

CANARD PUSHER

OCTOBER 1995

RUTAN AIRCRAFT FACTORY

VOL. 10, ISSUE 4, NO. 82

Burt joins Hall of Fame

DAYTON — Friends and family staged a surprise for Burt Rutan earlier this year when they showed up unexpectedly in Dayton, Ohio.

After all, Burt's induction into the National Aviation Hall of Fame was an event his friends didn't want to miss.

Burt's portrait will now hang in the same hallowed halls as aviation greats Orville and Wilbur Wright, Scott Crossfield and John Glenn, among others.

The National Aviation Hall of Fame, which is dedicated to honoring and preserving the history of outstanding air and space pioneers, was formally approved by Congress and President Lyndon B. Johnson as a national organization on July 14, 1964.

While Burt was one of four men inducted into the Hall of Fame this year, he was the only one still living. "Ace of Aces" Dominic Gentile, the flying hero who single-handedly shot down thirty enemy aircraft during World War II, was later killed in a T-33 trainer crash at the age of 31. Clyde Pangborn, the barnstorming pilot who once climbed out of the cockpit during a trans-Pacific flight to free a frozen wheel strut, was buried with military honors at Arlington National Cemetery in 1958.

Aeronautical engineer Harold Pitcairn, born long before the first flight of the Wright brothers, and whose commercial aircraft designs eventually led to the development of Eastern Airlines, had also "slipped the surly bonds of earth."

Friends and family members accepted awards on behalf of Gentile, Pangborn and Pitcairn.

Burt said he was thankful to be able to accept the prestigious award in person, in front of friends and family.

see FAME pg 2



Long-distance pilot Andre Deberdt gives pals a tour of "OI' ZAD."
(l-r) Andre, Mike and John Campbell.

Oshkosh or bust by gosh

One of our South American friends reproduced the flight of an aviation hero, set four new records and entertained air show tourists in the U.S. with Long-EZ antics all within four months.

Brazilian pilot, Andre J. Deberdt, began the adventure in his hometown, Sao Paulo on April 21, '95. After landing his 1989 Long-EZ in Natal, Brazil, the native Frenchman, who has lived in Brazil for forty years, took off for a long-distance flight across the Atlantic Ocean to Dakar, Senegal on the African coast. Flying at an average speed of 130 Kts, Andre covered 1627 NM in little over twelve hours. That was the first leg of a four month odyssey that swept him across the Atlantic four times, through Africa and parts of Europe, over Iceland, Canada, and eventually landed him in Oshkosh, Wisconsin for the annual fly-in.

PPZAD, or "OI' ZAD" as the airship is affectionately called, is the first Brazilian experimental homebuilt to fly from Brazil to Africa non-stop and to tie South America to Europe with only one fuel stop.

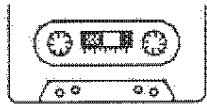
Joao Ribeiro DeBarros, a famous Brazilian pilot who made the Atlantic crossing in a twin-engine Amphibian Savoria Marchetti on April 28, 1927, served as prototype-pilot for the early part of Andre's voyage. "What is little known is that DeBarros made the crossing 22 days before Lindbergh," Andre explained. "But the difference was that Lindbergh was flying (between) two important cities, New York and Paris, and also he had the American media, which was very good. This poor guy had little media. At the time he was famous, but the Brazilian don't seem to have memory for their hero. I am trying to change that."

see ANDRE pg 4



All-star line-up on stage — (l-r) Burt, Atlantis pilot Charlie Precourt; astronaut Greg Harbaugh; astronaut Bonnie Dunbar; John Roncz.

'95 Oshkosh tapes for sale



Future Concepts for Personal Aircraft by Burt Rutan; July 29, 8:30am, Tent 2.

Shuttle pilot Charlie Precourt and the Atlantis crew were a few of our aviation favorites who shared the microphone on stage with Burt at his infamous Oshkosh tent talks this summer.

Mike Melvill joined Burt for a history of the Rutan canards and John Roncz shared the mic for the annual John and Burt Tent Talk Show.

The following audio tapes are available for your listening enjoyment: *Tent Talk Show* by Burt Rutan and John Roncz; July 30, 10 am, Tent 3.

Life, the Universe and Everything Else by Burt Rutan and John Roncz; July 29, 10 am, Tent 3.

Can Dragons Fly? by John Roncz; July 30, 8:30 am, Tent 2.

VariEze, Long Ez, Defiant and VariViggen by Mike Melvill and Burt Rutan; Friday, July 28, 10 am, Tent 3.

Human Elements on Long Duration Flights by Dick Rutan; July 30, 11:30 am, Tent 3.

Copies of these tapes and others are available for \$8 each from Forum Recordings, 3410 St. Peters Rd, Marion, Iowa 52302, or telephone (319) 377-4188.

FAME

Burt was joined in Dayton by wife Tonya; niece Jill and her husband Air force Captain Larry Hoffman, as well as friends Mike and Sally Melvill, Tehachapi; Emile and Kaye LeFebvre, Tehachapi; Dan and Margarite Cooney, Tehachapi; Greg and Krizzi Garrett, Tehachapi; and Chuck and Joan Richey, Mojave.

"The 151 enshrinees so honored represent the history of flight," wrote Hall of Fame president Dennis Corbly, "and include some who dreamed of its possibilities, some who gave their lives in its cause, some who made it practical reality, and some who have shown the way to the limitless universe."

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RAF is no longer accepting multi-year subscriptions. Please renew only after your current subscription has expired.

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

VariViggen (1st Ed)
CP 1 to current
VariViggen (2nd Ed)
CP 18 to current
VariEze (1st Ed)
CP 10 to current
VariEze (2nd Ed)
CP 16 to current
Long-EZ
CP 24 to current
Solitaire
CP 37 to current
Defiant
CP 41 to current

A current subscription of the *Canard Pusher* is mandatory for builders, as it is the only formal means to distribute mandatory changes. **Reproduction and distribution of the *Canard Pusher* is approved and encouraged.**

Glass Overcast blast from past

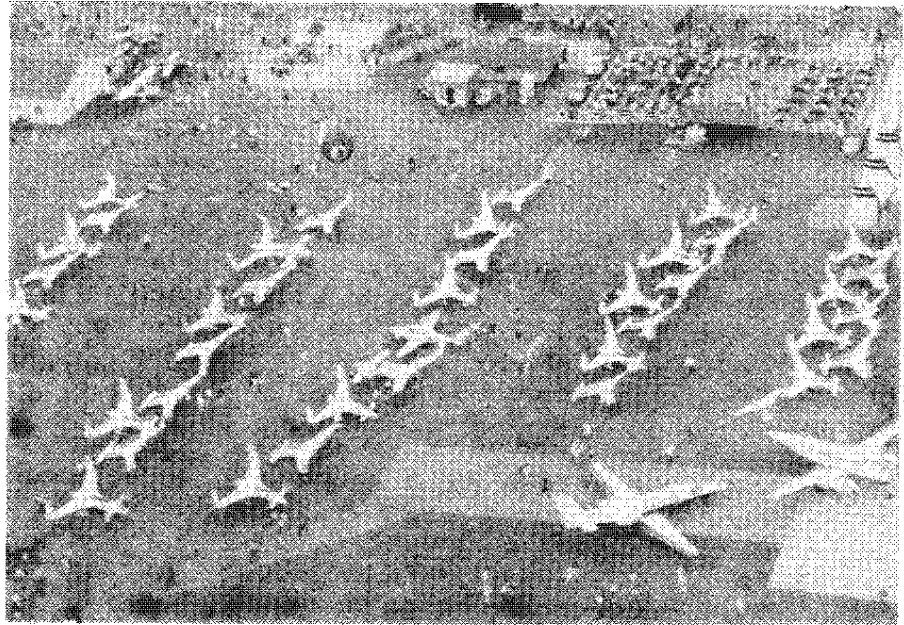
The old trusty Defiant N78RA ferried Burt, Tonya, Mike and John Campbell (Scaled engineer) safely to and from Oshkosh '95.

