

THE CANARD PUSHER

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If you are building a VariViggen from 1st Edition plans you must have newsletter 1 through 50. If you are building from 2nd Edition plans you must have newsletters 18 through 50. If you are building a VariEze from 1st Edition plans you must have newsletters from 10 to 50. If you are building a VariEze from 2nd Edition plans you must have newsletters from 16 through 50. If you are building a Long-EZ you must have newsletters from 24 through 50. If you are building a Solitaire, you must have newsletters from 37 through 50. If you are building a Defiant, you must have newsletters 41 through 50.

A current subscription for future issues is mandatory for builders, as this is the only formal means to distribute mandatory changes. Reproduction and redistribution of this newsletter is approved and encouraged.

PLEASE NOTE: BUILDER SUPPORT IS ON TUESDAY AND FRIDAY FROM 8:00 am to 5:00 pm ONLY. If you have parts that you would like us to see and or would like to drop in, please make it Tuesdays and Fridays if you can. If you need to come up other than those days, please call so that we can be sure to be here.

When writing to RAF send a stamped, self addressed envelope along if you have any questions. If you are placing an order, it's best to keep it separate from a request for an answer to a builder question. Mark the outside of your envelope "builder questions". This will speed up your reply.

OSHKOSH '86

Burt flew his Defiant, N78RA, and Mike and Sally flew their Long-EZ, N26MS, into Oshkosh again this year and this year saw more Rutan Designs on the flight line than ever before.

Irene "Mom" Rutan did her usual sterling job of checking everyone in and chasing down all elusive ones parked in camping areas, etc.. Once again, not everyone registered, so her count does not jive with the number published in the Sport Aviation. It really is hard to understand why you guys and gals don't register, a few minutes of your time, and that is all - maybe next year? According to Irene, there were 54 VariEze's, 67 Long-EZ's, 3 Defiants and 3 VariViggen's that were parked on the ground at Oshkosh in 1986. That is a grand total of 127! A list of all "N" numbers recorded by Irene and seen by her on the field is published in this CP.

The RAF booth was shared this year by Feather Lite Products (Larry Lombard and Michael Dilley) and the IVHC. This made for a much more interesting booth with all kinds of hospitality club membes helping out, the booth was always crowded, friendly and happy. Larry and Michael had several of their products there for builders to inspect and it was really neat having them there to help answer question.

We are very proud of "our" EZ builder/flyers who keep showing the way with some truly outstanding workmanship, and who continue to blow away the rest of the field with the kinds of incredible trips routinely flown all over these United States as well as many, many parts of the world. A recent rample is tow Long-EZ's which flew from Spokane, Washington to Australia, crossing the Atlantic via the Azores, (not to be confused with the more normal island hopping route via Greenland, Iceland and Scotland which can easily be accomplished even in a Cessna 172).

Pretty incredible, really. As we said, we are proud to be associated with these kinds of people.

Some highlights for us at this year's Oshkosh were the obvious effort that EAA had made on the flight line, the Homebuilders Corner, a neat little building on the flightline used one morning by the EZ group, good coffee, good company and lots of "hangar flying". The Italians were sensational! The Goodyear blimp was ponderous, but interesting. The Pitcairn Autogiro was quaint! The little Stratos from Australia was cute. Best of all, the Hospitality Club dinner, as always, was really the highlight of the week. Thanks to Bernadette and Doc Shupe.

A poll was taken at the Bull Sessions of rain trim changes in VariEze's, Long-EZ's and Defiants. The VariEze's had 9 examples that trimmed nose up and 12 that trimmed nose down in rain. The Long-EZ contingent had 16 that trimmed nose down and 1 with no trim change, all standard canards. Three examples of the Roncz canard were there and all 3 had no trim change. All three Defiants reported no trim change. The trim change in the EZ's range from very slight to slight (90%), moderate (5%), heavy (5%). It was very difficult to see or feel any difference between these canards.

If you did not make it this year, too bad, how about next year? Don't forget to register!

"Dear RAF People;

I am quite sure I have "N" numbers of all the Oshkosh arrivals. I slao checked at the registration booth, thanks to all who registered, it helped an awful lot, it seems like I did little else at Oshkosh this year! If I have missed anyone, please write and teel me.

I enjoyed meeting all of you and seeing the great quality of the Rutan Canards on the field. Thank you for your support of the Voyager program, you are a great group!

Thanks,
Irene "Mom" Rutan

P.S. I wish I had the names to go with all these "N" numbers."

VARIEZE'S

F-PYHZ	N1335D	N89RS	N83RP	N13WM	N83HR
N3252	N4ZZ	N15PR	N83DE	N82VE	N3793X
N44GG	N39EZ	N28JF	N93QL	N19VE	N235LB
N288EZ	N57EZ	N26JW	N60SD	N36SD	N267WM
N2286A	N37EZ	N67EZ	N86OH	N87JD	N12VE
N9091A	N28RR	N82JF	N8301	N118SJ	N49VE
N301RW	N300DJ	N222HK	N222EG	N16EL	N99VE
N7AH	N1QD	N729BB	N3976D	N79SG	N18VL
N718RM	N999JD	N9113A	N110NA	N99RS	N3262P

LONG-EZ'S

N1120C	N25LE	N339E	N412DM	N34JR	N112TG
N115EZ	N460LZ	N26MS	N10NG	N454BC	N85LD
N339E	N211LE	N30EZ	N100RY	N97EZ	N350JK
N61MB	N63DW	N35VL	N345KJ	N25HC	N988ST
N78CD	N888EZ	C-CBLD	N510PG	N84LL	N85LD
N676H	N1378X	N44TJ	N407MN	N84DY	N40EB
N39A	N688W	N606TT	N45FC	N31JJ	N101AN
N684SK	N369R	N494LE	N84HT	N169SH	N86LM
N2528C	N46AA	N67KC	N44FC	N81HM	N410BB
N412DM	N8EZ	N45EZ	N2069G	N38AR	N100PY
N883MB	N38EZ	N442C	N360DP		

DEFIANTS

N78RA
N39199
N38JM

VARIVIGGENS

N873L
N33VV
N31VV

N4ZZ, VariEze built and flown by Ken Swain has been on the flight line at Oshkosh 8 years straight!

The Designer's Award, this year, went to STEVE WRIGHT of Brentwood, Tennessee for his outstanding example of a VariEze, N9091A. Congratulations, Steve!

VOYAGER UPDATE

As most of you will know by now, the Voyager has suffered a serious setback in its schedule. Things were going very well. A full dress rehearsal for world flight take-off was successfully flown out of Edwards Air Force Base at the heaviest weight flown to date.

This flight brought out a few points that required one or two more engineering test flights before a world flight could be attempted. During one of these flights, while flying level at 9000 ft. at a moderate cruise power setting, one blade of the front engine's propeller separated from the hub. The ensuing vibration was so intense that several instruments came out of the panel and the rear engine's spinner thrashed enough to run into the cowling. The front engine mount broke in two places and every tube was bent. The engine remained on the airplane, fortunately. Both engines had safety cables attaching them to the firewalls. Dick's biggest problem was determining which engine was in trouble. Obviously, he did not want to shut down the wrong engine! The chase plane was able to identify it for him and he subsequently caged the front engine, declared an emergency with Edwards and made a safe landing on their runway 04.

The Voyager was flown, single-engine, back to Mojave the next morning after substituting a good old reliable B & T wood prop for the variable pitch prop on the rear engine. The front prop, which had failed, was removed and sent away for inspection and evaluation. The manufacturer, as well as the prop shop that did the post mortem, think that some prop rework that had been done by the Voyager team in an effort to improve performance, may have contributed to the failure. It is also possible that the drying of the wood in the desert environment resulted in the loss of shank retention. We adjust for this with our fixed-pitch, wood props by routinely retorquing the bolts. This adjustment is not available on any of the variable pitch wood propeller types.

