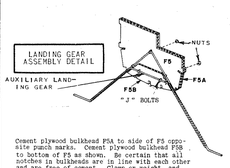


LANDING GEAR ASSEMBLY DETAIL

AUXILIARY LANDING GEAR

Cement plywood bulkhead F5A to side of F5 opposite punch marks. Cement plywood bulkhead F5B to bottom of F5 as shown. Be certain that all notches in bulkheads are in line with each other and are free of cement. Clamp or weight, and allow to dry thoroughly. Whon dry drill 3/32 holes through bulkheads where shown on F5B. Insert "J" bolts into holes capturing landing gear. Install nuts and tighten securely. Flat side of nuts against plywood. Be certain that top point of landing gear is directly under top "J" Bolt so that landing gear will be properly positioned. Auxiliary landing gear is installed thru holes in F5B in same manner. Auxiliary struts are directly over and in line with main landing gear struts. Bind entire strut length together with wire as shown and solder ends. Place drop of solder on rear of landing gear bolts to prevent nuts from loosening. Assembly is now ready to be installed as described in Step 2.

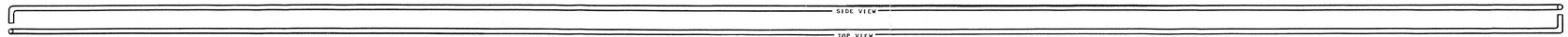
GENERAL INFORMATION AND PRE-CONSTRUCTION NOTE

THE PIPER SUPER CRUISER ALTHOUGH 72" IN WING SPAN, IS RELATIVELY EASY TO BUILD. PAY CAREFUL ATTENTION TO, AND FOLLOW THE NOTES STEP BY STEP EXACTLY AS THEY APPEAR ON THE PLANS. EXAMINE THE DRAWINGS BEFORE STARTING CONSTRUCTION. IF ANY DIE-CUT PARTS STICK IN THE SHEET, THEY MAY EASILY BE REMOVED BY SANDING BACK OF SHEET. FOR MAXIMUM STRENGTH, ALL PARTS SHOULD BE LIGHTLY COATED WITH CEMENT (WHICH IS ALLOWED TO DRY) AND THEN A SECOND COAT OF CEMENT IS APPLIED WHEN THE PARTS ARE ACTUALLY JOINED TOGETHER. THIS IS KNOWN AS PRE-GLUEING. THIS PIPER SUPER CRUISER MODEL MAY BE BUILT FOR MULTI-CHANNEL RADIO OPERATION, SINGLE CHANNEL RADIO OPERATION, SPORT FREE FLIGHT OR CONTROL LINE. PAY CAREFUL ATTENTION TO THE CHANGES THAT ARE MADE AS NOTED IN THE TEXT ACCOMPANYING EACH SKETCH AS CONSTRUCTION PROGRESSES. ENGINE SIZE RECOMMENDED IS : MULTI-CHANNEL RADIO: .45 WITH THROTTLE CONTROL SHOWN ON PLANS. SINGLE CHANNEL RADIO: 19 TO 35, FREE FLIGHT: .19, CONTROL LINE: .35 TO 60. ENGINE MOUNTS ON PLAN ARE SET-UP FOR .45 ENGINE SHOWN. IF OTHER ENGINES ARE USED IT MAY BE NECESSARY TO ADJUST MOUNTS ACCORDINGLY. THE FOLLOWING HARDWARE NEEDED TO COMPLETE THE PIPER CRUISER IS NOT INCLUDED IN KIT BUT MUST BE PURCHASED SEPARATELY:

PART	MULTI RADIO	SINGLE RADIO	FREE FLIGHT	CONTROL LINE
4/40 BLIND MOUNTING NUTS (PERFECT PARTS NO. PP239)	35	17	9	9
4/40X3/4 MACH. SCREWS	36	18	-	-
4/40 HEX NUTS	2	2	-	-
2/56X3/4 MACH. SCREWS	2	2	-	-
2/56 HEX NUTS	2	2	-	-
#4 FLAT WASHERS	25	-	-	-

FRONT ANGLED CABIN BRACE

MAKE TWO FROM 3/8 X 1/2 BALSA, CUT TO EXACT SIZE AND ANGLES SHOWN IN FULL SIZE PATTERN ABOVE. INSTALL AS DESCRIBED IN STEP 5.

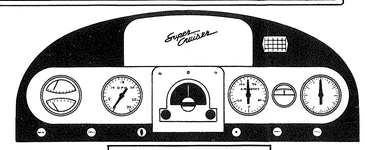


BALANCE CONTROL-LINE MODEL HERE

BALANCE RADIO CONTROL AND FREE FLIGHT MODELS HERE

CONTROL LINE CONTROL-ROD DETAIL

CONTROL ROD SHOWN ABOVE FULL SIZE,IS USED ONLY ON CONTROL LINE MODELS. MAKE ONE FROM 3/32 WIRE (NOT SUPPLIED). INSTALL AS DESCRIBED IN CONTROL LINE INSTALLATION NOTE AND SKETCH ON REVERSE SIDE OF PLAN.

