



The Newsletter of the Home Wing of Van's Air Force; Builders and Fliers of Van's RV Series Aircraft

JANUARY MEETING

The January meeting was held at Bill Kenny's Shop. The shop was large enough to make even my 3 car garage seem cramped. To give you an idea of the size, there were two airplanes under construction, with plenty of space left over to hold the fifty or so attendees. Bill is working on his wings and has both of them in jigs. Brent Ohlgren is also assembling his airplane in the shop. Brent is nearing completion on the fuselage. Workmanship on both planes appeared excellent.

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EVENTS CALENDAR

EAA Chapter 105 Monthly Meeting

SPECIAL MEETING NOTICE (PRESENTATION)

Thursday, February 26th, 7:00 pm, at the EAA 105 Hangar/Clubhouse, Twin Oaks Airpark:

"The Parachute - its use in sport aviation safety."

Speakers: Alien R. Silver from Hayward, CA (Silver Parachute), and Dan Taraslevich from Arlington, WA (Para-Phernalia, Inc).

EAA Chapter 105 "Breakfast at the Aileron Cafe"

Saturday, March 7th (first Saturday of every month) at Twin Oaks Airpark, 8:00 am.

NW Aviation Conference & Trade Show

February 21st & 22nd at the Puyallup Fairgrounds. See Kathy at the meeting for more info.

Hands-on Fabric Covering and Composite Construction Workshops.

/ Alexander Sportair. March 7th & 8th at Aerocenter, ,erco County Airport, Puyallup. Contact workshops@sportair.com or 1-800-967-5746 for info.

**MEETING NOTICE - Frank Justice, Meeting Coordinator
(503) 590-3991 Frank_K_Justice@ccm.ssd.intel.com**

Place: Steve Householder's home
14227 NE Stag Hollow, Yamhill Date:
February 12th (2nd Thurs. of the month) Time:
7:00 pm

The next meeting of the Portland Area RV Builders' Group will be held at Steve Householder's place in the Portland West Hills area. Steve is working on an RV-6, and I understand has some tools in his shop that even Randall Henderson does not.

To get to Steve's place you need to get on Canyon Road. From the east (Portland, Vancouver, etc) take highway 26 west from Portland and take the Canyon Road exit to the right just past the top of the hill. Follow Canyon Road and go left on 87th Ave. (at the Lexus of Portland dealer). Then take the first right (just past the post office) which is Cashmuir. Go about 600 feet and turn right at Steve's shop next to the brick building.

From the west and southwest (Beaverton, Tigard) take the Canyon Road exit off of 217 (right turn toward Portland) and turn right at 87th Ave. (at the Lexus of Portland dealer). Then take the first right Gust past the post office) which is Cashmuir. Go about 600 feet and turn right at Steve's shop next to the brick building.

From the northwest take highway 26 to 217, get off of 217 at the Walker Road exit, and turn left on Walker toward Portland. (This is just a little quicker than going down to Canyon Road on 217). Walker Road ends on Canyon Road; make a left there and turn right at 87th Ave. as above.

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THE TOOLAHOLIC

by Randall Henderson

This month instead of talking about a specific tool, I'd like to discuss some local places to go for tools and supplies.

The unfortunate fact is that you can't just go to Home Base or Ace Hardware and pick up a rivet gun, dimple dies, or AN fittings (although sometimes its fun to go and ask, just to see the funny looks they give you!) For most of that we need, we have to go mail order, through Cleveland, Avery, Spruce, etc. But mail order can be a hassle. You have to wait for your merchandise, you can't look before you buy, there is always the added cost of shipping, and there are plenty of things you need aren't in the aviation catalogs. So I'm always on the lookout for the "right" places to go locally for tools and supplies. Here is a list of local suppliers that I've found to be worthwhile.

Lucille's Tools

960 SW Baseline, Hillsboro 648-1762

This is a primo tool place, for most things other than the specialized aviation tools. I got a top quality S&K torque wrench there for about \$25 less than the one from Avery. They currently have a promotion going on various measurement tools (calipers, micrometers, etc.)