The Voyager team removed both engines. Beech provided transportation to Mobile, Alabama where Teledyne Continental began an immediate teardown/inspection and complete rebuild. Hartzell Propellers agreed to build up two special props using the latest John Roncz airfoil section blades. Bruce Evans and his team commenced to build a new front engine mount and to repair and modify cowlings to fit the new prop/spinners. Incredibly, this dynamic group will probably fly their next test flight by the end of October! An unbelievable feat in the face of overwhelming disappointment. The support that they have received from Continental, Hartzell and Beech is no less amazing - marvelous - Go for it, Voyager!

What can be learned from a problem like this? First of all, you can see why Burt has been so adamant about the use of variable speed/constant speed props on our experimental airplanes. To use any manufacturers variable or constant speed prop without conducting a full, in-flight, strain gauged vibration survey is probably courting disaster. Second, anyone who may still insist on doing some of this kind of testing should, at the very least, install a 3/16" diameter safety cable to retain the engine in the event of a failed engine mount - it could save your life. RAF categorically does not recommend any variable or constant speed props on any RAF designed airplane.

LONG-EZ'S TO AUSTRALIA

John Koch, N38TT, and Ed Roman, N38AJ, both stock O-235 powered Long-EZ's, left from home base, Spokane, Washington. They flew non-stop to St. John, Newfoundland where they cleared customs and had their avionics checked and approved. The filed flight plans for the next leg, non-stop across the Atlantic to the Azore Islands, a distance of just over 1400 nautical miles (1611 statute miles), average fuel used for this leg was between 4.0 and 4.5 GPH. Each Long-EZ was equipped with a 36 gallon auxiliary tank in the back seat and each had Loran C as well as ADF. A good thing, too, because Johns ADF went out and Ed's Loran failed, between them, flying whenever possible as a flight of two, they were able to navigate well.

Several times, they were forced by local officials to take off separately which defeated the object of flying together for safety. In each case, though, they managed to find each other and join back up. Once, while penetrating a serious line of thunderstorms, John found himself being forced upward to be "spat" out of the top of an enormous storm cloud while Ed was blown out of the bottom. It took hundreds of miles for them to locate each other and join up after that experience!

They landed in some friendly and cooperative countries and also in some not-so-cooperative countries. In some cases they had great difficulty getting back out to their EZ's. Once in the terminal building, they could not get back out onto the ramp! After a really fantastic trip, they eventually arrived in Northern Australia

where they left their Long-EZ's hangered with an Australian Long-EZ builder and returned home by "big aluminum bird" to earn more money and wait out the monsoon season. They intend to return to Australia next summer and continue their trip to Hong Kong, Hawaii and back to Spokane. John promised to write this up for a magazine article - should be most interesting. One piece of advice he feels could save anyone contemplating such a trip a lot of hassles - visit your local Navy surplus store and buy, at least, a Captain's jacket, complete with stars and bars and epaulets, and when in the East (Egypt, India, etc.) wear it, and it will get you through the barriers and gates you can't get through dressed in civilian clothes!

Anyone seriously interested in trying something like this trip may contact RAF for John's address. He says he can probably save you a lot of leg work and heartache.

Best of luck for the rest of the trip next year - please write a short blurb for the CP!

"THE BONNEVILLE 125"

Shirl and Diane Dickey have done it again! Another great fly-in and a super fast EZ race over the Bonneville Salt Flats. The weather made it rather tough to get to Wendover, Nevada, but quite a few made it and, in fact, the weather was not bad at Wendover.

The airport at Wendover is "big", a deserted old Air Force base, with nice long runways and it is an easy shuttle bus ride to the hotels. There are five or six nice casinos and several restaurants and lots to see and do. Wendover is a neat little Nevada town, almost on the border of Utah, even if it is situated in the middle of an area that looks for all the world like the surface of the moon!

The race was fast! Average race altitude was only 4500 feet. It was cool and the air was glass smooth. Only nine airplanes entered, so Shirl decided to run all 3 classes in one race. The winner of the unlimited race was a 200HP, retractable, Glassair with a constant speed prop. The surprising thing was that he only beat Dick Kreidel's Long-EZ with a tired O-320, 160HP, fixed gear, fixed pitch prop, by a scant 4 MPH! Makes you wonder! Gus Sabo won the "standard" Long-EZ segment and Shirl Dickey won the standard VariEze race. Shirl turned in an amazing speed when you consider that he had a sudden power loss when his number 3 piston partially seized. He pulled up thinking he was out of the race, went mixture rich, and the engine continued to run, so he "had at it" and finished a credible 6th overall. Here is a list of the pilots, their airplanes, class they competed in and their speeds:

Ken Ashby	- Glassair - Unlimited - 225.49 MPH
Dick Kreidel	- Long-EZ - Unlimited - 222.1 MPH
Earl Wilson	- VariEze - Unlimited - 219.65 MPH
Ed Kewey	- Long-EZ - Unlimited - 218.76 MPH
Wes Gardner	- VariEze - Unlimited - 214.98 MPH
Shirl Dickey	- VariEze - Standard - 204.14 MPH
Alan Dirkson	- Long-EZ - Unlimited - 194.16 MPH
Gus Sabo	- Long-EZ - Standard - 190.9 MPH
Stan Sneiderman	- Long-EZ - Standard - 174.16 MPH

LORAN UPDATE

Sally and I are continuing to build experience on our Northstar M1 Loran C. We are absolutely satisfied so far. On a trip to and from Oshkosh this August, we experienced no drop out at all! We had excellent, accurate data all the way there and all the way back. Our route was Loran-direct, essentially, Mojave - Las Vegas - Grand Junction, Colorado - Estes Park, Colorado - Sioux Falls, South Dakota - Oshkosh. We flew the entire flight at 17500' using our Aerox O₂ system. We had 30+ knots of tailwind and the trip was smooth and uneventful.

Coming back was similar but with a 15-20 knot headwind. We flew at 8500' to 12500', and even when flying in rain, our Northstar continued to run flawlessly. A point that no one I know of, who uses a buried homemade antenna, can claim! Apparently rain causes a static buildup on the skin and the Loran will drop off the line. Just like all other Lorans we have tried, the Northstar becomes uncertain if we fly from Bullhead City, Arizona towards the southeast to Phoenix - or anywhere from there to the Texas coast. This, I guess, is a fact of life until the FAA installs one or two more Loran transmitters to eliminate the so-called mid-continent gap. In summary, we both love our Northstar. There is not one feature we would change if we could except, perhaps, to have it recommend the best restaurants at our destinations!

BOONVILLE, CA. UPDATE

Larry and Michael (Featherlite Products, Inc.) have been busy since Oshkosh where they shared the RAF booth and had on display a number of their products. They really enjoyed talking to so many of their customers and to be able to get out of their shop and talk airplanes for a whole week.

The Long-EZ leading edge fuel strake kit is now out and quite a few have already been installed. The leading edge "D" section is slightly oversize to enable you, the builder, to custom trim to perfectly fit the fuselage and wing. To identify the proper position, B.L. 23 rib must be located at the jink or bend, then you can trim to fit the fuselage, then the wing. Don't forget to remove the peel ply from the top and bottom lips before installing the flat panels.

