

# THE CANARD PUSHER

No. 69

Oct.. 1991

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805-824-2645

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

VariViggen (1st Edition), newsletters 1 to 69.  
VariViggen (2nd Edition), newsletter 18 to 69.  
VariEze (1st Edition), newsletters 10 thru 69.  
VariEze (2nd Edition), newsletters 16 thru 69.  
Long-EZ, newsletters 24 through 69.  
Solitaire, newsletters 37 through 69.  
Defiant, newsletters 41 through 69.

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

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

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

This newsletter contains mandatory changes/corrections required for VariEzes, Long-Ezs, Defiants, Solitaires and VariViggen. These required changes are references only and you will need your reference library of CPs to get the full details.

## OSHKOSH 1991

Once again a Long-Ez wins Grand Champion, Custom built. Congratulations to Bob and Ginny Greider of Escondido, CA. Jack Cox wrote a great article with excellent photos in *Sport Aviation*, October, 1991.

At Oshkosh this year, Burt announced that RAF would be conducting a full investigation of the deep stall phenomenon as a follow-up to Danny Meyer's testing of his Velocity as reported in *Sport Aviation*. In order to conduct this testing, we need a Long-EZ. It does not need to be complete with engine or instruments. Please call or write if you have one to donate to the cause.

## NEW SERIAL NUMBERS

At last, we are able to tell you that new serial numbers have been assigned. If both the name and number on your mail label have an asterisk by them, then that number is your new serial number. If you receive CP information from someone else's subscription but you are the original purchaser of RAF plans and responded to the survey, please contact our office and we will give you the number assigned to you. If you responded to the survey and believe you should have received a new number but didn't, please call RAF.

## ATTENTION BUILDERS

If you are currently building a Long-EZ, you are missing a bet if you do not subscribe to the Central States newsletter. Editor Terry Schubert is doing a tremendous job of writing and publishing really helpful builder hints.

Contact: Terry Schubert  
9283 Lindbergh Blvd.  
Olmsted Falls, OH  
44138-2407

If you are currently building a Defiant, you should subscribe to the Defiant Flyer. Defiant builder/flyer John P. Steichen is the editor of this excellent newsletter which is full of information on building and flying the Defiant.

Contact: John Steichen  
960 86th Street  
Downers Grove, IL 60516

### CAUTION

We were shocked to see an example of a prefabricated canard for a Cozy/Long-EZ at Oshkosh. The workmanship on this canard was the worst we have ever seen. This canard was not built in accordance with the plans, it was grossly overweight and, as poorly as it was built, had it been flown on an airplane, it might have caused a life-threatening accident. If you have purchased a prefabricated canard from Fitzgerald Composites, Inc. of Bristol, WI, we would strongly recommend that you not fly it. At the very least, weigh it. If it weighs more than 19 lbs. (canard only), cut 3" off one end, outboard of the outboard elevator hinge, and carefully examine the structure. If it is not built precisely per the plans, discard it and build one yourself. If a canard fails in flight, there is no possibility of survival.

### SHOPPING

#### CANARD PUSHER DIGEST, 2ND EDITION

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

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

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

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

Annual Update Subscription \$25.00.  
(4 updates)

Overseas orders add \$5.00 for airmail.

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

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### VARI-EZE INDEX

Lists all plans changes from CP10 through CP64 as well as all suggestions, problems, etc. For any VariEze builder, this is a must. Bill sells it a couple of different ways. You can buy just the printed book for \$20.00 or you can get the book plus a 5-1/4" IBM compatible floppy disc with a delimited ASCII listing of the data base (or optional PFS professional file data file). Specify which you would want, for \$24.00. This index will be updated annually.

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

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### RAF "GOODIES" AVAILABLE

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

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### LONG-EZ EXHAUST SYSTEM

All 321 stainless tubing 1-3/4" diameter with 1/4" thick stainless steel flanges. Pipes exit the cowling one above the other, two each side. Fits all Lycoming engines from 0-235 to 0-360 (no heat muff). This is the same exhaust system Dave Ronneberg designed and built and has been flying

on his Long-EZ for several years. It is similar to the 4-pipe system Mike Melvill has on his Long-EZ, N26MS, for over 4 years and 600+ trouble-free hours.

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

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

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**LONG-EZ PARTS PRICE LIST FROM FEATHER LITE**

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

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

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

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**NOTE: NEW ADDRESS FOR ORDERING FLUSH  
RUDDER BELHORN SPRINGS.**

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

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**NACA FRESH AIR INLET VENT DOORS.**

Gene Zabler's neat little vent door is still available for \$7.50 pp. Gene tells us that after 8

years in service some of these little doors are wearing out. If yours is, send an SASE and \$2.00 to Gene and he will ship you a new rubber insert. Gene also manufactures and sells a light weight nose wheel fender (protects your prop from gravel damage) for \$45.00 pp.