Falk Ace Hardware

4285 SW Cedar Hills Blvd. Beaverton 644-0121

This is one of those hardware stores who's selection goes beyond that offered by your run-of-the-mill hardware store. I recommend them more for supplies (screws, washers, grommets, etc.) than tools however -their tools are pretty run-of-the mill "Ace" brand stuff. Examples of more hard-to find things that I've gotten there include plexiglass drill bits, wire gauge drill bits, grommets and bushings, stainless steel screws, hex head machine screws, Teflon and mylar washers, and line clamps. Open 7 days.

Wink's Hardware

903 NW Davis, Portland 227-5536

Even more oddball hardware. But not open on weekends.

Portland Compressor

903 NW Davis, Portland 227-5536

Lots of compressors and supplies, and people who know more about them than at Home Base or Sears.

Associated Hose Products. Inc. 801

SE Alder, Portland 232-0245 4444

NE 148th, Portland 257-4673

Good place for air hoses (breathing and compressor) and fittings. Doesn't carry Stratoflex or Aeroflex however, so nothing for your engine compartment.

Palm Abrasive & Tool Co

905 SE 14th, Portland 238-3800

The main reason I go there is for drill bits. They have all sizes and types, including 118 and 135 degree split-point, and were able to make me up a complete set of split-point bits, including the drill index, for about half of what you can get one for at Avery. No threaded shank bits however. Open Saturday but only until noon.

Sanderson's Safety Supply

1101 SE Third, Portland 238-5700

Good place to go for paint respirators, fresh air masks, hearing protectors, solvent resistant gloves, safety goggles, etc.

TAP Plastics

3818 SW Powell, Portland 230-0770

15230 SW Sequoia Pkwy, Tigard 620-4960

All sorts of fiberglass supplies (no "West Systems" ep oxy though).

Columbia Airmotive

1601 SW Sturges Drive, Troutdale 665-4896

This place actually has AVIATION stuff, new and used, more for parts than tools. I have purchased mail order from them but never actually been there. The thing that's nice about this is that even though I do mail order from them, it's usually a lot faster since it's local, and my parts often arrive the day after I place my order. I hear it's a pretty interesting place to visit, but they're out in Troutdale, and not open on weekends.

I'm sure I've missed some, and I've intentionally omitted others that are just too obvious (Flightcraft, HHI, Van's etc.) But if you have a "favorite" place to go for tools, supplies, or even a good cup of espresso, why not drop a line to our newsletter editors. (Hey there's a thought -an "Airplane Parts and Espresso Bar". Hmmm....)

SUBSCRIPTIONS DUE

Look at the date under your address on the cover. THAT IS THE DATE YOUR \$10 IS DUE. Use the form at the back of this newsletter to subscribe or renew. If you are paid up but the date doesn't reflect this, please give the Editors a call so they can correct it.

PROPER FIT. ESCAPE AND DEPLOYMENT (pt 2 of 3)

As Published In: SOARING and SPORT AEROBATICS MAGAZINES (June, July & August 1992).
www.pia.com/silver/index

submitted by Gary Graham

rewritten with permission from Alien R. Silver (SILVER PARACHUTE) and Dan Taraslevich (PARAPHERNALIA.INC.)

As you recall in Part 1, we covered all aspects of preflighting your parachute system as well as preflighting your mind. The positive, confident attitude we began to develop will become extremely important, in this part, as I take you through properly donning your parachute, bailing out of your disabled aircraft and deploying your emergency parachute system. For myself, an experienced skydiver, this is the fun part. But for most of you who can't understand why I would jump out of a perfectly good airplane, this will probably be the most challenging aspect both physically and mentally of executing your emergency bailout procedures. Now, we're ready to put on your parachute. First, I want you to loosen (if necessary) and unhook the chest and leg straps. Put on your parachute like a vest being careful not to pick it up by the shiny, metal handle (the ripcord) or by grabbing just the risers where they come out of the container. Unless the risers are tacked in place you could pull the lines out of the container. I suggest you fasten the chest strap next. Do not over tighten it. The vertical portion of the harness (the main lift webs) must run in an approximate straight line from each shoulder to your waist so they can properly take up the opening shock. Over tightening the chest strap can cause a portion of this load to transfer to the chest strap and it may cause damage or failure during opening. Next fasten the leg straps. How tight should they be? Adjust them while bent forward at the waist. A simple guideline to use is when you straighten up you will feel a considerable amount of pressure in the small of your shoulders. Men, this is a good time to make sure certain parts of your anatomy are situated comfortably and are not being pinched by the leg straps. The leg straps will feel looser when you get in your aircraft, but does not mean they are too loose. You can tighten them again if you desire, but they do

