

# VELOCITY VIEWS



Volume 40

## Thank You and Goodbye...

This is the last issue of *Velocity Views* Newsletter that I will be publishing. After ten years of publishing the newsletter and enjoying our close ties with the Swings, the factory employees, and the subscribers, it is very hard to let go and say goodbye.

On September 15, Velocity Inc. told me that both the *Velocity Views* Newsletter and the Velocity website will be handled in-house, by staff at the Velocity factory. Also, the newsletter will only be available online, via [velocityaircraft.com](http://velocityaircraft.com). There will be no charge for the online version available (see Duane's article under Factory News).

Judy and I have enjoyed the many friends we've made over the ten years of publishing the *Velocity Views*. We are certain to continue these great friendships and we will remain loyal supporters to the Swings and the entire Velocity family.

A few business-related notes regarding *Velocity Views*:

### • Refunds

There are 71 subscribers for whom I had already processed renewals prior to receiving termination notice from Velocity Inc. Look at the last page of this issue. If on your mailing label it reads "Paid thru Vol 44" (or higher), then I owe you a refund. You will be receiving a refund check directly from me (Lavoie Graphics).

### • Renewals

Obviously, please do not send me any renewal checks for 2005! Checks I receive (for 2005 year renewal) will not be processed or cashed. I will shred them. If you have already mailed a renewal check for 2005 year, please void the entry in your checking account register. I apologize for this inconvenience; I would not have asked for renewals if I had known about the newsletter changes earlier.

### • Past Issues

I have expressed to Velocity Inc. the value of the information in the back issues of *Velocity Views* and recommended that they make them available, as both hard copies and/or as PDF files. As of this writing, we have not finalized an agreement to transfer my copyright ownership of *Velocity Views*.

Thus if you want printed copies of back issues, this may be your last chance to get them. Most likely, the hardcopy printed versions I have always mailed out will no longer be available.

For details on how to order back issues (printed hard copies), see the next page. December 1, 2004, will be my absolute deadline for processing orders for back issues.

Thanks for your support!

*Rick Lavoie*

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### Hurricanes Delay Newsletter!

Due to the two hurricanes that hit Sebastian, getting factory input to publish this issue was no easy task. Factory staff had more urgent matters to deal with, thus the reason for such a long delay. Thanks for your understanding!

**Last Chance to Order the Printed Version  
Velocity Views Back Issues  
Big Discounts!**

- All orders must be received no later than December 1, 2004
- Please pay via a **check or PayPal** (my PayPal eMail is Richard@LavoieGraphics.com)
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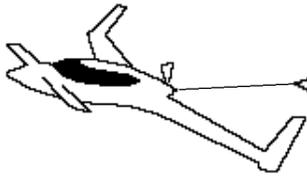
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## FACTORY NEWS

by Duane Swing

### Odd Jorgensen 1937 - 2004

I start this letter on a sad note. On Saturday August 7th 2004, Odd Jorgensen, a good friend to us and many of you, lost his life in an aircraft crash. Odd was flying his Velocity XL RG from Oregon to Florida and had made a fuel stop in Dodge City Kansas. His departure from Dodge City was in marginal weather and approximately 50 miles after departure his aircraft was observed spinning down through the overcast out of control and he crashed in a Kansas pasture. It was found that he had lost his right wing only moments before exiting the overcast and the left wing departed prior to hitting the ground. The evidence showed that the airplane erupted in fire immediately after the separation of the right wing, probably due to the fuel spilling over the engine. No evidence of any in-flight fire could be found prior to the wing separation and all control systems were in place and working normal. The NTSB noted that they could not locate the oxygen tank Odd carried in the airplane and an explosion of this tank is also a possibility since numerous small items carried in the cockpit exited without any evidence of burning or smoke damage. Odd was a heavy smoker and a stroke or heart attack could not be ruled out. No flight plan was filed and the transponder/encoder reply indicated a right hand turn at about 5,500 feet before he dropped below radar coverage.

The preliminary NTSB report will show that Odd was a non-instrument rated pilot and flew into IMC with rain in the area combined with wind sheer. Tops were reported at 6000 to 9000 feet at the time of the accident.

There are just too many questions left unanswered regarding this accident for us to speculate much about what could have happened. All we have are the facts and they may not tell the whole story.

Odd will be missed and our prayers go out to his wife and family.

### Velocity Views Newsletter

Over the years, many of our builders and Velocity owners have decided not to renew their subscription for a variety of reasons. We held on to a solid base of subscribers until we started putting the KPC's on our web site. Since then, there has been a steady decline in renewals which have resulted in Lavoie Graphics losing money on the cost associated with the publishing of this newsletter. In addition, input from our builders has slowed to a point that there just isn't enough to continue. Right or wrong, it is time to make a change. Starting after this issue, all KPC's and AD notes will be published "on line" as part of our web site just like before. It will be up to you to pull up this information on a regular basis and make changes to your builder's manual accordingly. A paper copy is only a click away. Most of you who are building or flying your Velocity already have access to the coded builder page of the web site and this will not change. If you don't have the username and password, e-mail or call us with your aircraft serial number and we will give you this information. We will have a new section of our web site called "Velocity Views" and this will contain normal builder comments, pictures of our builders who have completed their airplanes and other non-technical information. All this will be published as needed and dated so there will not be a "quarterly" type

newsletter.

