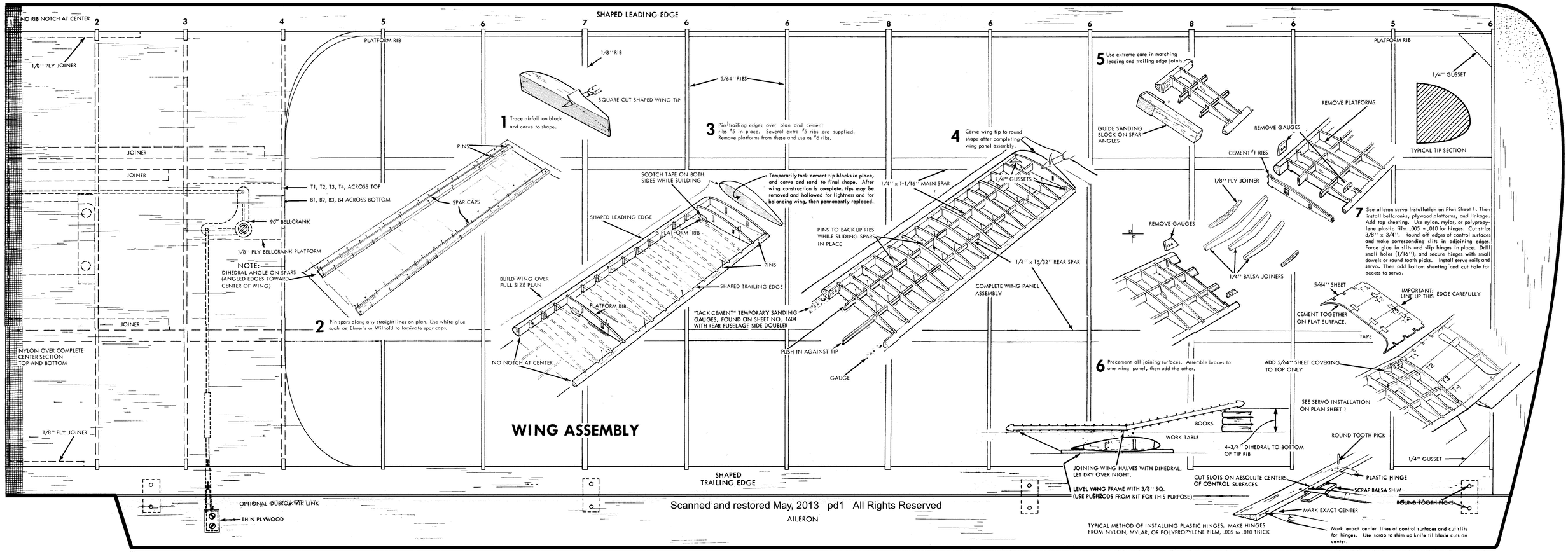
SR. FALCON
FOR RADIO CONTROL ON 10-CHANNELS OR PROPORTIONAL
KIT G16 FOR .35 TO .45 ENGINES
SHEET 1 OF 2
Designed and drawn by:
SPAN: 69''
LENGTH: 53''
AREA: 810 SQ. IN.
WEIGHT: 6 1/4 LBS.
ORIGINAL MODELS BUILT AND FLOWN BY— ROBERT FABIAN AND ALDON ANNIS
R/C TECHNICAL CONSULTANT— JOHN WISNIEWSKI
CARL GOLDBERG MODELS INC.
CHICAGO, ILLINOIS
COLOR SCHEME
ALL SURFACES WHITE, RED TRIM, BLACK STRIPING
PLATFORM RIB
1/4'' GUSSET
ANTENNA
AILERON SERVO
RECEIVER
BATTERY BOX
ELEVATOR TRIM SERVO
ELEVATOR SERVO
RUDDER SERVO
ENGINE SERVO
CHARGING JACK
COMMON PLUG WIRING DIAGRAM
MULTIPLE PLUG WIRING DIAGRAM
THIS TERMINAL CONNECTS TO CENTER SPRING OF JACK
THIS TERMINAL CONNECTS TO FRAME OF JACK
NOTE: COVER ALL WIRE SOLDER JOINTS WITH PLASTIC TUBING OR LIQUID RUBBER TO PREVENT BREAKAGE FROM VIBRATION FATIGUE
ON
OFF
TO BATTERIES
BLACK GREEN WHITE RED
COLORS SHOWN ARE TYPICAL
BATTERIES CAN BE CHARGED ONLY WITH SWITCHES IN OFF POSITION.
TO PLUG SOCKET FOR RECEIVER
SWITCH WIRING DIAGRAM FOR CHARGING BATTERIES PREVENTS ACCIDENTALLY CONNECTING THE CHARGER TO THE RECEIVER—USE DOUBLE POLE DOUBLE THROW SWITCHES
PLASTIC HINGE
BLIND NUTS
B1 B2 B3 B4
1/8'' PLY AILERON BELLCRANK PLATFORM.
3/8'' SQ. SERVO RAILS (CARVE TO SHAPE)
AILERON SERVO INSTALLATION
Carve servo rails to shape. Drill holes and mount servo, then cement rails to top sheeting and ribs. When dry, servo may be removed.
90° BELLCRANK
1/8'' PLY BELLCRANK PLATFORM
HOLE FOR PUSHROD IN BOTTOM SHEETING
JOINER
1/8'' PLY JOINER
NO NOTCH AT CENTER
BELLCRANK PLATFORM
CUT HOLE FOR PUSHROD
CUT HOLE FOR PUSHROD IN BOTTOM SHEETING
PUSHROD
YOUR REPORTS WANTED
Though much thought has gone into our design and testing program, we still will appreciate your help. In building and flying your model, you may come across problems or desirable improvements. Please write us -- long or short, simple or elaborate, we will read your letter carefully and with interest.
Also, we'd like to hear about any contests you or your friends may win with the Senior Falcon. Will appreciate all details. Thank you, and good luck!
FRONT VIEW OF WING
CARVE AWAY CENTER RIB TO CLEAR SERVO
3/8'' SQ. SERVO RAIL (PIECE LEFT FROM PUSHROD)
BLIND NUT
BIND AND SOLDER
1/16'' WIRE
SERVO
3-5/8" MAX.
AILERON SERVO OPENING
TO RUDDER
TO NOSE WHEEL
OPTIONAL METHOD FOR REDUCING NOSE GEAR TRAVEL USING DUBRO KWIK LINK AND TB-2 TRIM BAR
1/8'' PLY SERVO BOARD
Assemble servo board as shown using short screws down the center and longer ones along the edges. This method permits removal of entire servo board as a unit for use in another airplane.
LEAVE 1/8" LEDGE FOR CEMENTING