After much scrutiny, Defiant cowlings are now on line. Cheeks have been enlarged to accommodate the O-320, as well as the O-360 Lycomings. The rear cowls will fit most prop/spinner combinations with little or no trimming required. The front cowlings may require some homebuilder "blending" for the various combinations of props, spinners and prop extensions.

Defiant wheel pants are under development and will soon be available. These are based on Fred Keller's beautiful Defiant's wheel pants.

Several builders have asked about removing mold release. After waxing, PVA (poly vinyl alcohol), a thin, green film, is applied to the molds. This film is water soluble, so use a wet sponge and lots of water to wash it off your parts. Allow parts to dry thoroughly before scuff sanding for finish.

For more information, contact Larry or Michael at Featherlite Products, Inc.
P.O. Box 781
13451 Airport Rd.
Boonville, CA 95415
707-895-2718

DEFIANT NEWS

Charlie Gray flew his new Defiant, still in primer, 2 years and 12 days after receiving the plans. Charlie and his son, Marshall, are gluttons for punishment - they are building two Defiants. Number 2 is structurally complete. These guys really get with the program! They have already completed two Long-EZ's and Marshall is building another Long! Wow.

Don Foreman, from Kent in England, is essentially done with his Defiant and from the photos he has sent us, it looks like a beauty. Don, of course, was the first to complete a VariEze as well as a Long-EZ in England. Unfortunately, Don has run into a problem with the English equivalent of our FAA and is having a very difficult time getting his Defiant licensed. They are demanding a static load test.

Byrdell Mathews has finally got his Defiant flying well and has flown off his restricted hours. Byrdell had all kinds of power problems, could not get enough static RPM nor enough RPM's in level flight. Tried different props to no avail, finally traced the problem to wrongly timed magnetos on both engines! This was done by a real aircraft mechanic! Once corrected, this solved his low RPM problem as well as his overheating problems. Byrdell made it to the Kerrville fly-in so we should see his Defiant in some of the magazines.

There are now seven Defiants flying that we know of. Not bad in a little over 2 years since plans went on sale, especially such a complex machine!

Here are some weights on Defiant parts. You should be close to these weights if you are doing good work:—

Wings- complete with ailerons (no winglets)- 77 lbs.
Winglets- complete with comm. antenna and cable- 9 lbs.
Canard- with two nav. antennas (no elevators)- 75 lbs.
Elevator- complete with mass balance- each 10 lbs.
Rudder- with servo and tab (no mass balance)-3 lbs 12oz.
Fuselage- complete with 3 gear/wheels, seats,
canopy, windows and two engine mounts- 256 lbs.

All above weights were taken while the parts were structurally complete, but before any micro or other finishing material was applied.

SHOPPING

A 12V as well as a 24V pump is now available from Wicks Aircraft, both of which have male dash 6 fittings integral with the pump body! This makes it a piece of cake to attach fuel lines since you don't need AN elbows or 45° fittings, and it gets rid of the problem of 1/8" pipe threads which most of the original Facet pumps had. Part numbers and prices from Wicks are:

#40108 - 12V with 37° male fittings - - - \$29.75
#48610 - 24V with 37° male fittings - - - \$32.50

Contact Wicks Aircraft for further information.

Ian Ayton's gear/canopy/alternator warning device - a neat, easy-to-install, self-contained unit, it should be considered a "must" for all EZ's. The warning light flashes and the horn buzzes intermittently making it very difficult to ignore. Contact: Ian Ayton
213-375-9269

Jim Shultzman's pure silicone canopy seal, a very fine, "V" shaped seal. The best we have seen is still available but not for long. Jim (who now works for Composite Prototypes) is getting out of the business. He has a limited number of canopy seal kits. Contact:

Jim Shultzman
Building 13 - Airport
Mojave, CA 93501

Retrofitable Fuel sight gauges - machined from PVC, not only gives you a crystal clear view of your fuel, but also damps out the fuel sloshing making it easy and accurate to read fuel levels. Easy to install on new or existing EZ's. Contact: Wes Gardiner

1310 Garden St.
Redlands, CA 92373
714-792-1562

Nick Ruys has found a fine heat gun, one we have tried and like. It has two heat settings and gets hot enough to heat-form PVC foam, and also does a great job of shrinking heat-shrink tubing onto your wiring. Lots of uses for any composite airplane builder. Contact: Nick Ruys
Send \$40.00 (US)

P.O. Box 10 519-539-9886 (work)
Ontario, N4S 7N5 519-423-6322 (home)
Canada

DEFIANT BUILDERS: Fred Mahan has extrapolated the performance charts from the 160 & 180 hp charts for the 150 hp Defiant using a computer. These six sheets are very professionally done and can be obtained from Fred for \$5.00. Contact: Fred Mahan

1415 Glen Haven Dr.
Merritt Island, FL 32952

Gene Zabler still has his "oh, so simple" and "oh, so super" cockpit air vent controller available. This is such a neat solution to the problem of adjusting cabin air flow, you will wonder why you did not think of it. Takes just 10 minutes to install and really does work great. Contact: Gene Zabler

48 Robin Hill Dr.
Racine, WI 53406
Send \$6.50 to cover cost and postage.

Tired of your rocker covers leaking oil? The only cure we have ever seen are REAL valve cover gaskets. Mike has had a set of these on his Long-EZ engine for over 300 hours with no trace of a leak. They are reusable, too! Made from silicone rubber, they should last through TBO on any Lycoming or Continental engine. Contact: Doug Price

The Real Gasket Corp.
P.O. Box 14852
Portland, OR 97214
503-233-1613

Bill Bainbridge now has available a really first class lightweight 12-volt starter which will fit any 4 cylinder Lycoming engine. Weighs only 10.2 lbs. It is beautifully made and really has some neat features. Bill still has his well known linear regulators and small alternators. In addition, he now stocks excellent "Gelcell" or sealed, immobilized electrolyte batteries. Two options are stocked, 28AH, 12V or 15 amp, 12V. These are super little batteries and require zero maintenance. Contact Bill for more information:

B & C Specialty Products
518 Sunnyside Ct
Newton, KS 67114
316-283-8662

4 Gary Hall has an excellent aileron/rudder hinge pin kit. Consists of enough Teflon tubing and stainless steel pin stock to convert your aileron and rudder hinges on a Long-EZ or VariEze. This is retrofitable and well worth the effort. A comprehensive instruction sheet is included. Contact: Gary A. Hall
4748 NW 43rd St.
Lauderdale Lakes, FL 33319
303-484-4949

Rusty Foster's Space Saver side panel is now better than ever. Rusty has redesigned it and it now looks like something off a space shuttle - really a beautiful piece of work. Puts all of your circuit breakers and switches on the right side above the control stick. Contact: Rusty Foster
P.O. Box 1569
Portola, CA 96122
916-832-5993

FEATHERLITE PRODUCTS, INC.
P.O. Box 781
13451 Airport Rd.
Boonville, CA 95415
707-895-2718

Be sure to write or call for a quote and compare prices and quality with any of the other outfits. Keep in mind that Larry and Michael are the only RAF approved and recommended manufacturers of prefab glass parts for all of the RAF designs.

FOR SALE

Two (2) Marvel-Schebler 4-5 carburetors. Call: Dr. George Best, 602-991-0476.

Original VariEze main gear and other EZ parts. Call: Frank Drefs, 301-843-1100.

Long-EZ firewall aft. Includes Lycoming O235-L2C, 245 hrs. SFREM, mount, 4" extension, exhaust, Great American Prop, oil cooler, 35 amp alternator, baffling and all engine instruments. Donating our Long-EZ to a museum and building a Defiant. Call: Ron Van Bladeren with best offer. 503-642-3307.

