learning how to cut fiberglass, mix resins, do lay-ups, and work with composites was new for us. We learned a lot as we used the support of the Velocity helpers, which was available as needed. We made some mistakes and had to do some things over – which of course, made for a better-built aircraft. My wife, Rhonda, did most of the fiberglass and lay-up work. She was very careful and did a great job!

It was great having my son and 4 grandchildren helping us for a week – at which time we were working on the fuel strakes. This part of the project was quite strenuous and time consuming, but they were all very excited to help and anxious to



Nate and Rhonda Gutwein with their new Velocity XL RG

go flying.

Working in an atmosphere with other builders, encouraging one another and helping each other as needed, was very good – as most of us did not know much about this type of work when we first started. Our first intention was to purchase the Velocity XL-RG with fastbuild options – and to locate in a hangar convenient to us to build the airplane. In retrospect, this would have been totally beyond our time constraints and capability! We are thankful that Velocity has the Head Start Program.

We feel it has been a great experience and we have learned a lot about the function and operation of our plane. This gives us a lot of confidence in the dependability and capability of our Velocity.

Franklin Engine & Ivo Prop Update

From Rick Lavoie, St. Augustine Florida

I'm very pleased with both my Franklin engine and Ivo Prop combination. I get quite a few e-mails and calls asking me if I'd recommend them. My answer is always the same. I will not recommend what you should do, I can only tell you that I am happy with my decision.

My engine temperatures are ideal, as measured by my JPI instruments & EDM 700 engine monitor: 9,000 ft altitude, barometric pressure at 30.10, Outside Air Temp 61° F, 2500 RPM, 22.1" manifold pressure, speed 171 kts
CHT/EGT (#1 cylinder thru #6):
#1: 324/1240, #2: 321/1180,
#3: 322/1210, #4: 350/1190,
#5: 315/1150, #6: 302/1130

Continued on next page

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Builders Forum

Continued from previous page

Oil Temp: 171 degrees F
Oil Pressure 52 PSI
Fuel burn rate 10.7 gal per hour
I now have about 550 hours on my Hobbs meter.

As most of you know, getting things all "tweaked out" took time and experimentation. If you are a new subscriber and interested in what I did to get these great results, you will need to follow the thread of articles from back issues:

Vol 26 page 17
Vol 24 page 14
Vol 19 page 14
Vol 14 page 13
Vol 16 page 13
Vol 13 page 15
Vol 12 page 1 & 16

Just about any question you might ask me about what I did is addressed in these articles. So please, prior to calling me with questions about your Franklin or Ivo prop, read these articles and the pdf file that has the correspondence with PZL Franklin. Once you have done this, I'll be happy to share my experience.

••••

Why is N570 For Sale?

From Rick Lavoie

Since I posted N570 for sale on exp-aircraft.com, I have been asked "why?" from Velocity builders, pilots, and wannabees. You deserve an answer to that question. The reasons are both health- and finance-related.

About one year ago, I was diagnosed with the start of macular degeneration, an eye disease. This is unusual for a 48 year old. The probable result is that, at some future time, I will have vision problems. It could happen soon, or not until I'm 70. There is no way to predict the progression. At present, there is no known cure for "MD", but it's a leading cause of blindness.

Under the circumstances, I've decided to take the conservative approach and sell my Velocity. I've always found it's best to sell something when you do not have a gun to your head. I still have my medical and still fly. In the event that my vision goes bad, sooner than later, I'll have already sold the Velocity, and invested the proceeds. Sale of my Velocity is just one of several steps I am taking to simplify my life and reduce my living expenses for the long term. Thus I'll be better able, financially, to cope with a loss of vision. As a self-employed person, I must be conservative and assume the worst case scenario.

Yes, I will still be publishing the *Velocity Views*. Yes, Judy and I are still very close friends of the Swings and of the many members of the Velocity family. Yes, I will still be at Velocity events and fly-ins. Yes, I'll still be flying, so long as my vision is good... it may be that I'll show up in a factory Velocity instead of my own.

I'm going to be selective in who I sell my Velocity to. I want someone to care and maintain it as I have. Thus I'm willing to spend lots of time with the buyer to be sure that he/she understands the unique aspects of this fantastic flying machine, as well as the proper maintenance required. The buyer should want to get a factory check out, and a recommended factory pre-buy inspection.

Will I miss N570?... of course I will. Anyone who goes through the building process – and knows every nut, bolt, hose and wire – understands how attached you become. Owning, building and flying the plane has introduced me and Judy to people and places we never would have experienced and which will forever influence our lives. N570 is a part of me which can not be replaced. I am grateful for the opportunities the plane has given me and I know it can bring the same pleasure to someone else. That will give me satisfaction too.

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Thank you!

Factory Open House

November 3rd 2001

Saturday Morning

See Page 14 for more details

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P.S. Yes, you can prepay future years as well...

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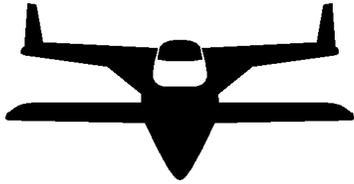
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173 Elite Kit For Sale

Kit No. DMO333 Purchased Sep 95
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Lloyd L Garner 813-929-9275

N570 For Sale: 1997 Standard Velocity RG



Interior, Engine, Avionics, & Airframe are all "10's". Spoiled, pampered and hangared in St. Augustine Florida since birth! 550 hours on Hobbs - all "tweaked out" with no problems. Scott & Duane Swing have flown N570 and will verify that it is one of the cleanest and best maintained Velocity's flying! IFR certified, new PZL Franklin engine with IVO Inflight electric adjustable pitch prop, HSI, Strikefinder, S-tech auto pilot, PS engineering stereo audio panel, Stereo CD player/radio, Terra radios (2 com, 1 nav, 1 transponder), GPS moving map, JPI engine instrument plus EDM 700 engine monitor, and more... All manuals (Builder's Construction & Owners Flight manuals, construction log & photos, Velocity Views Newsletter complete set, all log books, etc.). lots of spare parts.
Sales Price is US \$130,000
For a very complete description & lots of photos, go to:

<http://lavoiegraphics.com/velocityrg/n570.html>

e-mail: lavoie@aug.com
Rick Lavoie 904-461-6912

My reason for selling is health related: see story on page 16 for details...

Factory Information



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Sebastian FL 32958 USA
Ph: 561-589-1860
Builders Hot Line:
561-589-0309
Fax: 561-589-1893

Builders HOT LINE

Please remember that on weekends and after hours, we do not answer the 561-589-1860 phone number. Our unlisted builders hot line is 561-589-0309 and, if we are here, this is the only number we will answer.

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- Velocity Fly-in Suggestions
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Send your photos / stories to Rick Lavoie for the next newsletter!

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

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fax: 904-461-3146
voice: 904-461-6912

Delivery Dates

Quarter:	Mailed by:
1st	January 15th
2nd	April 15th
3rd	July 15th
4th	October 15th

Submission Deadlines

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Listed below are **4 options** for submitting your text. Do not type your text in all caps. Please send us **photos** and drawings too!

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