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

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**THE AERO ELECTRIC CONNECTION**

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

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

**FOR SALE**

Great American Prop for 125hp 0-235-L2C Lycoming. On a Long-EZ - like new, 62x64.

Contact: John VanCleve or  
Ralph VanCleve  
501-835-3848

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New, Improved Fuel Sight Gauges. Use with auto fuel or avgas. Clear bubble with white background. Easy retrofit for VariEzes and Long-Ezs. \$30.00 per set.

Contact: Vance Atkinson  
3604 Willomet Ct.  
Bedford, TS 76021-2431  
817-354-8064

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Original VariEze Main Gear Strut (new).  
Contact: Lee Deshler  
6822 Windover Way  
Titusville, FL 32780  
407-267-1129

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Cleveland 500x5 magnesium wheel/aluminum  
brake kit, part #199-102, never used - \$200.00.  
Contact: Bill Ginn  
406 Daffodil  
Lake Jackson, TX 77566  
409-297-0863

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Feather Lite, Inc. is proud to announce another  
product to re-introduce to EZ builders: The  
original Space Saver Panel by the late Rusty  
Foster. This is a bare fiberglass panel with a  
molded recess for builder installation of an  
aluminum flat stock electrical panel. \$40.00  
Contact: Larry Lombard or  
Mike Dilley at  
Feather Lite, Inc.  
PO Box 781  
Boonville, CA 95415  
707-895-2718

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Dr. Curtis Smith's nose gear crank ratchet is still  
available at \$38.00 pp. This little device should  
be considered a "must" by all Long-EZ and  
VariEze builder/flyers. Once you have flown  
with it you will wonder how you ever did without  
it.  
Contact: Curtis Smith  
1846 Sextant Dr.  
Worden, IL 62097  
618-656-5120

#### 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
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FeatherLite PO Box 781 Boonville, CA 95415 707-895-2718	Brock Mfg. 11852 Western Ave. Stanton, CA 90680 714-898-4366
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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

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

#### PLANS CHANGES AND OTHER IMPORTANT MAINTENANCE INFORMATION

THIS ISSUE LISTS MANDATORY GROUND CHANGES  
THAT HAVE APPEARED IN THE NEWSLETTERS  
OVER THE YEARS FOR ALL RUTAN DESIGNED  
AIRCRAFT.

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

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Since RAF is no longer active in the developmen  
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.

WANTED

For my Long-EZ project:

- 1) Rusty Foster's Space Saver Panel
- 2) Wheel pants for 3.5x5 tires
- 3) Avionics (used)
  - \*Nav/Comm/Glide slope
  - \*VOR/Loc/GS head
  - \*Loran with database
  - \*Transponder/Encoder
  - \*Marker
  - \*ICS and headsets
- 4) Engine and Flight instruments
- 5) Lyc 0-320, low time with good logs

Contact: C. E. Chisolm  
2700 Vista Grande NW #71  
Albuquerque, NM 87120  
505-764-5342 (W)  
505-839-0525 (H)

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SCALED COMPOSITES NEEDS A MANUFACTURING ENGINEER. SPECIFICALLY, A PERSON WITH COMPOSITE TOOLING DESIGN EXPERIENCE. NEED NOT BE A DEGREEED ENGINEER. PRACTICAL EXPERIENCE IS A PRE-REQUISITE.

CONTACT: DAN COONEY  
SCALED COMPOSITES, INC.  
HANGAR 78 - AIRPORT  
MOJAVE, CA 93501  
805-824-4541

THE FOLLOWING IS A LIST OF MANDATORY GROUND CHANGES FOR RUTAN DESIGNED AIRCRAFT. PLEASE NOTE THAT THERE ARE ALSO MANDATORY CHANGES WITHIN A GIVEN NUMBER OF HOURS THAT ARE NOT INCLUDED AS WELL AS MANY HUNDREDS OF SIGNIFICANT CHANGES THAT AFFECT THE SAFETY AND FLIGHT QUALITIES OF THE AIRCRAFT. WE HIGHLY RECOMMEND THAT YOU REVIEW ALL PLANS CHANGES TO INSURE THE SAFEST FLYING PLANE POSSIBLE.