For the first time in 15 years, Mike and Sally's N26MS Long-EZ did not make it to Oshkosh. Built in 1980, N26MS has been to Oshkosh every year since 1981. This year it was not to be.

Mike and John Campbell worked very hard installing the newly over-hauled engine, and were putting as many hours on it as possible prior to departing for Oshkosh, when, just the day before leaving, the oil pressure abruptly went away! Immediately all energy was transferred to preparing Burt's Defiant for four passengers instead of two, and early the next morning we departed Mojave via the Trona Gap, a small passage-way between the restricted areas of the Navy's China Lake and Edwards Air Force Base.

The GPS driven moving map on the laptop computer (Mentor Plus) made this task easy, and from there the route was GPS direct, over Las Vegas towards Oshkosh. The only stop was at the tiny town of Cambridge, Nebraska, where the FBO lent us his wife's car. Tonya drove us into town where we had excellent country style food at the only restaurant.

Cambridge is a neat little town, and the people are friendly. It's an excellent place



to stop for gas if you are in the area.

After lunch we flew GPS direct to Racine, Wisconsin where we spent the night. We enjoyed a fun evening and supper with the 60 or so other canard owners courtesy of EAA Chapter 838 in Racine. Great pizza, great company.

Early the next morning more than 60 composite canard aircraft took-off from the John H. Batten (RAC) runway, after a pilot's briefing held by Maj. Norm Howell, for a 90-nm in-trail mass arrival at Oshkosh led by Burt flying "Mother Ship," Defiant N78RA. Anyone with a Rutan or similar design was allowed to participate, as long as they had a cruise speed of 120 KIAS or better at 3000 feet MSL.

After being announced to the Oshkosh audience (according to EAA estimates, 830,000 people and more than 12,000 airplanes showed up for Oshkosh '95), the canard flock taxied to a specially designated area north of the Theater in the Woods.

In addition, to help celebrate the 20th anniversary of the proof-of-concept VariEze N7EZ, 28 composite aircraft swept the field in professional formation at Saturday's air show while five pilots gave the audience a taste of the canard right stuff for the first time in 10 years with a five-plane flying show — Ron Smith in his Variviggen; Andre Duberdt in his Long-EZ; Marty Pavlovich in his VariEze; Terry Krouch in his Quickie; and Mike in the Defiant.

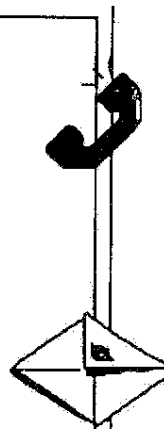
Glass Overcast 1995 was a great effort organized by Steve Sorenson, Glass Overcast Coordinator; Terry Schubert, President & Editor, Central States Association; Norm Howell, Glass Overcast Western Region Coordinator; Gene and Ann Zabler, Wisconsin State Rep, Central States Association; and Tim Bass, President EAA Chapter 838, Racine WI.

RAF thanks them and all the pilots who spent hours of practice preparing to put on the "greatest show on earth," at the "greatest airshow on earth."

RAF HOURS: Rutan Aircraft is officially open Tuesdays only. Please call between 9 am - 12 am and 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.

Note — Sometimes you can catch Tonya at RAF Monday thru Friday. She is in and out. Try and try again.

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



ANDRE (from pg 1)

Andre waited two days on Isl de Sal in the Cape Verde Islands just to cross on the same date as DeBarros — April 28th. "Looking at the weather, of course," he added.

Andre chose to cross the ocean by night. "As Dick (Rutan) told in his forum, what you do not see, you do not fear," he explained with a hearty laugh, "it's psychology." The shorter nights while traveling east and the ability to spot far-off lightening and heavily traveled traffic patterns also played a role in his decision. "By night it is cooler, and the engine works better," he said. "You can fly at higher altitude, and the sight is just beautiful."

An intelligent, gregarious guy, Andre had no problems making friends and influencing people even while crossing the wild blue yonder at an average of 12,000 feet. "Anytime I could not contact the controls by HF radio, I called on International Emergency Frequency and asked the big boys over there to help me, and use their radar," he said. "There are many airplanes crossing at the same time. You get many, many answers every time you call. One of them, from Swiss Air, had a Long-EZ so we were discussing the virtues of each EZ for an hour or so."

Foreign flying permits were relatively easy to come by, according to Andre, who serves as a judge for a Brazilian Rally team as well as an International judge for the FAI. "In South America (it is) completely free, as easy as here in the United States," he said. "The difference being that taxes are high and fuel more expensive, but it's a simple matter of filing an international flight plan."

Andre said there are four Long-EZs, two Cozys and one VariEze flying in Brazil. Two Velocitys are currently under construction.

He was only questioned once during his sojourn, while trying to fly over Morocco. "Three hours into the flight after leaving Tenerife, Canary Control called me and told me, 'Casa Blanca wants to know if you have permission to overfly their country.' And then I answer with another question, 'Ask them if they know that it's the new regulation of International Organization for Civil Aviation (IOAC)?'"

"But there was no way. They wouldn't let me overfly the country. So I had to discuss with Spanish Authority (a way to) vector me direct to Spain."

Andre said the airplane never failed, but he lost his ADF and Altitude Encoder at one point, landing by GPS and the feel of the airplane. It was repaired by RMI as soon as he arrived in the States. "The NARCO ADF was also repaired there," he said, "and I had to transfer the NDB data's for the IFR landing procedure in Iceland into the data base of the GPS, and I then completed the instrument landing there with no problems."

As for the 118 hp Lycoming 0235-L2C engine, "it works like a fine Swiss watch," he said. "I have the Klaus ignition, of course, and that is a big factor in the fuel efficiency."

A surprise encounter with ice south of Greenland was a new experience for Andre. Flying at 12,000 feet with a headwind, Andre said he felt that the airplane was a handling nose-high. While he noticed a little rime ice on the leading edge of the wing and the winglets, he did not consider it a significant problem. However, a short flight-test soon shattered his calm. The

See Andre pg 5

PP ZAD's Journey to Europe and Oshkosh '95

LEG	◇ DATE	ROUTE	→ → →	NM	SPEED	EET
1	◇ Jul 2	Marte SP Brazil	→ → →	1283	135	09:30
2	◇ Jul 4	Natal RN Brazil	→ → →	2342	130	17:57
3	◇ Jul 7	Tenerife Canary Islands	→ → →	1489	142	10:30
4	◇ Jul 13	Castellet France	→ → →	430	139	03:06
5	◇ Jul 15	Strasbourg France	→ → →	292	146	02:12
6	◇ Jul 16	Lelystad Holland	→ → →	181	136	01:30
7	◇ Jul 18	Lille France	→ → →	360	135	02:54
8	◇ Jul 18	Valence France	→ → →	160	137	02:24
9	◇ Jul 22	Castellet France	→ → →	229	134	01:41
10	◇ Jul 23	Moulins France	→ → →	642	121	05:10
11	◇ Jul 25	Billund Denmark	→ → →	1047	125	08:24
12	◇ Jul 26	Reykjavik Iceland	→ → →	1385	121	11:28
13	◇ Jul 27	Gander Canada	→ → →	1494	126	11:47
14	◇ Aug 3	Oshkosh USA	→ → →	1200	107	11:08
15	◇ Aug 6	Ft. Lauderdale USA	→ → →	1114	134	08:18
16	◇ Aug 9	St.Martin Carribean	→ → →	1470	122	11:55
17	◇ Aug 12	Belem PA Brazil	→ → →	1356	131	10:20

Total IFR Enroute 16.474 NM (30.510 KM) — 130:14 HOURS — 126.5 KT AVG (234.4 KM/H)

Surfing the Net

Internet has some EZ info. Burt recently posted the following letter on America Online Clubs - Interests - Aviation - Forum - General Aviation - Homebuilts, Long-EZ & VariEze Message boards.



