

#2.50
#1

PLANS UPDATER-David A. C. Orr
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CHAPTER 1: DESCRIPTION/INTRODUCTION

SEE DESCRIPTION IN CP, Pages:

32/1,46/1,2 on Builder Questions;
24/12 on Building time;
29/2 on composite structures;
43/2 Duties of Homebuilders;
34/4 FAA Checks;
32/6 on Fiberglass aging;
24/4 on making non-standard hybrids;
30/2 and 30/back on Laminar flow;
46/9,10 etc on License to build;
29/6 on MPG;
24/18 on Main Gear construction;
26/2 on using O-320 Engine;
29/3 on Ownership changes;
29/5 on Prefab Fuselages;
45/1,46/1 on RAF future;
24/18 on Spin tests.

CHAPTER 2: BILL OF MATERIALS

SEE DISCUSSION IN CP, Pages:

34/9 Air Filter;
37/4 on Antennas;
26/11 and 30/11 on B & C
Specialties;
28/9 31/7 and 33/6 on B & T Props;
34/8 Batteries;
40/7 on Brake pads;
24/7, 29/5 and 31/1 on canopies;
28/4 on not using Ciba Araldite
"506/507";
36/3 on pseudo cloth
34/9 Compucruise
28/8 and 34/8 on cowl;
43/5 on cutting foam blocks;
29/4 on Dremel tool;
26/2 on Engine Choice;
31/5 on Engine Mounts;
43/5 on Epoxy;
31/8 on Exhaust;
36/3 on Fake Fiberglass;
26/3, 27/7 and 34/7 on Foam
substitutes;
26/11 on Frilling design alternator;
43/5 on instant glues;
24/7 and 27/8 on Gear;
32/7 on Light on panel;
34/8 on Fuel hose;
41/6 and 42/8 on Hot wire control;

24/5 on A/C lock;
30/4 on Lock nuts;
46/8,9 on Lombards;
37/3 on Loran C;
32/4 on Magnetos;
29/5 on Main Gear;
26/5 on NACA Inlet;
24/7 and 29/5 on Nose Gear;
25/1 on Nose Wheel Wells;
31/5 on Oil Orifice;
33/7 on Plug kits;
25/2 on Precision Aero (fuel pump);
26/1, 30/11, 34/4, 40/4 Prefab parts;
24/4, 25/2, 26/6, 28/8, 29/2, 31/7,
32/5, 33/6, 35/9, 37/4, 38/9 and
40/8 on Props;
38/5 on Prop bolts;
37/3,40/3 on Props, experimental;
30/5 on Prop extensions;
45/6 on Protective cream;
40/8 on Radio Syst. Tech;
29/5 and 32/6 on Resins;
34/9, 36/7, 39/8 on Roller knives;
29/8 on Rolls Royce O-240;
40/2 on Safety Poxxy II;
29/8 on Sanding Disks;
24/4 on Seat Belts supplier;
32/4 on Slick Mags;
32/5 on Spinners;
28/9 and 30/7 on Spraylat;
34/1 on Steerable nose wheel;
26/1 on Stick Grip;
25/1 on Sump Blisters;
37/5 on Swaging tool;
30/11 and 32/8 on TASK Research;
33/6 on Ted's Custom Props;
43/5 on cuttin templates;
26/5, 29/6 and 31/10 on Tires;
28/9 on Turn Coordinators;
30/7 and 34/6 on Wheel Pants;
30/7 on Wicks Aircraft;
28/9 on Wingtip Lights.

LPC #15: MEO Page 2-1 Tools. change "2
Pcs 16 x 48" to "One piece 1/16" or
1/8" thick x 24" x 48"

LPC #34: MEO Page 2-1 LMGA is used in
Chapter 5 not chapter 9.

LPC #53: MEO Add CLI and NG5 to Brock
list page 2-1.

LPC #71: MEO Sect I pg 2-1. Add to Ken Brock parts list - 4 spacers A4-84 and 2 nuts J1.25 (Axle spacers and nuts).

LPC #109: MEO Add the following to the parts listed on page 2-1 of the Long-EZ plans under "custom prefab parts" by Ken Brock Mfg.

Lycoming exhaust system
Dynafoal engine mounts
Conical engine mounts
A484 back up rings (4 required 2 each)
J1.25 axle nuts (2 required)
LE2-LL landing light mounting kit
LMBGI forward main gear attach brackets(2)
LMGB2 aft main gear attach brackets (2)

LPC #14: MEO Page 2-2 airframe bolts AN3-11 should be AN3-11A

LPC #25: DES Page 2-2. Alum can be substituted for the steel firewall, don't install fiberfrax now. Wait until after cowling installation. This allows you to wrap the fuselage skin around onto plywood and allows you to layup the 1 ply inside lip on the cowl lip. You will then have to remove things bolted to the firewall to install the fiberfrax and alum. Install fiberfrax with silicone rubber, not epoxy.

LPC #55: MEO Bill of Materials Page 2-2, AN970-4 Washers, should be 11 not 5.

LPC #21: MEO Page 2-4 Metal : "3ft of 1.8 x 1" x 1" should be "3 ft of 1/8" x 1" x 1" alum angle"

LPC #79: Section I, page 2-4. Chapter 13 material list - SC fiberglass strut cover is listed twice.

33/6 on BID;
25/5 and 38/4,5 on BID Tape;
39/7, 48/7 on brushes, freezing;
25/5 on carbon paper;
32/6 on Cabinet to hold cloth;
35/7 on Cleaning epoxy pump;
29/5 on cold resin;
35/7, 39/8 and 51/10 on cutting cloth;
29/5 on crystalized resin;
29/3, 30/7 and 31/6 on epoxy heater;
37/4 on Epoxy reaction;
27/5 on Fiberglassing;
32/6 on Fiberglass edges;
29/8 on Foam carving;
29/8, 49/6 on Foam Gluing;
29/6 on not painting foam;
36/6, 37/7 on Gloves;
24/4, 25/5, 29/8, 30/7,31/8 and 36/7 on Hot Wire;
27/5 on peel ply;
29/6 on Ratios (epoxy);
36/7 on Respirator;
32/6 on Rivets;
28/4, 29/3,6 and 32/4 on Saf-T-Poxy;
40/2 on Saf-T-Poxy II;
25/4 and 31/3 on Slurry;
28/8 on Spars;
42/5 on Structure;
29/3,4 on Temperature for Epoxy;
43/5 on Templates;
27/5 on making Troughs;
48/3 on Water level;
24/4, 26/3, 27/1,4 and 28/6 on proper weights.

