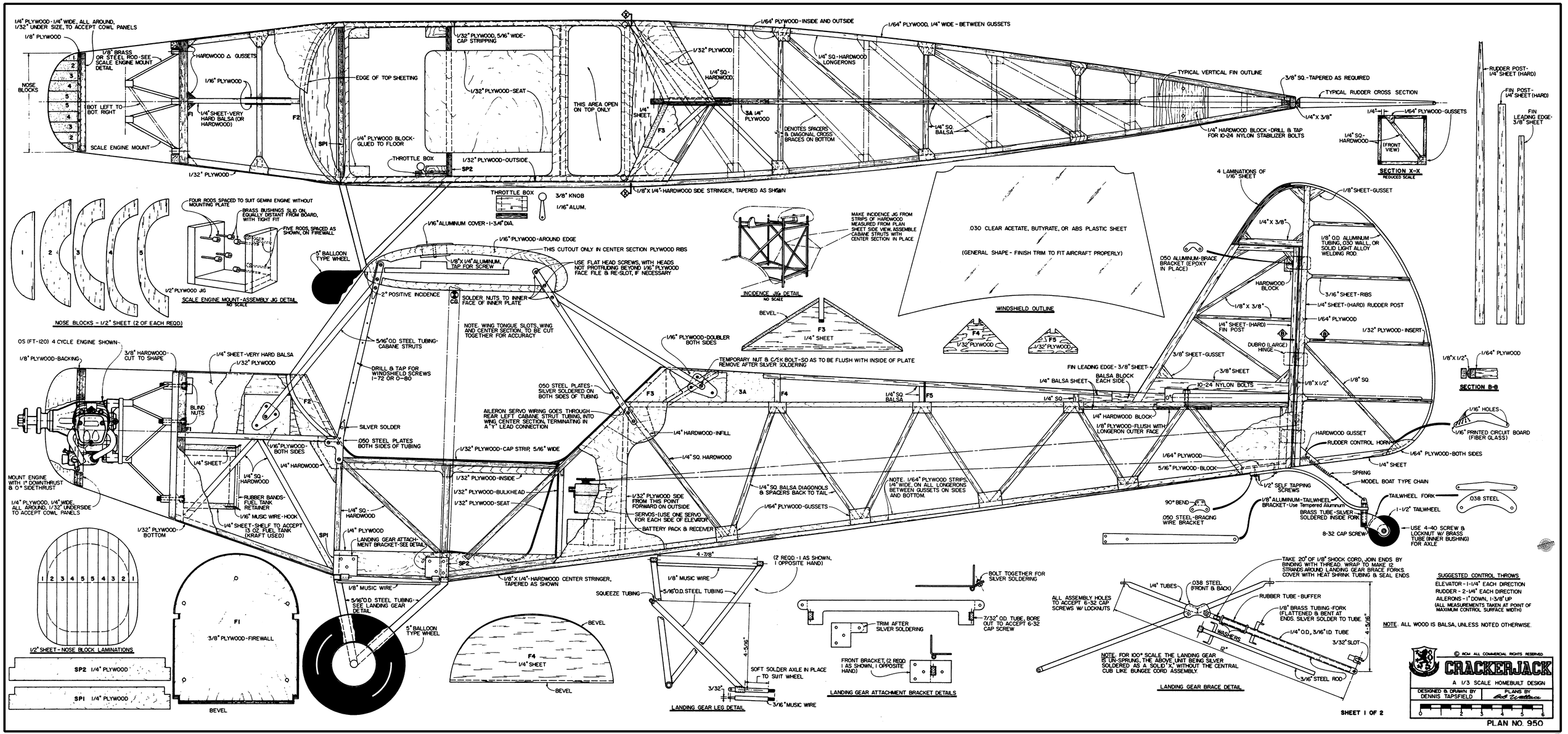
1/4" PLYWOOD-1/4" WIDE, ALL AROUND, 1/32" UNDER SIZE, TO ACCEPT COWL PANELS
1/8" PLYWOOD
1/8" BRASS OR STEEL ROD-SEE SCALE ENGINE MOUNT DETAIL
HARDWOOD Δ GUSSETS
1/16" PLYWOOD
NOSE BLOCKS
BOT LEFT TO BOT. RIGHT
1/4" SHEET-VERY HARD BALSA (OR HARDWOOD)
SCALE ENGINE MOUNT
EDGE OF TOP SHEETING
1/32" PLYWOOD-SEAT
1/4" PLYWOOD BLOCK-GLUED TO FLOOR
THROTTLE BOX
1/32" PLYWOOD-OUTSIDE
1/32" PLYWOOD
1/32" PLYWOOD, 5/16" WIDE-CAP STRIPPING
THIS AREA OPEN ON TOP ONLY
1/64" PLYWOOD-INSIDE AND OUTSIDE
1/64" PLYWOOD, 1/4" WIDE-BETWEEN GUSSETS
1/32" PLYWOOD
1/4" SQ.-HARDWOOD LONGERONS
1/4" SQ.-HARDWOOD
1/4" SHEET
3A 1/4" PLYWOOD
DENOTES SPACERS & DIAGONAL CROSS BRACES ON BOTTOM
1/4" SQ BALSA
TYPICAL VERTICAL FIN OUTLINE
3/8" SQ.-TAPERED AS REQUIRED
TYPICAL RUDDER CROSS SECTION
1/4" X 3/8"
1/4" HARDWOOD BLOCK-DRILL & TAP FOR 10-24 NYLON STABILIZER BOLTS
1/8" X 1/4"-HARDWOOD SIDE STRINGER, TAPERED AS SHOWN
1/4" SQ.-HARDWOOD
1/64" PLYWOOD-GUSSETS
(FRONT VIEW)
SECTION X-X
REDUCED SCALE
RUDDER POST-1/4" SHEET (HARD)
FIN POST-1/4" SHEET (HARD)
FIN LEADING EDGE-3/8" SHEET
THROTTLE BOX
3/8" KNOB
1/16" ALUM.
1/16" ALUMINUM COVER-1-3/4" DIA.
1/16" PLYWOOD-AROUND EDGE
THIS CUTOUT ONLY IN CENTER SECTION PLYWOOD RIBS
1/8" X 1/4" ALUMINUM, TAP FOR SCREW
USE FLAT HEAD SCREWS, WITH HEADS NOT PROTRUDING BEYOND 1/16" PLYWOOD FACE FILE & RE-SLOT, IF NECESSARY