Proportional R/C equipment may require that metal-to-metal contacts in the model be eliminated or bonded to prevent electrical "noise" created through vibration. This can be done through use of nylon connectors, spaghetti (thin wall plastic tubing) over wire, or bonding by soldering a piece of stranded wire to each pair of connecting metal parts. Use a piece of tape to keep the main gear struts from touching one another.
NOSE GEAR TRAVEL REDUCER
BEND ON DOTTED LINES
7/64" HOLE
4-40 SCREW & NUT
Cut pattern from plan or trace on paper and paste on .040-.045 thick sheet steel. Cut and drill, then bend to shape.
SR. FALCON
INSTALL RUDDER HORN ON RIGHT SIDE
USE FUEL TUBING KEEPERS ON ALL KWIK LINKS.
CEMENT TAIL IN PLACE
AFTER COVERING AND PUSHROD INSTALLATION
1/16'' -- 5/64'' WIRE SKID (OPTIONAL)
1/4'' FORMER
1/16'' PLYWOOD
TRIM TO SHAPE
1/4'' RAILS
5/16'' TRIANGLE
1/8'' TOP
1 Assemble hatch parts as shown. Trim triangles and top to match contour of side rails.
CUT ON SCORE MARKS.
2 Cement rear portion of hatch to wing. When dry, use a razor saw to cut along score marks in side rails. Carve and sand to rough shape.
1/8'' FORMER
1/2'' TRIANGLE FILLER
3 Cement rear hatch former in place and add 1/2" triangle filler in hollow at center of wing.
4 Hold hatch securely with rubber bands or tape. Drill 1/8" dia. holes (#31 drill preferred) through fuselage sides and 1/16" ply as shown.
INSTALL 1/8'' DOWEL
5 Remove hatch and carefully cut 1/16" ply to shape seen in side view below. Make a fine slit with a razor saw so ply acts as a spring. Care and patience here will result in a simple, effective hold down.
HATCH ASSEMBLY
TANK MODIFICATIONS
Recommended: Leakage can be eliminated and filling improved. Cut brass tubes to length, heat red hot, allow to cool, then bend to shape. Obtain #2 rubber laboratory stopper from hobby, drug, or chemical supply store. Drill holes and add tubes. Three tubes allow filling without disconnecting pick-up tube from engine. 8 oz. tank can be used after cutting neck off at circular bead, and flattening top slightly by pressing it on the bottom of a shallow pan of boiling water until soft. Then press on flat surface until it cools and holds its flattened shape.
CUT 8 OZ. TANK HERE
VECO .45 R/C ENGINE SHOWN. OTHERS MAY BE USED SUCH AS K & B, FOX, SUPER TIGRE, O. S. MAX., MERCO, ETC. AVERAGE FLYERS SHOULD USE ENGINES OF .35 - .45 DISPLACEMENT; EXPERT FLYERS MAY PREFER UP TO .60s.
FILLER TUBE
NOTE: USE PLASTIC RUBBER SUCH AS DURO LIQUID RUBBER, OR GE BATHTUB SEAL, TO SEAL SLOT IN FIREWALL AROUND FUEL TUBES.
PAINT INSIDE RAISED BEAD BLACK
OPTIONAL PILOT FIGURE
BACKREST
SCRAP 1/8" BALSA BACKREST
3/8'' SQ. AILERON SERVO RAILS CARVE TO RIB CONTOUR
AILERON SERVO
1/8'' DOWEL
CARVE PLYWOOD TO THIS SHAPE AFTER DRILLING 1/8'' HOLES (SEE STEP #5 ABOVE)