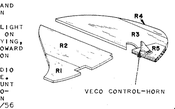


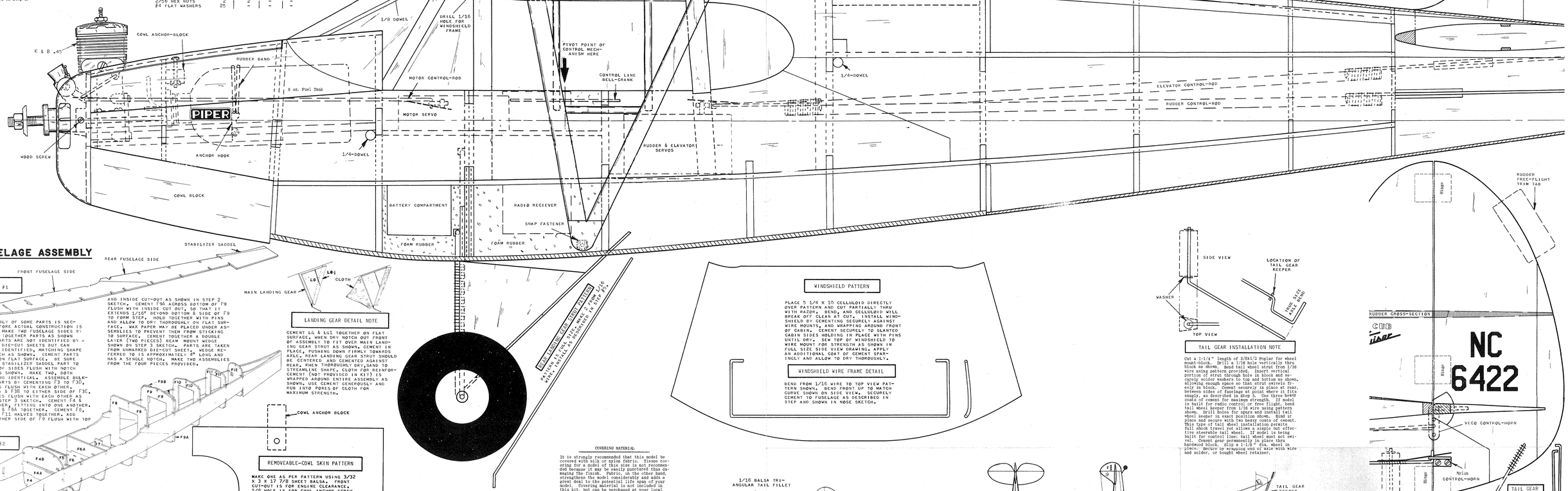
INSTRUMENT PANEL DETAIL

CUT INSTRUMENT PANEL FROM PLANS AND CEMENT TO REAR OF BULKHEAD F4.

RUDDER CONSTRUCTION DETAIL

CEMENT R1 to R2, R3 to R4, AND PLYWOOD R5 TOGETHER AS SHOWN AND ALLOW TO DRY THOROUGHLY ON FLAT SURFACE. WHEN R5'S ARE DRY, CEMENT SECURELY TO BOTTOM OF F3 AS SHOWN. WHEN ALL UNITS ARE ABSOLUTELY DRY, LIGHTLY CEMENT ASSEMBLIES TOGETHER THEN SAND TO STREAMLINED CROSS-SECTION SHOWN ON FULL SIZE DRAWING (SIDE VIEW). IF MODEL IS BEING BUILT AS FREE FLIGHT CEMENT PARTS TOGETHER PERMANENTLY ON FLAT SURFACE; FOR CONTROL LINE FLYING, CEMENT R3 IN PLACE AT ANGLE 7-1/4 TOWARD OUTSIDE OF CIRCLE FLOWN AS SHOWN ON CONTROL LINE INSTALLATION SKETCH. THIS WILL KEEP LINES TAUT, FOR RADIO CONTROL FLYING, RUDDER IS MOVABLE, LOCATE AND DRILL 3/32 HOLES TO MOUNT BONNIE NYLON CONTROL HORN (NOT PROVIDED IN KIT) AT LOCATION SHOWN ON FULL SIZE DRAWING. SECURE WITH 2/56 MACHINE SCREWS AND NUTS (NOT PROVIDED IN KIT). DRILL HOLES FOR HINGES AT LOCATION SHOWN AND ASSEMBLE UNITS TOGETHER AS DESCRIBED IN HINGE DETAIL NOTE.





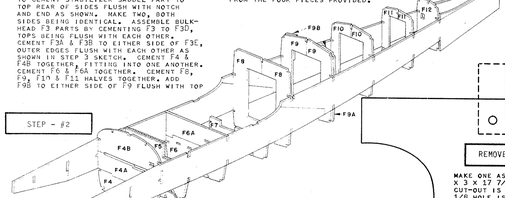
FUSELAGE ASSEMBLY

STEP - #1

PRE-ASSEMBLY OF SOME PARTS IS NECESSARY BEFORE ACTUAL CONSTRUCTION IS STARTED. MAKE TWO FUSELAGE SIDES BY CEMENTING TOGETHER PARTS AS SHOWN ABOVE. PARTS ARE NOT IDENTIFIED BY A NUMBER ON DIE-CUT SHEETS BUT CAN EASILY BE IDENTIFIED, MATCHING SHAPE WITH SKETCH AS SHOWN. CEMENT PARTS TOGETHER ON FLAT SURFACE. BE SURE TO CEMENT STABILIZER SADDLE PART TO TOP REAR OF SIDES FLUSH WITH NOTCH AND END AS SHOWN. MAKE TWO, BOTH SIDES BEING IDENTICAL. ASSEMBLE BULKHEAD F3 PARTS BY CEMENTING F3 to F3D, TOPS BEING FLUSH WITH EACH OTHER. CEMENT F3A & F3B TO EITHER SIDE OF F3C, OUTER EDGES FLUSH WITH EACH OTHER AS SHOWN IN STEP 3 SKETCH. CEMENT F4 & F4B TOGETHER, FITTING INTO ONE ANOTHER. CEMENT F6 & F6A TOGETHER. CEMENT F8, F9, F10 & F11 HALVES TOGETHER. ADD F9B TO EITHER SIDE OF F9 FLUSH WITH TOP REAR OF SIDES FLUSH WITH NOTCH AND END AS SHOWN. MAKE TWO, BOTH SIDES BEING IDENTICAL. ASSEMBLE BULKHEAD F3 PARTS BY CEMENTING F3 to F3D, TOPS BEING FLUSH WITH EACH OTHER. CEMENT F3A & F3B TO EITHER SIDE OF F3C, OUTER EDGES FLUSH WITH EACH OTHER AS SHOWN IN STEP 3 SKETCH. CEMENT F4 & F4B TOGETHER, FITTING INTO ONE ANOTHER. CEMENT F6 & F6A TOGETHER. CEMENT F8, F9, F10 & F11 HALVES TOGETHER. ADD F9B TO EITHER SIDE OF F9 FLUSH WITH TOP