While I am far too busy to keep up a continuous dialog on this news group I do think I should respond to some of the info out there!

I've been surfing the postings and see a lot of wrong stuff (abet mixed with some very good info). I offer the following to update those EZ guys that somehow don't get the quarterly Canard Pusher newsletters.

Yes, we still support EZ licensed builders and flyers, even now, 10 years after we sold the last set of plans. If you are licensed by RAF to build an EZ (several thousand people) we are still here to help in any way we can to assure that you have the best chance to fly safely. We do not support second-party plans owners or bogus (Xeroxed) plans owners, so if you buy a set of plans from a licensed builder, be sure to get his agreement to support you. Remember he is still authorized to build ONE aircraft, and we will support him. He, if he wants, can sell ANYTHING to you. If you buy a used set of plans we suggest that, along with the plans, you get his agreement to license you and to support your project, since he is the only RAF licensed manufacturer.

The CP is still in publication, written chiefly by Mike

ANDRE (from pg 4)

airplane shuddered, forcing Andre to cut power and descend to 8,000 feet. "Then suddenly I heard two big, loud bangs," he said. "After a while I figured out I had much more ice on the canard that I couldn't see, of course. It melted and (left) the wings. I had an aft CG, and I almost entered a deep stall because of that. This was quite an experience."

"I once had an experience of icing of gasoline over Chile in 1993. I lost my engine. Mike Melvill had the same problem over Alaska. He told me 'well, you are from the tropic. You do not know this phenomenon. At the high latitude it happens frequently.' Since then I was careful to add some additive to each leg over over Iceland just to avoid icing."

After the Iceland episode, Andre made a stop in Gander, Newfoundland before heading to Oshkosh.

"I was not going to come to Oshkosh '95," he said. "But

Melvill, the primary builder support guru since 1978. It still is my official means to pass on plans changes and important safety info. CP #82 (Oct 95) is a bit late, because it is being revamped to an all-new format (my wife Tonya is the new editor). It's 16 pages are packed with interesting stuff including several MAND-GROUND changes that Mike Melvill and I think everyone should have. A CP subscription is available to anyone, not just licensed builders.

Also strongly recommended are the Oshkosh talks.

In general, RAF only supports the basic, unmodified versions of the aircraft, since that is all we have flight-tested. Many mods have been done by builders (bigger engines baggage pods etc, etc, etc). Many of

these MAY be OK, but to find out for sure, contact those who developed them, NOT RAF.

We are painfully aware of how difficult it is for everyone to keep up with every single improvement and revision. The words of the newsletters alone comprise about 4 megabytes. That is why we are in the process of putting together a CD-ROM. This will be a special product since it will include not only the newsletters but also pilot's handbooks, tech reports and even the plans of all the RAF homebuilts since 1972! (No, it will not include new licenses to build — the postings here accurately explain why we stopped that).

The CD-ROM will have thousands of illustrations, photos and a great search engine. If You are a CD-ROM developer/producer, contact us for an RFP, by faxing your address to 805-824-4174.

RAF is open on Tuesdays ph 805-824-2645 addr 1654 Flightline, Mojave CA 93501

Onward & Upward, Burt Rutan

PS: no, the Boomerang is not yet flying. I hope to finish it this spring. I WILL post the first flight report here on America Online. PPS: check out the postings on the BD 12/14, shades of 1971!! ■

Terry Schubert (President & Editor, Central States Association) told me you cannot do that, you have to be part of our team for the Glass Overcast."

Indeed, he did. Andre and ZAD flew as part of the Lone Eagle Flight Team's display during Saturday's air show.

Andre, who is married with two daughters and two granddaughters age 13 and age 6, said he claimed four more distance records, which are about to be confirmed by the FAI, as he headed home from Oshkosh to Sao Paulo. The return home was uneventful, he reported, and "very enjoyable if not a bit tiring."

For now ZAD is temporarily grounded "by popular demand — my wife," he said, for a much deserved rest. But in 1997 Andre plans to fly the long-distance courses again, this time to close the loop through Australia.

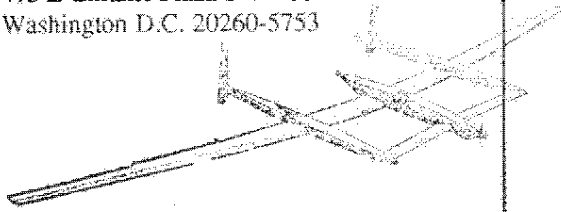
Good luck Andre, we will listen for you on the airwaves.

Canards take Oshkosh by storm

The Voyager round-the-world flight can't be picked! That is, unless it appears on a commemorative postage stamp in 1996.

You can help launch our slender airplane gain, this time from the upper corner of letters and packages all across the United States. Mail the following letter, or a similar one penned by your own hand, to the Citizens Stamp Advisory Committee today. Thank you!

Citizens Stamp Advisory Committee
 United States Postal Service
 475 L'Enfante Plaza SW Room 4474E
 Washington D.C. 20260-5753



FROM: _____

Ladies and Gentlemen,

It is my desire to request your consideration of a commemorate postage stamp for 1996 depicting the famous Voyager; the airplane that flew around the world non-stop and unrefueled in December 1986.

The Voyager project radiated American Spirit. The historic aircraft is now proudly suspended in the National Air & Space Museum in Washington D.C. and is an emotional reminder that even the impossible is possible.

Please honor those who made the flight possible — the Voyager flight crew, the volunteers and the grassroot support that funded this impossible dream, by issuing a ten-year anniversary commemorative postage stamp in 1996, ten years after the infamous flight.

Thank you for your consideration.

Sincerely,

_____ Date _____

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This year Rutan canards filled the skies over Wisconsin like a flock of regal birds heading Midwest for the summer. They flew to Oshkosh to celebrate the 20th anniversary of the 7-EZ, the "Ass Backwards" prototype that wowed that aviation-loving crowd for the first time in 1975.

We here at RAF applaud two people for their devoted efforts to count the flock. It was a big job, as you can see from the following list compiled by Irene Rutan and David Orr — 161 Rutan canards in all.

Thank goodness for friends and mothers.