1/16'' PLYWOOD HOLD-DOWN
RECESS BEARERS TO CLEAR BLIND NUTS
7/32'' PLY BREAKAWAY RAILS ONE SPARE SET SUPPLIED
5/16 DOWEL
BALANCE POINT 4-3/4" TO LEADING EDGE OF WING
After finishing, apply liquid rubber along edges of radio compartment. Wrap saran film around wing, (to prevent sticking) and hold in place with rubber bands until dry.
CARVE TO THIS SHAPE AT CENTER SECTION FOR EASY SLIDE OUT
5/16'' TRIANGLE
5/16'' DOWEL
BIND WITH THREAD AND CEMENT (BOTH ENDS)
SWITCHES AND JACK ON RIGHT SIDE
6 OZ. CLUNK TANK
1/16'' I.D. TUBING
OPTIONAL DUBRO KWIK KEEPER
SOLDER
EYELET
NOSE GEAR BEARING
SCRAP BRACES
LAMINATED BULKHEAD
5/16'' TRIANGLE STRIPS
CARVE OUT TO CLEAR ENGINE
BLIND NUTS
4-40 MACH. SCREWS 3/4'' LONG
7/32'' PLYWOOD FIREWALL
OPTIONAL DUBRO BATTERY PACK #6SP OR #6PC
RECEIVER
1/8'' PLY LANDING GEAR BRACES STAGGERED 5/32" TO COMPENSATE FOR WIRE THICKNESS
USE 3/64'' WIRE FOR NOSE GEAR AND ENGINE THROTTLE LINKAGE
1/16'' WIRE
3/8'' SQ. PUSHRODS
1/8'' BRACE
Make all joints with high grade model airplane cement or white glue such as Elmer's or Wilhold. For broad areas, "Contact Cements" (such as Borden's, Wilhold, Weldwood, etc.) save time. Avoid water-soluble types. Follow manufacturers instructions. Try on scrap balsa. Use tissue paper to prevent contact until parts are perfectly positioned.
2'' DIA. SPINNER
RECOMMENDED HARDWARE NOT SUPPLIED IS NOTED THRUOUT PLAN
OIL DRAIN HOLE
COIL ACTS AS STEEL LANDING SKID IN HARD TOUCHDOWNS ON CONCRETE
1/4'' BALSA
SURROUND RECEIVER WITH SPONGE
1/16'' SCRAP SHIM
1/8'' PLYWOOD
1/8'' BALSA
1/4'' SERVO RAIL
1/8'' PLY SERVO BOARD
11-6 PROP
SOLDER EYELET IN LOOP OF SPRING STEERING ARM BEFORE INSTALLATION
SPRING STEERING ARM SOLDER TO NOSE GEAR WIRE
SLOT FOR TANK TUBES
NOSE GEAR WITH SPRING STEERING ARM TO PREVENT DAMAGE TO SERVO
ADD BULKHEAD AND 1/8'' SCRAP BRACES
ADD 5/16'' TRIANGLES
EQUIPMENT USED
F & M MIDAS REC. -- MATADOR TRANS. BONNER TRANSMITE SERVOS
KRAFT 10 CHANNEL REC. AND TRANS. WITH BONNER TRANSMITE SERVOS.
KLINETRONIC PROPORTIONAL REC. AND TRANS. WITH ACCUTRONICS TRIO AND SOLO SERVOS
NOSE WHEEL BRAKE
Various brakes may be used, either commercial or drag-type. Connect to servo to operate when down elevator or down trim is applied. Use bellcrank or curved tube to reverse direction of actuating line. Electric brakes also may be used.
OPTIONAL: MAKE BREAK - AWAY RAILS OF LINEN BASE PHENOLIC - NEED NO FINISHING. BE SURE TO FINISH PLY BREAK—AWAY RAILS WITH FIBERGLASS RESIN OR ENAMEL.
OPTIONAL 2-3/4'' DUBRO AIRWHEEL
8-32 NUT
WASHER
7/32'' PLYWOOD FIREWALL
CUT NOTCHES IN FIREWALL AND BULKHEADS 3 & 4 FOR PUSHROD TUBES
LAMINATED BULKHEAD GOES BEHIND NOSE GEAR
DRILL HOLES AND INSTALL NOSE GEAR BEARING
1/4'' BOTTOM NOSE SHEETING
1/8'' BOTTOM NOSE SHEETING