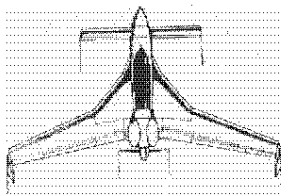
Oil screen with Vernatherm - trade for spin-on oil filter housing. Also, 3 1/8" dia. round transponder - \$150.00, electric tach - \$25.00. A few other Long-EZ items. Call: Tom Williams, 803-287-9291.

DEFIANT BUILDERS - Don Foreman, Defiant builder in England has available a really neat nose wheel shimmy damper. It is ideal for use on a Defiant. It is easy to mount and has a unique adjustable damping system. Best of all, it is rather inexpensive - \$36.00! Don will send one to anyone who will send him \$36.00 US plus postage. Write to: Don Foreman
Hillside
Malyons Road
Hextable
Kent BR8 7RE
England
phone direct - dial 44-322-64028

Radair R-250 Transponder - very recent factory overhaul and certification - \$225.00. Contact: Mike or Sally
805-824-2645

RAF SPECIAL SALE

Half price sale on all belt buckles in stock. Pot luck. Defiant, Solitaire, VariEze (no Long-EZ). Please specify aircraft type. Your may be sent either a large or small buckle, brushed or shiny. If you have a preference, let us know, we'll attempt to accommodate you. A great Christmas gift for builder or flyer. All belt buckles - \$10.00. California residents add .60 for state tax.



FUEL VALVE LUBE

Mike and Sally offered a very expensive and very special grease for this purpose for some time but have run out. They will not be ordering more. Anyone who would like to my contact: Burmah - Castrol
16815 Von Karman Ave. Suite 202
Irvine, CA 92714
714-660-9414

The grease was formally known as Brayco 3L-38RP, now Braycote 601 and can be bought as follows: 2 oz. for \$190.00, 4 oz. for \$300.00 or 1 lb. for \$800.00. Very expensive, but the only grease we have tested that really works.

ACCIDENTS AND INCIDENTS

A Kansas based VariEze crashed, fatally injuring it's builder/pilot. The circumstances of this crash are the stuff nightmares are made of. The left wing separated from the fuselage in flight and the airplane fell out of control to the ground where the right wing also separated from the fuselage. Examination of the wreckage showed that the 16 screws (AN-509/AN-525) that must be used to fasten the wing-attach fittings to each wing spar were never installed! Surprisingly, the same 16 screws that are used to attach the wing-attach fittings to the centersection spar were installed. As a result, only the epoxy bond held the wings to their fittings. Incredibly, this enabled the aircraft to fly for a number of hours before the top and bottom spar caps simply pulled out of the metal wing attach fitting.

This builder/pilot, by all reports, was a careful builder who built his VariEze closely to the plans, yet while he did install the wing attach screws into each end of the centersection spar, he somehow overlooked the installation of these critical screws into each wing. Why? We will probably never know, but we should all learn a lesson from this. Even though the plans are clear and concise, with full size drawings showing the location of these screws, it is apparently possible to overlook such a vitally important structural attachment. Every VariEze builder or flyer should check to be absolutely certain that all 64 screws are installed in the wing/centersection attach fittings. If you have already covered these screws, such as in an already completed and finished airplane, you can easily check using a small magnet hanging on a string, or a stud finder such as carpenters use to locate vertical studs in a wall (it's also a magnet). Carefully mark the exact location of each screw head with a pencil. Compare your bolt pattern with the full scale drawing in the plans. Be sure that you have all 64 screws in the correct positions. This applies especially to those who have not done this work themselves and therefore would not know.

A Texas Long-EZ lost power and hit power lines as the pilot attempted an emergency landing. The airplane nosed over and crashed, seriously injuring the pilot. The reason for the power failure has not been positively determined.

A California VariEze lost power while on a cross country flight still 200 miles from the pilot's intended destination. The pilot landed on a highway, crashing through a fence. The VariEze was heavily damaged but the pilot walked away with cuts and bruises. The reason for the power failure has not been positively determined.

What can be learned from this type of accident? Complete engine failure, if not a mechanical failure such as a broken crankshaft or connecting rod(s), is generally fuel associated. With redundant magnetos, ignition is seldom cause for a complete and sudden engine stoppage. Catastrophic mechanical failures, while they do occur from time to time, are quite rare in aircraft engines. Sticky or stuck valves occur more often, but again, this seldom causes a complete power failure. Most of these types of failures will result in a partial loss of power which, while very nerve wracking, should still enable a pilot who stays cool to reach an airport or, at least, make a safe emergency landing.

Fuel related engine problems in homebuilts generally come under two headings: simply running out of fuel (brain failure!), or a faulty fuel system that for one reason or another fails to allow fuel to reach the engine. This could be caused by many things. Deviating

from the plans is probably the most common reason. Clogged filters, substandard hoses or fittings, old, worn-out carburetors, sticking floats, wrong fuel pumps, disregarded inspections, - we could go on all day!

RAF is not an engine oriented company, our expertise is in aerodynamics and composite structures. While we have some experience with engines, we can only offer general guide lines. Get expert help with your engine installation. Check with the local airport mechanics, have other members of your EAA chapter look at your engine controls/hookups, your baffling, your fuel lines, etc. Tony Bengelis' book Firewall Forward is a great source of information on engine installations.

Before first flight, do conduct a fuel flow evaluation per owners manual Appendix I. For a Long-EZ, this test should also be conducted with the electric boost pump running. The flow should now be at least 20 gph. If these flows are not achieved, do not attempt to fly until you have located and corrected the problem. If your engine cannot get fuel, it will cease to run. This will give you an immediate, very serious problem which, unless you happen to be over or near a suitable landing site and unless you keep cool and judge it perfectly, could possibly result in the loss of your life.

PLANS CHANGES

We at RAF, of course, cannot enforce a mandatory change, as FAA can on a type-certified aircraft. The regulations allowing amateur-built experimental aircraft recognize that the homebuilder is the aircraft manufacturer and, that the aircraft does not need to conform to certification requirements. This allows experimentation by the homebuilder, giving him the freedom to develop new ideas. FAA achieves their goal of providing adequate public safety by restricting the homebuilder to unpopulated areas and to solo flight until his aircraft is proven safe.

It is the homebuilder's responsibility to maintain, inspect and modify his aircraft as he desires. However, we at RAF feel that part of our job is to provide information to the homebuilder in the form of recommendations that, in our opinion, are required for him to achieve a satisfactory level of flight safety.

<u>Category</u>	<u>Definition</u>
<u>MAN-GRD</u>	Mandatory, ground the aircraft Do not fly until the change has been accomplished.
<u>MAN-XXHR</u>	Mandatory, accomplish the change at next convenient maintenance interval or within XX flight hours whichever comes first.
<u>DES</u>	Desired - strongly recommended but not requiring grounding of the aircraft.
<u>OPT</u>	Optional - does not effect flight safety.
<u>OBS</u>	Obsoleted by a later change.
<u>MEO</u>	Minor error or omission.

VARIIZE PLANS CHANGES

MAN-GND Using a magnet or "stud finder", verify that all 64 wing-attach screws are installed. See details in this newsletter.

MAN-GND Add the words "and positively locked" after "check fuel caps on" in the checklist. Add the following: "warning loss-of-cap or deteriorated O-rings in the cap can result in all fuel being sucked into one tank. Check caps and O-rings before each flight. NEVER fly without a full, selectable header tank. This is the only way to keep the engine running after loss of cap, clogged vent, or other fuel problem. Restart should occur within 10 seconds after selecting the header. Maintain at least 80 knots for positive prop windmill."