There will be no charge for this newsletter as to do so would only bring up more work for us. If you don't have access to our web site, or perhaps don't even have a computer, let us know and we will work out the details of printing the information and sending it to you by regular mail. If you have pre-paid for additional years of the newsletter, you will receive a refund check shortly.

I take this moment to thank Rick and Judy Lavoie for the outstanding job they have done over the years in editing and publishing a newsletter that has been considered by those who have seen others, the best of the best. Rick and Judy have created a very hard act to follow and we really appreciate their effort.

### Hurricane Frances

As I write these words, hurricane Frances is just departing Florida and the damage has been widespread. The center of the storm passed just south of Sebastian leaving thousands without a place to live and more without power. We suffered only minor damage and most were to our "Quonset" buildings. We still await power to be restored so we can get back to "business as usual". None of our employees suffered serious damage to their homes and for this, we are all thankful. It could have been much worse for us. Our thoughts and prayers go out to all those who were not so fortunate.

As a side note, one of our local flying Velocity owners decided to fly his airplane up to North Carolina to get away from Frances. As it turns out, his home, business and other personal things in Vero, along with his hangar, survived without any damage. On the flip side, the line crew at the airport he left his airplane lifted the nose with a tug and promptly dumped the airplane over. It destroyed two blades of his M-T propeller along with both winglet

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## Factory News

*Continued from previous page*

extensions. The line crew had been warned to move the airplane by hand due to the possibility of this happening.

### What's Going On With Tango Charley?

Our XL dash 5 demonstrator is going through an engine replacement. After over a year of flying with the FADEC system, it has become apparent that there are still issues that need time to be resolved. Continental has asked that we send the IOF 550 N engine back to them for a complete analysis of the system and a correction of any problems that still might exist. Continental has indicated that a "certified" version for the IOF 550 engine should be ready by the end of the year. This version should address and correct any problems associated with the first of the breed, as was our system.

### TIO 550 N - Dual Turbo and Dual Intercooled Continental Engine

As you read this, we will be in the process of installing a factory turbo model of the Continental 550 engine. It will be turbocharged enough to maintain normal sea level power of 310 horses through about 20,000 feet and 75% power up to about 25,000 feet. Our calculations show a true airspeed of about 245 knots (280 mph) at this altitude. Continental is promoting a 2000 hour TBO on this engine, which is similar to the non-turbo version. We will also be installing another turbo engine, with an air conditioning system, in another XL sometime by mid-year 2005. It might not surprise some of you to know that the price of this engine is almost 4 times what I sold a brand new Piper Arrow for in 1970. I purchased a new Piper Lance in 1977 with all the whistles and bells and paid less than what this engine cost. Isn't inflation wonderful!!



*Hurricane Frances: Quonset Hut damaged by the first of 2 hurricanes to directly hit Sebastian. Damage from "Jeanne", the second hurricane, was far more extensive (see photos on the next pages 5 & 7).*

### Just One More Book Review

You all know my passion for reading and especially for books about WW II. I just finished a book by Stephen Ambrose who is also the author of Band of Brothers. His latest book is called The Wild Blue and is a story about the men "boys" who flew the four engine B 24 Liberator. Until the B 29 came along, the Liberator was the largest of our fleet of bombers and over 18,000 were built before the war ended. (That's over 72,000 Pratt & Whitney engines alone). The center of attention is George McGovern who at the ripe old age of 20 and with a scant 300 hours logged, became the pilot of his Liberator and flew until the end of the war on duty in Italy. At the age of 22, he had already completed the required 35 missions necessary before he could return to the US. He was the oldest of his crew of 10, some as young as 19. This is a gripping story of the terror every pilot and crewmember suffered as they flew day after day into enemy territory with flak so thick that they could not see to the other side and German fighters just waiting to strike. In most cases, the air-

planes were loaded over gross by 7,000 lbs. and tree top takeoffs were the norm. At a cruise altitude of 25,000 feet, (it took an hour to get there) with temperatures as low as 50 degrees below zero in the un-pressurized, un-heated aircraft, it was off to war. McGovern suffered numerous hits on his airplane (on one mission alone ground crew counted 110 bullet holes) and had to make several landings with engines on fire, controls shot off the airplane, flat tires and ruptured hydraulic systems that resulted in no brakes, no flaps, and laborious hand cranking to get the gear down. (With no brakes, the airplane was slowed down by the crew fastening a couple of their parachutes to the aircraft and pulling the ripcord just at touch-down.) If you enjoy true stories of heroism in battle, give this one a try. I know at least one of our Velocity builders, Jim White, flew the B 24 in WW II and I am sure he could tell us many stories equal to those in this book.

The most gripping thing about all

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## Factory News

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this is that every crewmember on these airplanes were volunteers. They joined the Army Air Force; perhaps because they didn't want to fight a war on the ground, but were, nevertheless, volunteers and many gave their lives so that we might live in a nation of freedom. As the saying goes, freedom is not free.