5" BALLOON TYPE WHEEL
2° POSITIVE INCIDENCE
SOLDER NUTS TO INNER FACE OF INNER PLATE
NOTE, WING TONGUE SLOTS, WING AND CENTER SECTION, TO BE CUT TOGETHER FOR ACCURACY
5/16" O.D. STEEL TUBING-CABANE STRUTS
DRILL & TAP FOR WINDSHIELD SCREWS 1-72 OR 0-80
FOUR RODS SPACED TO SUIT GEMINI ENGINE WITHOUT MOUNTING PLATE
BRASS BUSHINGS SLID ON, EQUALLY DISTANT FROM BOARD, WITH TIGHT FIT
FIVE RODS SPACED AS SHOWN, ON FIREWALL
1/2" PLYWOOD JIG
SCALE ENGINE MOUNT-ASSEMBLY JIG DETAIL
NO SCALE
NOSE BLOCKS - 1/2" SHEET (2 OF EACH REQD)
MAKE INCIDENCE JIG FROM STRIPS OF HARDWOOD MEASURED FROM PLAN SHEET SIDE VIEW. ASSEMBLE CABANE STRUTS WITH CENTER SECTION IN PLACE
INCIDENCE JIG DETAIL
NO SCALE
.030 CLEAR ACETATE, BUTYRATE, OR ABS PLASTIC SHEET
(GENERAL SHAPE - FINISH TRIM TO FIT AIRCRAFT PROPERLY)
WINDSHIELD OUTLINE
BEVEL
F3
1/4" SHEET
F4
1/32" PLYWOOD
F5
1/32" PLYWOOD
4 LAMINATIONS OF 1/16" SHEET
1/8" SHEET-GUSSET
1/4" X 3/8"
1/8" O.D. ALUMINUM TUBING, .030 WALL, OR SOLID LIGHT ALLOY WELDING ROD
.050 ALUMINUM-BRACE BRACKET (EPOXY IN PLACE)
HARDWOOD BLOCK
3/16" SHEET-RIBS
1/8" X 3/8"
1/4" SHEET-(HARD) RUDDER POST
1/64" PLYWOOD
1/4" SHEET-(HARD) FIN POST
1/32" PLYWOOD-INSERT
DUBRO (LARGE) HINGE
3/8" SHEET-GUSSET
3/8" SHEET
FIN LEADING EDGE-3/8" SHEET
1/4" BALSA SHEET
BALSA BLOCK EACH SIDE
10-24 NYLON BOLTS
1/8" X 1/2"
1/8" SQ.
