

THE CANARD PUSHER

No. 70

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If you are building a RAF design, you must have the following newsletters:

VariViggen (1st Edition), newsletters 1 to 70.

VariViggen (2nd Edition), newsletters 18 to 70.

VariEze (1st Edition), newsletters 10 thru 70.

VariEze (2nd Edition), newsletters 16 thru 70.

Long-EZ, newsletters 24 through 70.

Solitaire, newsletters 37 through 70.

Defiant, newsletters 41 through 70.

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 ONLY FROM 8:00 TO 5:00. When you call on Tuesdays for builder assistance, please give your name, serial number, and nature of the problem. If you are not in an emergency situation, we ask that you write to Mike. However, if you require immediate assistance, Mike will make every effort to return your call between 2:30pm and 4:00pm (our time).

When writing to RAF, send along a stamped, self addressed envelope if you have builder's questions to be answered. Please put your name and address on the back of any photos you send.

ACTIVITIES AT MOJAVE

Burt's helicopter is being kept quite busy these days by Doug Shane and Mike Melvill who are in the process of getting their commercial rotorcraft ratings. They have discovered that flying helicopters is a real challenge and, also, lots of fun. To be able to fly over the hills to the North or West and land in a small clearing or on top of a mountain peak is something you could not even consider in a fixed wing. Just last week Mike landed in a clearing and saw bear tracks in the snow! The helicopter really adds a new dimension to flying.

Speaking of new dimensions in flying, Doug and Mike recently completed the live gunfire testing on the ARES. The ARES, of course, is a single seat, single engine jet fighter with an empty weight around 3800 lbs. and a gross weight of 6800 lbs. The GAU-12U Gatling gun shoots 25mm bullets (almost 1" dia.!) at a rate of 1800 rounds per minute (30 shots per second) and has an average recoil of 7000 lbs.!

The testing began with ground firing at the Mojave police pistol range and the first couple of bursts were fired remotely. ~~Then the two pilots took~~ turns firing short bursts, gradually building up to maximum burst of 40 rounds. The second phase was firing in level flight and this was done over the China Lake Naval Weapons Center range. The final testing consisted of air-to-ground strafing which was conducted at China Lake and, also, at the East Mojave Range 9 miles east of Mojave Airport in the Edwards AFB restricted area. Both pilots greatly enjoyed the gunfire testing, especially the air-to-ground. The ARES was heavily instrumented and the data was recorded on each flight test. The composite structure of the ARES easily handled the blast pressures (in excess of 100 psi) and the recoil loads. Neither Doug nor Mike had ever fired a large gun in an aircraft and it was a tremendous thrill and a challenge to try to hit the target.

The testing was completed on schedule and the results were very satisfactory. A lot of people were skeptical that such a small airplane could successfully shoot such a big gun. Burt was confident that a composite airplane could do it and he was proven correct yet again!

FLY-INS

KANSAS CITY GRAZIN' IN THE GRASS

The planning for the Kansas City GIG for 1992 is in the early stages, and I hope you can arrange to attend the fly-in on June 12-14, exclusively for composite canard designs. Last year was the first year for the event and 67 beautiful EZs flew in from all over the country and drew over 180 builders, flyers, friends, and family members to share in our common bond (Yes, epoxy and friendships do hold most things together).

The event planners want to do their very best to encourage more of you to attend next year and make the activities as entertaining and beneficial as possible. The theme centers on operations and safety programs specifically for our types of aircraft. Programs are planned for builders and fliers, plus all the ramp rap, flying, and friendship forming you can imagine. There's no better way or better place to find the experts and discuss your issues. It's non-commercial and held on a big, lightly used controlled airport right in the middle of the country (Johnson County Industrial, KIXD--Olathe, Kansas).

So if you came last year, thanks for the support and hope you can make it a second time. If this is a first time consideration, it would be great to see you, whether by bus, train or homebuilt. The goal is 100 plastic pushers! Make sure one of them is yours!

June 12, 13, 14, 1992 -

Johnson County Industrial Airport, (KIXD),
Olathe, KS.

**Second National Gathering for Canard
Type Airplanes.**

Social events, races, seminars, prizes.

Contact: Terry Yake
8904 West 116 Terr.
Overland, KS 66210-1963
913-451-8904

LETTERS

"REALISING THE DREAM

As an aeroplane nut from birth who qualified as an aerodynamicist, I have always wanted my own aircraft but would never be satisfied with a 172 or a Cherokee bludgeoning its way through the air. It became evident that to obtain the aeroplane to which I aspired, I would have to build it and several times I have started to put my ideas on paper. However, when Jim Bede publicised his BD-5, he really caught my attention. Gliding is my sport of preference and the modern sailplane is a wonderful melding of structure and aerodynamics which fills me with joy to pilot or simply behold. The BD-5 concept took many of the best aspects of a sailplane and added an engine to make a very efficient travelling machine but the reality, as we now know, proved more difficult.