AND INSIDE CUT-OUT AS SHOWN IN STEP 2 SKETCH. CEMENT F9A ACROSS BOTTOM OF F9 FLUSH WITH INSIDE CUT OUT, SO THAT IT EXTENDS 1/16" BEYOND BOTTOM & SIDE OF F9 TO FORM STEP. HOLD TOGETHER WITH PINS AND ALLOW TO DRY THOROUGHLY ON FLAT SURFACE. WAX PAPER MAY BE PLACED UNDER ASSEMBLIES TO PREVENT THEM FROM STICKING TO SURFACE. CEMENT TOGETHER A DOUBLE LAYER (TWO PIECES) BEAM MOUNT WEDGE SHOWN ON DIE-CUT SHEET 3 PARTS ARE TAKEN FROM UNMARKED DIE-CUT SHEET. WEDGE REFERRED TO IS APPROXIMATELY 4" LONG AND HAS A SINGLE NOTCH. MAKE TWO ASSEMBLIES FROM THE FOUR PIECES PROVIDED.

STEP - #2



START FUSELAGE ASSEMBLY BY SECURELY CEMENTING ENDS OF FUSELAGE SIDES TOGETHER, FLUSH WITH EACH OTHER. HOLD WITH CLAMP, PINS OR RUBBER BANDS. INSTALL ALL BULKHEADS STARTING FROM F12 FORWARD TO F4 PLACING THEM IN THEIR RESPECTIVE NOTCHES SHOWN BETWEEN SIDES. HOLD SIDES IN PLACE WITH PINS OR RUBBER BANDS.

1/4 Sq. STRINGER

1/8 X 1/4 STRINGER

3/8 X 1/2 BALSA

NOSE SUB-ASSEMBLY

HARDWOOD BEAM MOUNTS

F3B

F3A

F3

F3C

F3D

F3B

F3A

1/4 DOWEL

BEAM MOUNT WEDGES

BOTTOM VIEW DETAIL SKETCH

STEP - #3

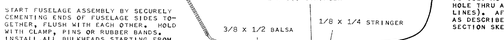
NOSE SUB-ASSEMBLY AS SHOWN IN DETAIL SKETCH, IS ASSEMBLED AND INSTALLED AT THE SAME TIME, BEFORE CEMENT DRIES. INSERT DECK VALUE F2, INTO SLOT IN PLYWOOD BULKHEAD F2. INSERT ASSEMBLED LOWER BULKHEAD F3 INTO NOTCHES ACROSS F4 AS SHOWN. BE CERTAIN TO USE CEMENT OVER ALL JOINTS INCLUDING WHERE F4'S JOIN AT REAR. INSTALLATION IS IMMEDIATELY INSTALLED IN FRONT OF FUSELAGE ASSEMBLY BY INSERTING INTO SLOT IN F4. CEMENT NOSE SUB-ASSEMBLY BRACE F INTO CENTER NOTCH IN BOTTOM OF BULKHEADS FROM F5 FORWARD, HOLD IN PLACE WITH PINS. IMMEDIATELY INSTALL UPPER F3 HARDWOOD ASSEMBLY BY PLACING INTO NOTCHES IN DECK F4, AND FUSELAGE SIDES. SIDE SKIN IS CUT AT BULKHEAD F3 TO FORM STEP. REAR RESTS ON F3D, FORWARD PART RESTS ON F3C. CEMENT SECURELY. CEMENT BOTH F3B'S TO EACH SIDE, FA FITTING INTO LOWER NOTCHES. OUTER EDGES ARE FLUSH WITH FRONT OF SIDES AS SHOWN.SECURELY CEMENT 1/2 X 3/8 X 3/8 HARDWOOD BEAM MOUNTS IN PLACE AS SHOWN. REAR RESTS AGAINST CUTOUT IN F4 ON EITHER SIDE OF SAME. BOTTOM FITS INTO NOTCHES IN F2 AND F3. USE THREE HEAVY COATS OF CEMENT AROUND ALL JOINTS ON ENTIRE BEAM MOUNT INSTALLATION. CEMENT ASSEMBLED BEAM MOUNT WEDGES TO BOTTOM OF BEAM MOUNTS, NOTCH IN WEDGE FITTING INTO NOTCH ON BOTTOM OF F2, CUT A 7 1/2 LENGTH OF 1/4 DOWEL FOR RUBBER TIE DOWN PINS. CEMENT THRU NOTCHES AGAINST BULKHEAD F4, APPLY TWO GENEROUS COATS OF CEMENT INTO INSIDE JOINT. CUT A 7 1/4 DOWEL FOR REAR PIN AND CEMENT INTO NOTCHES THRU SIDES AGAINST REAR OF BULKHEAD F8 AS SHOWN. CEMENT A LENGTH OF 1/8 X 1/4 STRINGER INTO SIDE NOTCHES BETWEEN BULKHEAD F8 AND F9, DIRECTLY ABOVE DOWEL ON BOTH SIDES OF FUSELAGE. CEMENT A LENGTH OF 3/8 X 1/2 BALSA ON TOP OF DOWEL, AGAINST F8, BETWEEN STRINGERS. APPLY AN ADDITIONAL COAT OF CEMENT GENEROUSLY AROUND ENTIRE INSTALLATION. CEMENT 1/4 SQ. STRINGER INTO NOTCHES AS SHOWN IN TOP CORNERS OF BULKHEAD F8 AND F9, ENDING FLUSH WITH REAR OF F9 AT SEAM. FOR MULTI CHANNEL RADIO ONLY: CEMENT PLYWOOD MOUNT A IN PLACE, DRILL 1/8 HOLES AT PUNCH MARKS AND INSTALL 4/40 BLIND MOUNTING NUTS.