## Hurricane Jeanne

Strange as it may seem, we had one of our customers call in the last few days wanting to know why we have not been answering our phone!!! When I suggested that the two hurricanes that passed through Sebastian might have been the reason, he said, "what hurricanes?" The pictures

below and on p. 7 speak louder than my written words so you can see just what happened just in case you, too, were not aware of the storm. You can probably see the Piper Navajo, that we opened our hangar for, that suffered the most damage. It did help protect some of the Velocities that were under construction. We also lost the use of the two Quonset buildings that were used to store molds, airplanes and finished wings. The net effect of the damage was that we immediately moved into a smaller leased hangar just south of our Service Center building to resume work there. The clean-up and move is a major undertaking and has consumed much of our peoples time during the loss of power and loss of phone service. As a matter of fact, we were out of power for almost three weeks and as of this

moment, have still not been able to resume normal phone service. It is really difficult to run a business that is so dependent on this service. Be patient with us as we go through this difficult time. In addition to the new Service Center, we have added four "T" hangars that will be used to store airplanes and wings that are not currently being worked on by our customers or our technicians. We will also be using one of the larger end "T" hangars for Wayne Lanza to use in the wiring and design of many of our electrical systems. We hope to resume normal service to all our customers by the time you read this.

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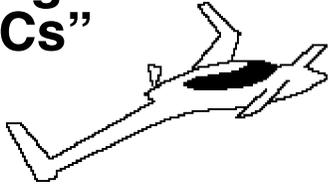
## Photos of Hurricane Jeanne Damage...

*See them on page 7*



*Photo shows electrical trucks parked at Sebastian Airport runways due to electrical outages from hurricanes in Florida.*

## 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.*

**No KPCs this issue due to the two hurricanes that hit Sebastian...**



## Builder Hints & Information

*by Scott Swing*

Normally for the newsletter, I would be writing about KPC's or hints and information but because of the events of the last month, I will do something else. I have lived in Florida for about 12 years and came down here shortly after Hurricane Andrew. We saw our share of hurricanes that missed or hit us with 70 mile per hour winds but nothing that I would call damaging. I know you have heard about the damage that we as a company have had but each of our employees has a story to tell and have had losses to deal with. This whole thing has set us back quite a ways as you can imagine. Most of our customers will have to pay for repairs to their aircraft, which also sets them back. I am helping them repair their aircraft, which delays all incoming projects. The reason I mention this is because I want all our customers to know that although we are here for you, please give us a break so that we can give everyone the help they need. E-mail more if you can and be patient for the answer. Use other sources of information, pictures, other builders,

etc. to limit the amount of work we have to do outside what we have here that gives us revenue. We will need quite some time to fully recover from this financial burden we find ourselves in. Because we are debt free, we will have no problem doing it, it will just take some time. If some of us have to work without pay for a while, or work extra hours, we will in order to ensure that our builders get taken care of. I appreciate the kind words from all who have called and you can be sure we will persevere. God has been very good to us and we are thankful than no one in our Velocity family was physically hurt during these two hurricanes. My family left for both hurricanes although I must admit that I wanted to stay for the second. It started out as a Cat one and I was sure it would be safe to stay but my wife (Amy) did not feel comfortable about it so we left for Naples for the one night that it was going to hit. Sure enough it was a good decision as the hurricane strengthened and we were in much lighter winds and a hotel out of harms way. In any case, I just wanted all to know that we as a company will be just fine but we would like you all to be patient (as you already have been) and we will all get back to normal in time. The phones have been out but hopefully by the time you read this, the phones will be back up.

Since I have been repairing planes lately, I would like to mention some of the things I have found that may be helpful those who may have the misfortune of having to fix their own aircraft.

Mainly I am discussing fiberglass repair. First, I might mention that I will not try and repair a spar unless the damage is outside the stress areas of the spar as would be on the ends or maybe in the middle of the main spar (in the fuselage area). Fortunately all areas of repair for the airplanes in the service center are limited to fuselages, wing dings and some with winglet replacement. If something falls on your aircraft or you land with the gear up or do any

damage to the fuselage, here is what you need to do. First of all, you must make a determination as to what surface will be repaired, just because you hit on the outside surface of the fuselage doesn't mean that you have to repair it on the outside. If the fuselage skin has not been damaged on the outside but you can tell that there is a delamination of either skin, you can do the whole repair from the inside which means that you will not need to do finish work on the repair. If the damage is within the duct, beam, upper duct, or an area that has something on the inside, the repair will have to be done on the outside. In either case, you will need to mark an approximate area of skin removal based on what you here when you tap the surface. Some of the delamination will be limited to the outer or surface skin, others will be on only the opposite skin, and some are both skins. On recent repairs, I was surprised as to how far the foam was delaminated from the opposite skin surface. This resulted in removing skin that had foam sticking to it but not sticking to the opposite side. You end up with only the inner or opposite side skin remaining. The way to find out how much to remove is to start cutting a hole through only the outer skin and peel it away. It will most likely pull the foam with it. You can then push on the skin and see how it is separated from the foam. You continue to remove skin and foam until you do not have this happening. At that point you clean the foam from surface to make the hole look clean. Then you sand all the primer off the surface around the damaged area and try to taper the edges a little if you can. This will help in the finishing of the repair in the future. You should be to the glass about 1 1/2 to 2" around the damaged area. Then you can make a template of the hole with paper and transfer that to some foam. I like to use the same scored foam we use in the fuselage since it has slots to let air out and it will conform to the surface better. Cutting the shape out with a band saw is the cleanest but