LPC #18: MEO Page 3-3, jig table size omitted - add 3 ft x 11 ft.

LPC #57: MEO Page 3-23, Number 6. Wet out.. Delete this paragraph entirely and add the following: WET OUT - Squeegee cloth from center outward aligning the fibers straight and removing wrinkles. Pull at the outside edges to straighten any wrinkles. Brush or stipple epoxy into any dry areas or pour on additional epoxy and squeegee out uniformly. Check for excess epoxy "ridge" with the squeegee.

CHAPTER 4: FUSELAGE BULKHEADS

46/9 on Bulkhead kits for sale.

CHAPTER 3: EDUCATION

SEE DISCUSSION CP Page:

32/4,37/4 on Alergic reaction;
38/4 on Anodizing;

LPC #68: MEO Sect I Pg 4-1. Note at the foot of the page. Remove "NOT" so that it reads, "micro slurry is used on this type R45 foam. We do recommend slurry to be used on all of the various foams in a Long-EZ.

LPC #17: MEO Page 34-2 bottom right: clarification: "both sides" means "left and right, on the forward face only"! The foam doubler goes on aft face, with no additional plies at this time. See Section A-A, B-B, and C-C on page A3.

LPC #42: OPT Page 4-2 add "alternate the BID and UND plies that reinforce the sides of the forward face of F-22". Note: Modification is not required if you have already installed these without alternating.

LPC #22: MEO Page A-3 correction: Hole for gear retract drive tube should be 1" to the right of C_L.

LPC #46: Revise F28 bulkhead by moving the longeron notch down 0.25". This raises F28, for better fit to canopy.

LPC #19: MEO Page A4 engine mount extrusions "Chapter 6" should be "Chapter 14", 2 places.

LPC #47: DES Due to a probable rubbing of the rudder cable on the aileron pushrod, the left hand rudder pulley bracket should be moved up 0.6" IF you have already mounted the 3 bolts in the firewall such that you cannot make this change, you can provide cable clearance by carefully bending the rudder pulley bracket to move the pulley aft approx. 0.2". Bend as shown below. (See diagram on CP27 Pg 7)

LPC #48: DES Firewall, page A4. Increase size of firewall at top as shown to assure adequate height to fit cowling. [see drawing cp 27/7]

LPC #25: DES Page 4-3. Alum can be substituted for the steel firewall, don't install fiberfrax now. Wait until after cowling installation. This allows you to wrap the fuselage skin around onto plywood and allows you to layup the 1 ply inside lip on the cowl lip. You will then have to remove things bolted to the firewall to install the fiberfrax and alum. Install fiberfrax with silicone rubber, not epoxy.

CHAPTER 5: FUSELAGE SIDES

SEE DISCUSSION IN CP, Pages:
25/5, 28/8 and 30/6 on Fuselage;
24/5 on Fuselage door;
39/2, 43/6 on new Fuel Gauge;
46/7 on gear attach bolt.

LPC #5: MEO Page 5-1 Spacing between dimensions on fuselage sides is 10", aft dimension is 3".

LPC #20: MEO Page A5 clarification: The 15 BID pad for the aft gear attach angle should stop at W.L. 12.35 (Don't glass above 12.35)(Chap 5.) (see chapter 15 to see why)

LPC #58: MEO Page A5. On the main gear mounting pads bottom of page, two places shows only 1 ply. Should be 15 plies of BID.

LPC #80: "A" drawings, page A-5. 2" x 2" x 1/4" aluminum ext. shown full size page 18-3, should be page 9-3.

LPC #85: MEO "A" drawings, page A5, to right "shown full size, page 18.3" should be "page 9-3".

LPC #82: Section I, page 5-2, step 2. one ply of BID extend entire 103" length, this ply of BID should be at 45 degree and can be in several pieces. See clarification CP 35/9.

LPC #67 MEO Section I pg 5-3, nuts on the AN6-80A bolt should be AN363-624, not MS21042-6.

CHAPTER 6: FUSELAGE ASSEMBLY

SEE DISCUSSION IN CP, Pages:
38/5 on bid tapes; 25/5 and 30/6 on
Fuselage;
38/4 on front seat bulkhead.

LPC#105: MEO Section I, page 6-3. The
1" x .7" x 3" wood doubler should be
glassed over with 1 ply BID @ 45
degree, lapping .4" onto F28, top
longeron and fuselage side.

CHAPTER 7: FUSELAGE EXTERIOR

SEE DISCUSSION IN CP, Pages:
24/5 on cockpit door;
25/5 on carving foam;
36/7 on fuel guages.

LPC #4: DES Chapter 7 New construction
only. The interior fuel tank layup and
fuselage side layup should be done
using only Safe-T-Poxy. Laboratory
tests have shown Safe-T-Poxy to be
more resistant to fuel than either
Lambert or RAE epoxy systems. Our
survey of possible fuel contamination
(see CP # 22 pg 7) did not reveal
anything of major concern, although
several of the 64 responding, reported
a gummy substance on the float valve
seat. Be sure to follow the CP #22 pg
8 Owners Manual carburetor inspection
requirement.

LPC #70: MEO (bottom skin) CP 28, Pg
8, under builder hints, UND layups on
the fuselage sides should be +30 not =
45. This is shown correctly in the
plans.

LPC #50: MEO Page 7-1 Section A-A.
This sketch is not accurate. See page
A2 for the correct full size drawing.
Also not LPC #46 in this C.P.

CHAPTER 8: ROLL OVER/SEAT BELTS

SEE DISCUSSION IN CP, Pages:
34/8 on Location of mag switches;
25/3, 36/7 on canopy stay-change hard
point on roll-over;
44/2 on Safety of rollover structure;
24/4, 26/7 on Seat Belts.