NO LONG-EZ PLANS CHANGES

NO DEFIANT PLANS CHANGES

NO SOLITAIRE PLANS CHANGES

Please report any significant plans errors so that we may print corrections in future editions of the CP.

Clarification of changes to VariEze and Long-EZ control systems aft of the firewall called out in CP 49.

As any plans owner knows, the aileron control system aft of the firewall consists of aluminum pushrods and several thin aluminum brackets. The intent of the plans change is to assure that an EZ pilot will retain, at least, roll and pitch control in the event of a serious engine compartment fire. Obviously, pitch control would not be effected by an engine fire, but it may be possible that an aluminum pushrod or aluminum bracket might be melted thus robbing an EZ pilot of lateral (roll) control in the event of a serious but otherwise survivable engine compartment fire. For this reason, we have carefully evaluated the control system for fire survivability. We have decided to only preserve the lateral (roll) control system, and to let the directional (rudders & brakes) system go. Our reasoning is that in such a serious situation as a bad engine compartment fire, the most important thing is for the pilot to retain sufficient control to be able to safely execute an immediate emergency landing. Pitch and roll control are all that are absolutely necessary for this. Stopping, once on the ground, can be accomplished by collapsing the nosewheel.

Toward this end, we are recommending in the strongest possible terms, the direct replacement of all aluminum pushrods aft of the firewall, with 1/2"O.D. x .028" wall 4130N steel tubing. The CS-1 aluminum threaded inserts in the ends of the aluminum pushrods should be replaced by steel inserts (part #CS-50). These inserts should slip inside the 1/2"O.D. x .028" wall steel tubes and should be fastened with four (4) stainless steel pop rivets, such as Cherry #CCP-42. Your existing dash 3 rod-ends can be screwed into these CS-50 inserts. In addition, the four CS-127 aluminum brackets on the aft face of the VariEze centerspar spar and in the wing root of the Long-EZ must be replaced by steel parts fabricated from .032 4130N steel. Ken Brock will have both of these parts available by mid November. They will be cadmium plated steel per RAF's specification.

Since this was published in CP 49, we have received all kinds of mail, mostly wanting clarification. Hopefully, the above has done that. We also received a few derogatory letters suggesting we were simply trying to "cover our -ss". Obviously, anyone is entitled to his opinion, but you should know that a decision to make such a change as this one is not taken lightly. First of all, RAF's agreement with Brock means that RAF has to buy all remaining inventory such as CS-127 aluminum brackets CS-1. Secondly, a change like this is always confusing to many builders and our workload on builder support goes up dramatically. Thirdly, and most importantly, we have tried and will continue to try to make any change necessary to make flying RAF designs safer, no matter what it costs or what anyone thinks. We have an awful lot of friends out there and are very sincere in our efforts to provide any information to make flying these airplanes safer. Last but not least, we cannot force anyone to make any changes, we can only print the suggestions in the CP. It is up to you whether you comply or not. Naturally, we hope every one will because these changes are not made on a whim. However, we do not have the authority to force you to ground your airplane and make the change, only the FAA can do that and then usually only when it concerns certificated airplanes.

MAJOR CHANGES - YOU AND THE FAA

Quite a number of EZ builders have been making "major" changes to their EZ's and not working with the FAA, either because they don't realize they are required to or because they don't realize that what they have done is a major change. A classic example is an engine change to a larger engine. Now RAF cannot recommend a change such as this, but we don't like to see our builders getting into trouble.

If you decide to make such a change after you have already had the airplane licensed and signed off, you must contact your local FAA and work with them to keep yourself and your aircraft legal. "Who will ever know?", you may say! "We did not even change the cowling," you say! Well, here is the straight skinny. As soon as you make a major change as defined by the FAA, your airworthiness certificate is automatically invalid. Worse than that, your insurance is also invalid.

If you should have an accident that would damage someone else's property, your insurance will not pay - you or your survivors will pay. That could be a really nasty problem. On top of that, the FAA takes a very dim view of this sort of thing and they will prosecute you. The penalty is not some little thing to laugh off, either. The fine is \$1000.00 per flight!!

As you can see, very obviously, it is not worth the risk, especially since it is so easy to comply and keep everything above board and legal. All you have to do is to inform your local FAA what it is that you are planning to do. They, in turn, will issue you a new, temporary, airworthiness certificate which will again limit you to within a 25 mile radius of your airport for a certain number of hours. Normally, this will be from 5 to 25 hours depending on the change and on the local FAA official. After you have successfully completed your test flying in the local area, or have flown off the hours, the FAA will issue a new "permanent" airworthiness certificate, and you are back in business, and your insurance is valid.

Do yourself and the homebuilt movement a favor, comply with the regulations and keep yourself and your airplane legal. It is an inconvenience and may take a week or two but, in the long run, you will be much better off and you may save yourself or your family untold grief.

BUILDER HINTS

"Fire-Proofing" your firewall: By Arnie Ash (Reprinted from Central States Newsletter).

"The arrival of the latest Canard Pusher just two days before leaving for Oshkosh and also just prior to mounting my engine for the final time was indeed timely. The following is an account of a few thoughts regarding the purchase, application and protection of Ocean 1644 "fireproof coating".

To coat to the proper thickness your firewall and side "heat shields" you will need more than one quart of 1644 but less than two. Wicks prices this material at \$25.00/quart or \$60.00/gallon. It would seem that perhaps three EZ's could be treated with one gallon so you may want to consider splitting the cost of a gallon with a couple of your buddies. You will also need the special thinner which sells for \$15.00/half gallon. (You'll use less than a cup of this material though).

Application: Grab the oldest spray gun you can find - you don't need to break out the high priced equipment. Thoroughly mix the 1644 and draw off approximately 3/4 of a quart. Cut this by about 5% with the special thinner. Set your spray gun up in the suction mode with about 50lb. pressure at the gun. The material seems to flow on best at a range of only 5-7 inches from the part being sprayed. To get the required material thickness you'll have to spray 7 to 9 coats (depending on the thickness of each coat). Allow a few minutes between each coat for the material to "tack" and you'll avoid any runs. (If all goes well you'll have the firewall coated to the required thickness in less than 45 minutes. Wear a good mask and be sure to protect the rest of your airplane from any overspray). This material needs a couple of days to really give you the feeling it's dry.

Once dry you'll have a nice white firewall -- until the first time you touch it with dirty hands or spill little oil on it. This material appears to be pretty porous and thus absorbent. I called the manufacturer, Ocean Chemical, Savanna, Georgia, inquiring as to the availability of a top coat to help keep the firewall looking nice.

Although they apparently have a product, their lab suggested an excellent top coat would be Imron 500-S Clear polyurethane enamel, sprayed to a thickness of about 3 mills. The problem: If you go to your local paint dealer and buy the smallest container of Imron 500-S and the 192-S activator required you will have as much invested as the Ocean 1644 and you'll only be using about six ounces!!!

ONE SOLUTION: Ask the paint dealer who his biggest customer for Imron is and go tell this "end user" your tale of woe. In my case it was the local "Big Truck" body shop and enough Imron 500-S and 192-S cost me a case of Pepsi!

Mix the Imron at a ratio of 3 parts of 500-S to 1 part of 192-S. The firewall will take about 4-5 ounces. Application is handy using one of those \$3 aerosol "touch-up" bottles you can pick up from the guy who told you who his biggest "end user" was. (At least he sold you something!) Spray this material just as you would any "lacquer type" material. This stuff will run easily so best to spray a light coat and let it tack for 10-15 minutes then follow up with successive coats until you achieve the desired thickness.