*** Participants in Glass Overcast.**

- VariViggen N31AN (Adam Wehr III) FL
- VariViggen N212RS (Ron Smith) IN
- VariViggen N77AX
- Defiant N219DF (Lomnie Weitzel) TX
- Defiant N711JS (Bill Sattler) TN
- Defiant N143PS (Bill Sattler) TN
- Defiant N78RA (Burt Rutan) CA*
- Defiant N431RA (Bayard Dupont) DF LA
- Defiant N3XK (Tom Kuffel) MT
- VariEze N7AH (Larry Hoepfinger) TN
- VariEze N115AM (Bob Campbell) IN
- VariEze N130BE (Bob Eckes) AZ
- VariEze N12BN (Bernard Nitz) IL
- VariEze N300DJ (Don Jones) TN
- VariEze N862DP (Dan Patch) CA
- VariEze N50EP (Edra Parker) IN
- VariEze N7EZ (EAA) WI
- VariEze N17EZ (Dick Harkey) OK
- VariEze N83EZ (Terry Sweat) TN
- VariEze N216EZ (Wm Morgan) OR
- VariEze N392EZ (William Freeman) KS
- VariEze N500EZ (Victor Mondary) IN
- VariEze N9FJ (Jon Gabrick) MN
- VariEze C-GMEZ (Nigel Field) Canada
- VariEze N34HA (EAA) WI
- VariEze N64HL (Howard Stern) CA
- VariEze N83HR (Harry Robbins) MO
- VariEze N60HZ (Bruce Leonard) OH
- VariEze N91JC (James Carraway) CA
- VariEze N844Jr (JD Hostutler) TX
- VariEze N26JW (Gary Holt) OK
- VariEze N47LG (Dave Kilbourne) CA*
- VariEze N6LK (Rob Martinson) CO
- VariEze N40LR (Leon Rausch) TX
- VariEze N79RA (Burt Rutan) CA
- VariEze N56RH (Bob Head) CA
- VariEze N301RW (Bob Woodall) MD*
- VariEze N118SJ (Steve Sorensen) CA



see Canards pg 7

Canards

VariEze N301SR (Stan Rawlings) WA
 VariEze N810TC (Martin Pavlovich) WI
 VariEze N12VE (Joe Bennight) TX
 VariEze N44VE (Joe Rosa) MO
 VariEze N829WJ (Dave Nelson) MN*
 VariEze N75WR (William Ingram) CA
 VariEze N2XB (Kurt Kuhlmann) CA
 VariEze N4ZX (John Cannon) TX
 VariEze N4ZZ (Ken Swain) IL*
 VariEze N9091A (Gary Mowad) CO
 VariEze N9113A (Wm Brin) CA
 VariEze N3260K (Doug Kouri) MI*
 VariEze N5080K (Chuck Airesman) MD
 VariEze N930L (Richard Zadow) TX*
 VariEze N1158M (Maxey Hester) IA
 VariEze N8037T (Jim Willer) CO
 VariEze N183W (Bill Oertel) CA*
 VariEze N303Y (Joe Krueger) WI
 VariEze N9664 (Burt Carmenzino) CA
 Long EZ N60AK (Gerald Nibler) AK
 Long EZ N57AM (Alex Becker) MI*
 Long EZ N775AM (Sam Chambers) KY
 Long EZ N41AN (Ian Ayton) CA
 Long EZ N454BC (Brad Carter) KS
 Long EZ N89BE (Robert Englert) CT
 Long EZ N82BJ (Bob Wilson) CO
 Long EZ N73BR (Brent Bristow) AK
 Long EZ N199BW (Barry Weber) CA*
 Long EZ N52CA (Chuck Allison) MN*
 Long EZ N18CC (Larry Laughlin) CA
 Long EZ N143CL (Chuck Busch) CA
 Long EZ N8CP (H.E. Crocker & Paul Jones) TX
 Long EZ N91CX (Ray McCrea) CA*
 Long EZ N129DD (Don Druckenbrodt) TX
 Long EZ N111DH (Darryl Hensingfeld) TX
 Long EZ IN412DM (David Haggard) KS
 Long EZ N83DT (David Adams) MO
 Long EZ N86DT
 Long EZ N49DW (Dan Wicklund) FL
 Long EZ N22EM (Ed Madona) OK
 Long EZ N27EZ (Jahn Steichen) IL
 Long EZ N63EZ (Dan Worley) AR
 Long EZ N90EZ (Tim Binder) IA
 Long EZ N165EZ (Tom Kranzusch) WI
 Long EZ N282EZ (Dan Mislik) MI
 Long EZ N321EZ (David Orr) CA*
 Long EZ N433EZ (Richard Reuland) AZ
 Long EZ N45FC (Ron Cothorn) CO
 Long EZ C-FRMZ (Roland Moreau) Canada
 Long EZ N81LP
 Long EZ N6KO
 Long EZ N21EM
 Long EZ N312SS
 Long EZ N81HM
 Long EZ N99FW (Fred Wimberly) VA*



Long EZ C-GBVC (S.C. Audet) Canada
 Long EZ N197GC (Sam Shelton) GA
 Long EZ C-GDOW (Lucas Wagenaar) Canada
 Long EZ N20GJ (Gus Sabo) NV*
 Long EZ N99HM (Herb Sanders) TN
 Long EZ N38JD (Jim Doan) OH
 Long EZ N83JM (James Madsen) MN
 Long EZ N57JP (James Price) MI*
 Long EZ N731JS (James Napier) CA
 Long EZ N818KD (Steve Drybread) CA
 Long EZ N28KM (Erik Stolle) NM
 Long EZ N58LD (Dave Jones) CA*
 Long EZ N776LE (Lew Miller) CA
 Long EZ N954LE (Sid Stiber) NY
 Long EZ N223MM (Carl Stevens) CA*
 Long EZ N407MN (McCumber Nickman Corp.) MN
 Long EZ N24ND (Norm Dodge) AZ
 Long EZ N510PG (Darryl Nelson) MI
 Long EZ N616PH (Pat Halverson) CA
 Long EZ N86PT (Gordon Jones) CA
 Long EZ N126PW (Harold Peterson) OR
 Long EZ N729RA (Rolland Sturtevant) NE
 Long EZ N86RG (Ron Gowan) TX
 Long EZ N312RH (Stan Sussman) CA*
 Long EZ N35RS (Bob Sudderth) WA
 Long EZ N424RW (R.G. Westphal) WI
 Long EZ N169SH (Dick Rutan) CA
 Long EZ N309SH (David Knox) SC
 Long EZ N24SK (Scott Carter) TX
 Long EZ N600TD (Dave Dent) CA*
 Long EZ N112TG (Buzz Talbot & Robert Gooch) IL
 Long EZ N158TG (Tom Garrison) TX
 Long EZ N9TS (Terry Schubert) OH
 Long EZ N83TS (Scott Talmadge) FL
 Long EZ N200TY (Terry Yake) KS
 Long EZ N87WH (George Walters) SC
 Long EZ N58WL (Wayne Litherland) MO
 Long EZ N30WP (James Jansa) FL
 Long EZ N262E (Ralph Galetti) CA*
 Long EZ N339E (Jim Evans) VA
 Long EZ N4706G (Jim Peck) NM
 Long EZ PP-ZAD (Andre Deberdt) BRAZIL*
 Long EZ N676H (Maring Fagot) MO
 Long EZ N163J (Harry Jenkins) CA
 Long EZ N271J (Norm Howell/Jay Greene) CA/AK*
 Long EZ N8248L (Steve McCaskie) MO
 Long EZ N4372Q (John Stuart) MD*
 Long EZ N369R (Bob La Bonte) NH*
 Long EZ N715R (Roger Crupper) OH
 Long EZ N2398T (Ron Verderame) CA*
 Long EZ N3260T (Klaus Savier) CA
 Long EZ N7128U (Bob Lemmon) CA
 Long EZ N378X (Tom Ridyard) AZ
 Long EZ N1378X (David & Robert Iuliano) NY*

Accidents and Incidents

As always, the following reports are published for the sole purpose of helping others to avoid the same problems that caused the accidents.

A **VARIEZE** crashed in Illinois recently, and unfortunately the pilot was killed. The passenger survived with severe burns.

After this Varieze landed on the 2300-foot paved landing strip, the two occupants complained that they smelled fuel fumes in the cockpit. They spent considerable effort trying to locate a fuel leak. No leak was found, so they purchased fuel and took off.

At least four eyewitnesses saw the crash. The Varieze reportedly used nearly the entire 2300-foot runway before breaking ground. It did not climb out of ground effect, and struck the corn in a field off the end of the runway before crashing on the runway centerline a quarter of a mile from where they broke ground.

Witnesses reported that the engine sounded normal, and there was no sign of an in-flight fire.

