

THE CANARD PUSHER

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

VariViggen (1st Edition), newsletters 1 to 64.

VariViggen (2nd Edition), newsletter 18 to 64.

VariEze (1st Edition), newsletters 10 thru 64.

VariEze (2nd Edition), newsletters 16 thru 64.

Long-EZ, newsletters 24 through 64.

Solitaire, newsletters 37 through 64

Defiant, newsletters 41 through 64.

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 12:00 AND 1:00 TO 5:00 When you call on Tuesdays for builder assistance, please give your name, serial number, and nature of the problem. It is required before you can be put through to Mike. This is a company policy and we must adhere to it.

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.

OSHKOSH 1990

BURT'S FORUMS:

FRIDAY, JULY 27 - 8:30AM - TENT 2 - BUILDER SUPPORT.

FRIDAY, JULY 27 - 11:30AM - TENT 3 - REQUIREMENTS FOR AVIATION GROWTH.

SATURDAY, JULY 28 - 8:30 AM - TENT 3 - THE COCKPIT - A DISASTER ZONE.

SUNDAY, JULY 29 - 11:30AM - TENT 3 - ARES - THE DESIGN PHILOSOPHY AND TEST RESULTS.

MONDAY, JULY 30 - 1:00PM - TENT 10 - LADIES FORUM - THE REVOLUTIONALRY CHANGES IN AVIATION.

ARES AT OSHKOSH

Scaled's flight test director, Doug Shane (also Long-EZ builder/flyer) will fly ARES to Oshkosh on Thursday, July 26th. He expects to make one stop to rest his buns and pickup some Jet A. He expects to cover the 1650 NM in 4.7 hours or so depending on winds aloft.

Mike Melvill will fly the ARES each afternoon on Friday, Saturday and Sunday at the show. ARES is a single engine, single seat jet. Using a Pratt and Whitney JT15D turbofan engine, ARES will true out at 420 knots at 25000 feet and will indicate 350 knots on the deck. Add to this, its ability to turn at over 300 per second and an extremely rapid roll rate, a maximum of 8 "G", and you have a really fun to fly personal fighter. It will be on static display at Oshkosh Thursday evening through Monday morning. Be sure to buttonhole Doug, Mike or Burt for details on this VariViggen look alike.

SOLITAIRE - SELF LAUNCH SAILPLANE

"Solitaire N691LP flew for the first time under its own power on June 21, 1990. I tried to fly a few days earlier but several attempted take-offs had to be aborted. The engine sagged from vapor lock.

This is after 6-1/2 years of building and engine mount development. It all became worth it, however, with the dazzling take-off and superior cruise performance (75-80 knots).

The engine retraction and extension time of 4 to 6 seconds from door opening to engine running, confirmed my most optimistic expectations.

During the flight, the engine was stowed and restarted three times. The landing was made as a sailplane. In a subsequent flight, a normal landing was made with the engine up but not running. Interestingly, the glide sink rate was 200 ft/min (31:5 L/D) but in this landing, it was only 400 ft/min. (16:1 L/D). This is a better L/D than the glider I learned to fly a lot of years ago. The rate of climb indications were not good but my estimate is 450 ft./min. at 1000 to 2000 ft. MSL on an 87°F day.

Engine problems were due to auto gas vapor lock on a 90°F day. I changed the fuel to 100LL then changed the plugs to NGK-B10-HV and added a Mikuni pulse pump at the fuel tank. All this was done on the advice of Frank Beagle, an experienced KFM Ultralight flier. Now the engine starts on the first revolution.

The airplane is exciting to fly...very sensitive to every air ripple. Now that I am less hyper, I find it responsive, stable and easy, easy to fly.

Herb Abrams"

Note: Herb is too modest. His Solitaire is absolutely gorgeous! The engine installation is what we at RAF, and probably most Solitaire builders, have been waiting for. A number of years ago (could it really have been 6 years, Herb?), Herb called to describe his novel idea for an engine/prop installation. A stock Solitaire folds the engine forward into the fuselage with the direct drive prop on the bottom. This severely limited the prop diameter and, thus,, thrust and performance. Herb designed an ingenious "flip-over" engine mount that uses the same KFM engine but with a reduction drive and much larger diameter prop. When the engine/prop is extended for powered flight, it looks much like the stock Solitaire but when he folds the engine away (which only takes 4 seconds!), the engine flips over and the engine goes into the fuselage placing the prop at the top

of the engine compartment just under the flush doors. You have to see it to believe it. I thought Herb had flipped his lid when he first called with his idea, but having seen his video tape and photos, I for one can't wait to see the real thing. Congratulations, Herb, a truly outstanding engineering achievement.

ED.

FLY-IN

LATE FALL FLY-IN, DRIVE-IN, EZ GET-TOGETHER
NOVEMBER 23, 24, 25 AT MINDEN, NEBRASKA

Sure it will be cold, but at least it won't be 110° in the shade. Just wear everything you own, like when you go skiing or hunting. Here is a chance to walk off some turkey and get in the Christmas spirit.