1/64" PLYWOOD
SECTION B-B
1/16" HOLES
1/16" PRINTED CIRCUIT BOARD (FIBER GLASS)
HARDWOOD GUSSET
RUDDER CONTROL HORN
1/64" PLYWOOD-BOTH SIDES
1/4" SHEET
SPRING
MODEL BOAT TYPE CHAIN
1/2" SELF TAPPING SCREWS
1/8" ALUMINUM-TAILWHEEL BRACKET-Use Tempered Aluminum
BRASS TUBE-SILVER SOLDERED INSIDE FORK
TAILWHEEL FORK
.038 STEEL
1-1/2" TAILWHEEL
8-32 CAP SCREW
USE 4-40 SCREW & LOCKNUT W/ BRASS TUBE (INNER BUSHING) FOR AXLE
90° BEND
.050 STEEL-BRACING WIRE BRACKET
1/4" SQ.
1/4" HARDWOOD BLOCK
1/8" PLYWOOD-FLUSH WITH LONGERON OUTER FACE
5/16" PLYWOOD-BLOCK
OS (FT-120) 4 CYCLE ENGINE SHOWN
1/8" PLYWOOD-BACKING
3/8" HARDWOOD-CUT TO SHAPE
1/4" SHEET-VERY HARD BALSA
1/32" PLYWOOD
BLIND NUTS
SILVER SOLDER
.050 STEEL PLATES BOTH SIDES OF TUBING
1/16" PLYWOOD-BOTH SIDES
1/4" SHEET
1/4" HARDWOOD
1/4" SQ.-HARDWOOD
MOUNT ENGINE WITH 1" DOWNTHRUST & 0° SIDETHRUST
1/4" PLYWOOD, 1/4" WIDE, ALL AROUND, 1/32" UNDERSIDE TO ACCEPT COWL PANELS
RUBBER BANDS-FUEL TANK RETAINER
1/16" MUSIC WIRE-HOOK
1/32" PLYWOOD-BOTTOM
1/4" SHEET-SHELF TO ACCEPT 13 OZ. FUEL TANK (KRAFT USED)
1/4" PLYWOOD
LANDING GEAR ATTACHMENT BRACKET-SEE DETAIL
1/32" PLYWOOD-CAP STRIP, 5/16" WIDE
1/32" PLYWOOD-INSIDE
1/32" PLYWOOD-BULKHEAD
1/32" PLYWOOD-SEAT
1/8" X 1/4"-HARDWOOD CENTER STRINGER, TAPERED AS SHOWN
.050 STEEL PLATES-SILVER SOLDERED ON BOTH SIDES OF TUBING
AILERON SERVO WIRING GOES THROUGH REAR LEFT CABANE STRUT TUBING, INTO WING CENTER SECTION, TERMINATING IN A "Y" LEAD CONNECTION
1/16" PLYWOOD-DOUBLER BOTH SIDES
TEMPORARY NUT & C/SK BOLT-SO AS TO BE FLUSH WITH INSIDE OF PLATE REMOVE AFTER SILVER SOLDERING
1/4" HARDWOOD-INFILL
1/4" SQ. HARDWOOD
1/32" PLYWOOD SIDE FROM THIS POINT FORWARD ON OUTSIDE
SERVOS-USE ONE SERVO FOR EACH SIDE OF ELEVATOR
BATTERY PACK & RECEIVER
1/4" SQ. BALSA DIAGONALS & SPACERS BACK TO TAIL
1/64" PLYWOOD-GUSSETS
NOTE, 1/64" PLYWOOD STRIPS, 1/4" WIDE, ON ALL LONGERONS BETWEEN GUSSETS ON SIDES AND BOTTOM.