not have to be so tight they're painful, just snug. When adjusting your harness special care must be taken not to allow the free ends of any adjustable straps (such as leg & chest) to remain against the adjustable friction adapters. During opening shock, where everything stretches, they could accidentally unthread. To be safe I recommend leaving at least 2-3 inches beyond the end of the adapters. Tuck in all the loose webbing ends in elastic keepers or wherever the manufacturer tells you. This will prevent them from snagging on anything, particularly on exit. Once in your aircraft NEVER loosen or remove your parachute. If you cannot adjust your harness properly have your rigger assist you. Become familiar with all the adjustments your parachute has. If your parachute is worn by different size people it must be properly adjusted for each person to prevent you from possibly falling out of the harness. You will not fall out of a properly adjusted harness. Some parachutes, particularly the older military pieces of equipment, may have as many as seven adjustments you must be familiar with. Consult your individual manual for instructions or better yet, a qualified rigger, if you have any doubts. If quick ejector snaps are used make sure you feel the lever snap over the detent balls. Unless seated all the way, the lever can easily be snagged and opened. I want to emphasize the importance of this because it takes very little force to release a partially locked quick ejector snap causing you to be totally without a leg or chest strap.

I suggest that you get your parachute on and off outside your aircraft. Why? We are creatures of habit and in case of an emergency when the adrenaline is flowing and you must bailout, you may do what you are accustomed to doing. For example, after a normal flight you may be accustomed to opening the door or canopy, releasing your safety belts, taking off your parachute and exiting your aircraft. By putting your parachute on and taking it off outside your aircraft you eliminate the possibility of leaving it in your aircraft when you may need it the most. If your aircraft is built (or you are) in such a manner that donning your parachute inside your aircraft is easier at least be very aware of the potential problem. Don't just get out of your aircraft after you're through flying.

I strongly recommend that you practice your emergency bailout procedures prior to your first flight of the day. Why? Because your first flight could be your last. Now, don't stop here. At the completion of each flight when everything is shut down is a perfect, stress free, time to practice your emergency bailout procedures. This allows you to simulate jettisoning your door or canopy, undoing your safety belt(s) and exiting your aircraft. There have been several incidents where pilots had difficulty releasing their door or canopy. Make sure the release

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mechanism is properly lubricated and operates smoothly, especially if you fly in a dusty environment.

Now I'll discuss emergency bailout procedures in greater detail. Every pilot and type of aircraft will require a unique set of procedures. If your aircraft has escape procedures become familiar with them and commit them to memory so you can do them in the dark and in any attitude. If your aircraft has no escape procedures make up your own checklist and practice them. I'm sure there are many others, but I can think of four major reasons to leave an aircraft: a midair collision, a structural failure, a severe control problem or a fire. In a situation warranting a bailout you must react quickly. This is where your practicing will pay off. This is not the time to start thinking of the proper procedures. Having formulated an escape ahead of time could save your life. Two things that might help you if and only if you have the time and still have some control are to gain as much altitude (AGL) as possible and to slow your aircraft down to make bailing out easier. But you may not have this luxury. Others say close your throttle and mixture just prior to exit to lessen the slipstream during bailout. This is fine if you have time, but when in doubt bailout immediately. The parachute works fast, but you still need time and altitude for it to work properly. You will need 2-3 seconds for your parachute to completely open. First jettison the door or canopy if necessary, then unfasten your safety belt(s). Note: NEVER unfasten your safety belt(s) first. You may be slammed into the canopy or other portion of your aircraft and be injured or rendered unconscious. You may find yourself upside down and jammed into some corner you never thought possible. The safety belt(s) are designed to hold you in place until you're ready to exit. After unfastening your safety belt(s) be prepared for one of four things to happen: 1) you may be pulling 1 (g) just like sitting in your aircraft on the ground, but not likely, 2) you may be pulling positive g's making egress very difficult, particularly if you have on an older, heavier military style parachute, 3) you may be pulling negative g's making you into a human cannonball, or 4) a combination of 2 and 3.