BLIND MOUNTING NUTS ARE NOT PROVIDED IN KIT - MUST BE PURCHASED SEPARATELY. FRONT IS SLIPPED INTO SLOT IN F4 THEN SLID REARWARD TO FIT INTO NOTCHES IN F6, RESTING ON TOP OF F5. USE TWO COATS OF CEMENT GENEROUSLY ON THIS INSTALLATION. FOR MULTI OR SINGLE RADIO, INSTALL BOTH MOUNTS B'S INTO NOTCHES IN F6, REAR RESTING IN CUT OUTS OF F7. DRILL 1/8 HOLES AT PUNCH MARKS AND INSTALL BLIND MOUNTING NUTS. A AND B MAY BOTH BE OMITTED IF MODEL IS TO BE FLOWN CONTROL LINE OR SPORT FREE FLIGHT. PART C FORMS RADIO COMPARTMENT WALL OR FLOOR. FOR SINGLE RADIO CEMENT SECURELY IN PLACE VERTICALLY (WALL) BETWEEN BULKHEADS F5 AND F6 AGAINST BOTTOM, AND FLUSH WITH SIDE OF F4 AS SHOWN IN DETAIL SKETCH. FOR SINGLE CHANNEL USING AS FLOOR, MOUNT C AS DESCRIBED IN SINGLE CHANNEL RADIO DETAIL. PART D'S ARE INSTALLED IN STEP 5. THEY ARE SHOWN IN DETAIL SKETCH FOR CLARITY ONLY. THEY ARE CEMENTED SECURELY TO BOTH SIDES OF FUSELAGE RESTING ON STRINGER, BETWEEN F5 & F6 AS SHOWN.

STEP - #4

GAS TANK ANCHOR HOOKS

CEMENT PLYWOOD MOUNT "A" TOGETHER SECURELY TO FORM DOUBLE LAYER. DRILL 1/8 HOLES THRU MARKED HOLES. PLACE A ON BEAM MOUNT FLUSH WITH FRONT AS SHOWN, USING OUTER HOLES AS GUIDE, DRILL 1/8 HOLES THRU HARDWOOD MOUNT AND INTO HARDWOOD BEAMS. USING 4/40 MACHINE SCREWS PROVIDED, BOLT "A" IN PLACE AS SHOWN. INSTALL 1/8 X 1/4 STRINGERS ON BOTTOM OF FUSELAGE. CENTER STRINGER RUNS FROM F5 TO F9, ADJOINING STRINGERS RUN FROM F3 TO F9, STRINGERS STOP OUT 1/16 FROM TIPS POINT ON F9A AND RUN BACK TO F12. BOTTOM CORNER STRINGERS ARE 1/4 SQ. SOAK IN WATER TO PERMIT EASIER BENDING, AND INSTALL IN SAME MANNER FROM F3 TO F9 THENCE TO F12 AS SHOWN. INSTALL THE 4 FULL LENGTH AND 1 SHORT (1/8 X 1/4) STRINGERS IN TOP NOSE COWL FROM F1 TO F4. SHORT STRINGER LIES FLAT. INSTALL SIDE STRINGER (UNDER BALSA FUSELAGE SIDE) IN EXACTLY THE SAME MANNER ON BOTH SIDES USING 1/8 X 1/4 STRIP. CEMENT STRINGER TO REAR TOP FUSELAGE SIDE FROM F9 TO F12. CEMENT 1/4 STRINGERS TO TOP CORNERS FROM F9 TO F12 THEN INSTALL F8A TO TOP OF BULKHEADS BETWEEN F8 AND F9. CONTINUE WITH 1/8 X 1/4 STRINGER RUNNING IN CENTER TOP OF BULKHEADS FROM F9 TO F12 AS SHOWN. ASSEMBLE TOP OF CABIN SIDES BY CEMENTING PLYWOOD C4 TO C6 AS SHOWN. TOP AND FRONT FLUSH WITH EACH OTHER. MAKE TWO ASSEMBLIES, 1 LEFT & 1 RIGHT AS SHOWN. WHEN DRY, CEMENT SECURELY IN PLACE AGAINST PREVIOUSLY INSTALLED PARTS OF F8B AND AGAINST BULKHEADS F8 AND F9, RESTING ON FUSELAGE SIDES USE 2 COATS OF CEMENT. HOLD IN PLACE WITH PINS. CEMENT VERTICAL CABIN FRAME MEMBERS C1 AND C2 IN PLACE AS SHOWN ON BOTH SIDES OF FUSELAGE. BE CERTAIN THAT FRONT OF UPPER CABIN SIDE IS TIGHTLY AGAINST TOP OF C1 AS SHOWN TO PROVIDE PROPER ANGLE OF INCIDENCE (ANGLE THAT WING SITS ON FUSELAGE, WHEN VIEWED FROM SIDE). C1 AND C2 ARE BOTH FLUSH WITH OUTER SKINS. CUT 3/8 X 1/2 BALSA STRIP TO PROPER LENGTH AND CEMENT TO INSIDE OF C1 AND C4. TOP OF FILLER STRIP IS AGAINST C4 AND BOTTOM AGAINST STRINGER AS SHOWN. FILLER STRIP UNDER C2 IS AGAINST REAR OF F5 AS SHOWN. CUT LENGTH OF 3/8 BALSA TO FIT BETWEEN CABIN SIDE AT TOP OF C8 AND CEMENT SECURELY IN PLACE FLUSH WITH TOP AS SHOWN. CUT 1/4 SQUARE STRIPS TO PROPER LENGTH AND CEMENT TO EACH CORNER AT REAR OF CABIN, FROM BOTTOM OF 3/8 X 1/2 STRIP TO STRINGER AS SHOWN. SECURELY CEMENT CARVED BALSA LOWER COWL HALVES TO EITHER SIDE OF CENTER FRAME MEMBER F AND AGAINST F3 AS SHOWN. ALLOW STRUCTURE TO DRY THOROUGHLY BEFORE PROCEDING WITH NEXT STEP. BEND 2 ANCHOR HOOKS AS SHOWN ON PATTERN FROM 1/32 WIRE. INSTALL ONE INSIDE OF EACH MOTOR MOUNT 1" IN FRONT OF F-4. USE WOOD SCREW PROVIDED TO FASTEN IN PLACE. APPLY 2 COATS OF CEMENT.