LPC #37 MEO page 8-1 Sides of roll over
structure should be 13" not 12.7"

LPC #52: MEO Page 8-1. Roll over
structure assembly 4.5" should be 4.0",
moving shoulder harness insert outboard
1/2".

CHAPTER 9: MAIN GEAR/LANDING BRAKE

SEE DISCUSSION IN CP, Pages:
31/4, 34/8, 40/7, 42/4 and 52/4 on Brakes;
24/4, 46/6 on Brake Cooling;
27/5, 31/5, 47/11, 49/7 and 51/5 on
Brake Lines;
40/7, 41/5 and 45/7 on Brake Linings;
40/7 on Brake Problems;
34/8 on Brake torque plates;
37/3 on Cable swaging;
46/6 on Fiberfraxing brakes;
46/4, 8 on moving brakes forward;
24/7, 25/5, 27/8, 28/8, 29/5, 30/6, 7,
31/5, 10, 32/5, 46/7 and 50/9 on Gear;
36/6, 9, 38/4 on Gear up switch;
42/10 on Jig!
26/7, 28/10, 29/7, 43/4 on Landing
Brake;
44/2 on Moving brakes up front;
45/6, 46/8 and 51/8 on New supplier;
46/13 on Photo of attach;
31/4 on Relief Tube;
46/6 on Rosenhaan wheels?;
32/5 on Shims;
38/4 on Side consoles;
26/10 on Strut failures;
44/4 on Task;
26/5, 10, 29/6, 31/10 on Tires;
29/6, 30/6 on Toe In;
46/7 on Torquing gear attach;
On Wheel pants see ch 24 notes

LPC #65: MAN GRD There are indications
that the back injury noted on accidents
(pg 3) may have been caused by the
center speed brake diagonal bulkhead
being forced through the seat back after
failure of the landing gear and the
airplane's belly impacted the ground.
Refer to the sketch and remove the
portion of the plywood bulkhead (part
#LB9) shown to allow it to collapse
without piercing the seat bulkhead.
Double check that the speed brake arm
(#LB 20 & LB2) does not go over center
with speed brake down - recheck the
40-lb closure force. (SEE DRAWING CP29
pg. 7)

LPC #112: MEO Page 9-1, top right -
"refer to Chapter 8" should read
"refer to Chapter 14"

LPC #35: MEO page 9-1 Landing brake
paragraph - after the word
"installation" add the words "and
other important landing brake
details".

Plan change: next 25hrs: VariEze and
Long-EZ-Landing Brake. A few builders
have reported noticing a softening or
weakening of their brake. We checked
ours here at RAF and sure enough, when
we wiggled it fore and aft we could
"hear" the damaged urethane foam
"working". The glass of course was not
damaged and no builder has reported
any more damage than this. This repair
could be done within the next 25
hours. The landing brake is called out
to be made from urethane foam. Anyone
who has not built the landing brake,
should build it from PVC (Klegecel or
Divenicel) or 4lb/ft³ foam. Increase
the length of LB19 (plywood insert) by
1/2" and taper it as shown to reduce
the concentrated loads at the end (See
CP43/4 for drawings)

LPC #75: Section I, page 9-1, The axle
bolt location in the sketch on the
lower left is not accurate. See sketch
below. Warning - Note that the 1/16"
clearance between the main gear strut
and the brake caliper is a mandatory
requirement. The caliper must not be
able to touch the strut or the wheel
pan or you could have an intermittent
brake or even a brake failure. (see
diagram cp30 Pg 8)

LPC #45: OPT Page 9-3. Move the 3/8"
holes in all four extrusions up 0.4".
Also modify outlines to maintain
original edge distances around the
3/8" hole. This moves the entire main
gear up 0.4, resulting in an improve
gear-fuselage juncture reducing
aerodynamic drag.

LPC #127 (48/5) A mandatory inspection
of your nylon brake lines is required
before next flight. If these brake lines
have been directly exposed to radiation
heat from the brake discs, or to
sunlight (UV), they must be replaced.

LPC #89: MEO Section I, pg 9-3. Sketch
on lower left of page shows brake line
run between the gear strut and brake
disc. This is incorrect. The brake line
must run around the inboard face of the
gear strut. This puts the strut between
the brake disc and the brake line.

LPC #128 MAIN GEAR ATTACH. Inspect with
a mirror and a flashlight to determine
if the gear attach tabs have slid aft on
the LMGA steel tube. We have received
two reports of this from Long-EZ flyers.
This is not a structural problem, but
may cause the nylon brake lines to be
pinched between the trailing edge of the
main gear strut and the fuselage side
where the gear comes out of the
fuselage.

If you find any evidence of
movement in this area, please let us
know. Pry the gear forward to its proper
position on the LMGA tube then fill the
gap between the aft attach tab and the
aft aluminum extrusion on each side with
flox. Allow to cure for 24 hours before
flying. (See drawing 48/5)

LPC #83 Section I, page 9-4. The
AN960-1018 washers called out should be
AN960-1016 and are not called out in the
bill of materials on page 2-4. Add 4
more AN960-1016 to the 2 washers called
out.

CHAPTER 10: CANARD

SEE DESCRIPTION IN CP, Pages:
28/8, 30/7 and 34/8 on Canard;
35/6 on Construction of Canard;
43/5 on cutting foam blocks;
24/4, 25/5, 30/7, 31/8, 36/6 on Hot wire;
46/9 on foam kits available;
47/8 on Lift tabs;
35/8 and 38/4 on pitch problems;
47/9 on Remount;
39/2, 42/1, 2, 43/1, 44/2, 45/3, 4
and 46/3, 7 on Roncz design;
29/8, 34/8 on Spar caps;
43/5 on Templates;

27/5 on Troughs;
44/2 on Vortilons.

LPC #44: MEO Page 10-1 step 1 paragraph two. refers to two 7 x 14 x 41 blocks (two places) change this to one block.