The Varieze was destroyed, and a fire broke out shortly after impact. The passenger was able to evacuate the aircraft, but received severe burns trying to get the pilot out.

This Varieze was known locally as a "heavy" aircraft, and routinely used lots of runway to take-off. The pilot did not build this aircraft, but purchased it three years previously. He was a proficient pilot, and flew his Varieze often. The pilot was a large man, weighing between 270 and 280 pounds. The weather was clear with temperatures in the high 80's. The pilot's home base runway was 4,000 feet long.

CONCLUSION

This was a heavy example of a Varieze, and had a reputation of needing a long take-off roll. The day was hot (upper 80's) and the pilot was a heavy man. With a load of fuel and a passenger, this aircraft was undoubtedly over gross. Even a lightweight Varieze (630 lbs) would be at the maximum allowable gross weight just with this pilot (270 lbs) and full fuel, not including a passenger! An over gross weight take-off from a 2300-foot strip on a hot day is simply a recipe for disaster.

A **LONG-EZ** crashed on take-off in Arizona. The pilot was killed but the passenger survived with serious head injuries.

The aircraft was attempting to take off on a 7,000-foot-long runway with an 1% uphill grade. The Long-EZ was loaded to more than 150 pounds over the maximum allowable gross weight. The temperature was 85 degrees F, and density altitude was over 8,000 feet.

It was almost dark, 8:30 pm in August 1995, and the

tower operator reported that the aircraft initially broke ground at the 4800-foot mark, but settled back onto the runway. The pilot continued the take-off attempt, lifting off briefly twice more before finally chopping the power and steering around the approach light system.

Unfortunately there was a six-foot chain link fence around the airport perimeter. The Long-EZ crashed into this fence, striking two fence posts, and breaking through the chain link. It crossed a road, broke through a wood-pole fence and came to rest upright on a golf course.

There was no fire, but the chain link fence and/or fence posts severely injured the passenger and fatally injured the pilot.

CONCLUSION

This was yet another example of an attempted take-off at over gross weight! Add to that, a hot, high density evening, plus an uphill runway! This pilot might have been successful with any one of these problems individually, but was unable to overcome them all.

A **LONG-EZ** crashed near an interstate highway in New Mexico. Weather at the time was bad with low ceilings, poor visibility in rain.

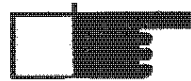
The aircraft struck a tree (a very low tree) and was totally destroyed. Both occupants were killed. Several eyewitnesses reported seeing this aircraft flying very low near the highway.

There was no evidence of any kind of mechanical problem, and it is believed that this accident was caused simply by the pilot attempting to fly VFR in IMC conditions.

CONCLUSION

This particular case is even more difficult to understand since this pilot was very experienced and IFR capable. Was this another case of "get homeitis"? Certainly, a 180-degree turn before the weather degraded would have been prudent, and they both may have lived to fly home the next day.

see Accidents pg 9



To report accidents and incidents

Write: Rutan Aircraft Factory
1654 Flightline
Mojave, Ca 93501

or Fax: (805) 824-4174
Attention RAF

Accidents

In a tragic accident like this one, it is of course impossible to know what the pilot was thinking, or why he continued in such poor conditions, but having done our share of skud-running, we have had to make many 180-degree turns due to bad weather. So far, we have been lucky, and have made the correct choice. But it is not always easy and many things can cloud your judgment — having to be at work the next day; make an doctor's appointment; deal with a family emergency, etc., — please friends, know your and your aircraft's limitations, and fly within that envelope.

EDITORS COMMENT

The above accidents were preventable and unnecessary. The pilot-in-command is responsible to check the gross weight and to make a "go" or "no go" decision based on the available runway and density altitude. An uphill runway, even an 1% grade, is a lot. A 7,000-foot-long runway, with an 1% grade is 70 feet higher at one end than the other.

Think of this as a seven-story building sitting at the end of the runway. It is hot, it is dark, you are over gross with a high-time Lycoming O-235 engine. The wind is calm, so no help from the wind (although a downhill take-off should have been an option with no wind). Would you attempt a take-off in these conditions, particularly if you think of the uphill grade as a seven-story building you would have to clear!?

Hopefully not. For most pilots this situation would be unacceptable.

Recently we read in the Cozy newsletter of an attempted over gross weight take-off from a short runway. The take-off attempt was aborted, but the brakes failed to stop the aircraft and it broke through a fence and hit a berm, failing the canard, both wings and the landing gear. Fortunately both occupants survived with minor injuries.

How can accidents such as this be prevented? Know your aircraft's limitations, and know your own limitations. Never try to operate outside of this envelope. Use your common sense. If you don't like the look of a situation, **STOP and REEVALUATE** what you are trying to do. **NEVER** allow yourself to be driven by schedule— much better late in this world than early in the next!

Reader Mail

Fuel Pump Fire



We recently had an event with our Long that may be of interest to other builders that use Ellison carburetors. We were out in front of our hangar starting our Lycoming 235. After turning on the fuel pump to check its operation I cracked the throttle, primed the engine, fooled around with the primer awhile getting it re-seated, and then hit the starter. The engine did not start immediately and I waited a few seconds then tried again.

The second time the engine back-fired but did not start. Thinking that it was flooded I opened the throttle and was waiting again when I noticed a puff of smoke drift by. *This caught my attention immediately!*

Fortunately the wind was blowing from behind so I could see the smoke. We were able to extinguish the fire with the use of two big CO2 extinguishers but the damage was significant. All the wiring from the fire wall (aft) was destroyed, the skin and foam were destroyed around the inlet and the cowling damaged.

Upon investigating the cause it was found that if the fuel pump was turned on and the throttle was advanced any amount above idle cutoff gas would pour from the carb. This had obviously been going on during the starting process and had resulted in fuel gathering in the bottom of the cowl which was then ignited by the backfire.

The carb was returned to Ellison for repair and they determined that some fine dirt and microscopic aluminum particles had gotten under the ball valve which allowed gas to flow even when the engine was not running. They said that a finer filter was required upstream of the carb to prevent this. The carb has a final filter built in but that is not good enough to protect the carb. The built-in filter is rated at 70 microns and there is a 25-micron filter in the Aircraft Spruce catalog that is stated to be approved for the Ellison carb so I guess that the problem is not altogether new even though Ellison seems surprised that we had a fire.

It seems bad practice to put a final filter in a system that is not good enough to protect the downstream components. It has been my practice to start with coarse "rock catchers" and then have increasingly finer filters downstream. The coarse filters then prevent large particles from clogging the finer filters and the final filter protects the system.

To prevent this problem from re-occurring we are installing a drain from the bottom of the aeroduct overboard through the lower cowl. This will not only prevent fuel puddling but it will also let us check for proper operation of the ball check by turning on the fuel pump, advancing the throttle, and looking for fuel from the drain before getting in the airplane.

Once Burned Always Careful,
Owen G. Morris

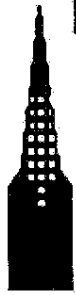
Sight Gauges

New, improved fuel sight gauges. Use with auto fuel or Avgas. Clear bubble with white background. Retrofit for Long-EZ and VariEze. \$35 per set.

Contact Vance Atkinson
3604 Willomet Ct.
Bedford, TX 76021-2431
(817) 354-8064

	Canopys
	Airplane Plastics
	8300K Dayton Rd
	Fairborn, OH 45324
	(513) 864-5607

High Density



Altitude



Takeoffs

Be Aware of Density Altitude

Takeoff in any aircraft on a hot day from an airport located at a high elevation, is not to be taken lightly. You, as Pilot-in-Command, should always check the density altitude, and most control towers at airports where high density altitude is prevalent will remind you to check "density altitude." This should trigger a mental alarm and you should calculate the density altitude and look up your flight manual takeoff performance estimate. You need this information before you decide to take off.