*Continued on the next page*

## Builder Hints & Information

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an air saw will work as well. Make sure it fits before you glue it in. I mix some slurry up (epoxy and micro balloons) that is about like mayo or slightly runnier so it will sag a little, and apply it to the back side of the foam. You don't need to be more than 1/8" thick with the slurry but make sure you have enough so you will not have any voids under the foam. I like to put the scrub side down on the surface and leave the grooves in the foam showing. I then will make a little slurry that is fairly runny and brush a very thin layer onto the surface on the fuselage or strake. Then I will apply the foam and work the micro out to the gap around the edges. It doesn't have to come out the cracks around the perimeter but you need to make sure that the foam is sticking to the surface. I then will duct tape it to the surface around the repair. After cure, I will remove the tape and sand the foam with 36 grit paper on a sanding block and contour it just as if it were micro. This is much easier to sand but the idea is the same. If you sand a little too far that is okay since you will fill later. Once satisfied with the contour, make sure you blow out all the grooves and prep the area for glassing. Next you will micro the foam and glass with the correct lay-up. If you are unsure as to the lay-up schedule for a part of the aircraft, just call me for it. You can taper the overlap a little on the edges of the repair but don't take all of it off or you will lose the connection. For finishing, you just need to ruff up the surrounding surface a few inches, no need to go to the glass under the primer, and micro with the finishing epoxy. For larger repairs that require sections of fuselage or when both inner and other skins are damaged, tune in next time for some more advice.

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## Hurricane Jeanne Damage at Factory

The 2 photos below show the Velocity Service Center building totally destroyed from Hurricane Jeanne. "It looks like a twister hit the building," said Scott Swing. Fortunately, the other 2 hangar buildings had almost no damage. The main production building is fully functioning. Phone & power have been restored.



# A&P Talk

by Brendan O'Riordan, CFII, A&P



## Pre-First Flight Inspection

Recently the service center crew has had a chance to go out and do quite a few pre-first flight inspections on Velocities. There have been a few problems that we have run across that were common to many of the airplanes. I thought it would be a good idea to list some of the things that we do before our own first flights.

### 1. Go from the nose of the airplane all the way to the engine compartment and check every nut and bolt to make sure it is tight.

We will make sure that we put a wrench on every nut and bolt. This will take us a few hours and many builders will think this is a waste of time but most of the airplanes we inspect have many parts loose on them and it only takes one nut loose on a critical item to cause a serious problem. Also check your safety wiring as you go through the airplane. You want to make sure that it is done in accordance with AC 43.13.

### 2. Make sure that all bolts used are long enough for their application.

A general rule for this is to make sure you have at least 2 threads showing past the nut when the nut is tight on the bolt. We are working with a fiberglass airplane where the thickness of a lay-up can be a little thicker or thinner from plane to

plane in which case the factory-supplied hardware can be too short. You, the builder, make the final decision.

### 3. Make sure that all rod ends have enough thread engagement and that the jam nut is jammed properly.

You want to make sure that you have no less than 3/8" engagement into each rod end and make sure that the jam nut is run up tightly to the rod end. Also check that every rod end is installed with a safety washer. A safety washer is a large area washer that will keep the rod end from coming off if the rod end would ever fail.

### 4. Go from the nose of the airplane to the engine compartment and check to make sure every single fluid line is tight.

Make sure you put a wrench on every connection and make sure all of your fluid lines are tight.

### 5. Check flight controls for full throw and make sure nothing is interfering with them.

Many builders will make sure that when they are installing their flight controls they have the minimum control throws. This is also the last time many of them check their control throws. Once an airplane is put together there are many things that can limit control throws that must be looked at and checked. Wiring is one of the main problems. Wires can be run around torque tubes or wire bundles can be placed where they interfere with counterweights. You want to make sure that your control systems can move freely throughout their complete range and not have anything interfere with them.

### 6. In RG's, with your aircraft up on jacks, retract the gear and make sure the gear can move throughout its full motion without any interference.

Just like the control systems parts we install on our airplane after we have built our gear system can interfere with it.

### 7. Do a general check of the wiring for neatness, security and chaffing.

Go through the airplane and inspect the wiring. Make sure the wiring is properly secured and protected from chaffing. You may need to add some wire ties to keep the wire secure or you may need to add a piece of hose around your wire to keep it from chaffing. Remember that an aircraft is a high vibration environment.

If you follow this general list after you believe your airplane is 100% ready to fly you will probably catch the few items most builders overlook. As always it would be a good idea to purchase a copy of AC 43.13 1b-2b "Acceptable methods, techniques and practices Aircraft inspection and repair". This book goes through all the basic techniques an A&P would use to inspect and repair any airplane. The last thing I would recommend to all builders is after you have completed all the tasks above have another competent person go through your airplane using our insurance inspection sheet, found on the Velocity aircraft builders page, as a guide to double check your work.

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## Online Builders Construction Manual & KPCs

Updated chapters of the Builders Construction Manual with the KPCs are online on our web site: [velocityaircraft.com](http://velocityaircraft.com). You can download updated manual chapters from there.