1/2" SHEET-NOSE BLOCK LAMINATIONS
SP2 1/4" PLYWOOD
SP1 1/4" PLYWOOD
3/8" PLYWOOD-FIREWALL
BEVEL
5" BALLOON TYPE WHEEL
5/16" O.D. STEEL TUBING-SEE LANDING GEAR DETAIL
1/8" MUSIC WIRE
4-7/8"
(2 REQD - 1 AS SHOWN, 1 OPPOSITE HAND)
SQUEEZE TUBING
5/16" O.D. STEEL TUBING
4-5/16"
SOFT SOLDER AXLE IN PLACE TO SUIT WHEEL
3/32"
3/16" MUSIC WIRE
LANDING GEAR LEG DETAIL
BOLT TOGETHER FOR SILVER SOLDERING
TRIM AFTER SILVER SOLDERING
7/32" O.D. TUBE, BORE OUT TO ACCEPT 6-32 CAP SCREW
FRONT BRACKET, (2 REQD 1 AS SHOWN, 1 OPPOSITE HAND)
LANDING GEAR ATTACHMENT BRACKET DETAILS
TAKE 20" OF 1/8" SHOCK CORD, JOIN ENDS BY BINDING WITH THREAD. WRAP TO MAKE 12 STRANDS AROUND LANDING GEAR BRACE FORKS. COVER WITH HEAT SHRINK TUBING & SEAL ENDS
ALL ASSEMBLY HOLES TO ACCEPT 6-32 CAP SCREWS W/ LOCKNUTS
1/4" TUBES
.038 STEEL (FRONT & BACK)
RUBBER TUBE-BUFFER
1/8" BRASS TUBING-FORK (FLATTENED & BENT AT ENDS. SILVER SOLDER TO TUBE
WASHERS
1/4" O.D., 3/16" I.D. TUBE
3/32" SLOT
4-5/16"
12"
3/16" STEEL ROD
NOTE, FOR 100% SCALE THE LANDING GEAR IS UN-SPRUNG, THE ABOVE UNIT BEING SILVER SOLDERED AS A SOLID "X", WITHOUT THE CENTRAL CUB LIKE BUNGEE CORD ASSEMBLY.
LANDING GEAR BRACE DETAIL
SUGGESTED CONTROL THROWS
ELEVATOR - 1-1/4" EACH DIRECTION
RUDDER - 2-1/4" EACH DIRECTION
AILERONS - 1" DOWN, 1-3/8" UP
(ALL MEASUREMENTS TAKEN AT POINT OF MAXIMUM CONTROL SURFACE WIDTH)
NOTE. ALL WOOD IS BALSA, UNLESS NOTED OTHERWISE.