SOLITAIRE MANDATORY GROUND PLANS CHANGES

CP 57 - 7  
Subject Warning placard

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DEFIANT MANDATORY GROUND PLANS CHANGES

CP 49 - 6  
Subject Rudder pedal/brake assembly outboard mount.  
Subject Steering pivot rigging and "trail" of axle relative to pivot axis.  
Subject Roll and yaw control systems.

CP 51 - 7  
Subject Canard strengthening by adding plies of glass.

CP 53 - 4  
Subject Nose gear retraction link rod end bearings

CP 57 - 7  
Subject Fuel pump replacement.

Subject Warning placard.

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VARIVIGGEN MANDATORY GROUND PLANS CHANGES

CP 4 - 4  
Subject 3/32 cable.  
Subject Stiffen SA5.

CP 6 - 9  
Subject main gear emergency extension system.

CP 9 - 7  
Subject Fuel valve location.

CP 12 -11  
Subject Reflex for first flight.

CP 17 - 6  
Subject Canopy safety catch.

CP 57 - 7  
Subject Warning placard.

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LONG-EZ MANDATORY GROUND PLANS CHANGES

## LONG-EZ MANDATORY GROUND PLANS CHANGES

### CHAPTER 9. MAIN GEAR/LANDING BRAKE

CP30-8  
LPC #75  
Ensure a minimum of 1/16" clearance between gear strut and brake caliper.

CP48-5  
LPC #127  
A mandatory inspection of your nylon brake lines is required before next flight. If these brake lines have been directly exposed to radiating heat from the brake discs, or to sunlight (UV) they must be replaced.

### CHAPTER 11. ELEVATORS

CP57-8  
MAN GRD  
Inspect or certify that elevators meet specifications in regard to weight, stiffness and shape.

CP66-9  
MAN INSPECTION  
Inspect elevator torque tubes for corrosion.

### CHAPTER 13. NOSE AND NOSE GEAR

CP30-9  
LPC #86, MAN/10HRS  
Reinforcement of top tab welded to the rudder pedal.

### CHAPTER 14. CENTERSECTION SPAR

CP28-9  
LPC #56, MAN GRD  
Long-EZ spar cap thickness

### CHAPTER 16. Control System

CP49-6  
LPC #131 MAN-GRD  
Substitution of 4130 steel or stainless for aluminum roll and yaw control components in cowling area. Use Ocean Intumescent fireproof coating.

### CHAPTER 19. WINGS, AILERONS/WING ATTACH

CP28-9  
LPC #56, MAN GRD  
Long-EZ spar cap thickness

CP30-9  
LPC #81  
Rodend attachment to CS 132L belhorn.

CP47-7

LPC #126, MAN  
Vortilons on each main wing are mandatory.

CP58-10  
MAN-GRD  
Replace aileron belhorns within next 25 hours.  
Rebalance vibrating ailerons.

### CHAPTER 21. STRAKES - FUEL/BAGGAGE

CP24-6  
LCP #4, DES, Chap 7 & 21  
See Safe-T-Poxy recommendation below for fuel areas.  
The interior fuel tank layup and fuselage side layup should be done using only Safe-T-Poxy.

CP65-7  
MAN/GND  
Mandatory inspection of polyurethane fuel and vent lines.  
Mandatory inspection of throttle/mixture springs.

### LONG-EZ SECTION VI. LANDING BRAKE PLANS

CP29-7  
LCP #65, MAN GRD  
Modification of LB9 to allow it to collapse in a crash without piercing the seat bulkhead.

CP68-6  
MAN GRD  
Modify the LB-9 bracket and install a plywood doubler on forward face of front seat bulkhead.

### SECTION III. LYCOMING O-235 ENGINE INSTALLATION

CP24-6  
LCP #1, MAN GRD  
Safetying Bendix fuel pump bottom cap.

CP31-5  
LCP #94, MAN GRD, 25 HOUR  
Replacement of aluminum fittings with steel.

CP49-6  
LCP #131, MAN GRD  
Inspection of all fuel system plumbing and components for approved fireproof components. Use fireproof sleeves on all hose components.

CP51-7  
LCP #132, MAN-GRD  
Inspection of engine mixture control system.

CP62-7  
MAN GRD  
Inspect exhaust system every time cowl is removed or every 50 hours.

CP65-7

**MAN/GRD**

Mandatory inspection of polyurethane fuel and vent lines.  
Mandatory inspection within next 10 hours of throttle/mixture springs.

**OPTIONAL SPECIAL PERFORMANCE CANARD PLANS**

**CP57-8**

**MAN GRD**

Inspect or certify that elevators meet specifications in regard to weight, stiffness and shape.