If you do not have internet access, call the factory and we will mail the updated chapter to you.

# Event & Production News

by Scott Baker



## Storm Damage

Those of us from Velocity that contribute articles to the Velocity Views do so independently – so it may not come as a surprise that most will include news about the recent hurricanes and how they have impacted our business.

Hurricane Frances, what experts labeled as a “strong” Category II hurricane, was truly a “warm up” to Hurricane Jeanne, which – just 3 weeks following Frances – punished this area with destructive winds in excess of 120 mph.

The factory lost several metal side panels, roof gutters, and metal roof trim pieces – but escaped structural damage. Rainwater found its way onto the office floors. This has created a cleanup mess – but again, nothing major.

The storms have had a big impact on power service and communications. From Sept. 4th through October 4th, the factory was without power for 20 days. As I write this article, our telephones have been out of service for 5-weeks – and we are still waiting on repairs from the telephone company. Our wireless Internet service provider, thank goodness, allows email communications, which is now our “lifeline” to the world. Hopefully, by the time this article is published, things will be back to normal.

I wish to thank everyone for their well wishes and patience as we continue our clean up and restore the factory and parts department to normal operations.

## Winter Wx Reminders and Hints

With cold weather approaching, we would like to remind builders of special procedures and hints to follow when using composite components. Epoxy components are sensitive to cold temperatures – both during storage and when they are mixed together during the building process.

Be sure to store resins and hardeners at or above room temperature. This rule applies to the Dow and EZ products, as well as the 5-Minute Epoxy and the Aeropoxy construction adhesive supplied with the kit. Epoxy components subject to cool temperatures (above freezing) sometimes forms crystals and “drops” out of suspension. When this happens, the crystalline solution can often be brought back to its non-crystal state by placing the bottle in a warm water bath (90-degrees F. should do the trick). Components exposed to freezing temperatures should be discarded. A reminder regarding shelf life – Dow and EZ publish a 1-year shelf life for their products. They unofficially state that their products will give satisfactory performance for 2-years, if they are stored properly (at room temperature or above). If your components are over 2-years old, Velocity recommends replacing these with fresh components.

Consider a “hot box” to store working solutions of epoxy components, including the epoxy pump that most of us use to dispense proportioned measurements of epoxy. Velocity recommends that the components be stored between 80 and 95 degrees F.

There are many good “build it yourself” hotbox designs. An easier approach might be to purchase a wall-type cabinet kit from Lowes or Home Depot; one that is large

enough to hold the epoxy pump, a reserve supply of components, and the other temperature sensitive agents (ie the Aeropoxy and 5-Minute Epoxy) – and install a simple “light bulb” heater to keep things warm. Use a heavy-duty thermostat to carry the 115V line voltage to the light bulb, such as that used with water heaters and electric baseboard heaters. The size of the light bulb depends upon the size of the cabinet and the ambient air temperature. A 100-watt bulb should do the trick. Insulating the cabinet might be necessary in very cold climates. (see illustration on the next page).

Remember, the aircraft parts as well as the epoxy mixture need to be warm in order to complete lay ups and bond parts together. Your choices are to: a) warm the entire room to 70-degrees F. (minimum) during the application and curing process, or b) apply spot heat treatment on the parts being bonded. Spot heat can be applied by directing strong light bulbs, heat lamps, catalytic LP heaters, ceramic heaters, etc. to the parts. Monitor spot heaters to make sure things don’t get too hot!

Many builders opt to use the “fast-West” epoxy system during cold temperature conditions. West 205 hardener works great in cooler climates and minimizes the time needed to run spot heaters.

Be sure to provide enough heat to allow the curing process to occur. Parts wetted with epoxy will feel soft and will not sand properly if they are not allowed to completely cure. If a part does not appear to have cured completely, don’t worry, just place it back into a heated environment and allow it to finish curing.

For those who are building in a tightly closed environment, be mindful of dust buildup and the elimination of epoxy fumes. Some air circulation is

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## Production News

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necessary. Also, be mindful of the dangers of Carbon Monoxide (for those with LP or "torpedo" type, open-flame heaters).

### Help Wanted!

Velocity, Inc. is looking for a skilled machinist and welder to join our production team. If you know of anyone who has such skills and is looking to live in Florida, please have them call Scott Baker at 772-589-1860. We would especially like to have someone skilled in with non-computerized milling machines and metal lathes.

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Visit  
the Factory's  
Official Web Site:  
**velocityaircraft.com**

## CFI Notams

*by Nathan Rigaud, CFI*



### Flying the Velocity

On your first flight of the Velocity you will likely be surprised by the performance of the aircraft. The overall performance of the Velocity compares very favorably to that of very high performance production airplanes. The tendency, even among pilots who have flown high performance aircraft, is to get behind the aircraft. Think ahead would be my suggestion.