VERTICAL CABIN PARTS C1 AND C2 ARE RUGGEDLY STRENGTHENED BY CUTTING LENGTHS OF 3/8 X 1/2 BALSA TO FIT FLUSH WITH TOP OF CABIN AND DOWN TO STRINGER. SECURELY CEMENT PIECES TO BACK OF C1 AND C2'S AS SHOWN. HOLD IN PLACE WITH PINS UNTIL DRY. USING PATTERN PROVIDED, CUT 2 FRONT ANGLED CABIN BRACES FROM 3/8 X 1/2 BALSA AND CEMENT IN PLACE AGAINST REAR OF F4 AND FRONT OF F5 AS SHOWN. FRONT OF CABIN IS COMPLETED BY CEMENTING 3 LENGTHS OF 3/8 X 1/2 BALSA ACROSS TOP AS SHOWN. REAR PIECE IS 4 5/8 LONG AND FITS BETWEEN VERTICAL SPACERS IN BACK OF C11. CENTER PIECE IS 5 3/8 LONG AND FRONT PIECE IS 5 1/4 LONG. ALL 3 PIECES ARE FLUSH WITH TOP OF CABIN, WITH FRONT IN LINE WITH CABIN TOP WHEN VIEWED FROM SIDE WHICH LEAVES A SPACE BETWEEN LENGTHS OF BALSA. THIS SPACE AS WELL AS ALL JOINTS IN ALL 3/8 X 1/2 BALSA INSTALLATION SHOULD BE GIVEN 2 ADDITIONAL COATS OF CEMENT FOR ABSOLUTE MAXIMUM STRENGTH. CEMENT THE TWO TRIANGULAR GUSSETS FROM THE LONG UNMARKED DIE CUT SHEETS AND CEMENT IN PLACE TO REAR OF CABIN FLUSH WITH TOP AS SHOWN. F8B IS INSTALLED AT ANGLE AGAINST F8A, BOTTOM (WHERE IT IS CEMENTED TO TOP OF F8) AND TOP (WHERE SHEET COVERING FITS OVER) ARE BEVELED TO FIT AS SHOWN IN SIDE VIEW. MAKE SWIVEL TAIL SKID AS SHOWN IN DETAIL SKETCH & NOTE. CEMENT BETWEEN BALSA FUSELAGE SIDES AT POINT WHERE IT FITS SNUGLY, FLUSH WITH BOTTOM. USE 2 HEAVY COATS OF CEMENT ON INSTALLATION. DO NOT GET ANY CEMENT AROUND WIRE SKID WHICH MAY PREVENT FREE MOVEMENT. USING FULL SIZE PATTERN DRAWING PROVIDED, PLACE LAST BEDD TWO REAR LANDING GEAR STRUTS FROM 1/16 WIRE. BEND TO FIT BOTTOM OF MAIN LANDING GEAR WITH SOFT WIRE AND SOLDER SECURELY. TOP OF REAR LANDING GEAR STRUTS FIT INTO HOLES AND RIDES FREELY THRU HOLE IN FUSELAGE MADE WHEN SKIN COVERING IS APPLIED. THIS CEMENT PERMITS EXCELLENT SHOCK TRAVEL. FUSELAGE IS COVERED NEXT AS DESCRIBED, USE SHEET SIZES GIVEN FOR EACH SPECIFIC SECTION COVERED. EDGES OF SKIN SECTIONS ARE BEVELLED WHERE NECESSARY TO PERMIT TIGHT BUTT JOINT SEAMS. WHERE NECESSARY, MOISTEN SIDE WITH WATER TO ALLOW EASIER BENDING AROUND CURVE. APPLY CEMENT GENEROUSLY TO ALL FRAME WORK COVERED. SECTIONS ARE HELD IN PLACE WITH PINS UNTIL ABSOLUTELY DRY. COVER BOTTOM-FRONT SECTION FROM BALSA SHEET F9 IN TWO PIECES, USING 1/8 X 3 X 20 SHEET BALSA. CUT OUT NOTCHES TO FIT OVER REAR LANDING GEAR STRUTS AS SHOWN. COVER REAR-BOTTOM SECTION IN TWO PIECES USING 1/16 X 3 X 36 SHEET BALSA. NOTCH OUT AT SAME TIME FOR LANDING GEAR STRUTS AS SHOWN. COVER UPPER-FRONT SIDE-SKIN FROM SHEET BALSA AS SHOWN. COVER UPPER-TOP SIDE-SKIN FROM SHEET BALSA AS SHOWN. COVER UPPER-TOP REAR SECTION WITH TWO PIECES USING 1/16 X 3 X 12 SHEET BALSA. FINISH TOP-REAR COVERING, USING 2 PIECES OF 1/16 X 3 SHEET BALSA AS SHOWN. COVER UPPER-FRONT COWL SECTION FROM SHEET BALSA AND CEMENT TO F4 USING 3/32 X 3 X 18 SHEET AS SHOWN. CENTER SECTION IS COVERED IN 2 PIECES USING SAME MATERIAL. TRIM FLUSH WITH REAR OF F4 AND FRONT OF F5. CEMENT THE 2 F2 HALVES TOGETHER ON FRONT OF FUSELAGE AS SHOWN. DOTTED LINES INDICATE DRAINING HOLES TO BE PLACED IN FINS UNTIL DRY. CUT TWO 3/4 LENGTHS FROM 1/4 X 5/16 PLYWOOD FOR FRONT METAL COWL MOUNT BLOCKS. TRIM EDGE OF BLOCKS TO MATCH CURVE OF F1 AND CEMENT SECURELY IN PLACE TO BOTH SIDES AS SHOWN. USE 2 HEAVY COATS OF CEMENT ON THIS INSTALLATION AND ALLOW TO DRY THOROUGHLY. USE FORCE ATTEMPTING TO INSTALL METAL COWL AS DESCRIBED LATER IN STEP 7. TOP OF MOVEABLE COWL IS NOW BUILT-RIGHT IN PLACE. BE CAREFUL NOT TO CEMENT ANY PARTS TO FUSELAGE WHICH WILL PREVENT IT FROM