**CP66-9**

**MAN INSPECTION**

Inspect elevator torque tubes for corrosion.

**LONG-EZ OWNER'S MANUAL**

**CP26-6**

**LPC #41, MAN GRD**

Added pressure range for 6 ply tires.

**CP36-6**

**LPC #115, MAN-GRD**

Long-EZ may spin when at or aft of aft CG limit.

**CP37-4**

**LPC #116, MAN GRD**

Aft CG limit moved from 104 to 103.

(This plans change was made mandatory in CP 39.)

**CP49-6**

**LPC #130, MAN GRD**

Clear idling engine every 15 seconds or so on approach. Always fly final with speed brake extended.

**CP57-7**

**MAN GRD**

Placard aircraft with notice that amateur built aircraft are more likely to have an accident.

**CP63-10**

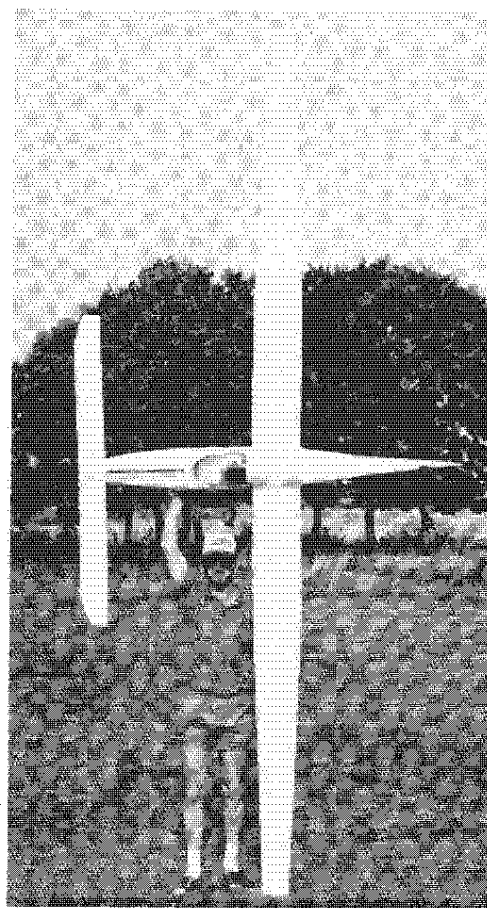
**MAN GRD**

Always fuel aircraft in level attitude when needing full fuel tanks.

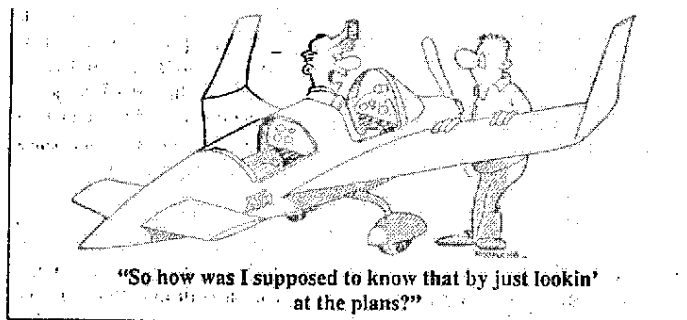
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RUTAN AIRCRAFT WOULD LIKE TO THANK STET ELLIOTT AND BILL GREER FOR THEIR HELP IN PUTTING TOGETHER THIS NEWSLETTER. THEIR DIGESTS ARE INVALUABLE.  
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The following pages contain :

VARIETZ MANDATORY GROUND PLANS CHANGES



How's this for a model?!!  
4.24 meter wingspan!!



**Chapter Section IV, Owner's Manual**

**CP Issue 15 - 7**

**Subject fuel filter**

MAN/GRD Replace or inspect fuel filter at 25 hour intervals.

**Chapter Section II, Engine Installation & Systems**

**CP Issue 16 - 9**

**Subject exhaust system**

MAN/GND Install safety cables on VE exhaust systems. Article discusses various exhaust systems & problems. See also CP18.

**Chapter 17**

**CP Issue 16 - 5**

**Subject strut**

MAN/25HR Strut beef up & mod to NG15.

**Chapter 22**

**CP Issue 17 - 6**

**Subject safety catch**

MAN/GND Plans for secondary canopy catch. Prevents open canopy accidents. DO NOT OMIT THIS!!

**Chapter Section II, Engine Installation & Systems**

**CP Issue 17 - 4**

**Subject fuel valve**

MAN/GND Replace fuel valve if stiff. (If the valve is stiff, not you.) If valve is selected between wings and fuselage position, the fuselage tank will drain into the wings.

