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COZY MKIV SECOND EDITION PLANS CHANGES/CORRECTIONS Plans S/N 500 onward

(Some plans with serial numbers close to 500 may in fact still be First Edition plans. If you have one of these, even if the S/N is greater than 500, use the First Edition Plans Changes/Corrections for updating your plans. Thanks to Rick Wright for pointing out this anomaly.)



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Bill of Materials:

SECTION I:

- Remove 2" x 4" x .063 aluminum shown on Wicks material list.
- Page 1, Foam: Wicks advises, the 4 sheets of 1/4" PVC foam needed in Chapters 4, 13, and 14 is no longer available in the sheet size shown. Replace with 29-1/2" x 43-1/4" which can be shipped UPS. The smaller size provides enough material for the necessary parts and will result in less waste.
- Page 2, and p. 4, (Chap. 13, hardware): Add (2) AN5268R14 screws for the nose gear

crank bearing on the instrument panel.

- Page 2, Misc: Change FC100-2 to FC100 002.
- Page 3, (Chap. 9, Metal): Change 4 pieces of .063 x 1.25 x 1.25 aluminum angle, to 1 piece of .063 x 1.25 x 1.25 x 4". It is needed to make the LB-18 brackets.
- Page 4, Add (2) AN5268R14 screws for the nose gear crank bearing on the instrument panel.

SECTION II:

- Preference Page 2, (MISC): Change (10) MM-3 rodends to (10) HM-4 rodends.
- Preference Page 3, (Chap. 16, Hardware): Change (10) MM-3 rodends to (10) HM-4 rodends.

CHAPTER 4: Fuselage Bulkheads

- Page 1, Fig. 2. Change .65" to .75" to get a 45 degree angle

CHAPTER 5: Fuselage Sides:

- Page 3, Step 3: 2 1/2" wide tape not necessary. OK to use 2" wide.

CHAPTER 6: Fuselage Assembly:

- Page 4, Fig. 18: Change 24-5/8" to 24-7/8" to agree with Fig. 15.

CHAPTER 7: Fuselage Exterior:

- Page 2, Step 2, 4th sentence, add after: back to the firewall, "except remove all the foam on the outside of the upper longeron and LWY starting at a point 5.5 inches forward of the firewall, and taper the foam down to where it is removed along the longeron and LWY so the glass will conform (refer to M-7 and M-8)".
- Page 4, Step 4, para. 2, change last sentence to read: "From this point the curvature gradually transitions to DD just ahead of the center section spar cut-out".

CHAPTER 8: Shoulder Support/Seat Belts

- Page 1, in Fig. 1, change 14 to 13 and change 15 to 14.
 - Page 2, Add 3 additional layers of UND 4" wide x 13" long over each attach point, starting 2" forward of the shoulder support on the seat back, extending over the shoulder supports, and then around the back of the seat back.
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CHAPTER 9: Main Gear/Landing Brake

- Material list for Chapter 9, change 4 pieces of .063 x 1.25 x 1.25 aluminum angle should have been 1 piece of .063 x 1.25 x 1.25 x 4". It is needed to make the LB-18 brackets.
 - The 8" x 12" x .063" aluminum was intended to make heat shields, placed between the axle and strut to shield the strut from red hot brake discs.
 - Page 9, para 3: Change 1/2" square to 5/8" square, to agree with Fig. 50.
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CHAPTER 10: Canard

- Page 1, change, the canard span (not including tips) from 147" to 141".
 - Page 2, Fig. 17: Delete W.L. 19.4.
 - Page 4, fig. 26, the outboard jigs for aligning the canard sections are shown at 71" from center. They will have to be moved inboard slightly. 69" from center is suggested.
 - Page 4, last paragraph of Step 2: Add a note that AN960-416L is preferred. Add a note on M-11 to use a washer (416L preferred) under lift tab bolts.
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CHAPTER 11: Elevators