One last thing: Even though you will only be spraying a few ounces do not under any circumstances attempt to spray this material without a very good mask. I used a good mask and pumped fresh air from a bottle into the mask to create a positive internal air pressure, and I still got a mild headache. This is nasty, nasty stuff. Be careful..... Arnie

P.S. At normal room temps. the Imron will take at least two days to cure to the point where you can work on the firewall. Total cure, they tell me, takes about two weeks."

Long-EZ builders/flyers have known for a long time that the number 4 cylinder usually runs hottest. Many of you have speculated that the firewall mounted air filter and associated scot hose to the carburetor may be blocking the cooling air to number 4. Dick Kreidel has designed, built and quite thoroughly tested a neat solution to this problem and it really works well. Mike is in the process of building one just like it. It is so simple you will wonder why no one else has thought of it!

A 1/16" thick 2024-T3 aluminum plate is the "base". Two aluminum extruded angles are riveted to this "base", see photo number 1. An AN4 bolt connects the two angles with an aluminum tube spacer over the bolt and between the angles to allow the AN4 to be tightened. These angles are shaped to "nest" against the starter. Two stainless worm gear clamps (hose clamps) go around the starter body and around the aluminum spacer tube to hold the "base" firmly against the starter. In these photos, Dick has an Amsoil foam filter but the standard paper filter will do. The stock Brock carburetor heat valve assembly is used just like it was on the firewall to hold the filter in place with four tension springs.

Photo number 2 shows the scot hose inlet duct with fiberglass elbow and the scot hose going to the carburetor heat source. The carburetor heat valve return spring is hooked at a small bracket on the alternator mounting bolt.

This set-up is sanitary, simple and puts the air inlet filter where the highest pressure cooling air is, right up against the aft lower baffle. This, also, gives you a nice, clean, roomy firewall. Dick has found that his cylinder head temperatures run more even, too. It certainly looks like it is worth a try, especially for anyone who has a very crowded firewall or a hot number 4 cylinder.

DEFIANT BUILDERS HINT: From Charles Sims' Texas Newsletter.

"Installing the Mooney nose gear. First, build with a new tire. Several builders have used worn out tires to build and find out, only too late, the box is too small for a brand new tire. Second, build the box about 1/8 to 1/4 inch longer by moving the instrument panel (lower portion only) aft just a little. This will make the side of the box too short, so remember to make the patterns longer. Then put one layup on the outside of the box, it will glue together easier and align better. The plans call for gluing the foam and plywood together with the solid 1/4" of glass. You have a more rigid assembly with one ply of glass on the outside over the foam and NGB-1. My nosegear worked out very well fitting into the lower box. However, my retract NGB-2 had to be trimmed to fit between the bushings NGB-18. One other little tip. Look in picture #340. See the extra piece of foam which is on the top of box? Do not forget this, I missed it the first time and had to go back and move the front of my box out to clear the tire. It shows up on page D-39 also, but no arrow points to it as it does the other two pieces of the lid."

CAUTION - MECHANICAL FUEL PUMPS

It has come to our attention that the FAA has received numerous reports of these pumps leaking; to complete in-flight pump failures; even to in-flight fires. Apparently, the most common cause of this type of problem is the loosening of the diaphragm screws. It has been reported in several national publications that A.C. will no longer be producing these mechanical fuel pumps due to the liability problems associated with such a failure. New pumps are already becoming scarce and rebuilt kits are no longer available anywhere to our knowledge.

Take care of your A.C. fuel pump. Keep it clean. Inspect it carefully for leaks. Be sure that the A.C. pipe thread adapters are tight and the "o" rings are in good condition and are sealing properly. There should be no fuel stains (leaks) anywhere, the AN fittings should be steel and should be tight and have no leaks. It may not be a bad idea to substitute aircraft quality AN-3, drilled-head bolts for the screws and lock washers. Be careful not to overtorque these bolts and do safety wire both bolt patterns.

If anyone has more information on A.C. fuel pumps, repair kits, etc., we would appreciate hearing from you.

A MISSING FUEL CAP on a gravity fuel system can be a very real problem. We have talked of this problem before in the CP as well as at airshows, and this year at Oshkosh was no exception. In fact, one VariEze pilot had had a first hand experience and was able to verify what we have said in the past.

In a VariEze (or Cessna 150) which have gravity fuel systems, both tanks feed together to the engine and there is no mechanical engine driven fuel pump and, also, no electric boost pump. This system is simple and works very well as long as the fuel tank vents are open, allowing ram air to pressurize each tank equally, and as long as both fuel tank caps are on.

Now, if one cap comes off (or even stays on but leaks badly) the fuel in that tank will be syphoned overboard (low pressure on the top of an airfoil), because a gravity fuel system has both tanks plumbed together. This means that the fuel in the tank with the cap on will be sucked across and into the tank with no cap. Of course, it will also continue to supply fuel to the engine until it is empty. When it is empty, however, your engine will quit, even though you still have most of one tank still with fuel in it (the one without the cap). The low pressure over the missing cap hole will not allow this tank full of fuel to gravity feed down to your carburetor. Selecting the header tank will allow engine restart within about 10 seconds.

This problem does not exist on an airplane with a pumped system (such as the Long-EZ or Defiant) since the two tanks are not plumbed together.

Check your fuel caps yourself, carefully and conscientiously, every single time you get fuel, whether you put it in yourself or have the line boy do it.

Another associated problem, particularly on a VariEze, is that the loose fuel cap will go through the prop and can damage it, sometimes seriously enough to cause an emergency landing. It is an excellent idea to attach your fuel caps to the fuel tank with a 6 inch length of light chain.

Wes Gardner stopped by RAF just yesterday and he was still shaking in his boots from just such an experience. He was very, very lucky and managed to stretch it to an airport and, therefore, did not suffer any damage other than a large ding and some cracks in his prop - be careful.

Dear Mike,

Thought I should pass on some information about nose wheel tube failures I've experienced and what was done to hopefully prevent future occurrences.

It all started with about 100 hours on the airframe. The nose tire went flat just after landing touchdown. The shimmy got quite violent and it wasn't until after we got it stopped that we knew it was a flat. I thought for sure we had broken something.

It appeared that the tube had been creased when it was originally installed in the tire by the supplier (back in 1976). The tube through use evidently moved around and the crease smoothed out. The failure occurred where the tube was creased, apparently due to it's age. A replacement was obtained from a fellow builder who happened to have a spare from a kit he had picked up.

Sixty hours later the nose tire went flat again. This time, luckily I had just started to taxi when things went all wobbly. The unlucky part was that I was 400 miles from home on a Sunday morning and I had a golfing date 250 miles away. To make a long story short, I was able to talk a very generous local builder into taking the tube from his project so that I could get under way. The failure this time was due to a pinch on the valve stem. This was either poor assembly or that the tire had rotated slightly to cause the interference with the rim.*

Eight hours later and fortunately, during taxi at the home port, another failure occurred. I was beginning to develop a phobia at this point. The failure this time had occurred in a manufactured seam of the tube. There is a good possibility that this tube also was quite old.

This time we replace both the tire and tube with new (or at least recently purchased) units. We also drilled the rim and installed three equally spaced screws on each side of the wheel to prevent the tire from rotating.

This is the same method used by automobile drag racers for years. The screws are self tapping and extend into the bead of the tire about an eighth inch. So far, we've got thirty hours on this setup with no problems.

I would recommend to anyone who has an old inner tube, especially from the 70's vintage kit, to replace it, or them, if the mains are that old also. I was lucky, these failures could have easily resulted in damage to the airplane.