### Taxing

The Velocity is a pleasure to taxi, and exhibits no adverse traits. Very little power above idle, if any, is needed to keep the aircraft rolling nicely. Steering is accomplished with the use of differential braking, which allows for a very tight turn radius. The brakes are powerful and smooth, requiring very little pressure to steer or stop the aircraft. Avoid making hard braking turns that will require a lot of opposite brake to return to straight taxi. Make turns smooth without the need to "jab" at the brake pedal. The main landing gear is made up of the fiberglass material also. With this in mind, you do not want to Ride the brake pedals. Riding the brakes will transfer the heat through the axle onto the gear leg. Heated enough, this will melt the gear leg and will have to be replaced.

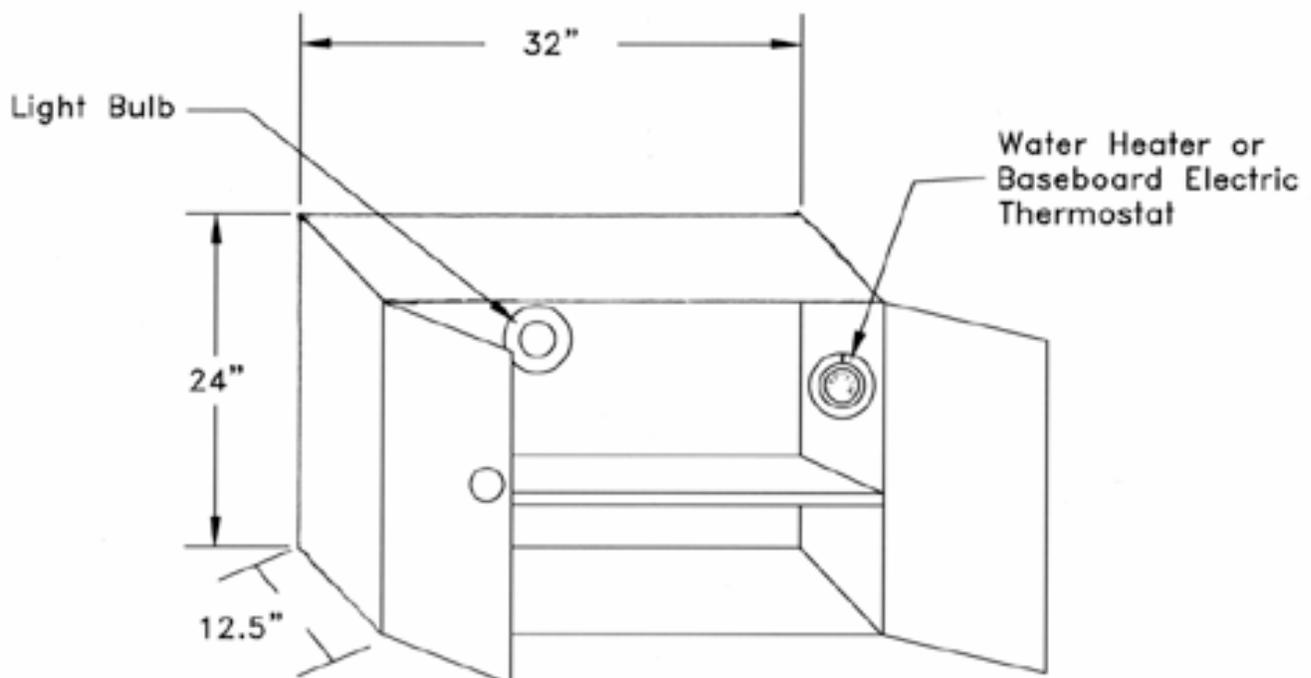
### Takeoff

Normal takeoff configuration is elevator trim to 1" below neutral solo and 2" below neutral with two or more in the airplane. Aileron trim is not a factor until into the climb phase

*Continued on next page*

## Build-It-Yourself "Hot Box" for Winter Storage

*(see story on p. 9)*



## CFI Notams

*Continued from previous page*

of flight. The aircraft should be aligned with the centerline of the runway. When in position, roll forward slightly to ensure that the nose wheel is centered. Apply power slowly to prevent debris from kicking up into the propeller and continue to apply power to full within approximately 3 seconds. The Velocity has little or no tendency to pull to the right as is the case of most tractor engine designs and therefore little or no brake/rudder is needed to maintain centerline departures. Rotate at approximately 65 to 70 knots, depending on aircraft loading, to a nose attitude to the horizon. Do not allow the nose of the airplane to rotate beyond the horizon. Hold this attitude until the airplane flies off the runway. There is no need to worry about over rotating the Velocity and hitting the propeller. When a positive rate of climb has been established, and there is insufficient runway remaining on which to land, retract the gear (for RG) and accelerate to the desired climb speed, 90 knots. Trim the elevator and ailerons as necessary for hands off flight. Passing 500 feet, set climb power, 25 inches and 2500 RPM.

### Climb

Normal cruise climb at sea level is 100 knots. Monitor all engine gauges to ensure correct and optimum performance, and ensure the aircraft is trimmed for balanced flight. At these lower speeds, the Velocity has a tendency to have a very positive roll stability that requires pilot induced control input to displace from the normal trimmed balanced flight.

### Cruise

The Velocity has excellent stability and control characteristics under all conditions of speed, power, load factor and altitude. The controls are effective throughout the speed range of canard stall to Vne and aircraft response to control movement is excellent. The rate of roll and pitch are brisk for a four seat aircraft. The trim system is effective at all speeds so that the aircraft may be easily trimmed to fly "hands off".