Flight manual performance data, if accurate, should predict the takeoff capability of a properly-flown aircraft. "Properly-flown" is very important as it is possible to greatly extend a takeoff if the pilot does not smoothly fly the correct speeds.

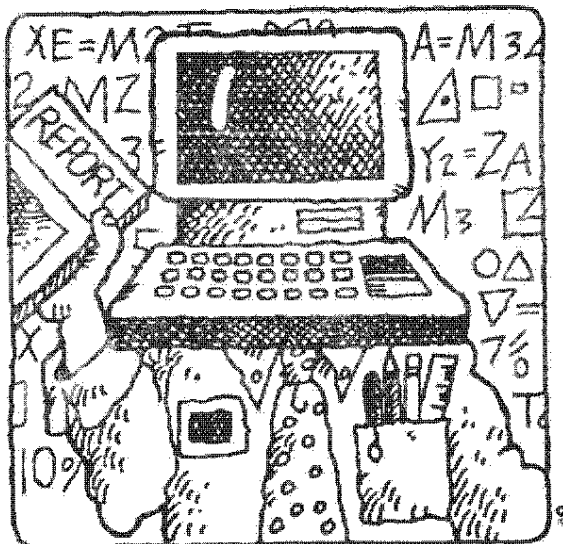
Density altitude is a function of pressure altitude (altimeter set at 29.92) and outside air temperature. For example, at Flagstaff, Arizona (elevation 7000 feet) on a hot summer day, 100 degree F, the density altitude is over 11,000 feet. This means that your airplane performs just as it would for standard temperature at 11,000 feet!

High altitudes require that you accelerate to higher true speed to attain adequate wing lift. High altitude also reduces the power output of your engine and prop. Also, when your performance is low, a modest uphill runway slope will

greatly extend takeoff roll. Add all of these factors together and you have an airplane that may roll two or three times as far down the runway before reaching lift-off speed. If you try to rotate early (maybe at about the normal distance down the runway) you will extend the take-off roll even further, due to the drag of the airplane at a high angle of attack, at too low an airspeed. Thus, you will find yourself in a classic "behind the power curve" situation. If you have tried to lift-off at too-low speed you have greatly extended your distance required to clear an obstacle. Your only option is to chop the power and land. Do not wait too late to be able to safely exercise this last option.

As pilots we are all trained about the dangers of heavy, hot, and/or high conditions for takeoff, and how to avoid the "backside" performance problem. Also, your pilot's handbook instructs you to fly faster when heavy or at high density altitude. In general, the EZ pilot community is very familiar with the limitations of their airplanes. However, since these recent accidents occurred, we are compelled to add further emphasis to the pilot's handbooks.

Do not fly until you comply with the plans change section on page 14 of this newsletter.



Request for Proposal

RAF is seeking a vendor to put together an encyclopedia-type CD-ROM that provides a reference to essentially all the published information of the Rutan Aircraft Factory. The product must provide a quick user-friendly search capability for text and graphics.

The proposal CD-ROM will include all newsletters with graphics, pilot's manuals and plans for the RAF aircraft.

If your company can help us put this product together —

Fax (805) 824-4174, Attention RAF
for a copy of the
Request for CD-ROM Proposal

Broken exhaust threatens wing!

This happened to be a Cozy MKIV, but the wing attach system, exhaust system, and engine cowling area are essentially the same as the Long-EZ and Defiant. RAF is publishing the story here in the hope that this knowledge may prevent a similar incident in one of our airplanes.

While flying at 10,000 feet over the Gulf of Mexico near Pensacola at night, the exhaust pipe on cylinder number 4 broke off. Fortunately it remained in the cowling and did not go through the prop. However, hot exhaust gases traveled between the wing and the center-section spar, heating the epoxy in the wing near the wing-attach hard points. The epoxy softened enough for both wings to move upward at the wingtips, 1/8 inch on the left wing, and 3/8 inch on the right wing.

The spar caps were not damaged, but the shear web on the right wing actually fractured near the outboard wing-attach point, allowing the wing to move to a new dihedral angle.

Unfortunately, the pilot was unable to land when he first heard the exhaust let go, but had to fly for nearly an hour to the nearest suitable airport. It is possible that an immediate landing would have prevented the damage and resulting enormous repair job.

The pilot reported that the engine sound made an abrupt change. Performance was not affected, but the noise level was obviously higher, and led him to suspect a broken exhaust system. He throttled back to 1800 RPM and continued on. He noticed that cylinder head temperatures on 2 and 3 settled down to around 300 degrees F, but cylinder 4 remained up around 400 degrees F.

He landed safely, and had the exhaust stack repaired. He did not notice the wing problem until the next day. There was considerable foam shrinkage (due to heat) all around the hard points. He found a small hole in the inboard glass rib, near the aileron torque tube bearing, and the heat had gotten into the wing through this hole. The only visible damage anywhere in the cowling was a small blister on the cowl itself. Fortunately all of his fuel lines were fire-sleeved, and his wing ribs were protected with 1/8 inch fiberfrax glued on with high-temp silicone. None of the glass on the firewall or in the wing roots were damaged.

What can be learned from this incident? First of all, exhaust systems are subject to vibration and high temperatures and are vulnerable to cracking, even in an type-certificated aircraft.

Inspect your exhaust stacks often and carefully, using a strong flashlight.

All visible glass in the cowling area, firewall, center section spar aft face, wing roots, etc, should be protected using fiberfrax. The 1/8 inch-thick material is best, and it should be cut to fit perfectly, and then glued onto the glass using red (high temp) silicon, available at any auto parts store.

Seal all possible paths for hot air, such as the gap between the center section spar and the wing, and any holes you may have made in the wing root ribs: All of the air, hot or cold, should have to exit the cowl around the spinner in front of the prop, except the air that flows through your oil cooler.

If you ever hear an abrupt, unusual increase in the noise level from your engine compartment, make a precautionary landing at the nearest suitable airport and remove the cowling for a thorough inspection.

Do not fly until you comply with the plans change section on page 15 of this newsletter.



RAF Recommended Suppliers

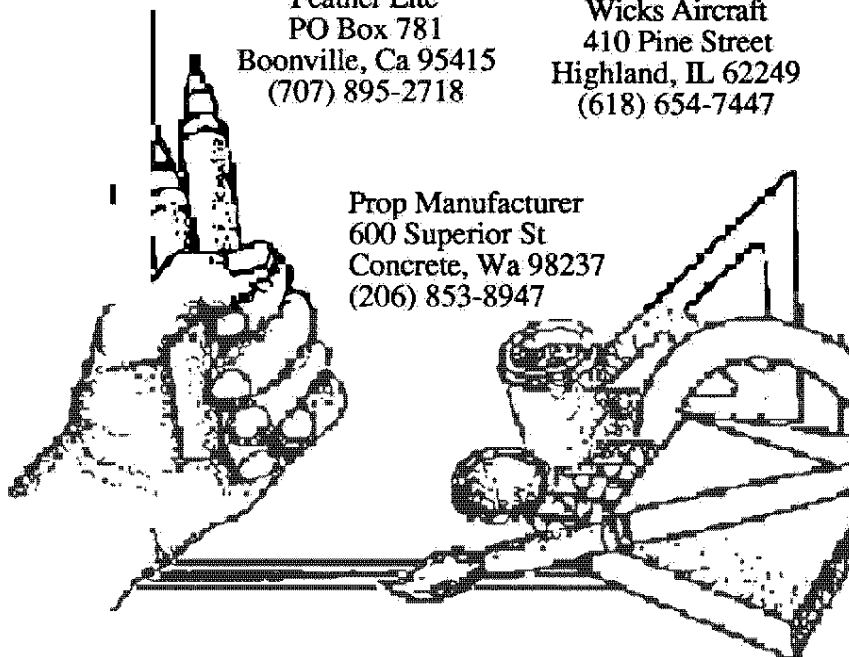
These suppliers are still the only authorized RAF dealers for all your various aircraft materials and components.