Then when I read of the VariEze, despite its terrible name, I was really hooked. This offered most of the same things as the BD-5 plus two seats and range. Also, I felt happier with the idea of working in glassfibre than metal. By the time I got organised, the Long-EZ was the way to go and I sent off a cheque for the plans, feeling then as I do now, that that was the best value for money I have ever had. I budgeted and planned for 2-1/2 years (3 winters) to completion and got stuck in. I worked mostly alone in the garage at my home which meant that I could work most days and all hours. The fuselage progressed well and I started on the canard. Hot wire cutting the foam is a beautiful experience and the satisfaction obtained from creating a superbly contoured artifact from blocks of foam, rolls of glass and tubs of glop is really fantastic. Next came the wings which took most of the room in the small garage and by this time I was shuttling components back and forth to the hangar.

After about 18 months, my work situation changed and left me with less time and energy for the Long-EZ and occasionally the project bogged down for weeks at a time and I fell behind schedule. The thought of giving up did sometimes come into my mind but some serious daydreaming of setting off for a sunny Mediterranean airfield at my own creation quickly re-motivated me.

The fuselage with the main spar fitted would not have come out of the garage door so that job had to be done at the hangar and, once the winglets were on the wings, there was barely room for them in the garage either. The hangar was freezing all winter and too hot in summer so progress slowed considerably. As another setback, I spent a full summer with my leg in plaster, hobbling around the now assembled airframe, making painfully slow progress.

I called on a friend to paint the wings over a couple of week-ends but instead he (and others) spent hundreds of hours preparing a finish so good that I paid a professional to do the painting so as not to degrade the result of their efforts. The friend recruited to complete the wiring installation took all the time necessary to do a thorough job. This involved many weekends and so more months passed.

Last winter, the fifth, I was finally on the home straight, finishing the engine installation and the plumbing and I was motivated to work several times until after midnight in the hangar at sub zero temperatures. At the beginning of April '91 all was ready for inspection by Bureau Veritas (thirty minutes on the aircraft, two hours on the paperwork) and after two weeks I had the test flight authorization and had done runway tests, perhaps even a little hop. On the 30th everything was ready including the delegated first flight observer. The wind was really too strong and gusty (15 gusting 25) but it was right down the runway so I went for it.

The 20 minute first flight was a simple demonstration of that which was expected, I even had time to enjoy the thrill, followed by the best landing I've ever made. By that one flight, all the effort of the previous five and a half years was repaid. A thorough inspection showed all to be well but the wind continued to gust for a week almost directly across the runway so I did not fly again for some days. Frustration. After that the testing proceeded as planned, with 50 landings and 15 hours, including a flight to demonstrate the range, and I received the Certificate before the end of May. Since then F-PGEV has taken me to many destinations in France, to England, (including Wroughton) and Germany. With my girl friend, we flew to the Moulins fly-in and then continued our vacation via Gap, Frejus, Propriano in Corsica from where we visited most

of the airfields on this beautiful island, back to Frejus, Perpignan, Carcassonne, Annecy and back to Paris. A fabulous shake-down trip with only one cowling removal all the way.

It is difficult to express the joy and satisfaction of completing what is not simply a flying machine but a thoroughly developed design exploiting up-to-date technologies to create a fast, efficient, safe and beautiful touring aircraft, but there are some ways in which the pleasure shows. For example, it's good to see the expressions on the faces of the people who you know were sure that you would never complete "that stupid looking aeroplane" when you tell them that you've just flown back from Munich in it. It's good, too, to share with others who have done the same, the comradeship that can only come from knowing what the other has done. Then intensity of the pride of ownership which could never come from something purchased can be almost overwhelming. One evening during test flying, I landed at dusk and went up to talk with the people in the tower. As we talked, the light went out of the sky and my aeroplane, the one that I made, was parked down there on the apron, highlighted in the apron illumination. I had to leave before they saw the tears in my eyes."

"This is a report of a stuck throttle "near-miss" incident. In hindsight, it is quite similar to the Don Patch report in CP 65 and the Charles Hewison report in CP 66. I consider I was lucky to not have pranged the airplane.

I have just converted my Long-EZ from an MA-3A (non-accelerator pump carb) to an MA-4SPA (accelerator pump carb) as part of a change from an 0-235 C2C to an 0-320 E2G. After about seven hours of uneventful flying, I sent the MA-4SPA away for an overhaul, including a new throttle shaft and a rebuilt accelerator pump. This greatly improved the smoothness and mixture control of the engine but the rebuilt carburetor requires about two pound of force to operate, when applied to the throttle bellcrank arm at the inner most hole, using the plans carburetor cable bracket. The force to operate the throttle bellcrank is about the same whether or not the engine is running (two pounds). The MA-3A carburetor springs itself to full throttle, since it had no accelerator pump; the non-rebuilt

MA4SPA was much looser than the rebuilt one. The problem is that the throttle quadrant is not able to supply this much force at idle without help from a spring. With a spring, the throttle sticking problem never occurred with the engine shutdown, only with the engine running after the throttle had been pulled to hard idle, and then slowly advanced.