In any event be prepared for a difficult exit where you will need both hands to crawl and claw your way free of your disabled aircraft. You must be free and clear of your aircraft before pulling the ripcord to prevent the aircraft and parachute from entangling. If you are unsure of your altitude (AGL) you must find and pull your rip-cord as soon as you're clear of your aircraft (about one second or approximately 20 feet). The key is to get clear of your aircraft and LOOK for the ripcord in case it came free from its pocket. Looking also prevents fumbling and pulling on other parts of the parachute system and

wasting valuable time, which happens more often than people think. Don't worry about which way the aircraft is spinning as to which side you exit. Just get clear and pull the ripcord. If you wear glasses the wind will probably blow them off during exit, so you will want to practice finding your ripcord without them on. Another suggestion would be a snug fitting strap and/or other method, such as a flying type helmet on over them. There are also goggles you can wear over your glasses such as skydivers use. Another option is to carry (on you) a spare pair of glasses in a secure place, such as a small waist pack. If you wear a waist pack put a signaling mirror and whistles in it to aid in your recovery. Survival equipment in your aircraft is fine, but you may not be able to recover it.

Generally, an accepted method of pulling the ripcord is to firmly grasp it in your right hand with your left thumb hooked in the handle. Pull the handle as if you're trying to punch both fists through a wall. In other words pull as if your life depended on it. Consult your manual for their procedures or ask your rigger. Remember to pull hard, fast and fully extend your arms. If any ripcord cable remains in the protective cable housing, pull it out and toss the ripcord away. One, this will make sure you actually pulled the ripcord and two this will prevent it from tangling with the deploying parachute if your tumbling. If you injure yourself on exit you may have to pull the rip-cord with one hand only. Don't give up. Remember to LOOK, FIND, REACH & PULL. This is a procedure you can perfect with the help of a qualified rigger. Many riggers color code your ripcord handle with a bright, contrasting tape to aid you in locating the ripcord handle, on the first try. Remember, you may have only one try at finding and pulling the ripcord. If they haven't done this you can easily do it yourself or have them do it at the next repack. As the parachute deploys keep your legs firmly together to help prevent the parachute from going between them and possibly entangling or causing severe injury to various parts of your anatomy (especially you men). If you are absolutely sure you have plenty of altitude (AGL) it is all right to fall for a few seconds. I recommend about 3-5 seconds before pulling. This will tend to distance you from your disabled aircraft and will help prevent the possibility of it coming around and hitting you or entangling with your chute. BUT, if you are unsure of your altitude LOOK, FIND, REACH & PULL as soon as you are clear of your aircraft (about 1 second). Be careful not to accidentally pull your ripcord in the aircraft. It may cause the parachute to entangle on the tail or other aircraft surfaces. Some people say to take a hold of the ripcord before you exit, but I strongly recommend waiting until after you are clear of the aircraft. Because, you may need both hands to assist you in escaping your disabled aircraft. Now that you're free and pulled the ripcord how long will it take for your parachute to be fully deployed? Your parachute should be fully

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Open in about 2-3 seconds. That means if you're 6 inches or 6,000 feet above the ground once your parachute is open, it's open and in its slowest descent mode. Your parachute will not need an additional loss of altitude to slow down. So, the only real difference between 6 inches and 6,000 feet is that at 6 inches you don't have as long to enjoy the scenery and you were very lucky. What may vary in the 2-3 seconds it takes for your parachute to open is your loss of altitude. If you exited your aircraft in a horizontal plane you may only lose approximately 150 feet of altitude in 2-3 seconds. If your aircraft is diving straight towards the ground you may lose approximately 700-800 feet in the 2-3 seconds it takes for your chute to open. The time is consistent, not the loss of altitude. If I had to give you an average distance for your chute to open in 2-3 seconds I would say about 300-350 feet is probably average.