**Chapter 22**

**CP Issue 18 - 8**

**Subject fuselage tank**

Fuselage fuel tank requires changes in canopy construction.

**Chapter Section IV, Owner's Manual**

**CP Issue 15 - 3**

**Subject performance**

Flight test performance data from N4EZ. Fuel flow, speed, etc. Paste these in the owners manual.

**Chapter 18**

**CP Issue 16 - 6**

**Subject brake lines**

MAN/25HR Install inserts in Nylaflo brake lines. (See also CP27, pg5)

**Chapter 4**

**CP Issue 16 - 4**

**Subject surface smoothness**

MAN/GND The top surface of the canard must be smooth within .006 in. How to check, flight tests to confirm.

**Chapter 5**

**CP Issue 17 - 5**

**Subject wide chord elevators**

MAN/GND Plans for wide elevators for VE. Optional for those already flying & used to narrow elevators. Templates to check elevator shape.

**Chapter 16**

**CP Issue 18 - 9**

**Subject fuel valve**

Fuel valve moved. Gascolator added.

**Chapter 21**

**CP Issue 18 - 8**

**Subject fuselage tank**

How to make & install fuselage fuel tank.



**Chapter Section II, Engine Installation & Systems**

**CP Issue 18 - 3,7**

**Subject fuel system**

MAN-25HRS Revised fuel system adds gascolator and fire resistant fuel lines. Fuel valve relocated. Plans for fuselage tank.

**Chapter 17**

**CP Issue 19 - 3,5,7**

**Subject worm drive**

MAN/GND Worm drive for nose gear prevents gear collapse. Plans in this CP.

**Chapter 19**

**CP Issue 20 - 4**

**Subject rod ends**

MAN/GND Replace HM-3 rod ends in pitch system with 1/4".

**Chapter \*Other\***

**CP Issue 21 - 5**

**Subject first flight**

Many good recommendations on pilot technique for VE.

**Chapter Section II, Engine Installation & Systems**

**CP Issue 21 - 5**

**Subject fuel system**

System shown in IIC, pg 36 is obsolete.

**Chapter Section IV, Owner's Manual**

**CP Issue 21 - 5**

**Subject nose gear**

Add note to grease gears in nose gear.

**Chapter 5**

**CP Issue 19 - 4**

**Subject balance**

MAN/GND Overweight or out of balance elevators must be corrected or rebuilt to prevent flutter. 1/2 of any weight added must go on outboard weight.

**Chapter 6**

**CP Issue 19 - 2**

**Subject cuffs**

MAN-25HR Cuffs added to rear wing to prevent departure at low speed. (Replaced by vortilons.) Good discussion of aft wing stall & departures. AFT CG LIMITED UNTIL CUFFS ARE INSTALLED.

**Chapter 18**

**CP Issue 20 - 3**

**Subject strut**

MAN How to prevent and repair compression damage to strut. Mandatory 3 ply mod for new construction, 7 ply fix for damaged struts.

**Chapter Section IV, Owner's Manual**

**CP Issue 21 - 5**

**Subject first flight**

Many good recommendations on pilot technique for VE.

**Chapter Section IV, Owner's Manual**

**CP Issue 21 - 5**

**Subject first flight**

Add note to clean out all fuel system screens and carb float bowl before first flight.

**Chapter \*Other\***

**CP Issue 21 - 4**

**Subject plans changes**

Cumulative list of plans changes up to July 1979.

**Chapter 1**

**CP Issue 21 - 4**

**Subject correction**

Cumulative list of plans changes up to July 1979.

**Chapter 15**

**CP Issue 22 - 11**

**Subject seat belts**

MAN/GND Eon E 8000 seat belt are unsafe, they can come open unexpectedly. Do not use.

**Chapter Section IV, Owner's Manual**

**CP Issue 22 - 8**

**Subject slips**

MAN/GND Pg. 19, add note to avoid aggravated slips at low altitude. Can result in winglet stall. How to recover.

**Chapter Maintenance & Inspections**

**CP Issue 22 - 8**

**Subject screens**

MAN/GND Clean all screens before first flight, then every 25 hours for first 100 hours, then every 50 hours.

**Chapter Section IV, Owner's Manual**

**CP Issue 22 - 8,7**

**Subject fuel contamination**

MAN/GND change to addition made in CP21. Clean all screens and needle valve before first flight.

**Chapter Maintenance & Inspections**

**CP Issue 22 - 8,4**

**Subject hoses**

MAN/GND Inspect induction hoses for correct safety of wire and cord.