I found this out over several days of trouble-shooting when I noticed the throttle response of the engine was occasionally delayed when coming off a slow idle. I investigated by cycling the throttle and visually inspecting the system, but could not reproduce the problem or find a cause for it on the ground. Being foolish and thinking the problem had fixed itself, I went flying, landed, and when I tried to apply some power to taxi, I could not get any power response, only a very spongy throttle movement to about half throttle position (2 inches of throttle knob motion). My first stealth forced landing! After engine shutdown, throttle response was normal! (Good thing he did not have to go around! -ED)

I then verified visually (top cowl removed) that engine movement was not binding the cable somehow. I increased the throttle spring tension, and slightly relocated the throttle cable clamp to perfectly position the cable at the throttle cable end bushing. These changes appeared to eliminate the slow response. I flew again, and on landing, still had some reduced amount of sluggish response off of idle. Suspecting a damaged cable, I made the force measurements on the carburetor and the cable using some string, a volunteer to make the measurements with the engine running, and a 1-10 pound fish scale. These measurements confirmed that the system could not operate the carburetor without a spring assist. Suspecting damage to the cable, I then removed the cable from the airplane for inspection (yes, it was floxed in every foot or so: no, my consoles were not removable: yes, hell of a mess and lots of swearing). The cable was not damaged, nor was the cable sheath. Interestingly, however, if you pull on the cable shroud from opposite ends, even as little as 2 pounds of force will stretch it some.

I really didn't want to put a spam can-sort of throttle system in, but it appears that something with greater push authority than the original design is needed. I don't want to just increase the throttle spring force since spring failure will

mean possible throttle failure. Do you have any thoughts or suggestions?

Lew Miller"

Five years ago, Mike Melvill went to an aircraft push-pull throttle cable and has been pleased with the result. -ED

BUILDER HINTS

DEFIANT BUILDER/FLYER INFORMATION

Charlie Gray who has built and flown two Defiants sent us the following information:

"I have flown over 50 hrs. since July and found the nose gear steering getting harder and harder to steer. It has never been good but I thought that was normal as #1 was the same. Finally we were unable to steer without using brakes, not good in a crosswind. We have been flying into Merritt Island to see Johnny Murphy and crew for lunch almost every Saturday. Merritt Island has 11 - 29 runway, 3500' with a north crosswind at 15 kts. which makes for a wild landing each time.

I removed the complete nosegear assembly and found NG-11 and NG-12 frozen solid. The cross bolt hole had been elongated by app. 1/4". We made a new NG-12 with 1" dia. tube and put an Oil-Lite bearing inside.

Man, what a difference - - after flying this Defiant for almost 230 hrs., I am convinced that there has always been a problem. We have never had this good control on the ground or in the air. As you know, I put the rudders on the winglets and, although the brake-out force was high at high speeds, the rudders work very well. Now I find the brake-out force much less with more than enough rudder and nose gear control. The friction between NG-11 and NG-12 must have always been high, causing our problem.

I would recommend this to be a fix on all Defiants."

Editors comment:

Many thanks for the report, Charlie. This is the kind of feedback that is needed for those building

and flying these airplanes. Your new home on the airpark sounds like a dream. Count on us flying by one of these days!

LONG-EZ MAIN GEAR MELT DOWNS

We continue to hear from at least one builder/flyer each quarter who has had this problem. We have reported on this problem several times in past *Canard Pushers* yet it continues to happen. The bad part is that each flyer who we hear from acts as though they had never heard of this problem and why weren't we warning people about it?! It is quite frustrating for us at RAF because this is a problem that, frankly, does not need to happen - should never happen, in fact.

If you have a Long-EZ (or know of someone operating a Long-EZ) who is using the heavy duty brakes, this is what must be done to fix this potential problem. You must install heat shields between the axle mounting flange and the glass/epoxy main gear strut. This shield is purely a radiant heat shield and, as such, must be large enough to prevent the hot brake disc from "seeing" the gear strut. A fan-shaped, 1/8" thick aluminum heat shield that extends up above the brake disc by at least 1/2" works fine. You don't need any more than that. We have seen more gear legs damaged in this way than we care to think about and all of them had exactly the same damage: namely, the epoxy had been boiled or vaporized out of the glass strut directly opposite the brake disc. The damage was confined to an area the same shape and size as the disc. The damage can, and does, occur even through fiberfrax insulation. I repeat, this damage is caused by radiating heat from the red hot brake disc and is locally confined to a small section of gear leg directly opposite to and the same shape and size as the disc.

To our knowledge, this damage has only ever occurred when tight fitting wheel pants were installed. Apparently with no wheel pants, the disc gets enough cooling air flowing over it to keep it from getting hot enough to do this kind of damage. So - if you have tight fitting wheel pants, expect your brake discs to get very hot and protect the gear with an aluminum shield. In addition to the radiating heat damage, it is

possible to generate enough heat inside an unvented wheel pant that this trapped oven-like heat can soften the epoxy and cause the gear strut to bend, usually at the highest point in the wheel pant. To protect against this kind of damage, you must wrap the strut from axle to the top of the inside of the wheel pant with Fiberfrax insulation, held in place with silicone (RTV). We have found wrapping over the Fiberfrax with aluminum tape makes a neat job and helps hold the Fiberfrax firmly in place. This will help the "oven heating" problem (as opposed to red hot radiation), but you must provide a place for this hot air to "chimney" out of the wheel pant. A vent of some kind is needed. This vent should be placed at the highest point in the wheel pant when parked, whether you park 3-point or nose down. This position may change a little depending on the wheel pant design. The important thing here is that the vent must be high to allow the trapped hot air to flow out and pull cool air in around the tire. These two fixes together will help prevent a softening of the epoxy-type failure.

The NACA scoop-type inlets and outlets we have all seen on wheel pants may have some value but you really need the cooling after you come to a stop. Cooling the brakes during braking probably has some value but these NACA-type cooling scoops are generally too low to allow good chimney venting when parked.