LPC #51: MEO Page 10-1 step 1 refers to chapter 13 for winglets, should be chapter 20.

LPC #16: MEO Page 10-2 clarification: remove the word "centerline" to places, W.L. 19.4 is correct, but is not centered on the shear web.

LPC #30: MEO page 10-3 Upper right drawing #3 holes should be 1/4".

LPC #38: MEO page 10-3 Two places, cut 12 pcs UND should be, cut 6 pcs. UND.

LPC #122: MEO New canard plans, page B top right, third paragraph down. AN2-21A bolt should be AN4-21A. Also the 2 1/2" long spacer should be 1 3/4" long.

LPC #123: MEO New canard plans, page CI right corner of the page - the dimension 64" should be 65" and the dimension 10" should be 11". The elevator lengths shown are correct and should NOT be cut down.

LPC #124: MEO New Canard Plans, page C4 shows 7 x 14 x 64 foam block. Clarification: FB-1 should be 7" x 10" x 54"; FB-2 should be 7" x 9 1/2" x 14" and FB-3 should be 4" x 7" x 54" - NOTE: Inboard cores (with spar troughs 54" long) are cut out of FB-1. Outboard cores (no troughs, 11" long) are cut from FB-2. Elevators are cut out of FB-3.

LPC #125: MEO New Canard Plans, page C4 calls out the length of the 3/16" stainless hinge pins, NC-8R as 36". This is correct. On page C, bottom right it is called out as 34", this is not correct but will work ok if you have already cut out the material.

CHAPTER 11: ELEVATORS

SEE DISCUSSION IN CP, Pages:
24/4, 30/7, 47/8, 48/3, 51/4 on Elevators;
51/6,8 on using Teflon in elevators;
48/4 on Elevator travel.

LPC #33: MEO Page 11-2 Lower left side, 3 lines up - should be 2 strips, not 3 strips.

LPC #76 Section I, page 11-5, "See detail page 5.4" should read "see detail page 11-4".

NEW ELEVATORS:

LPC #129 Long EZ Roncz 1145MS Canard Plans. The NC-2 elevator hinge inserts must be installed correctly as shown in the full size cross section drawing, page C1. The hinge pin hole should be aft as shown. (see drawing 48/6)

CHAPTER 13: NOSE AND NOSE GEAR

SEE DESCRIPTION IN CP, Pages:
51/4 on changing bolts;
51/6 on bumper material;
46/4 on Bushings;
41/5 and 42/4 on Friction dampener;
30/7 on the Gear;
36/6, 38/4 and 46/8 on Gear up warning;
32/13 on Grass Field mods;
32/2 and 34/4 on the Heater;
25/4, 49/6 on Landing Light;
46/2 on Long noses;
34/8 on Mud Flaps;
46/4 on moving brakes forward;
40/4 on Nose cones;
24/7, 29/5, 30/4, 31/4, 32/6, 33/6, 38/5, 39/9 and 41/5 on Nose Gear;
43/5 on Nose Gear chatter;
46/9 on Nose Gear cover;
50/7 on nose tire;
44/7, 46/4 on Nosewheel pivot;
34/8, 39/4, 42/4 and 46/7 on Overcentering;
39/9 on picture of construction;
30/7 on Pitot tube;
49/7 on Pivot bolt;
39/4 on Plate under bumper;
25/3 on Rough Fields;
38/4, 51/5 and 52/6 on Shimmy Dampener;
25/3,8 on Shock Struts;
42/4 on Spacer;

51/5 on Springs wearing out;
/1,35/1,39/1 on Steerable nose
wheel;
25/1 on Strut cover;
45/6 on Supplier of new struts;
26/8, 49/7 on Tie Downs;
35/7 on Custom Vents;
38/5 on Worm Gears.

LPC #27: DES For rough or grass fields
and to relieve stress on nosegear
components, install the spring
assembly (page 8 (CP25)) in place of
the NG 9/10A rod.

LPC #86: MAN/10HRS Rudder pedal
weldments. Before 10 hours of flight
the top tab welded to the rudder pedal
(see Section I page 13-3) must be
reinforced per Figure 2, page this
newsletter. Also change the full size
drawings on page 13-3 to show the top
tab per Figure 1, page this CP
(CP30).

LPC #87: Chapter 13, page 4. Change
all thickness on NG 17 to .188.
Change wire dia. of spring to .083.

LPC #23: Page 13-6 NG 31 is called out
of R45 dark blue foam, should be R100
1/4" red foam, see page 2-3 Also note
on page 2-3 that F28 can easily be cut
in one piece from the instrument panel
foam sheet.

CHAPTER 14: CENTERSECTION SPAR

SEE DISCUSSION IN CP, Pages:
49/4 on (don't use) Blue foam;
25/4,5 on Center section lay up;
51/6 on cutting Access Holes;
35/6, and 37/3 on Fuel leaks;
26/7,28/8,32/7 on Spar;
42/4 on Spruce blocks;
32/7 on fitting strakes;
32/6 on TASK Research;
39/7 on turning A/C over.

PC #26: OPT To save work and weight
substitute UND for BID on
centersection spar as shown on page 4
this (CP25) newsletter.

LPC #28: MEO Page 14-2 Step 4 Outboard
LWA 1 (sketch on left center of page)
1.0" dimension should be to outside of

CS 5 and 8, not inside. Change inside
dimension to 0.75". Be sure to
transition edges of all metal parts with
flox.

LPC #56: MAN GRD Clarification CP 25
page 6, Lower right corner. Long-EZ spar
cap thickness This box must be complied
with. Several builders have ignored
this. Do not omit this, you must have
the prescribed amount of glass in the
spar caps, in both the centersection
spar and the wings.

LPC #119: Section I, page 14-7, parts
#LWA4 and LWA5. Increase the size on 8
LWA4 from 1 1/2" x 2" to 1 3/4" x 2" and
on two LWA5 from 2" x 2" to 2 1/4" x 2".
The increase is in the vertical
dimension and is to allow more leeway
when drilling the 5/8" wing mounting
holes. Several builders have come very
close to the edge of these parts, a
couple have actually broken out.
Breaking out is cause for rejection.