The Pioneer Village Museum is open everyday and most of it is indoors. Friday night there will be pizza available in the motel meeting room. Saturday night in the town square, there is a Christmas pageant and their lights are turned on for the first time. This is a popular event so make your reservations early. Thirty rooms are being held under the name of "Central States Association Fly-In". Call: Pioneer Village Motel 1-800-445-4447.

LONG-EZ'S - TRAVELLING MACHINES

During one 3 week period a month or so ago, we noticed the following: Two friends flew their Long-EZ's from the LA basin to the southern Bahamas islands. Another friend flew to and from Kansas City for a weekend visit. A week later, Mike and Sally flew to New York and back.

These were only the people we knew of personally. There were probably others! Talk about a travelling machine - the Long-EZ, designed by Burt in 1979, was named for its long range and long endurance. It has really lived up to its name and its design goals

FIRST FLIGHT

Andre Deberdt reports his first flight in his Long-EZ, registration number PP-ZAD. Andre is from Sao Paulo, Brazil. He worked on his airplane for 5 years before finally taking to the air. Unfortunately, his first landing was not as successful as his first flight. He landed hard, hitting the nosewheel hard enough to fail the 4 AN-525 washer-head screws that secure the NG-15A casting to the strut. All four screws pulled their heads off allowing the nose wheel/fork assembly to depart the nose strut. Andre maintained control and held the nose off as long as he could. Once he touched the strut (NG-1) down on the runway, it ground off about 2". He slid for between 900 and 1000 feet on the end of the NG-1 strut.

Note: These four screws were changed to AN-3 bolts several years ago in the CP.

The mains hit hard enough to spread the gear to the point of grinding off one brake bleeder fitting, so he was without brakes. To his credit though, this was the only damage and he was out flying again the very next day, thanks to the generosity of a fellow builder, not as far along, who lent him a complete nose gear strut.

Andre tells us that his is the fourth example of a RAF design to fly in Brazil. There are now one VariEze, and 3 Long-EZ's flying there. He says he hopes to make it to Oshkosh some day and tells us that he is more satisfied with his EZ every time he flies it. Congratulations, Andre!

CAUTION

How do you know what you are getting when you buy a complete, or even a partially complete, composite aircraft?

RAF gets this question more often than we care to relate. It's a tough question and we honestly don't know the answer. Perhaps the most logical approach would be to look at one with plenty of hours on it. At least, the structure is proven. The other thing to look at is the structural weight. Beware of an unusually lightweight EZ (might have some lay-ups missing, also, watch out for an excessively heavy airplane. It will

probably fail at a lower "G" than a normal weight EZ).

We recently heard of a nasty accident in a Vari Eze that really drives home the point we are trying to make here.

The buyer purchased a structurally complete VariEze. Most of the contouring was done but not the engine installation or the wiring/instrumentation. This person spent a couple of years of hard work and lots of dollars until he was finally ready to try out his new bird. On the first high speed taxi run, with the nose wheel off the ground, he started to get it light on the main tires when suddenly the left wing folded. The right wing was lifting quite strongly and, without the left wing to balance the lift, the airplane abruptly rolled over and left the runway. It slid to a stop inverted, and although the damage to the airplane was fairly minimal, the pilot was seriously injured and spent several months in the hospital recovering.

Close examination of the wing attach area disclosed the fact that the wing fitting attach screws had never been installed! Since the micro used to contour the wings was already installed, the buyer had no way of knowing. This is just one way you could get in trouble when you buy a composite homebuilt. RAF has always been a strong advocate for build-it-yourself. If you want an airplane, build it yourself. Follow the plans as closely as you can. Have your friends or fellow EAA chapter members look at it over your shoulder as often as possible. Be conscientious and accept only your very best workmanship.

There are currently somewhere between 1200 and 2000 Rutan designs flying. By far, the majority fly well and safely because their builders took care to build their creations as perfectly as they were capable of doing. By all means, build it yourself, but if you decide to buy one, keep this true story in mind, you cannot be too careful.

ACCIDENTS AND INCIDENTS

A Long-EZ based in Oregon crashed on take-off and the pilot was fatally injured. The cause is not known at this time but, as always, RAF publishes all accident reports we know of in the

hope that these reports and analyses may help others to avoid the same problems.

The Oregon EZ had been flying for just over a year. It was reported to be a "work of art", a potential show winner. The pilot was in the habit of flying locally at least once or twice a week so he was very current. He was known for his steep climb-outs after take-off, so it was no surprise to the eye witnesses on the day of the accident when he climbed very steeply. However, at about 300 feet above the ground, the engine quit and the Long-EZ nosed over and crashed. There was no attempt to flare or land, it simply flew a parabolic arc and crashed nose first. The forward fuselage was heavily damaged but the wings, fuel tanks and centersection were essentially undamaged.