The single most important thing is not to conduct extensive braking/taxi testing with wheel pants installed. Do all initial taxi tests with no wheel pants. Once the airplane has been test-flown and signed off, generally you will not find a need to do extensive taxiing/braking. If you do have to check-out a new pilot, for example prior to his or her first flight in their own EZ, remove your wheel pants before you allow someone to practice for their first flight in your airplane.

If you have to taxi a long way with a strong crosswind, for example, the full length of a 10000 foot taxiway on a day with a 90 degree, 30 knot crosswind, you will have to ride one brake all the way. Under these circumstances, you might consider removing the affected wheel pant as soon as you park. This small inconvenience is tiny compared to getting stuck in some remote area, miles from home, due to a failed gear leg.

And if you are unfortunate enough to fail a main gear leg due to heat, contact Mike Melvill at Scaled Composites to borrow his steel splint that was made specifically to ferry a Long-EZ home with this problem. So far, it has been used on two Long-EZs and one Cozy and it will fit left or right Long-EZ main gear legs!

DEFIANT FLYER

If you are building a Defiant and you are not currently receiving John Steichen's Defiant Flyer, you are missing a bet. This publication is exactly what is required by both builders and flyers. It contains all kinds of helpful information and great articles. Bayard DuPont's letter on his Ford-powered Defiant in the December issue is a case in point. See CP 67, page 2 for information on subscribing to the Defiant Flyer.

SHOPPING

CANARD PUSHER DIGEST, 2ND EDITION

Stet Elliott's "Canard Pusher Digest for the Long-EZ" is now in its 2nd edition. (For a complete description of the Digest, see CP57). Includes all builder related information from CPs 24-68. The 2nd edition has now grown to 654 pages and is professionally printed on double sided paper from a laser printed master.

Note that the Digest is for builders and flyers of the Long-EZ only. It does not support other RAF designs.

Quarterly updates to the Digest are also available. These updates provide additional information from newly published CPs to bring the Digest current. The updates are compatible with either Digest edition.

CP Digest for the Long-EZ (2nd Edition)	\$75.00.
Overseas orders add \$20.00 for airmail, otherwise, it will be sent via surface vessel	
Annual Update Subscription (4 updates)	\$25.00.
Overseas orders add \$5.00 for airmail.	

Contact: Stet Elliott
5322 W. Melric Dr.
Santa Ana, CA 92704
714-839-4156

VARIEZE INDEX

Lists all plans changes from CP10 through CP68 as well as all suggestions, problems, etc. For any VariEze builder, this is a must. Bill sells it a couple of different ways. You can buy just the printed book for \$20.00 or you can get the book plus a 5-1/4" IBM compatible floppy disc with a delimited ASCII listing of the data base (or optional PFS professional file data file). Specify which you would want, for \$24.00. This index will be updated annually.

Contact: Bill Greer
222 McLennan Dr.
Fayetteville, NY 13066
315-637-3795

THE AERO ELECTRIC CONNECTION

is a book published for people who desire a working understanding of aircraft electrical systems and components. It is produced as a periodical publication of chapters on specific topics. For example, issue #1 covers d.c. electrical fundamentals, batteries, engine driven power sources, voltage regulators and grounding. Issue #2 continues over-voltage protection, low voltage warning systems, wiring, wire terminations and circuit protection. This first of a series of simplified wiring diagrams for composite airplane with high capacity alternators was published with issue #2. Issue #3 added diagrams for airplanes with and without starters plus versions using small permanent magnet, dynamo type alternators. A series of do-it-yourself avionics articles and kits are in planning. An entire issue will be devoted to providing a customizable book form wiring diagram for your airplane.

Contact: The AeroElectric Connection
Medicine River Press
6936 Bainbridge Rd.
Wichita, KS 67226-1008
316-685-8617

LONG-EZ PARTS PRICE LIST FROM FEATHER LITE

Main gear strut	\$ 349.00
Nose gear strut	58.00
Engine cowls, pr. (glass)	329.00
Engine cowls, pr. (Kevlar)	480.00
Cowl inlet	48.00
Wheel pants (3.5x5)	150.00
Wheel pants (500x5)	180.00
Above item in Kevlar	215.00
NG 30 cover	21.00
Pre-cut canard cores	160.00
Pre-cut wing & winglets	1199.00
Leading edge fuel strakes with bulkheads	524.00
Strut cover SC	19.50
Nose wheel cover NB	19.50
Sump blister	19.50
NACA inlet	47.00
3" extended nose gear	70.00

Contact Michael Dilley or Larry Lombard (both ex-RAF employees and EZ builders and flyers) at:

Feather Lite, Inc.
PO Box 781
Boonville, CA 95415
707-895-2718

RAF "GOODIES" AVAILABLE

Tie tacs-Long-EZ/VariEze (silver only)	6.50
Charms-Long-EZ/VariEze (gold or silver)	6.50
Name patch	1.50
Silhouette patch (no Defiant)	3.50
3-ship poster (17"x22")	3.75
2 Long-EZs in trail (11"x17")	3.00
Defiant on water (11"x17")	8.00
RAF Chronological poster	15.00
Long-EZ lithograph	10.00
Color photos (EZs, Solitaire, Defiant)	1.25
**Night photo by Jim Sugar new this year at Oshkosh	5.00

FOR SALE

LONG-EZ EXHAUST SYSTEM

All 321 stainless tubing 1-3/4" diameter with 1/4" thick stainless steel flanges. Pipes exit the cowling one above the other, two each side. Fits all Lycoming engines from 0-235 to 0-360 (no

heat muff). This is the same exhaust system Dave Ronneberg designed and built and has been flying on his Long-EZ for several years. It is similar to the 4-pipe system Mike Melvill has on his Long-EZ, N26MS, for over 4 years and 600+ trouble-free hours.