BEING TAKEN OUT WHEN COMPLETED. F1, F1A, F2A, AND F3C, IN POSITION AND THEN CEMENT SIDES F8 INTO NOTCHES IN F8 AND F9 AND TO BULKHEADS. PIN SIDES F8 AGAINST STRINGERS AND BULKHEADS WITH TOP FLUSH WITH F9. ALLOW FOR THICKNESS OF SKIN COVERING. PIN F3C AGAINST F3 FLUSH WITH TOP OF I3E FOR SAME REASON. CEMENT 1/8 X 1/4 STRINGER FLAT ACROSS CENTER NOTCHES AS SHOWN. CEMENT LENGTH OF 1/4 SQ. STRIP INTO REAR CORNERS AS SHOWN FOR STRENGTH. APPLY A SECOND COAT OF CEMENT TO ALL JOINTS BEING CAREFUL NOT TO GET CEMENT ON FUSELAGE STRUCTURE SO THAT THE COWLING MAY BE REMOVED. WHEN COWL FRAME IS PERFECTLY DRY, REMOVE PINS AND SAND TO FIT OUT OF FUSELAGE. IF NECESSARY, SLICE THRU ANY AGGREGATION OF CEMENT WITH SHARP RAZOR BLADE. USING PATTERN PROVIDED CUT TOP COWL COVERING FROM 3/32 X 3 X 17 7/8 SHEET BALSA. CEMENT IN PLACE OVER TOP OF COWL FRAME HOLDING IN PLACE WITH PINS UNTIL DRY. WITH CARE REMOVE PLACED BACK IN THE FUSELAGE WHILE SKIN COVERING IS DRYING TO BE CERTAIN OF GOOD FIT AND TO PREVENT WARPS FROM OCCURRING. SKETCH OF NOSE SECTION SHOWS FURTHER DETAILS TO COMPLETE THIS STEP. MAKE COWL ANCHOR-BLOCK FROM 3/8 X 1/2 POPLAR AS SHOWN AND DESCRIBED IN DETAIL SIZE DRAWING ON COWL SKIN PATTERN. CEMENT SECURELY IN PLACE AT FRONT OF F2, WITH BOTTOM OF STRINGER AS SHOWN. USE TWO HEAVY COATS OF CEMENT FOR MAXIMUM STRENGTH ON THIS INSTALLATION. ALLOW TO DRY THOROUGHLY. TOP COWL IS NOW REPLACED ON FUSELAGE, HOWEVER, F9 WILL HAVE TO BE NOTCHED OUT AS INDICATED IN BLACK ON MAIN SKETCH SO THAT COWL WILL CLEAR ANCHOR-BLOCK. USING THE SIDE IN COWL COVERING FOR POSITIONING, DRILL 1/8 HOLE THRU ANCHOR BLOCK AND INSTALL 4/40 BLIND MOUNTING NUT ON BOTTOM OF BLOCK AS SHOWN. DRILL 3/16 METAL COWL ON NOSE. LOCATE CENTER OF MOUNTING BLOCKS ON METAL COWL AND DRILL 3/64 DIA. (.045) HOLES THRU METAL COWL. REMOVE AND ENLARGE HOLES IN METAL COWL WITH 3/32 DRILL. COWL IS REPLACED BEING HELD IN PLACE WITH SCREWS PROVIDED. LOWER BALSA COWL BLOCKS ARE NOW SHAPED TO FIT COWL AS SHOWN ON DRAWINGS AND PHOTOGRAPH. SLIP VECO T-210 CLUNK TANK IN PLACE AND SECURE WITH RUBBER BANDS AS PREVIOUSLY DESCRIBED IN FUSELAGE STEP 5. REMOVE METAL COWL AND INSTALL ENGINE, TIGHTENING SCREWS SECURELY, THEN REPLACE COWL. USE PROPELLER SIZE RECOMMENDED BY ENGINE OR PROPELLER MANUFACTURER. INSTALL 3 1/2" DIA. VECO AIR WHEELS (OR SIMILAR TYPE) ON LANDING GEAR AND A 1 1/8" DIA. WHEEL ON TAIL SKID. SECURE WHEELS BY BENDING END OF AXLE WITH NEEDLE NOSE PLIERS AND SOLDER SECURELY OR YOU MAY USE WHEEL RETAINERS PURCHASED AT HOBBY SHOP. USING 2 7/8 X 12 1/2" CELLULOID, CUT SIDE WINDOWS TO FIT 1/8 PAST CURVE OF REAR WINDOW, AND CEMENT IN PLACE ON INSIDE OF FUSELAGE. INSTALL FRONT WINDSHIELD AS DESCRIBED IN DETAIL NOTE. USING A 2 7/8 X 1/4 STRIP OF BALSA, BEND AROUND FRONT OF WING CENTER SECTION AS SHOWN, HOLDING IN PLACE WITH PINS UNTIL DRY. WHEN DRY, ADD ANOTHER COAT OF CEMENT SPARINGLY AROUND OUTLINE. PLACE WING ON FUSELAGE AT CENTER AND PIN IN PLACE. WING IS HELD IN PLACE WITH 3/8 OR 1/4 RUBBER BANDS THAT ARE STRETCHED FROM THE 1/4 DOWEL PROTRUDING FROM EITHER SIDE OF FUSELAGE BELOW WINDSHIELD, ACROSS WING AND AROUND DOWELS AT REAR OF CABIN AS SHOWN IN PHOTOGRAPH AND SKETCH. BE SURE TO USE ENOUGH RUBBER BANDS, WITH ENOUGH TENSION SO THAT THE WING IS HELD FIRMLY ON THE MODEL AND WILL NOT LIFT OFF DURING FLIGHT. ROUGH LANDING WILL CAUSE STRUTS TO SNAP OFF AND RUBBER BANDS TO SLIP OFF OF DOWEL, ALLOWING WING TO FLY CLEAR PREVENTING SERIOUS DAMAGE. FOR INSTRUCTIONS SEE INDIVIDUAL DETAIL NOTES. GOOD LUCK!!!