We may never know exactly what happened here, but the lesson that comes to mind is, as always, "Fly The Airplane". If you are still physically able to, you must maintain flying speed and you must contact the ground wings level, nose high at, or slightly above, minimum flying speed. Try to aim between any obstacles to minimize damage to the fuselage/cockpit area. You have an excellent chance of surviving any landing if the aircraft is under control when it touches down. Above all, never give up! Continue to fly the airplane right to the ground and then brake as required to guide the plane to a stop.

MOJAVE-WILKESBORO, NC-LONG ISLAND, NY-MOJAVE IN LONG-EZ N26MS

Sally and I had planned this vacation for months. We were ready and so was our Long-EZ.

We lifted off runway 7 at Mojave at 5:55AM and headed East. I climbed at 140 kts, indicated which, at our weight, yielded a 600 FPM climb. The Northstar showed a ground speed of 185 kts! Great tailwind even during the climb. We donned our oxygen cannulas (AEROX - simply the best - 11-1/2 hours duration with two people at 18000') and climbed to 17500 feet. Once we were level and trimmed out, we were looking at a true speed of 173 knots, while burning 6.4 GPH. The winds were pretty much on the tail giving us a ground speed that never fell below 200 knots for the first

1000 NM. At times, we saw 220 knot ground speeds on the loran.

Unlike the terrible weather I had experienced flying the 0-235 powered Long-EZ over approximately the same route (See CP63), we had glorious blue skies essentially all the way from Mojave to New York.

We stopped for gas in Rogers, Ark. then pressed on to Wilksboro, NC. Flying time was 9-1/2 hours. We used 63 gallons for an average fuel burn of 6.7 GPH. Not bad when you consider two climbs to 17500! We averaged right at 30 NMPG (34 MPG) on the trip from Mojave to Wilksboro mostly due to strong tailwinds.

We had a marvelous 3-day weekend at a hot air balloon festival run by our old friend and VariEze builder/flyer, "Mule" Ferguson. We flew in hot air balloons, we chased hot air balloons all over the countryside and we had a ball. Thanks a million, Mule and beautiful wife, Debbie.

The trip from Wilksboro to East Hampton, Long Island, NY at 11500' took only 2.7 hours. Again, we got lucky and had a huge tailwind. We flew under the NY TCA at 500 feet, just off the beach. Quite an experience. You fly so close to Kennedy you can almost look into the windows of the airliners waiting to take off!

Although the route flown was not exactly the same, it was close. The 0-235 powered Long-EZ used 99 gallons and the trip took 18-1/2 hours. This time, our 0-360 powered Long-EZ used 83 gallons and the trip took 12.2 hours. The tailwinds had a lot to do with it, though - it took 16:10 to fly back to Mojave, bucking strong head winds and awful weather, at least to Ohio. Average fuel burn on the trip home was 8.8 GPH - the price you pay for the big engine if you can't go up high enough.

We stayed with a friend on Long Island and he and his wife saw to it that we had a splendoriferous time. We flew to Boston, then to Newport, RI. (Saw a completed Rutan Solitaire on the Newport airport.) We flew into New York City, flying down the Hudson river at, or below, 600 feet to stay below the TCA. We flew by the Statue of Liberty and landed at Linden, NJ. We spent 3 days in New York City and loved every minute of it.

We departed from Linden on a cloudy, low ceiling day and "scud ran" in driving rain for almost 4 hours! We landed for fuel in Burlington, IA and discovered that our voltage regulator had died. Sally called Bill Bainbridge of B&C Specialty in Newton, KS and he invited us to drop in. He also offered to trouble-shoot the problem, fix it or replace the B&C linear voltage regulator. He was as good as his word and, when he could not find the problem, he replaced the regulator. As we lifted the broken one out of the nose, it was dripping water! Bill took the lid off and, low and behold, it was full of water! Stupidly, I had installed it directly under the access door in the nose and my door does not have a good seal. Flying for hours in pouring rain had somehow caused water to get into the regulator and shorted it out! A valuable lesson - do not mount your voltage regulator where rain can get to it!

While I am on the subject of Bill Bainbridge and his B&C Specialty Company, I would like to thank Bill and his delightful wife, Celeste, for their hospitality and kindness. Bill really does have a neat little company in Newton. I got a tour of the facility and was tremendously impressed. The lightweight starters, the linear voltage regulators, the various alternators, etc., all are built with incredible attention to detail. You have to see these accessories going together to appreciate just how much superior they are to anything else out there. By the way, you can order a brand new Lycoming O-235, O-320, or O-360 from the factory equipped with one of Bill's beautiful starters! Bill really cares about us homebuilders and he strives to provide us with excellent parts designed to not only provide excellent service but also to give us the best possible performance and long life. The linear voltage regulator also provides absolute protection from an over-voltage spike thus keeping your expensive avionics safe. Before buying less expensive starters, alternators and voltage regulators, take a hard, critical look at what you get - believe me, I speak from experience!