Contact: Hal Hunt
6249 Longridge Ave
Van Nuys, CA 91401
818-989-5534

Note: Hal Hunt also makes and sells a neat air intake with filter and carb heat valve that provides filtered carb heat. Contact Hal for details.

NACA FRESH AIR INLET VENT DOORS.

Gene Zabler's neat little vent door is still available for \$7.50 pp. Gene tells us that after 8 years in service some of these little doors are wearing out. If yours is, send an SASE and \$2.00 to Gene and he will ship you a new rubber insert. Gene also manufactures and sells a light weight nose wheel fender (protects your prop from gravel damage) for \$45.00 pp.

Contact: Gene Zabler
48 Robin Hill Drive
Racine, WI 53406
414-886-5315

FLUSH RUDDER BELHORN SPRINGS.

Many builders have had difficulty locating the correct springs called out to be installed in the rudder cables when installing the flush rudder belhorn modification. The springs called out in the plans are available from Century Spring Corp. but this company has a \$25.00 minimum charge! Fortunately, John York, a Long-EZ builder who experienced the same problem, has informed us that he has a supply of these springs and is willing to keep them in stock for a year or two. He will sell the springs for \$1.50 each plus \$1.00 shipping. So send John a check or money order for \$4.00 and he will send you a pair of springs!

Contact: John York
903 W. 24th Street
Lawrence, KS 66046
913-832-2049

NOTE: NEW ADDRESS FOR ORDERING

NOSE GEAR RATCHET

Dr. Curtis Smith's nose gear crank ratchet is still available at \$38.00 pp. This little device should be considered a "must" by all Long-EZ and VariEze builder/flyers. Once you have flown with it you will wonder how you ever did without it.

Contact: Curtis Smith
1846 Sextant Dr.
Worden, IL 62097
618-656-5120

SIGHT GAUGES

New, improved fuel sight gauges. Use with auto fuel or Avgas. Clear bubble with white background. Retrofit for Long-EZ and VariEze. \$30.00 per set.

Contact: Vance Atkinson
3604 Willomet Court
Bedford, TX 76021-2431
817-354-8064

ENGINE

Rotorway RW100 engine - new in the crate with accessories - liquid cooled, 108 hp, originally intended for my VariEze - \$4500.00. VariEze canopy (clear) new, in the crate - \$200.00.

Contact: Jay
602-497-5240

USED PARTS

Removed from 0-235 powered Long-EZ:
Brock exhaust system \$165.00
3" prop extension and
crush plate \$165.00
Great American Prop, 62x62 \$200.00
All used, but in good condition.

Contact: Steve Bowsler
PO Box 83
Honeydew, CA 95545
707-629-3445

Please help! I have three aerosol cans of conductive copper paint. I paid \$35.00 each for them when I bought them from Spraylatt Corp. Very effective to make an excellent ground plane for a Loran antenna.

Call or send \$35.00 plus postage to
Peter Magnuson
573 G Carriage Shop Road
East Falmouth, MA 02536
508-540-5940

TOM BERKLEY'S HOT WIRE SAW

John has purchased a roll of the .041 diameter high temp, high tensile wire from the manufacturer as called out for Tom Berkley's saw. Two hundred and twenty feet was a minimum order and John is willing to sell his extra wire. He purchased his wire from The National Standard Co., Los Angeles Warehouse, 14700 S. Marquardt Ave., Santa Fe Springs, CA. 213-921-9683.

Contact: John Di Milia
92 Park Ave.
West Caldwell, NJ 07006
201-228-8966 (NEW NUMBER)

FEATHER LITE PRODUCTS

Feather Lite, Inc. is proud to announce another product to re-introduce to EZ builders: The original Space Saver Panel by the late Rusty Foster. This is a bare fiberglass panel with a molded recess for builder installation of an aluminum flat stock electrical panel. \$40.00

Contact: Larry Lombard or
Mike Dilley at
Feather Lite, Inc.
PO Box 781
Boonville, CA 95415
707-895-2718

RAF RECOMMENDED SUPPLIERS

Aircraft Spruce Wicks Aircraft
PO Box 424 410 Pine Street
Fullerton, CA 92632 Highland, IL 62249
714-870-7551 618-654-7447

FeatherLite
PO Box 781
Boonville, CA 95415
707-895-2718

Brock Mfg.
11852 Western Ave.
Stanton, CA 90680
714-898-4366

These suppliers are still the only authorized RAF dealers for all your various aircraft materials and components.