LPC #99: DES Section 1, pages 14-10 &
14-11, sections E-E, F-F, G-G, & H-H.
The UND layouts #3 & #4 are incorrectly
shown to lap onto the CS7 & CS8
bulkheads. The words describing this
layout on page 14-2 are correct. Layouts
#3 & #4 are layed up onto CS2 & CS3 in
sections E-E & F-F, and only onto CS1 in
Sections G-G & H-H.

CHAPTER 15: FIREWALL AND ACCESSORIES

SEE DISCUSSION IN CP, Pages:
37/3 on Cable swaging;
26/1,27/5,31/5,32/5 on Engine Mounts;
27/5 on extrusions;
25/4 on use of Fiberfrax in Firewall;
493 on Ocean 1644.

CP37/4: "NOTE: The engine installation
plans update and supercede information
in Section I. Do not do any work aft of
the firewall without having Section IIL
in your hands. Section IIL also has lots
of information on engines which may help
you to make your selection."

LPC #47: DES Due to a probable rubbing of the rudder cable on the aileron pushrod, the left hand rudder pulley bracket should be moved up 0.6" IF you have already mounted the 3 bolts in the firewall such that you cannot make this change, you can provide cable clearance by carefully bending the rudder pulley bracket to move the pulley aft approx. 0.2". Bend as shown below. (See diagram on CP27 Pg 7)

LPC #131 MAN GRD; Modify the roll and yaw control systems between the firewall and the aluminum protective ribs at the wing roots by substituting 4130 steel or any stainless steel for all aluminum components with thicknesses less than 0.1 inches. This includes tubes, pushrods (with inserts), pulley brackets and bellcrank brackets. Apply Ocean No. 1644 Flexibilized - Intumescent Fireproof Coating Compound to the engine-side surface of the aluminum wing root shield ribs. Apply Ocean 1644 Intumescent to the aft face of the centersection spar including interior flange surfaces between the existing firewall and the wing root rib. If your Fiberfrax shield is aluminum rather than the stainless steel option, coat its aft surface with Ocean 1644 Intumescent. Inspect all fuel system plumbing and fuel system components for approved fireproof components. Substitute approved fireproof components (steel or stainless) for any aluminum components and be sure that fireproof sleeves are use on al hose componets. Any exposed aluminum tubing or fittings should be corrected with approved stainless steel or steel aircraft fittings. If your gascolator bowl is aluminum, wrap it with approved fire sleeve material similar to the hose sleeves.

CHAPTER 16: CONTROL SYSTEM

SEE DISCUSSION IN CP, Pages:
27/5 on Control rods;
31/4, 38/5 on Control Stick;
30/7 on Elevators;
49/5 and 50/5 on Fireproofing rods;
37/3 on Nicopress tool;

35/8 on Pitch control separation;
24/9, 10, 11, 38/4 on Pitch trim;
38/5, 40/7, 49/4 on Rudder cables;
30/5 on Rudder Pedals.

LPC #95: DES Section I, page 16-2, step 3, paragraph 1, last sentence. Pivot hole drilled to 23/64" (0.359). This results in an extremely tight interference fit, (0.016) and it would work better yet if you then ran a 3/8" press fit reamer (approx. 0.373) through the hole.

LPC #29: MEO page 16-3 CS119 should be 4.1" not 3.1"

LPC #40: MEO page 16-3 The AN 315-3 jamb nut shown is not supplied in the bill of materials. It is satisfactory to substitute a MS21042-3 nut. Run a 10-32 tap through the MS nut before installation.

LPC #111: MEO Page 16-4. Universal Joint CS120, should be MS20271-B10, not AN271-B10.

CHAPTER 17: ROLL/PITCH TRIM SYSTEM

SEE DISCUSSION IN CP, Pages:
34/8 on Ailerons & Elevators
Acrylic use;

38/5 on Front stick interference;
34/5 on Pitch;
35/8 on Pitch problems;
37/3 on Sanding aileron leading edge.

LPC 131 (49/6) see full text on Firewall (ch 15). Applicable here: Substitute approved fireproof components (steel or stainless) for any aluminum components
...

CHAPTER 18: CANOPY

SEE DISCUSSION IN CP, Pages:
50/3 Air vent door;
26/7, 29/4, 5 30/10, 31/1 and 40/4 on Canopy;
35/6 on Canopy construction;
25/3 on canopy latch;
36/4 on canopy, replaced;
25/9, 42/8, 46/8 and 50/3 on canopy *seal*

29/4 on cleaning canopy;
 40/7 and 42/8 on canopy vent door;
 2/6 on flight with canopy open;
 24/5 on Lock;
 45/6 on NACA vent;
 38/4 on Pour-in-place;
 30/7, 31/4 on Spraylat;
 36/7 and 40/4 on Throw over stay;
 46/8 on canopy warning.

LPC #43: MEO Page 18-7 lower right "to firewall bulkhead" should be "to aft end of canopy frame FS 117" (two places) see page 18-5

CHAPTER 19: WINGS, AILERONS/WING ATTACH

SEE DISCUSSION IN CP, Pages:
 26/7, 28/8, 31/4, 37/3, 39/7, 43/6 and 51/4 on Ailerons;
 50/4 and 51/4,8 on Aileron Hinge Kit;
 26/7, 33/6 and 35/5,6 on Antenna;
 25/10 on cap strip;
 39/7 on Drilling Wing;
 37/3 on Gluing Aileron hinges;
 39/7 on Improved bearing;
 6/7,29/8 and 41/8 on Jigs;
 6/9 on pre-cut wing foam;
 32/6 on Rivets;
 25/4,6 and 26/7 on Spar;
 29/8 and 34/8 on Spar Caps;
 25/5,26/7 on use of Spotface tool;
 39/7 on Teflon and hinge pin;
 31/9 on Strakes;
 27/5 on Troughs;
 52/5 on Vibrations(loose bolts);
 44/3,46/3,47/9,15,48/2 on Vortilons;
 48/6 on (not using) WD-40 anywhere;
 26/7, 30/7, 31/5 and 34/11 on Wing Attachment;
 28/8 on Wing edge;
 42/11 on wing jigs;
 39/6 on Wing root;
 38/5 on Wing fitting vents;
 30/7 Wiring.