Best regards,
Herman J. Kuebler"

EDITOR'S NOTE: We have found that the best method of preventing the tire from rotating on the wheel is simply to keep it inflated to at least 40 psi. Because the nose gear is retracted while the EZ is parked, the nose tire gets very little attention and, if the pressure gets down to 15 or 20 lbs, the tire will rotate and the valve will pull out of the tube.

"Dear Folks at R.A.F.

I am very pleased to announce that N721EZ made it's first flight earlier in September and as with many of the other builders the initial flight went off perfectly. Performance has been without exception, right out of the owners manual. Basic empty weight is 853 lbs., with starter, wheel pants, and a 25 amp/hr gell cell up front. 125kts IAS @ 2500 rpm fits very well within the 65% power range. I now have over 22 hours of very enjoyable time and look forward to completing the required time.

Although I'm happy to report the excellence of this design, I actually wrote to describe a problem I had after the forth hour. Having made the modifications to the flight controls in the last CP (LPC 131) and coating the firewall with the intumescent paint, I had the crankshaft seal split and lost two quarts of oil over a one hour period. Fortunately, I kept my first 10 hours down to one hour segments. On removal of the cowlings, I decided to run a short inspection and discovered very small fuel stains running down the firewall from the Facet fuel pump. Had I not had the new firewall paint on, I might not have noticed the stain. The stain was reddish and did not coincide with the 100LL fuel which confused me at first. The stains were not very much at all and I was almost going to dismiss them but I elected to turn on the fuel pump and watch it for awhile. After 5 minutes, a single drop of fuel dripped out from the back case of the pump.

A few drops of fuel over a 5 minute period does not seem like much but it was enough for me and off came the pump. Close inspection did not show any fuel coming from either of the fittings so I pried open the back of the pump and there found a surprise. The central core of the pump was wrapped with coils of enamel coated wire

(red) and then finished wrapped with cloth. The cloth was soaked with fuel and stained red I presume from the fuel acting on the enamel wire insulation. It's anybody's guess what further progress this may have taken. I am in the process of returning the pump for inspection.

Since the last newsletter had important information on fire hazards, I thought I would pass this information along to you.

If I may make any suggestions to builders on their initial flight test program, keep the first few flights short and near airports in the restricted areas. Also, even though the cowlings may be a small inconvenience to take off, during these first few hours remove them and check things over.

Once again many thanks,

Rick Glos"

EXCERPTS FROM LETTER TO MIKE FROM SOLITAIRE BUILDER:
HERBERT C. ABRAMS.

"Solitaire builders' bull sessions have gone international! The attached photo tells it all. From left to right: Herb Abrams, Columbus, Ohio; Bjorn Bostad, Vollen, Norway; Runa Pedersen, Tonder, Denmark; Ole Ploug, Augustenborg, Denmark; Kjeld Pedersen, Tonder, Denmark. Bjorn is a 747 pilot for Cargolux, Ole is an engineer and Kjeld, Ole's partner, is a body shop owner. They are all good craftsmen. Runa is a student, a glider pilot and a participant. We brought her the T-shirt. The picture was taken in Kjeld's shop in Tonder where he and Ole are building their Solitaire.

Ole and Kjeld wanted a total building experience so they started from scratch with a lofting drawing of the fuselage translated into a plug, then molds, and finally a fuselage. They made spar molds and spars. Their work is outstanding. The fuselage is a wet layup and, with a clear resin, has a little different appearance but the contours are exactly as they should be. Both Bjorn's and Ole/Kjeld's ships are at the same point of completion. The fuselage has been assembled as per the plans and so has the canard. They are working on the wings and also starting control installations.

We reluctantly left our new friends with whom we developed very strong attachments, to continue our trip with a three day bus ride through mountains and fjords to Bergen. Then we boarded a coastal steamer for an 11 day trip to 35 ports along the Norwegian coast north to North Cape and the border of Russia. It has taken two weeks to recover, so work on my Solitaire is now two months behind."

AND ONE MORE LETTER

"Greetings from Spain,

In September I finish my tour of flying F-16's in Madrid, Spain and will return to civilian life on Cape Cod, Massachusetts. Please note the change of address.

In the past six months I have had a fantastic time logging over 120 hours in Europe on my (built in Texas) Long-EZ, N27PM. I have flown to eight countries, crossed the Pyrenees eight times, and flown over the Alps twelve times and attended the British, French and Swiss homebuilt fly-ins. It's been a truly fantastic spring and summer EZ-wise in Europe. Many thanks to you at RAF for a terrific design and all the great builder support!

Peter C. Magnuson

MEXICAN VACATION WEEKEND

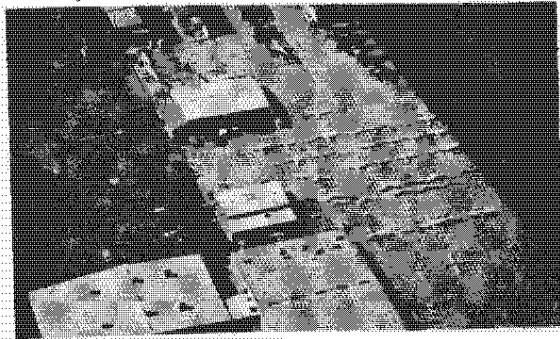
Dave Kolstad (who went last year) reports that this is a super neat fly-in. Mexican EAA Chapter 815 is holding their second annual fly-in at Puerto Escondido this coming November 27th thru 30th. A brand new hotel with the newest airport in Mexico (Toluca airport, 163 NM on the 102° radial out of Acapulco VOR) has tie down rates of only 75¢ US per day. A race will be held for anyone interested on Friday, the 28th of November. Miles of unspoiled beaches, good food, good company await those who would like to join Dave in flying down. He has installed a rear seat auxiliary tank in his VariEze and intends flying down non-stop!

Should be a really fun, low-cost weekend.
Contact Dave: (818) 349-3274 / SASE 9955 Rabbitt Avenue,
Northridge, California 91325

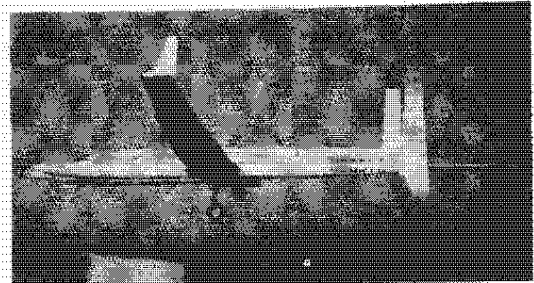
MIKE AND SALLY'S 25TH WEDDING ANNIVERSARY CELEBRATION
FLY-IN AT MOJAVE

I woke up quite early on Sunday morning and looked at Sally. To my astonishment, she was wide awake and had a silly grin on her face. I hastily closed my eyes and pretended to be asleep while I tried to figure out what was going on! I peeked again, same silly grin! Finally, I said, "What's up?" She said, "We have to get up and go to Mojave". I said, "No way, it's Sunday. I've worked every weekend for the last 8 in a row. I'm going to stay right here". She said, "I have invited a bunch of EZ people to a fly-in at Mojave to celebrate our 25th anniversary". It took a while to sink in, but I finally realized she was not kidding and that we really did need to get up and get down there in case anyone showed up.

Well, it turned out to be an absolutely beautiful day in Mojave & 48 VariEze's and Long-EZ's flew in to spend a few hours eating good food and swapping tall tales. It was great - I had a ball. It really was the neatest wedding anniversary present any pilot could possibly wish for. I got to visit with lots of old friends and to meet many new ones. Ralph Gaither flew his VariEze in from Pensacola, Florida and R. K. Campbell from downtown Ducktown, Tennessee flew in in his beautiful Long-EZ. He's 69 years young and says he is having a ball flying his Long-EA to fly-ins almost every weekend. Thanks to everyone for helping make such a neat day.