PROPS FOR EZ'S AND DEFIANTS

RAF recommends the following prop manufacturers:

Bruce Tift
B&T Props
75872 Mosby Creek Rd.
Cottage Grove, OR 97424
503-942-7068

Ted Hendrickson
PO Box 824
Concrete, WA 98237
206-853-8947

While we still have not had an opportunity to try one of Performance Propellers (Nogales, Arizona) props, we have now had a chance to see and touch several of them, and to talk with pilots who fly them. We have also received nothing but enthusiastic letters of recommendation for these props. See their ad in *Sport Aviation*.

PLANS CHANGES AND OTHER IMPORTANT MAINTENANCE INFORMATION

THERE ARE NO NEW CHANGES TO ANY AIRCRAFT IN THIS CP.

Since RAF is no longer active in the development of homebuilts, we are not likely to discover many new errors or omissions in the plans. For this reason, we need your help. Please submit any significant plans changes that you may come across as you go through the building process.

ACCIDENTS AND INCIDENTS

The CP newsletter reports accidents and incidents and discusses their conditions and causes for information purposes for all operators. We have always investigated accidents in the interest of determining information that we can disseminate to you to prevent recurrence. It should be recognized in our discussion of accident conditions or causes that generally this information is preliminary since it is published before the availability of the FAA accident report.

A French VariEze was ditched off the coast of France when the engine quit while on short final to the Montpellier airport. Fortunately, neither the pilot nor the passenger were injured and, amazingly, the aircraft suffered relatively minor damage. This is the first known ditching of an EZ so we at RAF were most interested to read the report submitted to us by the pilot. We reprint the relevant information contained in his letter with the pilots permission and for the education of those readers who may fly this type of aircraft over water.

Pilot took off using the fuselage reserve fuel tank. Failed to notice the fuel valve position due to epoxy covered sleeve of coveralls. (VariEze fuel valve handle protrudes vertically into forearm when set to emergency reserve fuel tank). After 35 minutes of flight over beaches, the engine starved of fuel when the reserve tank ran dry. Pilot attempted to glide to runway, could not make it, so elected to land in the water due to bushes on approach end of runway. Pilot executed a normal landing on the surface of the water. He did extend the nose gear (but did not say if he extended the landing brake - RAF recommends both.) He touched down on the main gear at near minimum flying speed. The main gear instantly folded aft as the wheels penetrated the surface of the water. (This VariEze was equipped with a Long-EZ main gear strut and mounted similarly to a Long-EZ main gear mount). The nose gear did not collapse, but rather acted as a water "ski", preventing the nose from diving into the water. All of this happened very quickly according to the pilot, and although the stop was abrupt (he estimated less than 100 feet from

point of touchdown 'til stopped), it was also gentle enough that he and his passenger did not even suffer any bruising from the seat belt/shoulder harnesses!

The fuselage filled rapidly with water and the pilot and passenger evacuated the aircraft after opening the canopy. The VariEze floated high enough in the water that the magnetos were above the water line and the instrument panel did not get submerged. The aircraft was pushed to the beach; the nose wheel was retracted and it was lifted up onto the beach with minimal damage.

The lower cowl was extensively damaged. The upper cowl, less so. Both ailerons were damaged and, of course, the main gear was torn completely out of the fuselage. The small plastic window used to check nosegear-down, was blown out by water pressure in the nose wheelwell. The ailerons have been rebuilt, both cowlings were replaced. The same main gear strut has been reinstalled and the aircraft is once again in flying condition.

So, how could this have happened? In the pilot's own words: he was in too much of a hurry. He had not expected to go flying, he was wearing his epoxy-covered shop coveralls and did not take the time to change. He raced through his checklist and missed a few important items. He did not climb to the standard pattern altitude, and flew relatively low over the beach. He recommends always taking enough time to do all the things that must be done to accomplish a safe flight. If, in spite of all your best efforts, something goes wrong, keep your head, think about what you are doing, fly the airplane and control it all the way to touchdown, maintaining flying speed without fail. After his experience, he believes the VariEze to be an excellent choice for long, over-water flights! He says that if something goes wrong, simply land in the water, stay with the plane, it will provide you with protection and flotation while you wait to be rescued!

We certainly appreciate this pilot's candor, and we take our hat off to him for keeping his cool and making a safe landing into the water.

A Long-EZ crash-landed in New Mexico when the pilot suffered a stroke while flying and attempted

an emergency landing. The aircraft was considerably damaged, but the pilot sustained no serious injuries. Sadly, less than 3 weeks later, the pilot died after radiation therapy for several malignant tumors.

A VariEze crashed in Kentucky fatally injuring the pilot. The aircraft impacted the tops of trees at high power and finally struck a large tree trunk. The airplane burned and was totally destroyed. The pilot took off in adverse weather conditions and, at the time of the crash, a nearby airport reported near zero visibility. The pilot was instrument rated, had thousand of hours in his logbook and over 200 hours in type. Although it is difficult to understand how such an accident could happen, unfortunately, this is one of the most common general aviation type accidents. Weather can get you no matter how experienced you may be. If you have doubts about the weather, stay on the ground and try again when the weather gets better.

A Long-EZ crashed in Pennsylvania and the only person aboard was killed. The NTSB has not yet come out with a finding on this accident. All we have is a letter from the builder and a newspaper clipping. We talked with the FAA who assured us that they had found no evidence of an airframe problem and that, for some reason, the pilot was flying low down a river valley and struck an unmarked cable. The aircraft crashed into the river. What we do not know is whether the pilot was deliberately flying low or, perhaps, had a problem and was attempting an emergency landing. The cable has since been repaired and has had three red balls installed on it.