LPC #32: MEO page 19-3 Last paragraph, third sentence between "at" and "12" add "the correct place at the wing top. Hot wire "0" to".

LPC #121: Long EZ high performance rudder Plans. For new construction only - install the rudder cable conduit in the wing so that the conduit is 1.5" aft of where it is shown on the full sized pattern on Plans A-12 of the large 'A' drawings supplied with Section I of the plans.

LPC #31: MEO page 19-5 Lower left paragraph, 3 plies should be 2 plies.

LPC #9: MEO Page 19-6 Step 6, 3rd line down LWA7 should be LWA2

LPC #10: MEO Page 19-6 Lower right paragraph, LWA7 should be LWA2.

LPC #11: MEO Page 19-7 Bottom right, 3 lines up, LWA7 should be LWA 2

LPC #8: MEO Page 19-8 Step 9. Second line should read "form the 0.7" rib by removing foam with a rotary file".

LPC #12: MEO Page 19-8 bottom left, 2 lines up, LWA8 should be LWA7

LPC #107 MEO Section I, page 19-8, step 10 clarification. The foot of the aileron should be cut at 90 degrees to the trailing edge along the line on the top skin to the hinge line defined by the 5.9 dimension. This cut is a vertical plane and will not pass through the point on the bottom skin that is defined by the 7.6" dimension.

LPC #2: MEO pg 19-10 Oops! We forgot to include the tie downs in the Long-EZ plans. Drill a 3/8" hole through the wings, 13" inboard along the leading edge, and 9.5" aft of the leading edge. This will assure that you do not drill through the shear web, but will be just aft of the shear web. Now floc a piece of aluminum tube into each wing, so that the tube is flush with the skin top and bottom. 3/8 O.D. x .049W 2024T3. Obtain two An4 bolts and make up a couple of removeable tie down as shown, these can be stored in the centersection spar when not in use. (SEE DRAWING CP24 Pg 6)

LPC #81: Section I, page 19-4. Section E-E. Detail A shows the rod-end bolt on the CS 132L belhorn reversed.

Anytime a rodend is cantilevered off one side of a belhorn, the bolt head must be on the belhorn side, see sketches below: (See CP30 pg. 9)

LPC #36: MEO page 19-15 page 19-16. clarification: CS127 can be made from the drawings on these two pages. Use .032" 2024T3 aluminum.

LPC #88: MEO Section I pg 19-16. Part # CS127 is made from .032" 2024T3 aluminum.

LPC #64: DES Page 19-17 Snub the aileron hinge pins per instructions in this newsletter. (CP28 Pg8)

LPC #77: Section I, page 19-18. Step 11. "Refer to chapter 6 and 7" should be "refer to pages 14-8 and 14-9."

LPC #126 MAN Vortilons on the leading edges of each main wing are mandatory. See Cp47/7,15.

CHAPTER 20: WINGLETS/RUDDERS

SEE DISCUSSION IN CP, Pages:

26/7 on Antenna;
51/4 on finishing rudders;
39/1, 40/2 on full length rudders;
50/4 and 51/6 on rudder hinges;
32/6 on Rivets;
26/7 and 42/4 on Winglets.

LPC #118 High performance rudder plans, page R-2. Top left hand corner. The sketch shows the hinge attach screws and nutplates to be on the rudder and the rivets to be on the winglet. This is in fact reversed as can be seen in Photos #23 and #24. The hinge should be permanently mounted into the rudder with rivets and the attach screws and nut plates should be in the winglet.

Clarification High performance rudder plans. The dimensions shown are what we used to mount these rudders in 3 different Long-EZs and are correct. The 39" dimension from the top of the rudder down to the "kink" in the rudder trailing edge is a reference dimension. The "kink" in the rudder varies from plane to plane. To lay out the rudders on your winglet, follow the instructions exactly as called out on Page R-1.

LPC #13: MEO Page 20-1 Step 1, 3rd line down, Add page A3 and A14

LPC #97: MEO Page A-14, lower winglet, tip template. The arrow pointing inboard is correct, the words, "this side for lt", etc. are reversed. The side shown is for the right winglet, transfer numbers to the other side for left.

LPC #6: MEO Page 20-2 Add A,B,C, dimensions:

A=102.15"

B=108.35"

C=118.35"

LPC #104: MEO Section I, page 20-2, second paragraph, "3rd ply is on the upper surface only" change "surface" to "winglet" to clarify.

LPC #90: MEO Section I, pg 20-4. Step 6, says see Section III, this should read, see page 22-3.

CHAPTER 21: STRAKES - FUEL/BAGGAGE

SEE DISCUSSION IN CP, Pages:

25/4, 28/7, 31/5 and 50/7 on Fuel Caps;
35/10, 36/4, 7, 39/2, 40/9, 43/6, 50/3 and 52/7 on Fuel Guages;
35/6, 7, 36/6, 37/3, 38/4, 7, 40/7 and 49/5, 7 on Fuel leaks;
47/12, 50/7 on Fuel pump;
24/7, 25/5, 37/3 and 40/7 on Fuel Tank;
29/3, 6, 38/5, 46/4 and 51/8 on Fuel valve;
27/9, 36/6, 47/6 and 48/3 on Fuel Vent;
46/9 on prefab strakes;
50/3, 9 on prefab strake leading edges;
30/7, 31/4, 9, 32/7, 34/8, 40/4, 7 on Strakes;
52/6 on refueling fire safety chain;
37/3 on Sump Blister leaks.

LPC #4: DES Chapter 21: See Saf-T-Poxy recommendations attached to Chapter 7 by LPC #4.

LPC #60: MEO Page 21-3. Fifth paragraph, 1/4 - 27NTP should be 1/8 - 27 NTP

LPC #102: MEO Section I, page 21-4, Step 6. Strike the 5th, 6th and 7th sentences. Substitute the following: "Glass the inside with one ply of BID. Flox in place holding with nails. (Section F-F)". Page 21-4 Step 7. After "halfway down O.D.", Insert "lapping 1" onto the forward face of the centersection spar".