- Page 3, On NC-3, change 2.3" to 2.0".
 - Page 6, Step 4: Change BSC 44 to BSPQ- 44.
 - Page 7: Disregard the "L" jig shown in Figs. 17&18. Use the "L" jig shown on M-18. Using this jig will insure that you get a full 15 degrees of up-travel of the elevator.
 - Page 7, first paragraph: The jig block "L" on drawing M-18 has been revised in the Second Edition Plans to install the elevators at 15 deg trailing edge up, and ZERO gap. Then when the elevators are in trail, as shown in Fig. 18, the gap will be 0.2".
-

CHAPTER 13: Nose/Nose Gear:

- Page 7, The instructions for installing the canard to the fuselage call for riveting K1000-4 nutplates to a 3/4" x 1-1/4" piece of 0.063" aluminum, while drawing M-11 calls for the nutplate to be riveted to an AN 970-4 wide area washer. Both methods are equally satisfactory.
- Page 10, Fig. 43: In the early 90's, the clamp plate MKNG-2 was changed from a flat aluminum plate to a hat-shaped .090 steel plate, so the nose wheel would be able to swivel 360 degrees, but Fig. 43 was never updated to show this change.

At a somewhat later date, the MKNG-15A casting was changed to make the ears longer and stronger, but again Fig. 43 was not revised.

- Page 10, Step 8: After reference to Fig. 43, add the following:

WARNING: Over-tightening the four bolts clamping MKNG-15A to the strut will stress the ears of the casting and reduce the safety factor on load carrying ability. Snug the bolts only as much as necessary to hold the assembly together while the flox cures. A limit of 10 in.-lbs. is suggested. Fill in the space between the casting and the clamp plate with flox to provide additional bonding to the strut.

- Page 12: Change referenced Dwg. M-17 to M-19.

NOTE: It is recommended that builders drill a 3/16" hole through the side of MKNG-15 and strut and install an AN-3 bolt of the proper length and nut to prevent the MKNG-15A assembly from coming loose from the strut and departing the aircraft in the event of nose wheel.

NOTE: It will help make the MKNG-15A assembly attachment more secure to dimple the strut and fitting before floxing the fitting in place.

CHAPTER14: Center Section Spar

- Page 3: Both steps 7 & 8 instruct you to install LWA2 and LWA3. You need only install them once.
- Page 4, Step 10, 4th para., change 2nd sentence to read: "When everything is perfect, lay up a 5 ply BID tape spar to LWY, inside and out, both sides, as shown on M-8, and a 5 ply BID tape spar to longeron, inside and out, both sides as shown on M-7".
- Page 5, shows a bulkhead installed at the centerline of the center section spar, but this bulkhead is not shown on Page 7. Make and install this bulkhead similar to bulkheads 6 & 7. One inch diameter holes may be cut in the bulkheads for routing electrical wires and

co-ax cables through center section spar.

- Page 8. Change 8.41 to 8.51, and 8.50 to 8.60

CHAPTER 16: Control System

- Page 1, SCHEDULE A – PREFAB PARTS: Change CS-50 from AN-3 rodend insert to AN-4 rodend insert.
- Page 2, COZY STICK ASSEMBLY – CZSA (2 REQ'D): Change CS-50 from drill and tap 10-32 to drill and tap 1/4-28 AN-3 rodend insert to AN-4 rodend insert.
- Page 2, The plans show the bearings for the aileron torque tubes inside the fuselage, CS 108 and CS 115, to be made from 1/4" thick phenolic. These are quite acceptable; however, inexpensive bearings FMN10 may be substituted, in which case the holes in bearing blocks CS-109 and CS-118 must be relocated and enlarged to accept AN-4 bolts.
- Page 4, Change view G-G from MM-3 to HM-4, and all related AN-3 hardware to AN-4 hardware.
- Page 7, Step 6, 3rd line: Change to read "no more than 4.5" at bottom".

NOTE: Change any reference to MM-3 rodends in text or drawings to HM-4 rodends.