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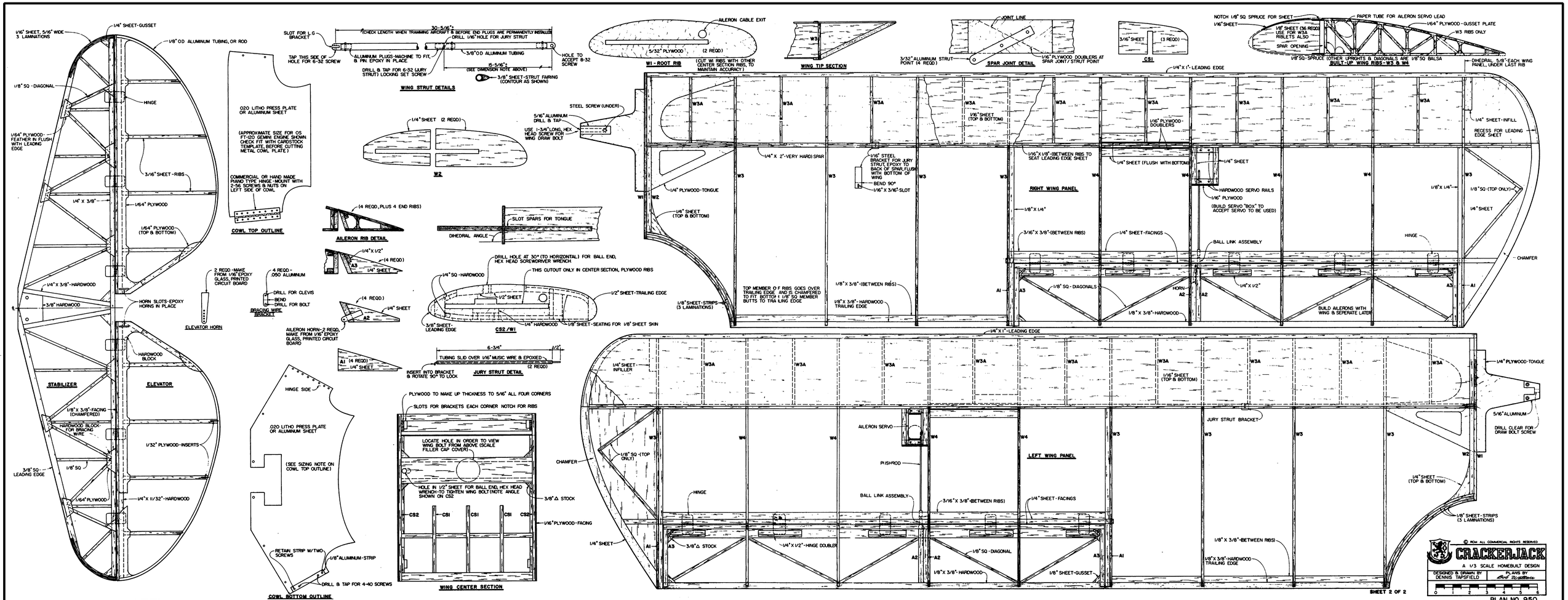
CRACKERJACK
A 1/3 SCALE HOMEBUILT DESIGN
DESIGNED & DRAWN BY DENNIS TAPSFIELD
PLANS BY Bob Carlisle
0 1 2 3 4 5 6
SHEET 1 OF 2
PLAN NO. 950


1/16" SHEET, 5/16" WIDE 3 LAMINATIONS
1/4" SHEET-GUSSET
1/8" OD ALUMINUM TUBING, OR ROD
1/8" SQ - DIAGONAL
HINGE
1/64" PLYWOOD-FEATHER IN FLUSH WITH LEADING EDGE
3/16" SHEET-RIBS
1/4" X 3/8"
1/64" PLYWOOD
1/64" PLYWOOD (TOP & BOTTOM)
1/4" X 3/8"-HARDWOOD
3/8" HARDWOOD
HORN SLOTS-EPOXY HORNS IN PLACE
ELEVATOR HORN
HARDWOOD BLOCK
STABILIZER
ELEVATOR
1/8" X 3/8"-FACING (CHAMFERED)
HARDWOOD BLOCK-FOR BRACING WIRE
1/32" PLYWOOD-INSERTS
3/8" SQ - LEADING EDGE
1/8" SQ
1/64" PLYWOOD
1/4" X 11/32"-HARDWOOD
30-5/16"±
CHECK LENGTH WHEN TRIMMING AIRCRAFT & BEFORE END PLUGS ARE PERMANENTLY INSTALLED
SLOT FOR 1 G BRACKET
DRILL 1/16" HOLE FOR JURY STRUT
TAP THIS SIDE OF HOLE FOR 6-32 SCREW
ALUMINUM PLUGS-MACHINE TO FIT, & PIN EPOXY IN PLACE
3/8" OD ALUMINUM TUBING
HOLE TO ACCEPT 8-32 SCREW
DRILL & TAP FOR 6-32 (JURY STRUT) LOCKING SET SCREW
15-5/16"± (SEE DIMENSION NOTE ABOVE)
3/8" SHEET-STRUT FAIRING (CONTOUR AS SHOWN)
WING STRUT DETAILS
020 LITHO PRESS PLATE OR ALUMINUM SHEET
(APPROXIMATE SIZE FOR OS FT-120 GEMINI ENGINE SHOWN. CHECK FIT WITH CARDSTOCK TEMPLATE, BEFORE CUTTING METAL COWL PLATE.)