**Chapter Section IV, Owner's Manual**

**CP Issue 22 - 8,4**

**Subject hoses**

MAN/GND Under power plant add \*inspect induction hoses for correct safety of wire and cord.\*

**Chapter 19**

**CP Issue 22 - 8,7**

**Subject rudder travel**

MAN/GND Reduce rudder travel from 3.5" to 2".

**Chapter Section II, Engine Installation & Systems**

**CP Issue 23 - 7**

**Subject Continental engines**

MAN/GND Continental engines without starter must install bearing retainer to prevent spontaneous conversion of engine into boat anchor. CP gives plans for retainer.

**Chapter 19**

**CP Issue 23 - 6,7**

**Subject rudder travel**

MAN/GND Reduce rudder travel from 3.5" to 2". Clarification of earlier change. Keep brakes in top shape!

**Chapter Section IV, Owner's Manual**

**CP Issue 24 - 6**

**Subject first flight**

Test pilot should have 10 hours VE time.

**Chapter Section IV, Owner's Manual**

**CP Issue 24 - 6**

**Subject pilot checkout**

Additions to pilot checkout criteria.

**Chapter 3**  
**CP Issue 24 - 4**  
**Subject weight**

Too many airplanes are coming out too heavy. Delay installation of extras. Other hints for weight control & mods.

**Chapter Maintenance & Inspections**  
**CP Issue 26 - 6**  
**Subject wing fitting**

MAN 100 HR Remove and inspect wing attach bolts for corrosion annually or each 100 hours. Spray LPS #3 on bolts and cones.

**Chapter Section IV, Owner's Manual**  
**CP Issue 28 - 9**  
**Subject checklist**

After \*fuel caps on\* add \*and locked - screws aligned to locked orientation\*.

**Chapter Section IV, Owner's Manual**  
**CP Issue 29 - 7**  
**Subject checklist**

After \*canopy locked\* add \*visually confirm proper canopy latch engagement and proper safety catch engagement\*.

**Chapter Landing Brake**  
**CP Issue 29 - 7**  
**Subject LB29**

MAN/GND See LPC #65 for redesign of LB29. Applies to VE also.

**Chapter 17**  
**CP Issue 30 - 5**  
**Subject rudder pedals**

Modify rudder pedal to prevent tab breaking off. Brock has parts.

**Chapter Section IV, Owner's Manual**  
**CP Issue 26 - 6**  
**Subject tires**

MAN/GND Sec IV pg 33 After 55 to 65 psi add \*75 to 80 for 6 ply tires\*.

**Chapter 19**  
**CP Issue 27 - 5**  
**Subject push rods**

Drill an inspection hole in all push rod tubes to be sure enough rod end threads remain in the bushing.

**Chapter Section II, Engine Installation & Systems**  
**CP Issue 28 - 8**  
**Subject exhaust gaskets**

Use blow proof gaskets. Mandatory if using cabin heat.

**Chapter Section IV, Owner's Manual**  
**CP Issue 29 - 7**  
**Subject owners manual**

Add CAUTION to check prop bolts torque 180 in lbs when moving from wet climate to dry climate.

**Chapter 18**  
**CP Issue 30 - 8**  
**Subject brake caliper**

There must be 1/16" clearance between caliper and strut. (see LPC #75)

**Chapter Section II, Engine Installation & Systems**  
**CP Issue 31 - 8**  
**Subject installation**

MAN/GRD Upgrade fuel & oil hoses to standard shown in CP.

**Chapter 21**

**CP Issue 31 - 5**

**Subject** fuel caps

Install safety chain on fuel cap to prevent loss.

**Chapter Section IV, Owner's Manual**

**CP Issue 31 - 5**

**Subject** owners manual

Under engine failure add caution to use power during descents when carb ice is likely.

**Chapter Section IV, Owner's Manual**

**CP Issue 33 - 4**

**Subject** ditching procedure

Ditching procedure for VE explained. Add to owners manual.

**Chapter 6**

**CP Issue 34 - 6**

**Subject** hinges

MAN Aileron hinge pins must be saftied. Shows proper method.

**Chapter 17**

**CP Issue 35 - 10**

**Subject** sealing nose

How to seal up nose so cabin heat will work. Battery must be manifolded type and vented overboard.

**Chapter Landing Brake**

**CP Issue 43 - 4**

**Subject** LB19

MAN/25 HRS Modify LB 19 plywood insert, or add glass reinforcement as shown.