MASKING TAPE
1/8'' PLYWOOD
1 Cement parts shown on flat surface. Drill firewall and fasten nose gear bearing with washers and 8-32 nuts supplied.
1/8'' PLYWOOD LANDING GEAR MOUNT ASSEMBLY (SHOWN FROM UNDERNEATH)
1/8'' BRACE
5/16'' TRIANGLE ON REAR.
1/16'' BRACES
NOTE BRACES ON REAR
NOTE: USE MASKING OR FREEZER TAPE TO HOLD PARTS TOGETHER WHILE DRYING
1/8'' STAB PLATFORM
FUSELAGE BOTTOM
DISCARD EXTRA PARTS
TORSION TYPE FORMED MAIN GEAR STAGGERED 5/32"
OPTIONAL 3'' DUBRO AIRWHEELS
FUSELAGE ASSEMBLY
1/16'' DOUBLER
APPLY WEIGHTS SUCH AS BOOKS ON LAMINATED AREAS
5/64'' DOUBLERS
1/8'' PLYWOOD DOUBLERS
MAKE ONE LEFT SIDE AND ONE RIGHT SIDE
NOTCH FOR NO. 4
PRECEMENT
TACK CEMENT BREAK-AWAY PLATE IN PLACE
TAPER BEARERS BEFORE INSTALLING
2 Glue doublers and bearers to sides using white glue such as Elmer's or Wilhold.
1/4'' SHEET TANK SUPPORT CARVE TO SUIT
7/32'' PLY FIREWALL (NOSE GEAR BEARING ON REAR)
3 Assemble sides to formers. Add 1/4" sheet tank supports. IMPORTANT: Proceed immediately with step 4. Use breakaway plate as temporary alignment jig until step 5.
TRIM EXCESS LENGTH
FUSELAGE BOTTOM
ADD 1/4'' AND 1/8'' BOTTOM NOSE SHEETING
1/8'' PLY MAIN GEAR MOUNT "R" MUST FACE REAR
"F" MUST FACE FRONT
FUSELAGE TOP
4 Cement bottom rear sheeting in place. Add fuselage top and 1/4" bottom nose sheeting. Do not cement stab platform in place until pushrods are installed. When dry, drill 1/8" holes through breakaway plate and bearers, and install blind nuts.
1/8'' STAB PLATFORM
USE 1/2'' ROUND FILE OR RASP TO CUT OIL DRAIN
USE BREAKAWAY PLATE TO MARK CORRECT TAPER ON NOSE BLOCK
1/8'' PLY NOSE FORMER
1/8'' FILLERS.
5/16'' TRIANGLES
5 Use breakaway plate to mark correct taper on nose block. Cut to shape. Use 1/2" round rasp or file to cut oil drain. Cement in place. Cut (razor saw) plate on score marks, and discard rear portion. Bolt engine to breakaway rails and fit in place as described above.
TIP ENGINE, LOWER INTO PLACE AGAINST FIREWALL, THEN SLIDE FORWARD TO FINAL POSITION
RAIL FROM BREAKAWAY PLATE
1/8'' PLY LANDING GEAR BRACES
INSERT MAIN GEAR WIRE AND WHITE GLUE LANDING GEAR BRACES TO FUSELAGE SIDES
SHEET METAL SCREWS
STRAPS
6 Temporarily install main gear (then remove for covering, etc.). Hold in place with metal straps and small screws. Carve and sand fuselage to final shape. After wing and fuselage are complete proceed with hatch construction.
TO RUDDER
TO ELEVATOR
TOGGLE SWITCHES
3/8" x 1/2" BIRCH ENGINE BEARERS - TAPER AS SHOWN
1/8'' DOWEL
HATCH
1/4'' REAR TANK SUPPORTS CARVE TO SUIT
TANK
STEERING ARM
SURROUND RECEIVER WITH SPONGE
ELEV. TRIM
ELEVATOR
THROTTLE
RUDDER
USE 1° RIGHT THRUST - ABOUT 3/16'' DIFFERENCE IN DISTANCE FROM PROPELLER TIPS (HORIZONTAL) TO REAR OF FIN.