The Velocity possesses neutral stability and positive dynamic stability in roll and both positive static and positive dynamic stability in pitch and yaw axis. When the aircraft is placed in an angle of bank its tendency is to remain in the angle of bank and neither continue to roll nor return to wings level. However, if a yaw or pitch displacement is induced the aircraft has a tendency to dampen out the resulting oscillation and returns quickly to aerodynamic equilibrium.

### Descent

A timely descent, particularly from a high, fast cruise, will require that you be well ahead of the aircraft. Pulling the power back to quickly can have detrimental effects on the engine and reduce engine TBO. Prior to descent, reduce power 1 inch of manifold pressure and start the descent. Continue to reduce power 1 inch of manifold pressure for every minute in the descent. This will reduce the possibility of shock cooling of the powerplant. There are many powerplants that are being used in today's homebuilt aircraft, use the recommended procedure for your powerplant. In turbulent air the aircraft should be slowed down to its Vno of 170 knots. Monitor your

engine instruments to remain in the green arcs.

### Approach and Landing

Approaching the terminal area, keep the airspeed less than 120 knots to allow for a normal descent without rapid power reductions. Enter the pattern as directed at 1000 feet agl as appropriate. On the downwind leg reduce power to allow for a 100 knot trimmed airspeed. Perform your GUMP check, Gas, undercarriage, mixture and propeller. Once abeam the numbers of the landing runway, reduce power and trim to 90 knots. Turn your base leg and maintain 80 to 90 knots. Look outside for the runway, and determined if high or low and make power adjustments to compensate. On final approach, check gear down, if RG, and maintain 80 to 90 knots. The speed brake may be used at this point if you find yourself a little high. Remember to adjust power and trim to maintain 80 to 90 knots. Fly the aircraft onto the runway; we will not be doing a full stall landing.

Very little flare is needed to perform a nice landing. Remember to use your fingers to round out, if you use too much pressure, the Velocity will be flying once again. At this point you will be nose high with low airspeed. It is important that all rudder pressure is removed prior to touchdown to prevent the brakes being locked on. Once on the ground rolling out, use your brakes as directional control and maintain centerline.

Warning: Do Not attempt a full stall landing in the Velocity. A canard stall will bring the nose down hard and could result in damage to the nose gear.

*Continued on next page*

### V-Speeds in Knots

Vne 200  
Vno 170  
Va 140  
Vle 120  
Vlo 130  
Vs 60  
Vso 65

X-wind Component  
15kts takeoff  
20kts landing

Max Weight  
Standard 2250  
Long Wing 2400  
XL 2700  
XL-5 2900

## CFI Notams

*Continued from previous page*

### Crosswind Landings

Analyze the wind before pattern entry, or on downwind to determine if it is a right or left crosswind condition. This can also be determined on final by observing the crab profile while holding centerline. The optimum technique is to fly a crab approach with a slight rudder application a few seconds prior to touch down. The rudders are very powerful and can create heavy aileron forces to counter the rolling tendency of the rudders. After touchdown, apply stick into the wind and brakes as necessary to maintain centerline.

### Go Around

Do not delay the decision to go around. Apply full power at first sign that a go around is necessary, after a positive rate of climb, retract the speed brake or landing gear.

### Upper Air Work

Clearing turns will be performed prior to any maneuver in the practice area. All upper air work will be performed 2,000 feet or higher.

### Steep Turns

Establish the aircraft in straight and level flight at cruise speed and align the aircraft with a landmark. Roll into a 45 degree angle of bank and apply slight back pressure as necessary to maintain altitude. Adjust power if needed. Complete the maneuver performing 360 degree turn left and right.

### Slow Flight

Slow flight will be performed while maintaining a constant altitude and angle of bank. Enter slow flight from a normal cruise. We will maintain 80 knots and trim elevator as needed to maintain hands off flying.

### Stalls

Maintaining altitude, reduce the power or idle. As the airplane decelerates, apply aft stick as necessary,

adjusting elevator trim as needed. At approximately 60 to 65 knots, the canard will either stall or pitch buck indicating the canard has completed the stall. When this occurs, reduce back pressure on the stick to reduce the angle of attack and apply smooth power. When the canard stalls, the airplane will not brake into a spin. With the canard stalled, the ailerons and rudders will be effective throughout the stall.

••••

### 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, Flight Advisor
- Scott Baker, CFII

The following Flight Instructors have also been approved by Avemco Insurance:

- Sam DaSilva - Seminole FL 727-595-6384
- Mike Gunvordahl - Burke SD 605-775-2952
- Mack Murphree - Dayton NV 775-246-9364
- Manny Lewis - Scotia NY 518-399-8614

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).

### 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 - Rosamond CA 661-256-8272

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

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

Glenn Babcock - Tampa FL 813-569-0281 / 813-604-0149

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

Gary Stull - Tampa FL 813-949-1297

(Gary is an airline employee and can travel inexpensively)

Mike Watson - Mt. Vernon NY, 914-699-3915 / 201-476-8231



## Safety Corner

Accident & Incident Reports,  
Maintenance & Service Difficulties

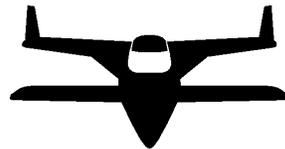
No report this issue due to the hurricanes

### Visit our Online Construction Photo Gallery

The Construction photo gallery contains over 400 construction photos, organized into 17 galleries. You can view and / or download any of the JPEG photos.