We flew out of Newton during a summer thundershower and ended up fighting thunderstorms and rain all the way to Gallup, NM. From Gallup to Mojave the weather was perfect except for a 30 knot headwind.

N26MS now has 1630 hours on her. She first flew in 1980 which makes her almost 10 years old.

We have been all over the lower 48 states as well as Alaska and our Long-EZ has served us well. No question, our lives would not be the same without her. She has been ready to fly us anywhere, virtually anytime we wanted to go. Airframe maintenance has been essentially zero. Engine maintenance with the O-235 was more than it should have been. We topped it twice in 907 hours. This was probably due to my running it too hard! The O-360 has required no maintenance during the last 720 or so hours. We have had to have both magnetos worked on and we had an alternator failure once. We are extremely satisfied with our Long-EZ and would not trade it for anything.

Mike and Sally Melvill

WARNING- MODERN PAINTS CAN KILL

Scott Finnigan, a real up-and-coming aerobatic contender in a Pitts S-1-S died suddenly last December. There is a lesson that can be learned from this tragedy and you should be aware of what it is.

Last year, Scott painted some airplane parts in a small, unvented paint booth without using protective breathing equipment. Scott was spraying Imron. This material can be quite lethal and some of it got into his lungs. The damage was great and, sadly, incurable.

Be sure to use protective equipment whenever it is required by the manufacturer. Follow all safety guidelines - many of the modern painting materials are dangerous if not used in accordance with the manufacturers instructions. Modern polyurethane paint is just not like the old butyrate dope and enamels so many of us used to use.

SHOPPING

Plans for flush rudder belhorns for Long-EZ (sorry, not applicable to VariEze). As seen on Mike and Sally's N26MS - has been flying for 3 years trouble-free. Clean up the only thing on

your Long that just does not look right and enjoy stronger rudder authority for taxiing with no compromise to flight safety. \$10.00 per set

Contact: Joan Richey
Rutan Aircraft Factory
Building 13-Airport
Mojave, CA 9350
805-824-2645 (Tues. only)

Canard Pusher Digest - Stet Elliott's *Canard Pusher Digest for the Long-EZ* is still available. The Canard Pusher Digest is basically a recompilation of information from CP24-CP61 into chapters that correspond to chapters of the Long-EZ plans. (For a complete description of the Digest, See CP57). Not that the Digest is for builders and flyers of the Long-EZ only! The Digest 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.

CP Digest for the Long-EZ. \$67.00
Overseas orders add \$20.00
for airmail, otherwise, it will
be sent via surface vessel.
Annual Update subscription. \$25.00
(4 updates)

Overseas orders add \$5.00 for postage
Send payment to Stet's new address below:

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

RAF RECOMMENDED SUPPLIERS

Aircraft Spruce PO Box 424 Fullerton, CA 92632 714-870-7551	Wicks Aircraft 410 Pine Street Highland, IL 62249 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 Tiff
B&T Props
375872 Mosby Creek Rd.
Cottage Grove, OR 97424
503-942-7068

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

FOR SALE

Regretfully, I must cannibalize my beautiful Long-EZ, N870FS. 160 hours on the airframe, 200 hours on the 0-235 Lycoming. Everything Goes -
Call: Frank Swanson
38730 Brookside
Cherry Valley, CA 92223
714-845-5851

Lycoming 0-235-L2A, 1100 TTSN. Complete with accessories \$3500.00

Continental 0-200, 200 Hours since Major overhaul - \$3200.00

Two VariEze props and other misc. VariEze and Long-EZ components. Call or write for list
Don Bates
2742 Swansboro Road
Placerville, CA 95667
916-622-1886

Lots of used parts salvaged from a damaged VariEze. Write for list. Engine gauges, main gear strut, etc., etc. Also, an aluminum trailer - good for a VariEze or Long-EZ - Large wheels - \$275.00
Bill Ingram
3328 Macauley Street
San Diego, CA 92106

The nifty sight gauges sold by John Van Ostrom are no longer available from him. I will be taking over from him and they will be the same unbreakable quality as before. Price remains the same at \$30.00 per pair. (\$36.00 overseas). I have had a pair in my Cozy for 2-1/2 years and visibility is super. I have been unable to break or fracture the clear plastic with a hammer (test unit!). Builders can contact me:
Vance Atkinson
3604 Willomet Ct.
Bedford, TX 76021

Northstar M1 Loran - with current update - works perfectly. Upgrading to King - \$1750.00 (including tray), Bent whip antenna and antenna preamp. Contact: Mike or Sally Melvill
805-824-4541 days
805-821-1805 evenings

PLEASE NOTE NEW FORMAT

PLANS CHANGES AND OTHER IMPORTANT MAINTENANCE INFORMATION

VARIVIGGEN -----	NO PLANS CHANGES
VARIEZE -----	THIS TIME.
LONG-EZ -----	
DEFIANT -----	
SOLITAIRE-----	

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.