**Chapter Maintenance & Inspections**

**CP Issue 31 - 5**

**Subject** main gear

At annual or 100 hour inspection jack airplane and check gear for excess motion.

**Chapter Section II, Engine Installation & Systems**

**CP Issue 32 - 5**

**Subject** magnetos

\*Left\* mag should be as referred to by engine manufacturer, even though it is on the right side of a VE.

**Chapter 7**

**CP Issue 34 - 6**

**Subject** hinges

MAN Rudder hinge pins must be saftied. Shows proper method.

**Chapter Section III, Electrical Systems**

**CP Issue 35 - 10**

**Subject** cabin heat

Electrical cabin heat system, takes 20 amps. How to seal up nose. Battery must be manifold type vented overboard.

**Chapter Section III, Electrical Systems**

**CP Issue 35 - 10**

**Subject** battery

Suggested manifold vented battery.

**Chapter Maintenance & Inspections**

**CP Issue 62 - 7**

**Subject** exhaust system

MAN/GND Inspect exhaust system for cracks.

**Chapter Maintenance & Inspections**

**CP Issue 61 - 10**

**Subject wing fitting**

MAN/GND Inspect AN-4 bolts & taper plugs in wing fittings. Caused fatal accident.

**Chapter 6**

**CP Issue 61 - 10**

**Subject attach fitting**

MAN/GND Check taper pins & AN-4 bolts for proper fit. Caused fatal accident.

**Chapter 19**

**CP Issue 58 - 7**

**Subject ailerons**

MAN/GND Check bellhorns, replace within 25 hrs. Rebalance ailerons if vibrating.

**Chapter 5**

**CP Issue 57 - 8**

**Subject balance**

MAN/GND Inspect for proper construction. New balance requirements & discussion of flutter. Reuse of elevator tube if building new elevator.

**Chapter 6**

**CP Issue 55 - 5**

**Subject attach fitting**

MAN/GND Check wing attach fittings for corrosion. Method for replacing fittings.

**Chapter Maintenance & Inspections**

**CP Issue 53 - 7**

**Subject airspeed indicator**

Check accuracy of airspeed indicator. CP shows manometer for doing this.

**Chapter Section II, Engine Installation & Systems**

**CP Issue 61 - 7**

**Subject controls**

MAN/GND Wrong outer cable attachments caused engine failure.

**Chapter 8**

**CP Issue 61 - 10**

**Subject attach fitting**

MAN/GND Check taper pins & AN-4 bolts for proper fit. Caused fatal accident.

**Chapter Maintenance & Inspections**

**CP Issue 57 - 7**

**Subject placards**

MAN/GND Check for proper placards in cockpit. Install "You may die if you fly this airplane" placard.

**Chapter Maintenance & Inspections**

**CP Issue 55 - 5**

**Subject wing fitting**

MAN/GND Check wing attach fittings for corrosion.

**Chapter 8**

**CP Issue 55 - 5**

**Subject attach fitting**

MAN/GND Check wing attach fittings for corrosion. Method for replacing fittings.

**Chapter 8**

**CP Issue 53 - 7**

**Subject attach fitting**

MAN/GND Corrosion found on fittings. Alodine treat all new fittings. Do not anodize.

**Chapter Maintenance & Inspections**

**CP Issue 53 - 7**

**Subject wing fitting**

MAN/GND Check wing attach fittings for corrosion. Alodine new fittings. Do not anodize.

**Chapter Maintenance & Inspections**

**CP Issue 51 - 6**

**Subject mixture control**

MAN/GND Problems with mixture control have caused 2 forced landings. Check for proper installation & operation.

**Chapter 8**

**CP Issue 50 - 4**

**Subject attach fitting**

MAN/GND Use stud finder to verify all screws are installed. Missing screws caused fatal accident.

**Chapter 16**

**CP Issue 49 - 5**

**Subject fireproofing**

MAN/GND Replace aluminum control system parts with steel. Use Ocean #1644 to fireproof CS spar. See pg 3 for source of Ocean #1644.

**Chapter Section II, Engine Installation & Systems**

**CP Issue 49 - 5**

**Subject fireproofing**

MAN/GND Replace aluminum control system parts with steel. Use Ocean #1644 to fireproof CS spar. See pg 3 for source of Ocean #1644.

**Chapter Maintenance & Inspections**

**CP Issue 48 - 5**

**Subject brake lines**

MAN/GND Inspect brake lines for damage from disc heat or sunlight.

**Chapter Section II, Engine Installation & Systems**

**CP Issue 51 - 6**

**Subject controls**

MAN/GND Problems with mixture control have caused 2 forced landings. Check for proper installation & operation.