COMMERCIAL OR HAND MADE PIANO TYPE HINGE-MOUNT WITH 2-56 SCREWS & NUTS ON LEFT SIDE OF COWL.
COWL TOP OUTLINE
1/4" SHEET (2 REQD)
W2
(4 REQD, PLUS 4 END RIBS)
AILERON RIB DETAIL
1/4" X 1/2"
A3
(4 REQD)
1/4" SHEET
2 REQD-MAKE FROM 1/16" EPOXY GLASS, PRINTED CIRCUIT BOARD
4 REQD-.050 ALUMINUM
DRILL FOR CLEVIS
BEND
DRILL FOR BOLT
BRACING WIRE BRACKET
(4 REQD.)
A2
1/4" SHEET
AILERON HORN-2 REQD. MAKE FROM 1/16" EPOXY GLASS, PRINTED CIRCUIT BOARD
A1 (4 REQD)
1/4" SHEET
HINGE SIDE
020 LITHO PRESS PLATE OR ALUMINUM SHEET
(SEE SIZING NOTE ON COWL TOP OUTLINE)
RETAIN STRIP W/TWO SCREWS
1/8" ALUMINUM-STRIP
DRILL & TAP FOR 4-40 SCREWS
COWL BOTTOM OUTLINE
SLOT SPARS FOR TONGUE
DIHEDRAL ANGLE
DRILL HOLE AT 30° (TO HORIZONTAL) FOR BALL END, HEX HEAD SCREWDRIVER WRENCH
THIS CUTOUT ONLY IN CENTER SECTION, PLYWOOD RIBS
1/4" SQ - HARDWOOD
1/2" SHEET
1/2" SHEET-TRAILING EDGE
3/8" SHEET-LEADING EDGE
1/4" HARDWOOD
1/8" SHEET-SEATING FOR 1/8" SHEET SKIN
CS2/W1
6-3/4"
1/2"
TUBING SLID OVER 1/16" MUSIC WIRE & EPOXIED
(2 REQD)
INSERT INTO BRACKET & ROTATE 90° TO LOCK
JURY STRUT DETAIL
PLYWOOD TO MAKE UP THICKNESS TO 5/16" ALL FOUR CORNERS
SLOTS FOR BRACKETS EACH CORNER NOTCH FOR RIBS
LOCATE HOLE IN ORDER TO VIEW WING BOLT FROM ABOVE (SCALE FILLER CAP COVER)
HOLE IN 1/2" SHEET FOR BALL END, HEX HEAD WRENCH-TO TIGHTEN WING BOLT (NOTE ANGLE SHOWN ON CS2)
CS2 CS1 CS1 CS1 CS2
3/8" Δ STOCK
1/16" PLYWOOD-FACING
WING CENTER SECTION
AILERON CABLE EXIT
5/32" PLYWOOD
(2 REQD.)
(CUT W1 RIBS WITH OTHER CENTER SECTION RIBS, TO MAINTAIN ACCURACY)
W1-ROOT RIB
W3
WING TIP SECTION
JOINT LINE
3/32" ALUMINUM STRUT POINT (4 REQD.)