Aircraft Spruce
PO Box 424
Fullerton, Ca 92632
(714) 870-7551

Brock Mfg.
11852 Western Ave
Stanton, Ca 90680
(714) 898-4366

Feather Lite
PO Box 781
Boonville, Ca 95415
(707) 895-2718

Wicks Aircraft
410 Pine Street
Highland, IL 62249
(618) 654-7447



Prop Manufacturer
600 Superior St
Concrete, Wa 98237
(206) 853-8947



For Sale

Ellison Throttle Body EFS-4-5

Suitable for use on a Lycoming O-360, 180 HP engine. 1360 hours total time since new, 60 hours since a factory major overhaul. I am upgrading to an airflow performance fuel injection system. \$650 or best offer.

Harmonic Damper

Like-new harmonic damper, as advertised in Sport Aviation. It bolts to the starter ring gear, and the manufacturer says it damps out 30-40% of engine vibration. It cost over \$300. I will sell it for \$125.

Fuel Pump

Brand new engine driven mechanical fuel pump — (AC type) part number 41271, 4-6 PSI. Cost over \$170. Sell for \$60.

Solenoid Engine Valves

Two electric solenoid engine primer valves (Skinner) 28V — cost \$35 new, sell for \$15 each.

Contact Mike Melvill

24120 Jacaranda Dr. wk (805) 824-4541
Tehachapi, CA 93561 hm (805) 821-1805

MOLDED VORTEX GENERATORS

These pre-molded generators are specially engineered for aircraft application. Available in white, they can also be custom molded in quantity to match specific paint colors for aircraft manufacturers and OEM suppliers. After installation, the sail appears to be molded an integral part, rather than an "add-on". The final result not only looks better, it performs better than typical hand-made aluminum fences. Molded vortex generators adhere better, do not corrode, require no painting and are easy to install: one Long-EZ canard can be equipped with a full span of generators in less than 30 minutes.

A kit containing fifty generators is available for a price of \$25.00 plus \$2.00 shipping and handling per kit. Two kits are sufficient to equip the full span of a typical canard (i.e. Long-EZ, Dragon-Fly, et al) or both ailerons on either canard or conventional planforms. Documentation is included. Please send check or money order to:

CCI, PO Box 607, Plainfield, NJ 07061-2318

Please allow 2-3 weeks for delivery, Sorry, no COD's.

For more information 6:00-10:00pm EST, Mon.-Fri.

908-757-9573 908-755-9639 FAX

Note: These vortex generators are not TSO'd for use on type-certificated aircraft.

F-16 DEEP STALL INCIDENT VIDEO

Gives a pilot's-eye view of a deep stall which almost doesn't recover. Includes a letter describing what the important learning points are from the video, especially as they apply to EZ pilots who are unfamiliar with deep stall, as well as a transcript of the audio portion (for clarity). Price - \$13.00.

Contact: Charlie Precourt, 7015 Little Redwood Dr.
Pasadena, TX 77505-4433

NOSE WHEEL SHIMMY DAMPER

Bob Davenport tells us that he can still supply this excellent damper. Unfortunately he gets very few orders nowadays but can sell them even if he gets only one order. Including the set up charge, the cost is \$236.00 delivered in the USA.

Contact Bob Davenport

PO Box 650581, Vero Beach FL 32965-0581
407-567-1844

FLUSH, INTERNALLY MOUNTED ANTENNAS

A complete line of antennas, specifically designed for, and flight tested on, composite aircraft. The antennas are tuned for maximum performance and in general those who have used them so far report reception is doubled over standard external antennas.

VariEze builder/flyer Bill Butters has started a company to develop a full range of buried antennas. These are normally supplied with a BNC connector built into the actual antenna, but can be supplied without connectors to include enough length of coax cable to facilitate easy installation with minimum weight and bulk.

Call Bill Butters, Advanced Aircraft Electronics
PO Box 4111, Florissant, MO 63032
800-758-8632

NOSE GEAR RATCHET

Dr. Curtis Smith's nose gear crank ratchet is still available at \$38.00 which includes postage and packaging. No need to call, just send check or money order. 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.

Curtis Smith, 1846 Sextant Dr.

Worden, IL 62097

618-656-5120



TITANIUM ACCESSORIES AVAILABLE!

Custom anodized to any of 15 different colors, shades of copper, purples, blues, greens, yellow/gold, even rainbow effect. Rudder and aileron gustlocks - \$20.00-30.00.

GU canard full span vortex generators with layout template - \$170.00. These are very exciting! Rudder horn CS-301L&R replacements, \$25/pair. Shipping inc.

Ti Specialties
PO Box 1052
Grover Beach, CA 93483-1052
805-489-8155

Feather Lite

LONG-EZ PARTS PRICE LIST

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 w/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	

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 Michael Dilley or Larry Lombard (both former RAF employees and EZ builders and flyers)

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



Feather Lite bought Bruce's equipment from B&T PROPS and will soon make an announcement as to when they expect to begin producing props.

Christmas Shopping

Posters

Chronological litho poster (see cover CP 64)...	\$10.00
Jim Sugar night poster (Voyager & friend)...	4.00
Defiant on water...	4.00
EZ 3-ship 17x22 (see cover CP 62)...	4.00
Long-EZs in trail (11x17) ...	4.00
Color photos (8x10)...	2.00

Stocking stuffers

Long EZ ball caps (only 23 left)...	\$5.00
Solitaire ball caps (only 4 left)...	5.00
Long EZ charms / tie tacks (silver/gold tone)...	6.00
VariEze charms / tie tacks (silver/gold tone)...	6.00
Name patches (except for VariViggen)...	1.00
Silhouette patches (VariEze, Solitaire only)...	3.00

Videos

Building the Rutan Composites...	\$24.95
Go-A-Long-EZ...	24.95
On Wings of Glass...	20.00

Sensible stuff

VariEze and Solitaire owner's manuals...	\$8.00
Long-EZ owner's manual...	9.00
Defiant owner's manual...	15.00
Large rudder plans...	18.50
Speed brake...	10.00
0-235 engine installation...	21.50
RoncZ Canard...	42.50
Flush belhorns...	10.00
Moldless Composites manual...	14.50

Postage & handling included in price.
Make check to: Rutan Aircraft Factory
1654 Flightline, Mojave, Ca 93501



STARTER FOR 0-200 CONTINENTALS

B&C Specialty has introduced a beautifully made, 12 volt starter specifically designed to be installed into the accessory housing on a Continental 0-200 engine, or on an 0-240.

This starter has been thoroughly tested at Teledyne Continental (more than 5000 start cycles without a single problem!).

Bill Bainbridge has these starters available for immediate delivery and they can be had STC'd or for homebuilts.

Contact: B&C Specialty Products, Inc.
123 East 4th Street
Newton, KS 67114
316-283-8662

Plans Changes

Do not fly until you comply with the following plans change.

MANDATORY GROUND for All RAF DESIGNS until adding the following information to the Takeoff performance section of your pilot's handbook:

High Density Altitude Takeoffs

The combination of high aircraft gross weight and high density altitude represent significant dangers for takeoff obstacle clearance. Special care is required to avoid premature rotation, ie, if liftoff is too slow, the aircraft will be on the back side of the power curve and may not climb.