REMOVEABLE-COWL SKIN PATTERN

MAKE ONE AS PER PATTERN USING 3/32 X 3 X 17 7/8 SHEET BALSA. FRONT CUT-OUT IS FOR ENGINE CLEARANCE. 1/8 HOLE IS FOR COWL ANCHOR SCREW. SKIN IS CEMENTED TO TOP OF COWL FRAMEWORK AS DESCRIBED IN STEP 5. 1/8 HOLE IS USED AS LOCATION TO DRILL SIMILAR HOLE THRU ANCHOR BLOCK (SHOWN IN DOTTED LINES). AFTER BLOCK HAS BEEN INSTALLED AS DESCRIBED IN STEP 5 AND SEEN IN NOSE SECTION SKETCH.

LANDING GEAR DETAIL NOTE

CEMENT LG & LG1 TOGETHER ON FLAT SURFACE, WHEN DRY TRIM OUT FRONT OF ASSEMBLY TO FIT OVER MAIN LANDING GEAR STRUT AS SHOWN, CEMENT IN PLACE, PUSHING DOWN FIRMLY TOWARDS AXLE. REAR LANDING GEAR STRUT SHOULD BE CENTERED AND CEMENTED AGAINST REAR, WHEN THOROUGHLY DRY, SAND TO STREAMLINE SHAPE. CLOTH FOR REINFORCEMENT (NOT PROVIDED IN KIT) IS WRAPPED AROUND ENTIRE ASSEMBLY AS SHOWN, USE CEMENT GENEROUSLY AND RUB INTO PORES OF CLOTH FOR MAXIMUM STRENGTH.

COVERING MATERIAL

It is strongly recommended that this model be covered with silk or nylon fabric. Tissue covering for a model of this size is not recommended because it may be easily punctured thus damaging the finish. Fabric, on the other hand, strengthens the model considerably and adds a great deal to the potential life span of your model. Covering material is not included in this kit, but can be purchased at your local hobby shop. Detailed covering instructions generally accompany the package in which the material is packed.

WINDSHIELD PATTERN

PLACE 5 1/4 X 10 CELLULOID DIRECTLY OVER PATTERN AND CUT PARTIALLY THRU WITH RAZOR. BEND, AND CELLULOID WILL BREAK OFF CLEAN AT C

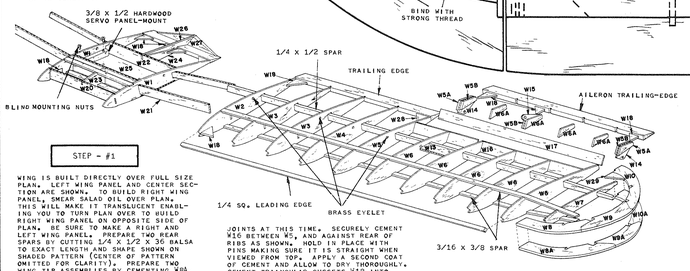
AEROBATIC STRESS NOTE

This model was not designed for the stress of aerobatics. If loops, rolls, etc., are to be included in flying, then the Wing should be strengthened. This can be accomplished by adding 1/16 x 1/2 Hardwood Spars cemented to the Ribs, extending 3 or 4 Rib spaces on each side. Notch out Ribs to receive Spars and use cement generously on entire installation.

WING ASSEMBLY

METHOD OF CENTERING RIBS ON TRAILING EDGE

DRAWING ABOVE SHOWS HOW 1/16 STRIP IS PLACED BENEATH REAR OF RIBS TO RAISE RIBS UP TO CENETR OF TRAILING EDGE.