1/16" PLYWOOD DOUBLERS AT SPAR JOINT/STRUT POINT
SPAR JOINT DETAIL
3/16" SHEET
(3 REQD)
CS1
NOTCH 1/8" SQ SPRUCE FOR SHEET
1/16" SHEET
PAPER TUBE FOR AILERON SERVO LEAD
1/64" PLYWOOD-GUSSET PLATE
1/8" SHEET (36 REQD) USE FOR W3A RIBLETS ALSO
W3 RIBS ONLY
SPAR OPENING
1/8" SQ-SPRUCE (OTHER UPRIGHTS & DIAGONALS ARE 1/8" SQ BALSA)
BUILT-UP WING RIBS-W3 & W4
DIHEDRAL 5/8"-EACH WING PANEL, UNDER LAST RIB
1/4" X 1"-LEADING EDGE
W3A
1/16" SHEET (TOP & BOTTOM)
1/16" PLYWOOD-DOUBLERS
1/4" SHEET-INFILL
RECESS FOR LEADING EDGE SHEET
STEEL SCREW (UNDER)
5/16" ALUMINUM DRILL & TAP
USE 1-3/4" LONG, HEX HEAD SCREW FOR WING DRAW BOLT
1/4" X 2"-VERY HARD SPAR
1/16" STEEL BRACKET FOR JURY STRUT, EPOXY TO BACK OF SPAR, FLUSH WITH BOTTOM OF WING
BEND 90°
1/16" X 3/16" SLOT
1/4" PLYWOOD-TONGUE
1/4" SHEET (TOP & BOTTOM)
W1 W2 W3 W4
1/16" X 1/8"-(BETWEEN RIBS TO SEAT LEADING EDGE SHEET
1/4" SHEET (FLUSH WITH BOTTOM)
1/4" SHEET
RIGHT WING PANEL
HARDWOOD SERVO RAILS
1/16" PLYWOOD
(BUILD SERVO "BOX" TO ACCEPT SERVO TO BE USED)
1/8" X 1/4"
1/8" SQ (TOP ONLY)
1/4" SHEET
1/8" X 1/4"
3/16" X 3/8"-(BETWEEN RIBS)
1/4" SHEET-FACINGS
BALL LINK ASSEMBLY
HINGE
CHAMFER
A1 A2 A3
1/8" SQ - DIAGONALS
HORN
1/4" X 1/2"
1/8" X 3/8"-HARDWOOD
BUILD AILERONS WITH WING & SEPERATE LATER
TOP MEMBER O F RIBS GOES OVER TRAILING EDGE AND IS CHAMFERED TO FIT BOTTOM 1/8" SQ MEMBER BUTTS TO TRAILING EDGE
1/8" X 3/8"-(BETWEEN RIBS)
1/8" X 3/8"-HARDWOOD TRAILING EDGE
1/8" SHEET-STRIPS (3 LAMINATIONS)
1/4" X 1"-LEADING EDGE
1/4" SHEET-INFILLER
1/16" SHEET (TOP & BOTTOM)
1/4" PLYWOOD-TONGUE
JURY STRUT BRACKET
5/16" ALUMINUM
DRILL CLEAR FOR DRAW BOLT SCREW
AILERON SERVO
PUSHROD
1/8" SQ (TOP ONLY)
CHAMFER
LEFT WING PANEL
HINGE
BALL LINK ASSEMBLY
3/16" X 3/8"-(BETWEEN RIBS)
1/4" SHEET-FACINGS
1/4" SHEET (TOP & BOTTOM)
1/8" SHEET-STRIPS (3 LAMINATIONS)
1/4" SHEET
A1 A2 A3
3/8" Δ STOCK
1/4" X 1/2"-HINGE DOUBLER
1/8" SQ - DIAGONAL
1/8" X 3/8"-HARDWOOD
1/8" SHEET-GUSSET
1/8" X 3/8"-(BETWEEN RIBS)
1/8" X 3/8"-HARDWOOD TRAILING EDGE
W1 W2 W3 W4
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CRACKERJACK
A 1/3 SCALE HOMEBUILT DESIGN
DESIGNED & DRAWN BY DENNIS TAPSFIELD
PLANS BY
0 1 2 3 4 5 6
SHEET 2 OF 2
PLAN NO. 950