TRIBUTES

On Wings of Glass

Oh come along and fly with me
We'll ride across the sky.

My slender craft has wings of glass
And she can really fly.

This sleek and slender craft of glass
Is such a lovely thing.

She'll loop, she'll roll, she'll dance
The sky on white and shining wings.

She'll do so many things
That I've always dreamed.

So come along and ride with me,
I'll show you what I've seen.

We can fly across this land of ours,
We can cross the oceans deep.

We can sail along on wings of glass
Above the mountain peaks.

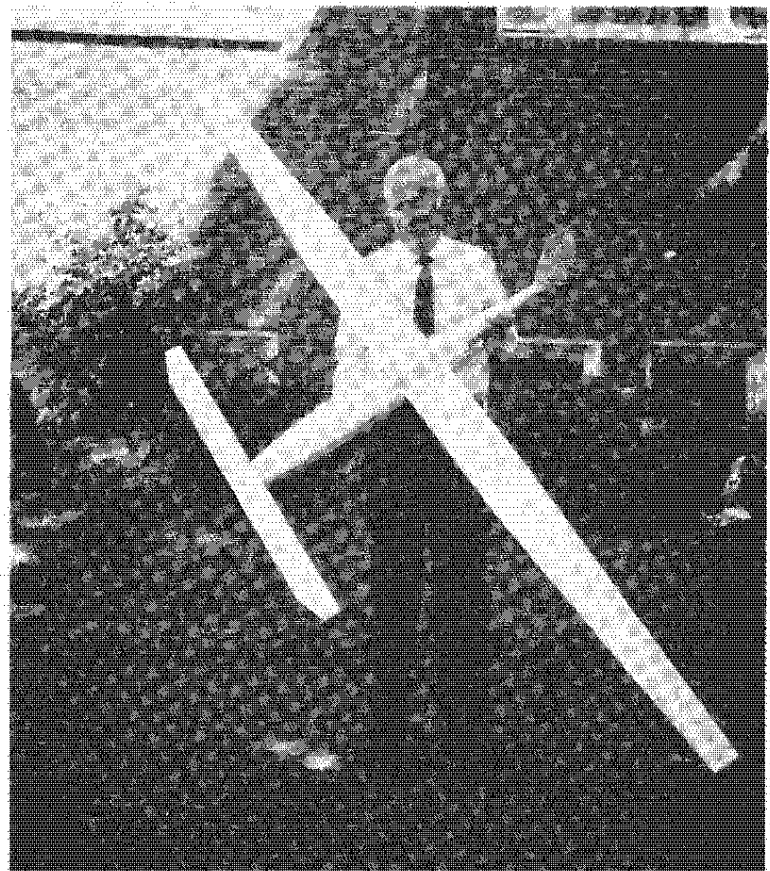
This sleek and slender craft of glass
Can take us farther than you think.

The adventure of our travels
Will give us memories to keep.

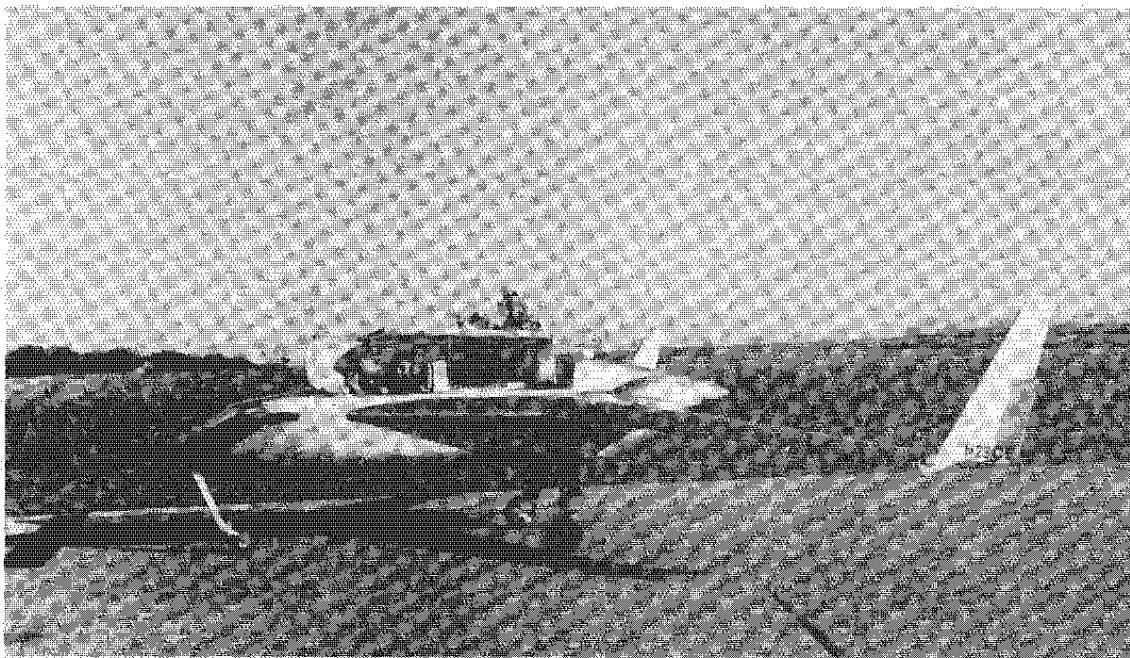
So come along and fly with me.
We'll ride across the sky.