CHAPTER 18: Canopy

- Page 5, para. 3: Delete relocating screws per design change in NL #39.
- Page 8, Fig. 45, Change 5.5" to 4.5" aft of the instrument panel to keep from having interference with the canopy latch.
- Page 9, top of Fig. 51) Connect the two 2-1/2" pads (for the latch and safety catch, together, and widen the pads (Section A-A from 1.6" to 2.0") to make the location of the screws less critical.

CHAPTER 19: Wings/Ailerons/Attach

- Page 14, The plans show the bearings in the wing rib for the aileron torque tubes to be made from 1/4" thick phenolic. These are quite acceptable, however, inexpensive bearings FMN10 may be substituted, in which case they must be floxed and glassed in place.
- Page 14: Change A11 to A13 in sections I-I, H-H, and J-J.
- Page 16: Change nut AN4-16A bolt from MS21042-3 to MS21042-4.
- Page 17: Change A13 from 3/8" to 7/16" steel rod.

CHAPTER 20: Winglets & Rudders

- Page 6, View B-B, upper right. Change BL 157 to BL 169

CHAPTER 21: Strakes/Fuel/Baggage

- Page 2: Fuel tank capacity is 26-30 gal. per side, depending upon how built.
- Page 5, para. 2: 4th line. Where it says to assemble the parts with micro, use flox.

CHAPTER 23: Engine Installation

- Page 2, Fig. 3 and Step 7 text: Change MS21042-7 to NAS1291-7 (new designation for small profile nut).
- Page 4, 3rd para. and Fig. 18: Change 1 ply BID to 4 plies BID to agree with drwg. M-7, Section BB.
- Page 6, Step 4, after the 1st para. add this: "If the pipes are not tightly supported going through the rear baffle (zero clearance), they can shake, fatigue, break, and go through the prop. For insurance against this, bind together both pipes on each side with a stainless worm hose clamp on the engine side of the baffle".
- Page 9, Change AN3-10A to AN3-4 or 5A.
- Page 10, Fig. 40: Add a note that the baffle shown for cylinder #4 is upside down.
- Page 13, Step 9: Ellison throttle body installation, Fig. 54 shows the throttle in the correct position but it should be labeled B rather than A, to agree with Ellison's schematic. Also, we have been advised by Cablecraft that for aircraft applications, the cable designation should be #580-700-109. Please make these changes.
- Page 15, the mounting hole should be 11/32" rather than 9/32", and the 1.06" radius should be increased to approx. 1.27".

CHAPTER 26: Upholstery

- Page 1, Delete the reference to upholstery kits available from Alexander Aircraft.

DRAWING CHANGES:

- M-7: Where upper longeron and doubler penetrate firewall, doubler is shown as 1" wide, when it should have been shown as .75" wide.
- M-7: Change washer call out under engine mount bolt head from AN960-616 to AN970-6.
- M-8 calls for 5 plies BID reinforcement over the lower engine mount hard point. Change this to 2 plies BID and 3 plies UND to agree with Chap. 7, p.5, Fig. 24.
- M-8, sec. E-E: Change to "select height so cable misses pushrods and leads in to CS 72. This height should be approx. 1-7/8".
- M-13: Shows incorrectly the landing brake attached to LB-23 with AN3 bolts rather than the AN525 screws and aluminum slugs specified in Chap. 9.
- M-25: Delete jig board sketch lower left, and write: See Fig. 5, Chap. 21, p. 4.
- M-25: Re-dimension the isometric drawing lower left corner to agree with Chap. 21, p4, Fig. 5.