LPC #84: MEO Section I, page 21-5. Step 10. We omitted to tell you to micro a urethane foam block (2 lb.ft³ green) to the 'flat' leading edges of the strakes, see page 21-7, cure, then carve to match proper leading edge contour (ribs R23, R45 and the wing). Slurry the foam and lay up two plies of UND crossing each other at 45 degrees to the leading edge of the strakes. Lap this 1/2" onto the strakes top and bottom.

LPC #96: MEO Section I, page 21-5, drawing at lower left. Material for fuel valve mounting bracket should be 0.062 2024-T3 aluminum. The fuel valve handle should be trimmed down to clear the instrument panel.

LPC #59: MEO Page 21-6, section F-F. The outside strips of UND glass, the third ply in layup #7 and #9 (shown on page 21-4) has been omitted. This should be shown on Section F-F (on the outside of the tanks, directly above layup #4 directly below #3).

LPC #1: MAN-GND pg 21-8 The Bendix fuel pump called out does not have a means of safetying the bottom cap. This is done on certified aircraft as follows: Bend the small tab shown 90° drill a #50 hole in it, safety with #32 stainless safety wire, tied to the fitting. (SEE DRAWING CP24 Pg 6)

CHAPTER 22: ELECTRICAL SYSTEM

SEE DISCUSSION IN CP, Pages:
26/11, 30/11, 31/8, 34/9,10,
37/3,4, 39/8 and 49/4 on Alternators;
26/7,29/7,30/7,33/6,35/5,6,37/4,5,
38/6,7,9,39/3,7, 40/2,3,44/4 and
46/8 on Antenna;
25/11 on Baffles;
35/10 and 36/7 on Batteries;
32/4 on Bendix Mag;
36/9 on Canopy Warning;
24/7, 26/6 and 32/2 on Compucruise;
34/8 and 37/3 on Conduit for electrics;
35/5 on Copper braid;
44/2 on F-Tech engine monitor;
36/6,9, 38/4 and 50/3 on Gear Warning;
32/2, 36/7, 34/4, 35/10 and 38/8 on
Heater;
35/11, 36/7,9 38/11, 39/9, 41/8
and 42/10 on sample instrument panels;
24/7 on Intercom;
29/8, 37/3, and 40/3 on Grounding
Instruments;
49/6 on Landing light;
32/7,46/3 on Light for panel;
51/8 on Linear Regulators;
37/3, 38/9, 39/2,7, 40/3, 46/3-5 and
50/2 on Loran C;
32/5 and 34/8 on Mag Switches;
40/8 on Radio Syst. Technology;
37/3,4 and 39/7 on Regulators;
24/7 on Santa Paula Avionics;
36/7,9, 38/4, 42/8, 50/4 and 51/9 on
Space Savers;
36/7 on Tachometers;
34/8, and 39/7 on Transponder;
30/7 on Transponder antenna;
34/8 on 28-volt system;
32/2 on Zemco Compucruise.

LPC #106: DES Section I, page 22-3, system II with alternator. The wiring diagram does not show an alternator circuit breaker between the B+ alternator terminal and the battery. This protection is very important and the circuit breaker should be sized to the maximum output of the alternator. For example a 35 amp alternator should have a 40 amp breaker.

LPC #114: Meo Page 22-3, gear and canopy warning wiring diagram. For clarification add the correct call outs for each connection to each switch, i.e. C (common), NO (normally open), NC (normally closed). See sketch CP36/9.

LPC #78: Section I, page 22-4. Antennas. Nav. antenna DES should be cut into two equal lengths from a 48" piece. Change the length to 22.8" long, not 24".

LPC #49: MEO Page 22-6 on circuit breakers, change "roll trim" to fuel pump".

LPC #98: OBS Section I, page 22-6, center drawing - delete "yaw trim bracket".

CHAPTER 23: ENGINE INSTALLATION

SEE DISCUSSION in CP, pages:

35/10, 44/8 and 50/6,9 on Air Filter;
31/5 on Aluminum Fittings;
38/9 on B & T Props;
47/10,11 on Baffling;
25/7 on Ball Joints;
32/4 on Bendix Mag;
47/12 on Breather line;
32/5 on Brock Props;
26/13 on Brock Engine Mounts;
28/7 and 49/4 on carbs;
26/4, 32/6, 34/8 and 38/4 on carb heat;
46/7 on ceramic tape;
27/5 on Continental engine;
47/10 on Cooling;
26/8, 27/5, 28/8, 34/8,11, 37/4, 37/4 and 47/5 on Cowl stiffeners;
35/6,46/4 on Cyl. Head Temp.;
46/4 on EGT;
38/5 on Engine Alignment;
42/3 on Engine cooling-cowl ramps;
26/1, 27/5, 31/5, 32/5, 46/6 and 51/3 on Engine Mount;
46/2 on Engine size;
35/6 and 52/5 on Engine Temperature;
51/5 on Exhaust systems;
46/3 on extending cowls;
27/5 on extrusions;
25/5,7, 27/11, 31/4,5,8, 34/6 and 52/5 on Exhaust;
28/8 on Exhaust Gaskets;
34/8 on Exhaust Paint;