LETTERS

ATTENTION: ANYONE WHO EVER WANTED TO CROSS THE ATLANTIC . . .

"Planning my North Atlantic crossing began in May, 1989 when my wife, an Air Force physician, received word that her next assignment was to Hahn Air Base in central West Germany. I

borrowed an old copy of IFR magazine (Jan. 1989) which had an article about such crossings written by an experienced ferry pilot. First, I contacted Canada Air Transport (Bob Lavers at 506-857-7131) in Moncton, New Brunswick, Canada. They sent a complete packet detailing the requirements for single engine North Atlantic crossings.

In short, they require a full gyro panel, two long range navigation radios, and a high frequency communications radio. I found a marine hand-held radio direction-finder that worked very well. The other long range nav radio I had was a loran. Loran coverage is normally good all the way to Scotland using the Goose Bay-Narsarsuaq-Keflavik route but the Labrador Bay chain was down for maintenance during my trip. I found out after buying it that my Northstar loran is not able to receive the loran chains in Europe or the North Atlantic past the Labrador Bay chain so I had to rely on my other nav radios. I was able to get a heading for the Simiutaq (SI) NDB on the coast of Greenland using both my Northstar and King Marine lorans before the Labrador Bay chain went down. I was able to use the East Canada chain all the way to the coast of Greenland, but the Northstar kept asking to change chains and ~~warning about repeatability. The King loran~~ worked great in the states but not at all in Europe.

For the crossing, a full immersion suit, life raft, and sea survival pack are also required. The spares that I carried were a set of plugs and oil. I used 100 weight oil but would recommend a lighter weight as it felt pretty stiff trying to hand-start in Greenland. Also, the oil temp never got over 120° between Greenland and Iceland.

Navaid Devices sold me an auto pilot and it worked well and let me relax a bit during the long legs over water.

Since the Long-EZ is classified as experimental, technically, we must contact any country in which we want to operate and request validation of our airworthiness certificates. Canada and Iceland were aware of this rule, written in small print on the back of our certificates. Others were not. Eventually, all countries responded; Denmark said that they wouldn't validate my

certificate since my aircraft was not "certified", and I was in and out of Greenland before I even got their reply (which ultimately was "no"). The people at the airport in Narsarsuaq didn't care about this rule. They even let me park overnight in the hangar with the Ice Patrol planes.

For maps, I relied on Jeppesen. They sold me a North Atlantic set of charts, A VFR radio navigation chart for Germany, and an expensive set of books called a Bottlang Airfield Manual. The Bottlang books were very handy, with all the required details I needed for international travel.

I didn't install any extra tanks since I planned legs of only about 700 or 750 nautical miles. This left plenty of fuel to meet the three hour reserve fuel requirements of Canada Air Transport.

The trip itself started from Dunnellon, FL. I headed up the east coast to Barnes Airport in MA. On subsequent days, it was on to Caribou, ME and then across to Moncton, New Brunswick for the required inspection. Don't try to skip the inspection; security checked paperwork in Goose Bay and the officials in Iceland also checked the "ship's papers". After a low pass which the Moncton tower requested, I was off to Goose Bay about four hours north. Telephone ahead for a prior permission number that you will need for the approach controller (Goose Bay Operation at 709-896-7331). Outside the U.S., our airplanes get lots of attention, most controllers asked lots of questions if they had the time and always gave very good service. Goose Bay was my first landing at a primarily military airport, so phrases like "check gear down" and "arresting cable up" made the approach a little out of the ordinary.

Before I left, people I talked to about the trip said that the weather briefing that you get at Goose Bay is really something special and they were right. After having made an appointment the night before, the weather service had a folder ready for me covering the flight and a weather

man met with me to go over it. I was following a high pressure system out to the U.S. and the weather couldn't have been much better.

After I was out of VHF range, I started using airline traffic passing overhead to relay my position reports. Over the North Atlantic, air traffic is required to monitor 121.5 and it is normal practice to call and ask for help with a position relay. My calls always got an instant response and we arranged to meet on 131.8, the air-to-air frequency assigned to the North Atlantic. Again, there were always lots of questions about my aircraft and the trip.

About seven hours out of Goose Bay, the coast of Greenland and the fjords that lead to Narsarsuaq airport come into sight. Simiutaq NDB is on the coast and there are three choices for someone flying too low to pick up Narsarsuaq NDB. If you fly up the right-hand fjord, as I did, you are on a long right base for the runway. For the center fjord, you jump over a hill and are on final. The third fjord does not lead to the runway. You shouldn't fly up the fjords if the clouds are below the tops of the ridges at 3600 feet but should use the Narsarsuaq NDB/DME approach. The charts show an instrument approach using the NDB and DME but the controller said that the airport is normally only open for VFR. I stayed at the Artic Hotel in Narsarsuaq; the only choice except in mid-summer. The room was warm and clean and reasonably priced at about \$60.00 per night.