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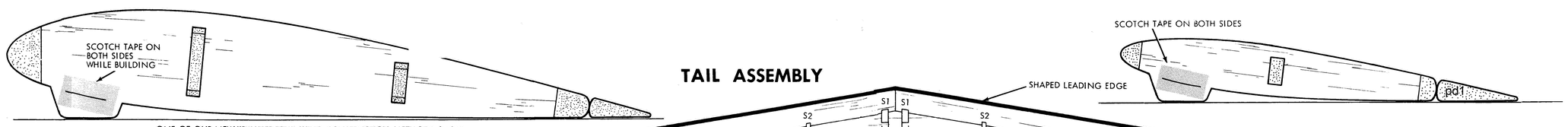
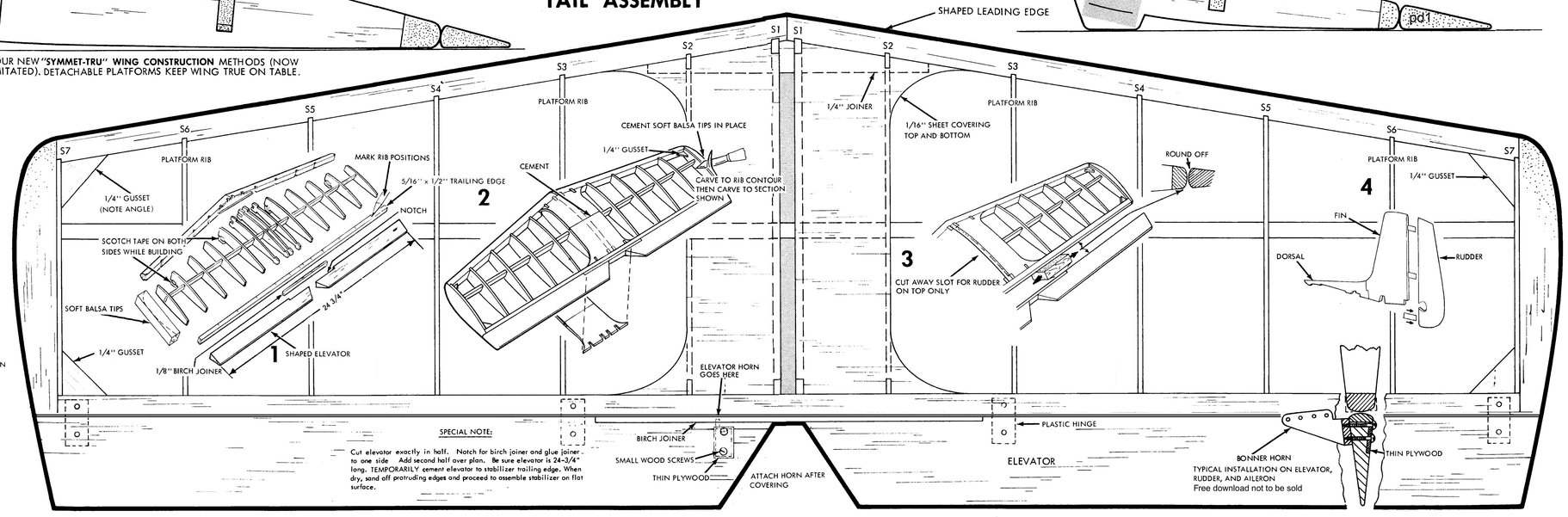
AILERON