Photo gallery categories include: Engine (Continental IO550, Franklin, Lycoming IO540), Fuel System, Fuselage, Keel and Control System (Center Stick Controls, Yoke Controls), Landing Gear (Fixed Gear, Gear Legs, Retract Gear), NACA Photos (Premolded NACAs), SUV Photos, VG Photos, Wings and Canard.

Go to: [velocityaircraft.com](http://velocityaircraft.com)  
click on "Builders Page"  
link



### Nov 6, 2004 Factory Open House Workshop Schedule

Saturday November 6, 2004 - 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](http://velocityaircraft.com)

**CANCELLED Due to  
Hurricane Damage**

# 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.

## Moving Seat

I just finished installing a moveable rear right seat in our Velocity standard. I noticed that people exiting the rear seat would scooch down to the door then have trouble getting over the door sill.

I mounted two drawer slides on the seat and attached that to the floor with two 3x3x3/16 x 18" long aluminum angles. These are 230 pound rated slides. You might be able to get by with lighter units but these are thinner thereby raising the seat about 2-1/2 inches. The slide is 22 inches long and has a travel also 22 inches. I used clips on the front seat to be able to tilt the seat forward under the panel.

The slide is from McMaster-Carr part number 1277A84.

....



Front seat tipped



Seat extended



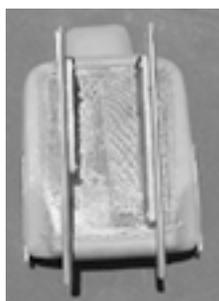
Bottom view ready to install



Seat with slides



Seat in front position

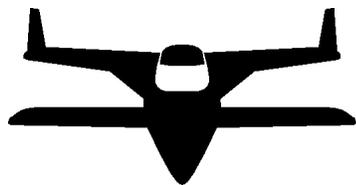


Bottom view seat with slide



Seat in normal back position

# Buy Sell or Trade



Velocity parts, tools, kits, flying Velocity's: **Free** and exclusive to *Velocity Views* Subscribers.

## For Sale 173 LW Velocity FG

TT A&E 48 hours, MT constant speed electric prop (3 blade), One collins Nav-com, transponder, apollo GPS. Standard panel and engine gauges. Engine is a IO-360 Lycoming, new barrels and all accessories have been overhauled and certified. Also all gyros have been certified. Also panel mounted intercom installed. Aircraft flies great and averages 172 mph cruise at 10,000 ft. Built by an A&P and certified hardware used thru-out. Aircraft at Medford OR in Medford Air's hangar. Delivery available. All factory updates are c/w and fresh condition report will be done at time of sale.

Price \$89,500.

Reason for selling - Lost medical.

Call Gerald Robertson  
541-618-9393

## For Sale Velocity FG

Standard Velocity fixed gear kit for sale. Fast-build wings, fast-build fuselage. About 100 hours of work completed, all of which were done at the Velocity Service Center under their Head Start Program. The main spar has not been bonded into the airframe, so the entire kit will still fit in a rental truck. Kit located in Colorado.

Price: \$39,000.

Call Arlan Mock (919) 362-3953  
email: amock@alum.mit.edu

## For Sale Velocity XLRG

Velocity XLRG for sale. Unable to finish in the four years we have had it. Three year old daughter comes first and partner has lost interest. It is finished through one fuel strake. After finishing the other and mounting the canard it is ready to do the surface prep for paint. This is more complete than a fast build with all the options for less money. \$60,000 OBO

Wes Oliver  
817-924-8987  
wesley.oliver@belwave.net

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Fax: 772-589-1893

### Internet web site:

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### Builder assistance:

support@velocityaircraft.com

### Other e-mail addresses:

kitsales@velocityaircraft.com  
accounting@velocityaircraft.com  
parts@velocityaircraft.com

## Builders HOT LINE

Please remember that on weekends and after hours, we do not answer the 772-589-1860 phone number. Our unlisted builders hot line is 772-589-0309 and, if we are here, this is the only number we will answer.

### Velocity Service Center Inc.:

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

#### Submission Deadlines

Quarter:	Mail Date:
1st	December 1st
2nd	March 1st
3rd	June 1st
4th	September 1st

## Subscriptions

- This is the last issue of *Velocity Views*. Future newsletter information will be provided direct from Velocity Inc online only at [velocityaircraft.com](http://velocityaircraft.com)

- **2004 Calendar Year Subscription** (Volumes 37-40): The annual cost was \$45.00 for mailing addresses within the United States. For all other mailing addresses, the cost was \$50.00 in US funds (covers Air Mail & special handling).

All subscriptions were sold on a calendar year basis. New subscribers joining mid year were provided with back issues for that calendar year.

- **Back Issues** 1995 thru 2004 are available for sale (see page 2 of this issue), until December 1, 2004. Specify the year(s) you want when ordering back issues. Check or PayPal only.



FIRST CLASS

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