Overnight, Greenland had snow so I had to wait until noon before the low clouds and fog went out to sea. Just before I left, the weekly airliner arrived and said that they had a lot of turbulence over the ice cap on their way in from Iceland. So, I had to skip flying over part of the ice cap and head out to sea and around the southern tip of Greenland before heading for Iceland. Again, I got excellent weather service with hourly satellite pictures. The personal service might have been because the airliner and I were the only traffic for the day. My only alternate was

Kulusuk, about 400 miles north on the east coast. Kulusuk was reporting a snow storm but I went ahead because the satellite pictures showed a clear path to Iceland.

The trip to Iceland was uneventful although very cold. I wore the immersion suit, pulling off the top half after climbing in. Wool pants and a down coat under the immersion suit were not quite enough. I was afraid to run the electric cabin heat since I could not tell if the legs of the suit were touching the heating elements. I was very cold by the time I reached Iceland, especially since it was in the 90's when I left Florida.

Iceland is supposed to be a North Atlantic radar outpost but they didn't see me until I was over land despite operating my transponder and giving them my flight level and inbound VOR radial.

If you can afford \$150 a night for a hotel, the Lofleder Hotel at the Reykjavik airport is an excellent choice. It offers pilots a discount, has a heated pool and seafood lunch buffet that you shouldn't miss. I could only allow myself one night of luxury and then had to catch a shuttle bus over to Keflavik and stay at the Navy base (military only). I spent three days in Iceland waiting out both a wind and rainstorm with steady 35 to 40 knot winds and some military maneuvers that restricted low level flight between Iceland and Scotland.

The wind was not as strong as forecasted on the trip between Iceland and Scotland and I purposely over-corrected for the forecasted wind in a southerly direction so that if I was off course, I wouldn't pass north of Scotland. All this put me about twenty miles south of Stornoway when Benbecula VOR came into range. A call to Scottish information and I was on my way down the coast to Glasgow. Communications and radio navigation were weak down at lower levels in northern Scotland but improved after I cleared the hills and entered the valley leading to Glasgow.

Strong winds and rain delayed my departure from Glasgow the next day until nearly noon again and after flying southeast into England, I began to run out of daylight and the weather, while reported as clear in Germany, was turning into a sold deck below me. So, it was time to change plans and land at Teeside airport on the central coast of England after only a couple hours of flying. The next day was sunny and very windy but I was off to Germany. I had radar service all the way across the north sea. VFR traffic is required to descend to one thousand feet around Amsterdam and, again, I caught up with the rain and a forecasted ceiling. I passed a small airport just inside the German border and I called Dusseldorf radar to let them know that I was heading back there to land because of the weather.

My wife, Peggy, drove the two hundred kilometers north to pick me up. I had to wait out a week of clear skies until the next weekend when she could take me back up for the short flight down to Koblenz. The airport there has a 3000 foot paved runway and overlooks the Moselle river. This is homebase for my airplane for the next four years.

All in all, I had a pretty smooth trip. The only problem was the loran chain being down for maintenance and this shouldn't be a problem for future flights. For the flight back, I'm planning to build a back-seat tank and take the Shannon-Gander route or go through the Azores.

Juan Rivera"

"Dear RAF,

I thought I would write to report an exhaust failure on our Defiant that could have been quite serious.

This involved the front engine with about 200 hours on it. The exhaust was a unit purchased from Wag Aero. It is a standard wide deck exhaust for a Grumman Tiger.

The failure occurred at two places on the unit. One spot was on the exhaust stud coming from the right rear cylinder. It was a total fatigue fracture about 1/2" below the weld to the flange.

The other failure spot was on a lower left juncture of the combined pipes as they went into the muffler.

I could not determine which crack was primary and which was secondary, but I suspect one of them caused the other. What was interesting was that the cylinder near the site of the failure had been pulled by a repair facility when an intake valve cracked.

I did not oversee the repair since it was on a standard engine and muffler combination. After a discussion with Aero Fabricators who repaired the muffler, I came to the following conclusions: When the cylinder was pulled, they probably did not loosen the entire muffler from all the other cylinders. When the cylinder was replaced, the muffler was sprung back into place in a stressed condition and was bolted into place. Aero Fabricators suggested that when the exhaust system was reinstalled after repair that it be loosely bolted into place and then heated by running the engine until it was good and hot. In this hot state, the cylinder bolts and sleeve clamps are then tightened to appropriate torque.