When operating heavy and high (say, within 100 lbs of gross weight and above 5000 ft density altitude) do not fully rotate to liftoff attitude until your airspeed is within 5 knots of the best rate of climb speed, for your specific weight and altitude (see climb charts). This will require more runway than a slower liftoff, but will assure the best capability to clear obstacles and continue a safe climb. Never attempt takeoff under conditions in which you cannot achieve best rate of climb speed while still on the available runway. If this ability is not clear at any point during takeoff — abort. Off-load weight or wait for a cooler time of day.

Lift-off is possible as slow as the "minimum lift-off speed," and can be successfully used at light weights and/or low altitudes to achieve a short ground roll. However, that technique will usually result in inadequate initial climb if used

when heavy or high.

Runway slope effects are minor when light or at low altitudes, but they become very significant when heavy/high. For example, a 1% uphill runway slope may add well over 1000 feet to the distance required to clear an obstacle. Never takeoff uphill when your takeoff roll performance is marginal. Never continue a takeoff if crosswinds require you to brake so much that a safe liftoff is in doubt. Always use "best power mixture" for high altitude takeoff conditions. An over-gross weight takeoff that seems like an acceptable operation near sea level can be a real killer when hot and high. **Never attempt a takeoff when over approved gross weight.**

There may be considerable variance in takeoff capabilities from one homebuilt aircraft to another of the same type. Engine installed power and propeller efficiency at low speeds may be less than that for the prototype that provided the basis for the takeoff distance charts. Find a long runway and measure your takeoff capability at the weights you intend to fly. If your actual performance is less than the charts, correct the charts or improve your prop and/or engine.



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 discover as you go through the building process.



Plans Changes

Do not fly until you comply with the following plans change.

MANDATORY GROUND for All RAF DESIGNS until the following changes are made on your aircraft —

All RAF designs Check Fuel Pump

Fuel draining out of the carburetor, as reported by Owen Morris (see Reader Mail on page 9), be it a Marvel Schebler, an Ellison, or a Bendix fuel injection system is a potential catastrophic fire hazard! It is very important to create a small drain hole at the low point in the induction hose. Fuel must be able to drain into the cowling, and you must drill a hole in the low point of the cowling, so that this fuel can drain on out of the cowl.

The fuel comes from priming the engine, prior to and during the start cycle. The worst offender is the carburetor with a throttle pump installed. Some pilots pump these throttles several times just before cranking with the starter. The throttle pump squirts a fine mist of raw fuel up into the intake manifold, but most of the fuel runs back out of the carb, and if the engine backfires during the start sequence — you have a fire. Even manually-primed and injected engines can and do have raw fuel drain down the intake manifold tubes and out of the carb or throttle body. You as the aircraft manufacturer are responsible to provide a path for this fuel to get out of the manifold/throttle body/air filter/ inlet hose/ whatever, and out of the cowling onto the ramp.

This problem only occurs while starting and normally is not an in flight problem. Check your aircraft and if this has not been taken care of, fix it before your next flight.

VariEze, Long-EZ, Defiant Inspect & Comply

Inspect and comply with the additional sealing and heat insulating areas on the rear engine installation as described on page 11.



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 discover as you go through the building process.

OCT 95
CP 82

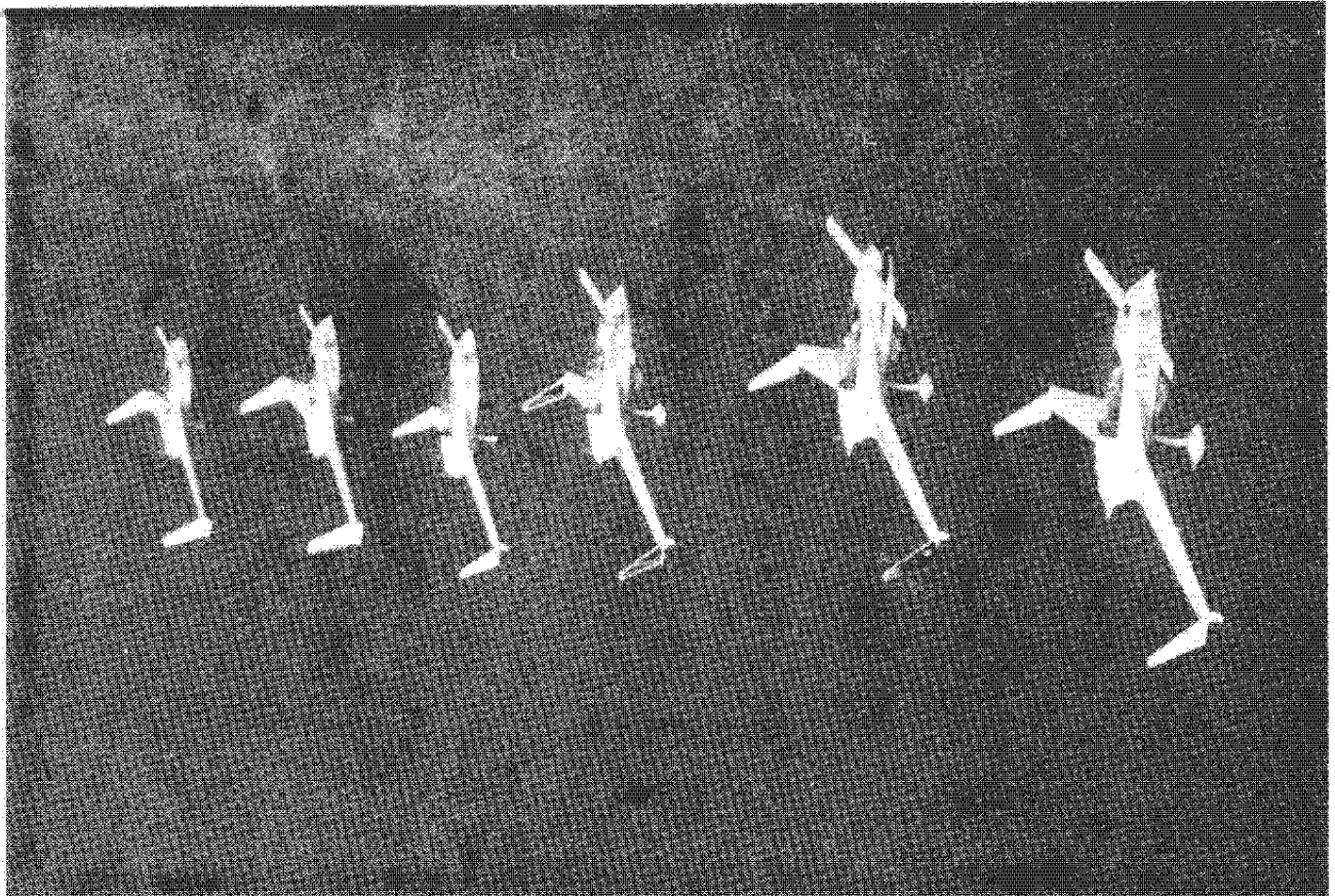
If your label says LAST ISSUE CP 82, this is your last issue and you need to renew.

ALL RAF DESIGNS GROUNDED UNTIL COMPLIANCE
WITH ENCLOSED PLANS CHANGES See pages 14 & 15

Inside

Pg 2	Oshkosh tapes 4 sale
Pg 8	Accident report
Pg 9	Attention! Fuel pump fire
Pg 10	Be aware - High density altitude
Pg 11	Broken exhaust threatens wing
Pg 14 - 15	Plans changes

RUTAN AIRCRAFT FACTORY
1654 Flight Line
Mojave, CA 93501



Pilots in France celebrated the 20th anniversary of the VariEze along with their U.S.A. cousins. Their Montpelier fly-in drew 42 composite aircraft, including 37 canard types.