Some of the 48 EZ's that flew in to Mojave to celebrate with Mike and Sally on Sunday, October 19th.



Wow! Look at those carbon fiber wings bend! The Voyager over Edwards Air Force Base at almost 8000lbs. gross weight.

FIRE EXTINGUISHERS IN THE COCKPIT

With our recent experience of a brake fire while taxiing the Defiant, the value of an on-board fire extinguisher became painfully evident. If we had not had an extinguisher, we would have lost the Defiant!

We have done a little research into the subject of fire extinguishers and the consensus is that "Halon" extinguishers are the only ones to consider. There are two types of Halon, 1211 and 1301. FAA says that Halon 1301 is best. However, the much more readily available Halon 1211 is still an excellent choice and is available in a small size well suited to our EZ cockpits. A lot of mail order catalog houses, such as Sporty's Pilot Shop, sell these fire extinguishers. A 2-1/2 lb. Halon bottle is well suited to a Defiant size airplane, but is really bigger than necessary in an EZ cockpit, while the tiny, aerosol size 12 oz. Halon bottles are probably marginally too small although they may well be a life saver if used soon enough on a small fire. They certainly are easy to mount in our small cockpits. Be sure you place the fire extinguisher where you can easily reach it in flight.

Do not use a dry chemical or a CO₂ fire extinguisher in any aircraft for any reason.

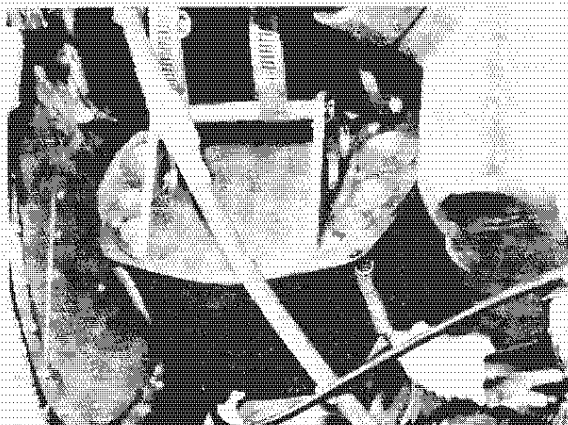


Photo #1 - Dick Kreidel's intake system showing method of clamping to starter and foam filter - view is from right side.

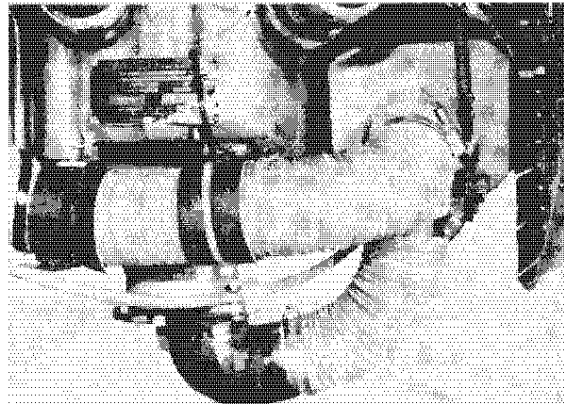
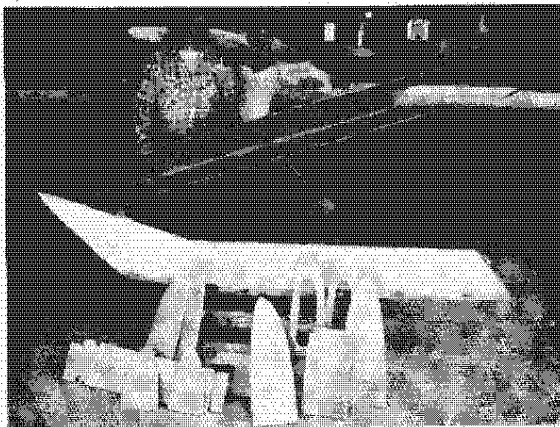
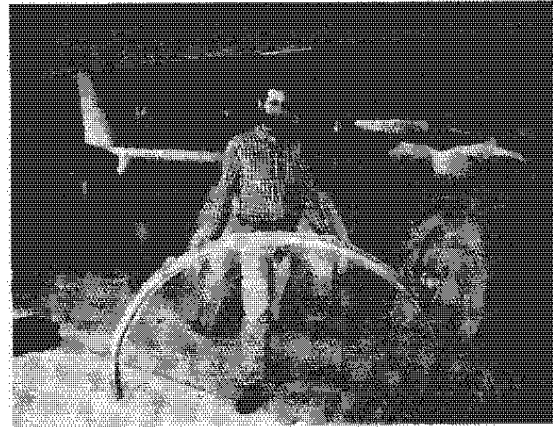


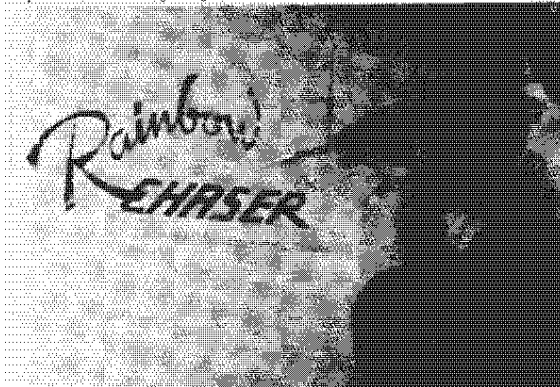
Photo #2 - Dick's intake system from left side. Brock carb heat valve assembly is used. Dick has a carb heat shroud over his left exhaust - he reports complete satisfaction with this system.



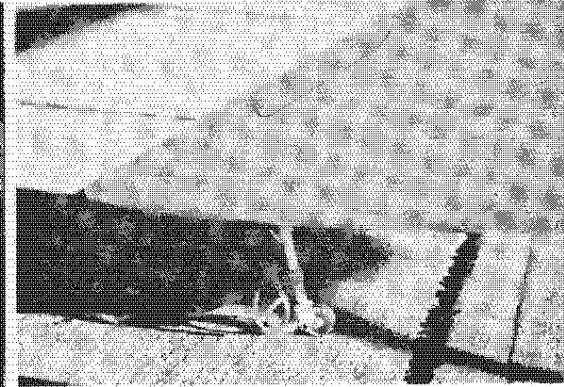
Larry Lombard, FEATHERLITE PRODUCTS, INC., with their Long-EZ fuel strake kit. All ribs and baffles come with a prefab leading edge.



Michael Dillely, FEATHERLITE PRODUCTS, INC. holding a Defiant main gear strut, with 3 Defiant cowlings behind him.



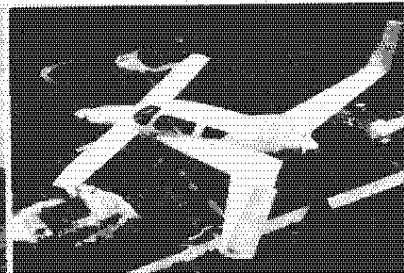
"The finishing touch" goes on the side of Bill Hemmel's Long-EZ prior to first flight - what an appropriate name for a Long!



Seen at Mojave - this is what happens when you get carried away with the nose shape - you can't park it on it's nose!



Joe and Della La Courte, New Orleans, Louisiana with their new Long-EZ. This striking looking EZ was on the flight line at Oshkosh where it was much admired.



Charlie Gray's newly completed Defiant still in primer - near Kissimmee, Florida.