This exhaust system was only about 200 hours old. Since this was a certified muffler on a standard engine, things point strongly to an error in installation procedures. This caution might be relevant to other exhaust systems that are somewhat rigid between multiple cylinders.

We are also going to be balancing both engines in the near future since both starter ring gears were not part of the engines when we bought them. What was really scary was that we had a fuel line failure on the same flight on the same engine, within only 1 hour of each other.

The fuel line failure by the way was one of those fancy expensive lifetime custom made all stainless steel lines that come from Aircraft Spruce. It appears that the failure was a combination of a poor weld on the stainless steel tube and vibration failure. I am considering replacing them with good old rubber Aeroquip rubber lines that you periodically throw away. At least I never saw a rubber line fatigue.

Did you ever notice that it is all that metal on our fiberglass airplanes that seems to brake all the time? I think I am ready for fiberglass engine mounts and ceramic engines.

John Steichen

"Dear RAF,

"LUCKY YOU FLY A LONG-EZ " - AGAIN!

This is to relate to you an incident that occurred last Saturday, May 21.

I was flying PP-ZAD enroute to a fly-in in the south of Brazil at 8500' under positive control area and enjoying, in advance, my participation in the fly-in and the amazing performance of the Navaid Devices autopilot.

I suddenly smelled burning oil and, looking back, I saw some smoke in the cockpit and two trails of oil coming out of the oil filler door. I immediately reduced power to minimum and began to look for a place to land.

The only airport close by was under rain and no safe approach could be attempted due to mountainous surroundings.

Loosing altitude slowly (what a splendorous glider is the Long!), it soon became apparent that the only safe place was a new open-to-traffic freeway with not much traffic on it. After some low passes to make clear my intentions (oil pressure was at this time around 40 PSI down from 80 PSI), I was able to make one of my best landings, not even touching the brakes and with only 20 PSI oil pressure even taxied one more mile to an adequate place clear of the traffic to park.

Some 5 quarts of oil poured from the cowl when I lowered the nose. Next day we put in new oil, ran the engine and we observed the oil coming out from the hose connecting the oil cooler to the engine. A new hose was put on, engine checked carefully and I departed from the freeway again to my home airport.

Now, this airplane is very special to me and no efforts nor expenses were spared in all phases of its construction and choice of parts which had to be always of the best quality, not bothering with prices. Even a brand new engine was ordered from Lycoming.

When it was time to choose the hoses, I decided to use the "stainless steel hose assemblies" as advertised on page 84 of Aircraft Spruce's catalog (very expensive) instead of the regular rubber material. These hoses were made to order for the sizes I supplied (copy of invoice enclosed).

I am sending the failed hose to Jim at Aircraft Spruce to have it inspected by the supplier and I also already substituted all other hoses, even those carrying fuel, with standard Aeroquip shielded hoses.

These hoses were not abused in any way and were installed by a certified mechanic of our air club.

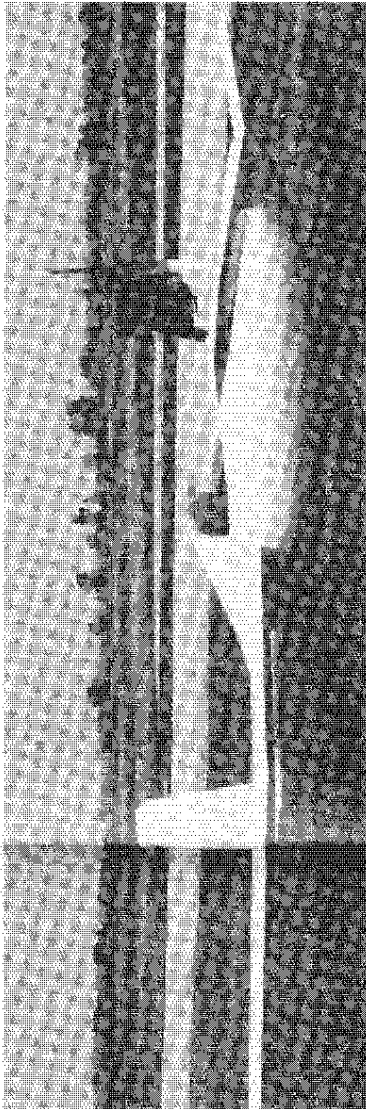
I hope that this may help any other builder who may decide to use these hoses in their airplane.

Thanks again for a wonderful airplane that is making me more confident every day in its capabilities and anticipating my hours of safe, enjoyable flying (not quite my wife's opinion).

