TORNADO II

DESIGNED AND DRAWN BY PAUL PLECAN

SCRAPS OF 3/32" SHEET TO RAISE L.E. UP OFF BUILDING BOARD OR WORKBENCH

L.E.- 1/8" X 3/8" STRIPS (2) LAMINATED. MUCH BETTER THAN 1/4" SQ. ON 1946 PLANS (THINNER STOCK BENDS EASIER TO MATCH CURVE SHOWN)

1/8" SHEET SCRAPS

SPAR PATTERN (MAKE 2 OF FIRM, STRAIGHT-GRAINED 1/8" BALSA SHEET

'GOLDEN BEE' SIZE

'BABE BEE' SIZE

DIHEDRAL JOINER - 1/16" HARD BALSA SHEET OR 1/32" PLYWOOD. 2 REQ.

W1, W2, W3 & W4 ALL CUT FROM 3/16" SHEET

TRAILING EDGE SHOULD BE RAISED PROGRESSIVELY FROM RIB 'G' TOWARDS TIP TO OBTAIN SLIGHT "WASH-OUT"

DOUBLER "B" RIBS OPTIONAL - (WING RESTS ON MOUNTS AT THOSE TWO POINTS)

WRAP WITH FINE WIRE & SOLDER

L G STRUT BENDING PATTERN - 1/16" MUSIC WIRE

WING STRUT BRACES - .040" OR .050" MUSIC WIRE

REAR STRUT IS 5/32" SHORTER

STABILIZER SPAR - FIRM 1/8" BALSA SHEET

TYPICAL WING RIB SECTIONS

RIB 'L'

RIB 'N'

RIB 'J'

WING RIB TEMPLATE (1/16" PLY OR .032"/.050" DURAL)

WING RIBS ARE CUT "INDOOR" STYLE USING THE TEMPLATE. CUT TOP CAMBER CURVE IN 3/32" MED. BALSA SHEET. LOWER TEMPLATE 3/32". REPEAT CUT 27 MORE TIMES. INVERT TEMPLATE, CUT 27 BOTTOM RIB CAMBER STRIPS.

WHEN CUTTING RIBS, KEEP LEFT EDGE OF TEMPLATE FLUSH WITH LEFT EDGE OF BALSA SHEET

TRIM THIS LAST

(HALF-SIZE DETAIL)

SOLID RIBS 'B' TO 'N' - 2 OF EACH REQ. ONLY 1 OF 'A'

TYPICAL RIB (BUILT-UP TYPE)

FUSELAGE CROSS BRACES (MED. 3/16" SQ.)

STATIONS 1 TO 5 REQ.)

2 OF EACH

1/8" SQ

1/8" SHEET

3/32" SQ

1/16" SHEET

1/8" SHEET

POSITION RIB 'B' ON WING MOUNT AS SHOWN BEFORE GLIDING OR FLYING MODEL (ALSO SEE SHEET 2, COLUMN 6)

FOR EASIER ACCESS TO NEEDLE VALVE, SOLDER A 1" WIRE EXTENDER TO N/V USE .040" DIA MUSIC WIRE, BENT AS SHOWN

PINE OR VERY HARD BALSA

WING MOUNTS - 1/8" X 1/4" X 7-5/8" PINE

BALANCE POINT

FILL IN BETWEEN STRINGERS WITH SCRAP 3/32" SAND FLUSH, THEN CUT OUT COCKPIT OPENING

BALSA BLOCK HEADREST

WING STRUT BRACES

1S

1T

2T

3T

4T

5T

HOT AIR OUTLET (BOTH SIDES)

COWL CHEEK PIECES - 1/4" BALSA SHEET

CP1

CP2

OUTLINE SHOWN FOR COX 'GOLDEN BEE' .049 WITH 2630 MUFFLER. FOR 'BABE-BEE', CUT 1/4" OFF REAR OF SIDE COWLS

AN INVERTED ENGINE LOOKS BEST IN THIS DESIGN TO INVERT COX 'BEE' 049S. LOOSEN 4 TANK-ATTACHMENT BOLTS AND ROTATE TANK 180° RELATIVE TO ENGINE. RE-TIGHTEN 4 BOLTS. MOUNT ENGINE ON EMD/F1 ASSEMBLY

ALL 3/16" SQ BALSA

STATION NUMBERS

1 2 3 4 5 6 7 8 9 10

TOP REF.

1A 1B 2B 3B 4B 5B 6B

BOTTOM VIEW

SOFT 1/4" SHEET (BOTH SIDES) BLENDS RUDDER INTO FUSELAGE SHAPE

3/32" SQ STRINGERS (MEDIUM HARD BALSA)

TYPICAL FUSELAGE CROSS SECTION (AT STATION 2 OR 3)

TO CLARIFY FUSELAGE CONSTRUCTION, ONLY THE TOP AND BOTTOM CENTER STRINGERS ARE SHOWN IN SIDE VIEW

AS VIEWED FROM SIDE, TOP LONGERON IS STRAIGHT

L.E.- 3/32" X 3/16" BALSA (2 PIECES) LAMINATED. SEE NOTE REGARDING WING L E. AT TOP OF THIS PLAN

OPTIONAL 1/4" SHEET FILLERS BETWEEN CP1 COWL CHEEK PIECES, TOP AND BOTTOM OF COWLING

FIREWALL (F1) 1/8" PLY

CUT THESE SEGMENTS UNDERSIZE ON ONE '1T' FOR 'FILL-IN' AT FRONT OF COCKPIT

1T (3 REQ.) - 3/32" SHEET

1S (1 REQ.) 3/16" SHEET

3T

4T

2T 3/32" SHEET

5T

3T-4T-5T - 3/32" SHEET

6B

1A & 1B

2B

3B

4B

5B

1A (1 REQ.) 3/16" SHEET

1B (4 REQ.) 3/32" SHEET

2B TO 6B - ALL 3/32" MEDIUM SHEET

POSITION OF EMD (ENGINE MOUNT DOUBLER) ON F1 (FIREWALL) - EPOXIED TOGETHER

S1, S2 & S3 ALL CUT FROM 1/8" SHEET

S1 S2 S3

R

S

T

O-P&Q

TRIM TO FIT

ALL STABILIZER RIBS ('O' TO 'T') CUT FROM MEDIUM 3/32" SHEET

EMD - 1/8" PLY

WHEN MOUNTING ENGINE USE BLIND MOUNT NUTS BEHIND EMD/F1 UNIT

FOR PRACTICAL PURPOSES COX .049 SHOWN. ORIGINAL "TORNADO" POWERED BY BANTAM '14' (NO ERROR - THE 19 CU IN CAME LATER).

— NOTE —

IT IS BEST TO EPOXY BOTH L G STRUT AND AND FIREWALL ASSEMBLY (EMD/F1) AT THE SAME TIME (WORK L G STRUT INTO POSITION AND HAVE FIREWALL FLUSH WITH FUSELAGE FRAMEWORK). SECURE WITH PINS, ALLOW SUFFICIENT TIME FOR THE EPOXY TO CURE THOROUGHLY. ADD COWL PARTS AND SAND

SHEET ONE -- DOUBLE PLAN PACKET NO. ONE

ORIGINALLY PUBLISHED IN MODEL AIRPLANE NEWS OF APRIL 1946 - REDRAWN AND RENAMED AS TORNADO II BY PAUL PLECAN