It would be nice to say everything is done and you can just hang around enjoying the ride and the view, but you're a survivor and survivors do not give up. There is still work to be done. The final installment will discuss steering, avoiding obstacles and proper landing procedures. You've come this far and I don't want you to blow your landing and recovery. You are not going to have the luxury of a missed landing approach and be able to go around. Literally, let me leaving you hanging until next time. Take care and blue skies. As always, if you have any questions or parachute needs, please feel free to call or write. I can be reached Monday through Friday 8am-4pm (PST) at (510) 785-7070.

BUILDER'S TIP

by Vincent S. Himsl

Rather than use the flange marking tool as per plans, I drilled a hole in the end of the ruler of an inexpensive 12" combination square. Then I took the 'base' and micro adjusted it to the exact distance to center the hole on the center of flange of the ribs, spars, etc.

Next I took the combination square and secured the long end of the ruler to a vise using the bubble to level it. This eliminates having to somehow secure a piece before you mark it. In use I put the marking pen in the hole and draw the piece to be marked across the pen using the base and gravity as support. I found this to be quicker, more accurate and easier to use than securing the piece and then drawing the edge marking tool.

As with most great ideas, I am probably not the first to think of it. In fact I read this list so much that I probably just remembered a previous posting. Takes a max of five minutes to set up and I it saves me a lot of time and my markings are more accurate.

IT "LOOKED" LIKE IT SHOULD WORK!

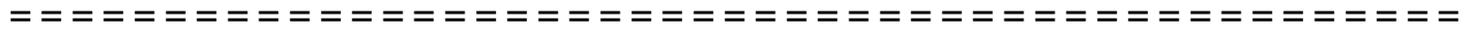
by Scott McDaniels

I was relating this story at one of our builders meetings recently, and thought I would share it with everyone. It is a good reminder for us to think about what we are doing, and to realize that things may not always work out as we would expect them to.

This story happened quite a few years ago (well OK not too many years ago) so I may not remember all the details exactly. It begins with me doing my usual parking and greeting airplanes at the Copper State Regional Fly-In in Arizona. A couple of RV-6's were taxiing in, and being an RV builder myself I made sure that I got them parked in a good spot and said hello. The gentleman that got out of one of the airplanes immediately got on the ground and began looking into his cowling from the air outlet in the bottom. He then began laughing and jumped up and began teasing his friend about how slow his RV was.

After things settled down I asked him to explain... He said that ever since completing his airplane his friend's had always been faster. Even though they were nearly identical in the way they were equipped. While flying in formation at altitude on the way to the fly-in; he heard a loud noise up front. While he was looking into what the problem was his wingman buddy noticed that his partner flying lead was suddenly pulling away "And Climbing". He called him on the radio and asked what the heck happened. Said it looked like he had just kicked in a turbocharger. Well, it turns out that while this person was building his RV he decided to design his own induction airbox with filter (I don't know whether the factory one was available then or not). What happened in route was that the whole thing fell off his carb into the bottom of the cowling. It turns out that it was so inefficient that he had more power from the engine with the carb. just open to the bottom cowling area than he had with his home designed induction system that utilized ram air from the outside.

Moral of the story? If you are going to deviate from the designers design. Be prepared to test and evaluate what ever you do so that you know what the real life effect is. Otherwise it is anybody's guess. It may "look" good, but until you prove it you really don't know.



THE TOOL EXCHANGE

The club Toolmeister is Brent Ohlgren, 288-8197. Let him know if you have jigs, tools, shop space, etc. to loan, exchange, or otherwise provide - at NO COST ~ or if you are looking for something specific to borrow. And whether your item is listed here or not, go ahead and bring it to the meeting.