Our slender craft has wings of glass!
And we can really fly!

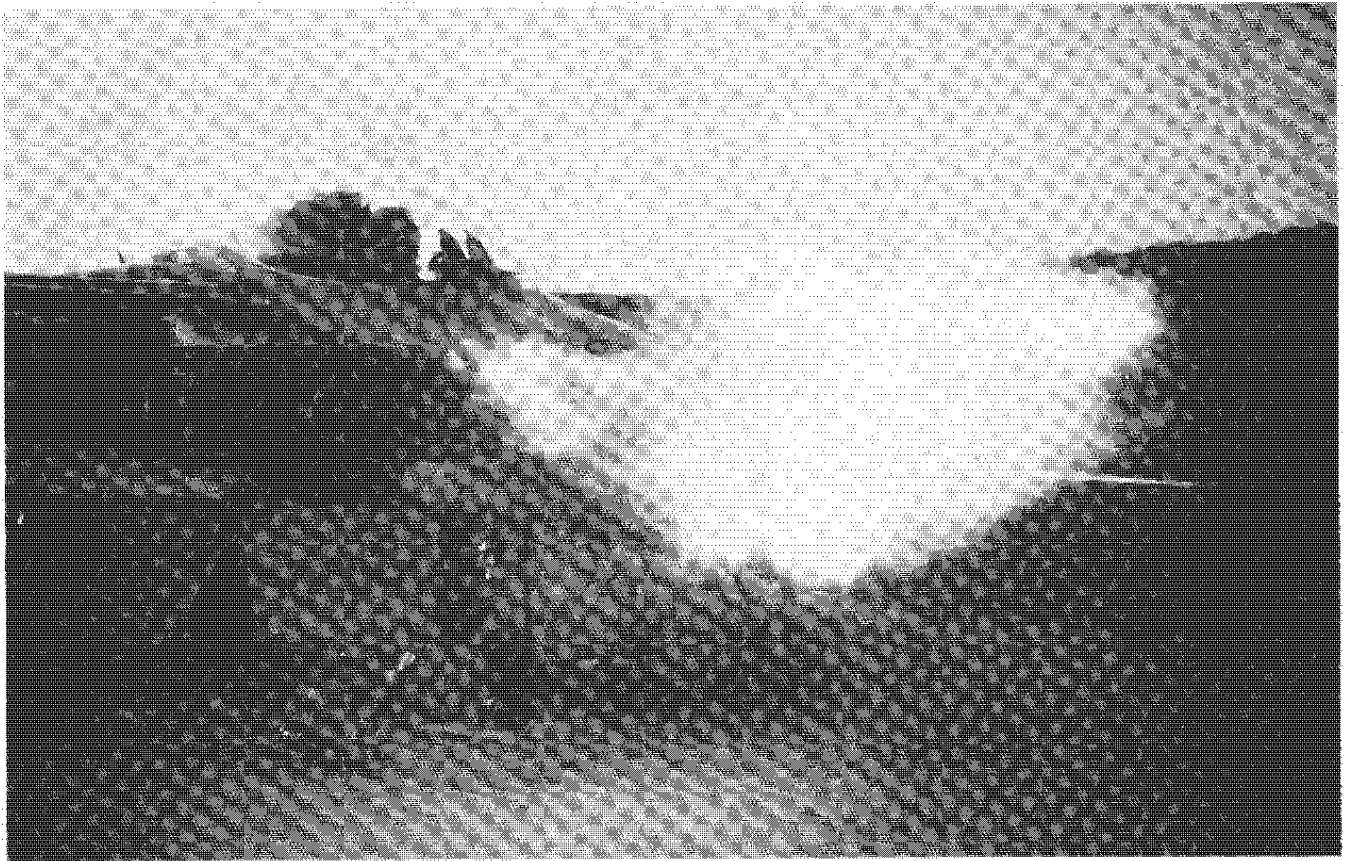
David M. Haggard



David Coulter of Salt Lake City with his Solitaire model
and a happy smile!

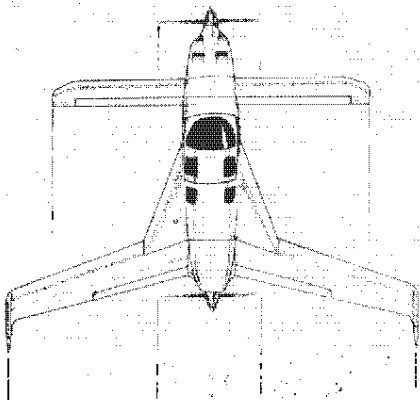


Another happy man. Chuck Charles coming back from first flight in his VariEze,
N23CE, on December 11, 1991. Congratulations, Chuck!



Scaled test pilot, Doug Shane, fires a 40-round blast with the General Electric GAU-12U Gatling gun in ARES at the Mojave Range. Fire balls like this were typical both on the ground and in the air.

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TO:

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The line which appears above your name lets you know through which Canard Pusher you are paid. If your label says **LAST ISSUE CP 70** then this is your last issue, and you need to renew.

CP 70