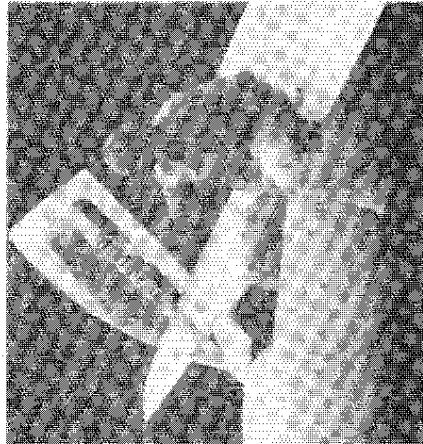
Next day I was on a national coverage TV network - try to imagine answering all those phone calls!
Andre J. Deberdt"

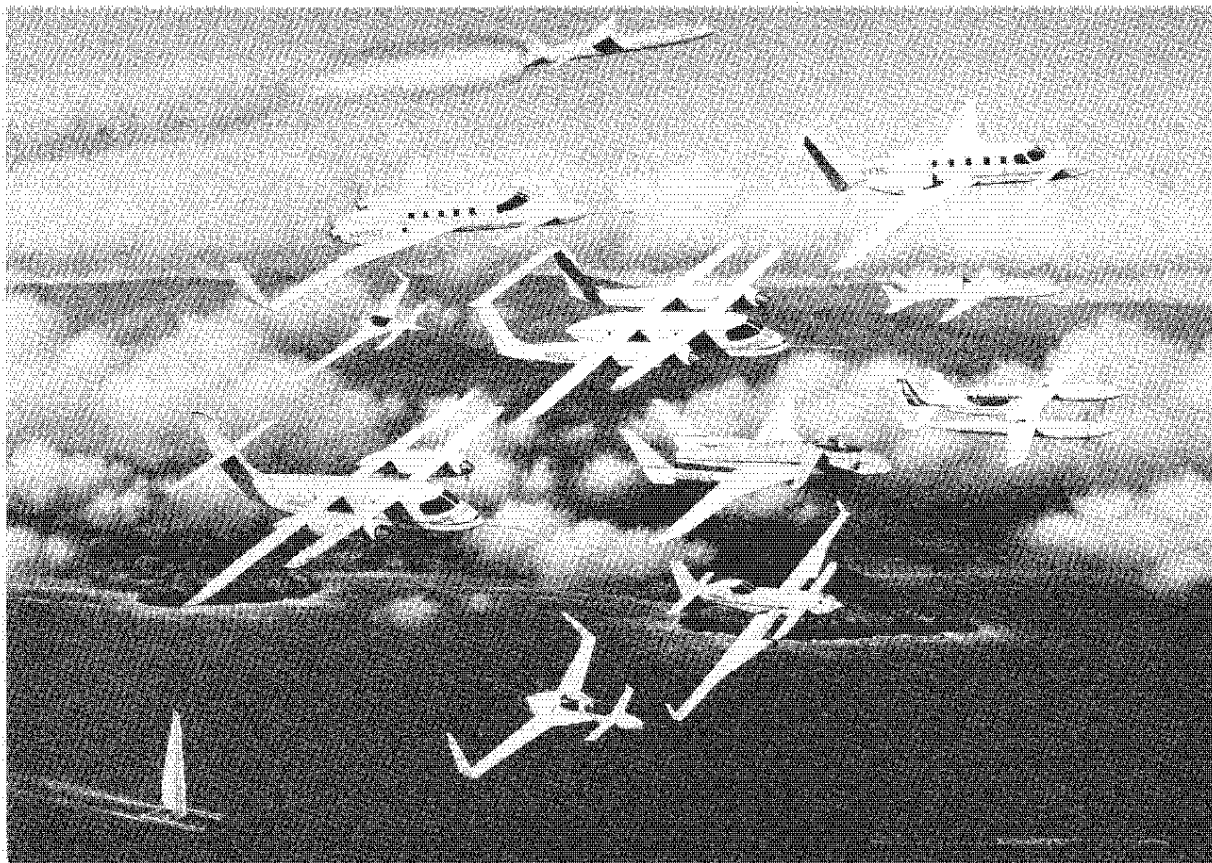
PLEASE NOTE CHANGE OF ADDRESS FOR B&T PROPS:

BRUCE AND BONNIE TIFFT
B & T PROPELLORS
75872 MOSBY CREEK ROAD
503-942-7068



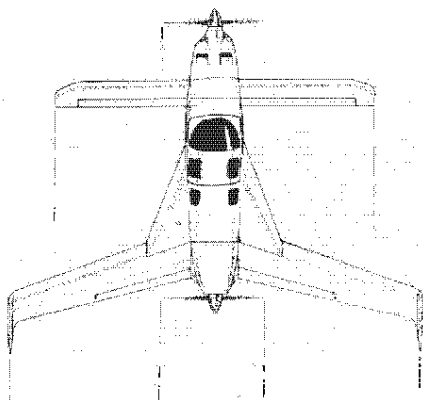
Herb Abrams and his beautiful new Solitaire, N691LP, with its nifty engine retract system.





Rutan Aircraft Factory
Building 13, Mojave Airport
Mojave, CA 93501

first class mail



TO:

July '90

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CP 64