MANDATORY CHANGES:

- Move the shoulder attach points closer together so that they are no farther apart than 8.5". This will require installing new hard points, same procedure as shown in the plans. The bolts may just clear the headrest, but the triangular harness brackets will not, so it will be necessary to notch the forward corners at the base of the headrest to provide the necessary clearance for the brackets.
- As explained in the aft c.g. flight test report, the canard span shown in the plans is too long and will allow the main wing to be stalled at a c.g. of 101.6 and beyond. This is unacceptable! The span must be shortened by 6" (3" at each tip). In Chap. 11, p.2, shorten the 11" outboard section of the canard to 8". This will put the counterweight recess adjacent to the tip. Also, remove 3" from the outboard end of the elevator. It will then be at B.L. 70.4 and the counterweight will be flush with the end of the elevator. After making this change on our plans model, we were no longer able to stall the main wing with the c.g. as far aft as 103.2. After this change is made, the approved c.g. operating range will be 97.5" to 102. 1", which provides a safety factor at both ends of the range. This design change is mandatory!
- If you have an exhaust system with a heat muff welded on to #4 pipe, ground your airplane until you replace it with a new #4 pipe with a heat muff that is clamped on.
- On drawing M-32 and M-33 indicate that the aft baffles should be reinforced locally with 1/8" aluminum (instead of .032) where they are cut out for the exhaust pipes, and the cut-outs for the pipes should be a .875" radius for tight fit around 1.75" pipes, and the two exhaust pipe baffles shown on M-33 should be similarly dimensioned and made from 1/8" aluminum. Add a note that each pair of pipes should be clamped together or wired together with safety wire ahead of the aft baffle to prevent any relative movement. Your airplane should be grounded until these changes are made.

MISCELLANEOUS CHANGES:

- Discrepancies in Section II, Preface, P. 1, Table of contents: Change Chap. 4 from 9 to 4 pages, Chap. 16 from 7 to 8, Chap. 18 from 17 to 18, and Chap. 23 from 21 to 22 pages. Sorry for the confusion.
- On the back covers of both Section I and Section II, change the canard tip leading edge B.L. 75.5 to B.L. 72.5, and the canard tip trailing edge B.L. 78.5 to B.L. 75.5. In the Owners Manual, the dimensions are correct.
- The recommended nicopress sleeve to use on SS (stainless steel) cable is zinc plated, 28-1-C, NOT copper, 18-1-C. Change the bill of materials for Chapter 16, where they are used on the rudder cables, and Chapter 17, where used on the roll trim. Beware, hardware stores carry aluminum sleeves. They are a no, no!
- The control system rod end insert, have undergone an evolution since they were first designed by Burt in 1976 for the Varieze. The CS-1 insert was originally aluminum with a .427 OD to fit inside .035 wall tubing and drilled and tapped for AN3 rod ends.

When Varieze and Long EZ builders were accidentally bending the AN3 rod ends while removing and installing their canards, a change was made to the AN4 rod ends, for the elevator push rods, requiring the CS-1A insert, which was drilled and taped for 1/4 x 28.

Then, after a Long EZ experienced compartment were change to .5 OD x .028 wall steel and the CS-1 insert was changed to a .441 OD for .028 wall tubing with a new designation, CS-50. But the wall steel tubing is almost impossible to obtain, so the OD will probably be changed back to .427. We are dealing with two different wall thicknesses, each with a tolerance of +/- 10%, so some fit problems may occur.

The optimum angle of incidence for the Roncz canard is the angle that puts the elevators in trail (0 degrees) or slightly reflexed in cruise at a mid c.g. But a number of builders have reported that they have carefully set their canard incidence-using template F on M-17, and yet their elevators are 3 or more degrees trailing edge down at cruises with a mid c.g. Apparently the template F on drawing M-17 does not produce the recommended result, so it has been modified as shown to the right. Please copy this new template and paste it over the old template F on drawing M-17. If you are satisfied with the way your airplane performs, it is not necessary for you to change. But new builders should use this new template.

The elevator travel-checking template G on drawing M-18 has been modified to agree with the new template F described above and is shown on the next page of this newsletter, 80-3. Please copy this new template and paste it over the old template G on drawing M-18.

The nose gear LST shock strut assembly shown on Chap 13, p.3, is exactly as designed by RAF for the Long EZ and as supplied by Brock Mfg. The LST strut shown on drawing M-10 is not correct, because it is 1/2" shorter. We don't know how this happened. There is enough

adjustment, however, so ½” longer should not cause a problem.

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