Home Wing Tools available: HVLP Paint Sprayer, Hole template for instrument panel, Wire crimping tool and die, Brake lining rivet set tool, and Tune-up and Annual Equipment (Compression check, Mag timing light, Timing dial, Mag adjustment tool, Plug gapper, high voltage cable tester, and Plug vibrator cleaner). Brent Ohlgren 288-8197.

Cutting wheel mandrel, custom made by Stan VanGrunsven to use for cutting your canopy. Knob on the outside makes it much easier to hold steady and not screw up that expensive piece of Plexiglas. WHO HAS THIS? Call Brent Ohlgren 288-8197.

PropTach (optical electronic tach, use to calibrate your tachometer). Butch Walters 360-636-2483.

Engine Stand. Don Wentz 503-696-7185.

Engine Hoist. Norm Rainey 360-256-6192.

Precision chemical scale, for measuring pro-seal. Brent Anderson 646-6380.

Surveyor's transit level ~ handy way to level wing and fuselage jigs. Bill Kenny 590-8011

Back Riveting Contraption - large, counterweighted bucking bar and suspension system, and offset back rivet sets. (See "Back Riveting Wing Skins, December 1994 issue). Bob Neuner 771-6361.

Lead crucible with electric heating element for melting lead for the elevator counterweights. Doug Stenger 324-6993. Table

saw taper jig, for tapering wing spar flange strips. Carl Weston 649-8830.

WANTED Ads are FREE

Leftover ProSeal. Skip Dennis. 503-655-7226. 2/98

Interested in finding a good flying RV-6A. Ola Vestad. viking@wolfenet.com 2/98

Looking for an engine for an RV-8 that's in progress. Any ideas? Bryan Stauter oasis@oio.net 1/98

FOR SALE/ RENT Ads are FREE.

RV-4 kit, tail an wings finished. Superb quality by A&P, \$8000. Additional parts available. (503) 648-1819 or (503) 628-2006. 2/98

Airpark Property. Independence State (7S5) North Annex. Lot is approximately 140' wide by 115' deep. \$65,000. John (Sky King) Conley (503) 784-3134. 2/98

Completed empennage kit. Excellent workmanship. \$800 obo. Greg Halverson. 503-591-0105. 2/98

FYI - Dave & Helen Patchett found a place in Arizona to buy really nice whole cow hides for doing upholstery. They measure 6' x 8', inside cut, several colors. \$110 per hide. Dave 541-473-2785 for more info. 2/98

Narco LRN-840 Loran. Works perfectly, includes tray, antenna, manual. Cheap navigation, only \$200. Randy Lervold, 360-944-3702 1/98

Van's Air Force Apparel, Home Wing member discount. Limited edition VAF hats, gray crown with black bill. Four color 100% embroidered jacket patches. Van's Air Force jackets, MA-1 style black w/red liner, VAF patches on shoulder and breast, pencil pocket, optional name patch. Randall Henderson (503) 297-5045, or catch me at a meeting.

Duckworks Landing Lights. Retro-fittable, light, easy installation. Kits start at \$69 (discount for Rid RVators). Don Wentz 503-696-71 85.

"Home Wing" Newsletter Subscription/Renewal

Please fill out and mail to **Jerald & Kathy Hall, 32034 J.P. West Rd., Scappoose, OR 97056-2600**, along with \$10 for renewals or new subscriptions. Please make checks payable to Kathv Hall. If you are renewing, you only need to give your name, date, payment method, and any other information that has changed. Use this form for address changes too.

Name	Spouse's Name
Address	Home Phone
City, State, Zip	Work Phone

Pmt (\$10/yr) Check a Cash Q Info change only a E-mail Address.

Project (RV-3, 4, 6, 6A, 8)_____ Comments?

Progress:

Tail	In Progress G	Finished Q
Wings	In Progress rj	Finished Q
Fuselage	In Progress a	Finished Q
Finish	In Progress O	Finished (i.e. flying) a