ONE OF OUR NEW "SYMMET-TRU" WING CONSTRUCTION METHODS (NOW WIDELY IMITATED). DETACHABLE PLATFORMS KEEP WING TRUE ON TABLE.

TAIL ASSEMBLY



SR. FALCON

SHEET 2 OF 2

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PROCEDURE

Pre-cement all highly stressed points, such as wing center joints, engine mount and landing gear joints, and joints of sheet balsa fuselage.

The proper technique is as follows: Coat both joining areas with cement, rub into the wood surface and let dry. Next coat these areas generously with cement and join using light clamping, or applying weights on laminated areas. We recommend you use only high grade model cement for most joints, and white glue (Elmer's, Wilhold, etc.) for laminating fuselage doublers.

COVERING

1. Silk is an excellent all purpose covering for R/C models of this size. However, nylon and heavy grades of model paper may also be used.

2. The best adhesive is clear nitrate dope, but clear butyrate dope will do, although it dries slower.

3. All surfaces, whether sheet balsa or framework, should be covered. Use the following procedure:

a. Sand all surfaces to a smooth contour and finish.

b. Give entire structure two coats of clear dope, full strength. Sand each coat lightly when dry using very fine sandpaper. This seals structure and makes covering easier.

c. Cut silk slightly oversize, allowing an extra inch at all sides to help in handling. Cut 4 pieces for wing, 5 for fuselage (2 for top), and 2 each for rudder and stabilizer. Wet one piece and lay gently in place, pulling out all wrinkles. Apply dope over silk in a band about 1/2" wide along the short edge (on the wing this would be at the root). Gently rub this dope through silk with thumb or finger. Stretch silk moderately over structure, working out all wrinkles. If silk begins to dry before you're finished, apply more water with soft brush or spray. Pull silk gently across its width and along its length to work out wrinkles, doping edges down as you go. Apply dope right over silk and gently rub it through with your finger. When you have worked down to the tip, apply dope along it to complete the job. Trim excess silk with razor blade or scissors, and dope loose edges down.

d. Use thinned clear butyrate dope (50-50) for finishing. This will penetrate the silk and bond it to the balsa. Apply 4 coats, letting each dry about two hours. Now apply as many coats full strenght dope as necessary to thoroughly fill the pores of the silk. Avoid tail heaviness. Silk may be sanded between coats of dope but sand lightly with the finest grade of sandpaper available (#400 Wet or dry or finer).

4. Colored dope (butyrate) trim may now be applied. Mask off areas to be colored and apply thin coats until desired color is obtained.

5. Dope areas around the tank and engine with several extra coats of colored dope to prevent fuel and oil penetration of the wood framework.

SR. FALCON

ON

OFF

G-16

SR. FALCON