42/4 on Exhaust tabs;
49/6 and 50/6 on Firewall fire proofing;
31/8 on Friling Alternator;
47/5 on Fuel flow guages;
46/3 on Fuel Pres;
24/6, 25/2, 26/1, 47/12, 50/7 and 51/8 on Fuel Pump;
50/3 on Fuel Pump(new);
44/7 on Fuel Pump vent;
37/4 on Great American props;
39/6 on Heat shields;
36/6 on Helicopter Balancer;
52/5 on Hose leaks;
44/3 on Larger Engine;
51/8 on Linear Regulators;
32/4,5 on Magnetos;
34/8 on Locating Mag Switch;
51/6 on Mixture control Springs;
25/2, 26/5, 27/3, 29/3, 38/8, 47/10 and 52/6 on Naca Duct;
47/11 on Oil Cooler;
47/9 on Oil Dip Stick;
32/4 on Oil Filter;
30/10 on Oil Lines;
32/7 on Oil Orifice;
46/3 on Oil Press.;
45/7 on Oil Screen;
43/6 on Oil seal;
24/4, 25/2, 26/6, 28/8, 29/2, 31/7, 32/5, 33/6, 35/9, 37/4, 38/9, 39/3, 42/5, 45/7, 46/8, 49/3 on Prop;
48/6,7 on Prop Balancing;
38/5, 41/5, 49/4, 51/5 and 52/5 on Prop Bolts;
38/5 and 40/8 on Prop Damage;
36/3 on Prop Extension;
52/7 on Prop leading edge;
44/4 on Prop Videotape;
50/3 on rocker cover seals;
37/4 on Sensenich props;
32/4 on Slick Mags;
37/5 on Solar Panels;
35/6 and 38/5 on Spark Plugs;
32/5 and 51/5 on Spinner;
49/4 and 50/3 on Starter(B & C);
46/7 on Thermeeze tape;
36/6 on Vibration.

LPC #131 MAN-GRD (see full text Ch 15-Firewall) Appropriate here: Apply Ocean 1644 Intumescent to the aft face of the centersection spar including interior flange surfaces between the existing firewall and the wing root rib...Inspect all fuel system plumbing and fuel system components for approved fireproof components.

Substitute approved fireproof components (steel or stainless) for any aluminum components and be sure that fireproof sleeves are used on all hose components. Any exposed aluminum tubing or fittings should be corrected with approved stainless steel or steel aircraft fitting. If your gascolator bowl is aluminum, wrap it with approved fire sleeve material similar to the hose sleeves.

LPC #132 MAN-GRD Inspection of engine mixture control system. Before flight, remove the cowl and remove any spring installed on the mixture control and the throttle control which is used to assist the control arms to go to the full rich positions. With the springs removed, pull the mixture control to idle cut-off and the throttle to idle, then push the levers forward and confirm that the mixture positively moves to at least the mid range (well rich of idle cut-off) and the throttle moves to at least to two-thirds power without the assistance of any spring. Then re-install springs and put the aircraft back in service.

CHAPTER 24: COVERS/FAIRINGS/CONSOLES

SEE DISCUSSION IN CP, Pages:
31/8,10 and 33/6 on consoles;
27/3 on Gear Inspection panel;
29/4 on Lettering;
34/8 on Mud Flaps;
38/4 on Side Consoles;
36/7 on Space Saver Panel;
26/10 on Strut failures re: wheel pants;
28/10,34/6, 36/7 and 44/7 on Wheel Pants;
27/5 and 32/6 on Zoletone Paint.

LPC #54: MEO Page 24-1, Step 1, 3rd paragraph, glass with one ply of BID.

CHAPTER 25: FINISHING

SEE DISCUSSION IN CP Pages:
5/3 on use of Bondo;
28/5 on care of composites;
29/2 on not using colored paint;
28/9 on a dust cover;
36/9 on Instrument panels;

41/4 on Paint;
42/4 on Paint flaking;
26/7 on paint thinner;
29/5 on placards;
35/7 and 41/4 on Primer;
35/7 on Spray painting;
31/4 on Stirling;
45/4,5 on Summary of Finishes; 37/3 on Testing for fuel leaks before finishing;
39/3 on Weight and Balancing.

CHAPTER 26: UPHOLSTRY

SEE DISCUSSION IN CP, Pages:
30/11 on Seat Cushions;
25/9 on Upholstry plans.
LPC #39: MEO page 26-1 "VariEze canopy (Chapter 22)" should be "Long-EZ canopy (Chapter 10)"

APPENDIX : DRAWINGS 18" X 24"

[Duplicate here; you will find the LPC set out in the appropriate chapter].

LPC #46: OPT (A1,2,3 and Chap.4) Revise F28 bulhead by moving the longeron notch down 0.25". This raises F28, for better fit to canopy.

LPC #22: MEO Page A-3 correction: Hole for gear retract drive tube should be 1" to the right of C_L.

LPC #19: MEO Page A4 engine mount extrusions "Chapter 6" should be "Chapter 14", 2 places.

LPC #48: DES Firewall, page A4. Increase size of firewall at top as shown to assure adequate height to fit cowl. (See drawing on CP27/7)

LPC #20: MEO Page A5 clarification: The 15 BID pad for the aft gear attach angle should stop at W.L. 12.35 (Don't glass above 12.35)(Chap 5.)

LPC #58: MEO Page A5. On the main gear mounting pads bottom of page, two places shows only 1 ply. Should be 15 plies of BID.

LPC #80: "A" drawings, page A-5. 2" x 2" x 1/4" aluminum ext. shown full size page 18-3, should be page 9-3.

LPC #85: MEO "A" drawings, page A5, to right "shown full size, page 18.3" should be "page 9-3".

LPC #97: MEO Page A-14, lower winglet, tip template. The arrow pointing inboard is correct, the words, "this side for lt", etc. are reversed. The side shown is for the right winglet, transfer numbers to the other side for left.

BACK COVER:

LPC #7: MEO Back cover of plans, wing root leading edge should be 113.9", not 113.4"

LPC #24: MEO Back cover - Nose gear C_L is at W.L. -22 not -23.

IIL: ENGINE INSTALLATION LYCOMING

46/7 on Lyc Exh. Cover gaskets.
51/7 on articles of use to maintain Lycs.

CP37/4: "NOTE: The engine installation plans update and supercede information in Section I. Do not do any work aft of the firewall without having Section IIL in your hands. Section IIL also has lots of information on engines, which may help you to make your selection."

LPC #120 Section IIL, Page 6, paragraph 2. There should be 4 AN509-10R8 screws in each top attach point. LPC #100, CP32, page 7 incorrectly called this out as 3 screws.

SEE DISCUSSION IN CP, Pages:

- 27/5 on estrusions;
- 32/5 on Engine Mounts;
- 43/6 on oil seals;
- 31/8 on Fuel System.