**Chapter 6**

**CP Issue 50 - 4**

**Subject attach fitting**

MAN/GND Use stud finder to verify all screws are installed. Missing screws caused fatal accident.

**Chapter Section IV, Owner's Manual**

**CP Issue 50 - 5**

**Subject checklist**

MAN/GND Should read "Check fuel caps on and positively locked." Check cap O-rings before each flight. Never fly without header tank full. Other cautions related to engine & fuel.

**Chapter 19**

**CP Issue 49 - 5**

**Subject fireproofing**

MAN/GND Replace aluminum control system parts with steel. Use Ocean #1644 to fireproof CS spar. See pg 3 for source of Ocean #1644.

**Chapter 21**

**CP Issue 48 - 5**

**Subject tank vents**

MAN/GND Separate tank vents recommended in CP47 pg 6 are a mandatory plans change.

**Chapter Safety & Accident Information**

**CP Issue 44 - 8**

**Subject hot dogging**

Low flying causes or contributes to many LE accidents. Don't!

**Chapter Maintenance & Inspections**

**CP Issue 44 - 8**

**Subject cracks**

MAN/GND Cracks have been found in the bottom skin of fuel tank - center section area. They were probably caused by sanding away structure at the edge of CS spar. Includes info on how to repair.

**Chapter 3**

**CP Issue 12 - 8**

**Subject quality control**

The most important inspection is just after layup is done, many problems can still be corrected. Get someone else to check it. How to do a post layup inspection.

**Chapter 2**

**CP Issue 12 - 18**

**Subject aileron plans**

MAN/GND Aileron plans announced. See Ch. 19 index listing.

**Chapter Section II, Engine Installation & Systems**

**CP Issue 11 - 5**

**Subject fuel system**

MAN/GND Plans & discussion for 3 tank fuel system.

**Chapter 8**

**CP Issue 11 - 7**

**Subject attach fitting**

MAN/GND Apply 2 ply UND wrap around attach fitting.

**Chapter 4**

**CP Issue 10 - 3**

**Subject lift tabs**

Install nut plates behind lift tab insert. Do not use method shown in the plans. Other hints for lift tab installation.

**Chapter 3**

**CP Issue 12 - 7**

**Subject hot wire cutting**

MAN Mod to templates helps cut straighter leading edges. Other hints for hot wire cutting.

**Chapter 19**

**CP Issue 12 - 18**

**Subject ailerons**

MAN/GND Install rear wing ailerons. Last minute addition to CP announces availability of aileron plans & how to get them. Explains why ailerons are needed.

**Chapter 20**

**CP Issue 11 - 4**

**Subject roll trim**

Roll trim is mandatory on the VE.

**Chapter 21**

**CP Issue 11 - 6**

**Subject fuselage tank**

MAN/GND Plans for fuselage tank. Discussion of 3 tank fuel system.

**Chapter Section II, Engine Installation & Systems**

**CP Issue 11 - 8**

**Subject fuel system**

Do the fuel flow tests (step 12) for WING AND FUSELAGE fuel. CP lists other plans changes due to 3 tank system.

**Chapter 21**

**CP Issue 10 - 6**

**Subject drains**

MAN/GND Install drains in forward part of wing tanks. CP gives drawing showing how to install them.

Chapter Section II, Engine Installation & Systems

CP Issue 65 - 7

Subject fuel lines

MAN/GND Carefully examine every inch of urethane fuel line in all VariEzes. Some have disintegrated.

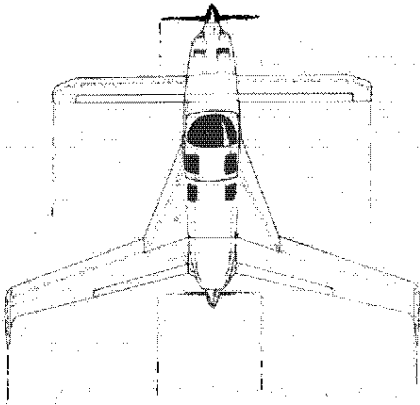
Chapter Section II, Engine Installation & Systems

CP Issue 65 - 13,7

Subject controls

MAN - 10 HRS Inspect throttle & mixture springs for proper installation & wear. Failure of these springs caused an engine failure.

**Rutan Aircraft Factory**  
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**Mojave, CA 93501**



**TO:**

**October '91**

The line which appears above your name lets you know through which Canard Pusher you are paid. If your label says **LAST ISSUE CP 69** then this is your last issue, and you need to renew.

**CP 69**