STEP - #1

WING IS BUILT DIRECTLY OVER FULL SIZE PLAN. LEFT WING PANEL AND CENTER SECTION ARE SHOWN. TO BUILD RIGHT WING PANEL, SMEAR SALAD OIL OVER PLAN. THIS WILL MAKE IT TRANSLUCENT ENABLING YOU TO TURN PLAN OVER TO BUILD RIGHT WING PANEL ON OPPOSITE SIDE OF PLAN. BE SURE TO MAKE A RIGHT AND LEFT WING PANEL. PREPARE TWO REAR SPARS BY CUTTING 1/4 X 1/2 X 36 BALSA TO EXACT LENGTH AND SHAPE SHOWN ON SHADED PATTERN (CENTER OF PATTERN OMITTED FOR CLARITY). PREPARE TWO WING TIP ASSEMBLIES BY CEMENTING W8A, W9A, AND W10A TO EACH OTHER DIRECTLY OVER PLANS (USE WAX PAPER BENEATH FRAME TO PREVENT STICKING TO PLAN). CEMENT SECOND LAYER OF W8, W9, AND W10, IN PLACE OVER FIRST LAYER AS SHOWN. MAKE TWO IDENTICAL ASSEMBLIES, ONE IS USED FOR EACH WING PANEL. ALLOW TO DRY THOROUGHLY BEFORE REMOVING FROM FLAT SURFACE. FOR MULTI-RADIO ONLY. - DRILL 1/8 HOLES AT PUNCH MARKS IN THE FOLLOWING RIBS: 2-W1, 2-W2, 4-W3, 2-W4, 2-W5, & 2-W6*S. CEMENT A LARGE BRASS EYELET SECURELY IN HOLE OF 2-W2*S, 2-W3*S, & 2-W5*S: THIS WILL MAKE A NON-BINDING BEARING SURFACE FOR THE AILERON PUSH ROD. MAKE 4 IDENTICAL AILERON HINGE ASSEMBLIES, CEMENTING W5A AND W5B TO EITHER SIDE OF PLYWOOD W16 FLUSH AND AS SHOWN. MAKE TWO AILERON HORN ASSEMBLIES BY CEMENTING W5B AND W6A TO EITHER SIDE OF W15 FLUSH WITH BOTTOM AS SHOWN. ALLOW ALL PARTS TO DRY THOROUGHLY BEFORE PROCEEDING WITH WING ASSEMBLY. ASSEMBLE WING PANEL OVER PLAN BY SLIDING RIBS ONTO REAR SPAR IN NUMERICAL ORDER AS SHOWN. DO NOT CEMENT UNTIL WING FRAME IS COMPLETED LATER IN STEP, SPREAD WAX PAPER OVER PLAN TO PREVENT STICKING. PIN SHORT TRAILING EDGE DOWN ON PLAN, INSERT AND CEMENT REAR OF RIBS INTO NOTCHES IN TRAILING EDGE. PLACE TWO PCS OF 1/16 BALSA UNDER REAR OF RIBS SO THEY ARE IN CENTER OF TRAILING EDGE WHEN VIEWED FROM FRONT TO ALLOW FOR TOP & BOTTOM SKIN COVERING, AS SHOWN ON DETAIL SKETCH. POSITION RIBS OVER PLANS. CEMENT 1/4 SQ. STRIP TO BOTTOM OF RIBS AS SHOWN. CEMENT ASSEMBLED TIPS AGAINST RIB W5. RIB W7 FITS INTO NOTCHES IN TIP. PLACE A BLOCK UNDER WING TIP TO RAISE IT 3/8 FROM FLAT SURFACE. CEMENT 3/16 X 3/8 TOP SPAR (LYING FLAT) INTO NOTCHES FOR SAME IN TOP OF RIBS FROM W2 TO WING TIP AS SHOWN. APPLY A COAT OF CEMENT TO ALL RIB AND REAR SPAR JOINTS AT THIS TIME. SECURELY CEMENT W10 BETWEEN W5, AND AGAINST REAR OF RIBS AS SHOWN. HOLD IN PLACE WITH PINS MAKING SURE IT IS STRAIGHT WHEN VIEWED FROM TOP. APPLY A SECOND COAT OF CEMENT AND ALLOW TO DRY THOROUGHLY. CEMENT TRIANGULAR GUSSETS W18 INTO CORNERS AT FRONT AND REAR OF W2. CEMENT TRIANGULAR GUSSET W5B AT REAR OF W5 ADJOINING AILERON AS SHOWN FLUSH WITH TOP OF RIB. CEMENT TRIANGULAR GUSSET W20 TO CORNER OF W5A & W10, FLUSH WITH TOP OF W10, DRILL 1/8 HOLE AT PUNCH MARK AND CEMENT W13 BETWEEN W6*S AGAINST FRONT OF, AND FLUSH WITH TOP OF REAR SPAR AS SHOWN. CONSTRUCT MOVEABLE AILERON BY PINNING W17 DIRECTLY TO REAR OF W16. CEMENT AND INSERT REAR OF AILERON RIBS W6A*S AND AILERON CONTROL HORN INTO CENTER OF TRAILING EDGE NOTCHES TO ALLOW FOR TOP AND BOTTOM SHEET COVERING. PLACE ASSEMBLY ON PLAN. CEMENTING FRONT OF RIBS TO W17. AILERON HINGE ASSEMBLIES ARE INSTALLED AFTER FRAME IS DRY AND REMOVED FROM PLANS. ALLOW TO DRY THOROUGHLY BEFORE MOVING FROM FLAT SURFACE. IT STRUCTURE IS REMOVED BEFORE COMPLETELY DRY IT MAY TEND TO WARP, THEREBY AFFECTING THE FLYING QUALITIES OF YOUR SUPER CRUISER. WHEN DRY REMOVE FRAME FROM FLAT SURFACE AND TURNED OVER. BOTTOM 3/16 X 3/8 SPAR IS CEMENTED IN PLACE INTO 4 NOTCHES FROM W2 TO WING TIPS. REMOVE PINS THRU W17 AND W16 HOLDING AILERONS IN PLACE. CEMENT HINGE ASSEMBLY FLUSH WITH EDGE OF AILERON. COMPLETE BY CEMENTING TRIANGULAR GUSSETS W18 INTO REAR CORNERS OF BOTH ENDS AND CORNER AT AILERON HORN AS SHOWN ON SKETCH. CONSTRUCT CENTER SECTION DIRECTLY ON PLANS TO KEEP SQUARE. SLIDE RIBS W1 ONTO EITHER SIDE OF PLYWOOD GUSSETS W20, W21, AND W22 AS SHOWN, AND CEMENT IN PLACE. BOTTOM OF RIBS ANGLE IN SO THAT WHEN WING IS ASSEMBLED, TIPS ASSUME THE PROPER DIHEDRAL ANGLE AS DESCRIBED IN WING STEP 2. CEMENT TRAILING EDGE AGAINST REAR OF RIBS SO THAT RIBS ARE IN CENTER OF SAME, USING 1/16 BALSA AS SHOWN. SLIT IN MAIN WING INSERT W23 INTO NOTCHES FOR SAME BETWEEN W20 AND W21 AS SHOWN. INSERT W26 INTO NOTCH IN W22 AND OVER CENTER OF TRAILING EDGE. CEMENT W24*S TO EACH SIDE OF W26 FLUSH WITH BOTTOM OF SAME. BEVEL EDGES OF W27 ON ANGLE SHOWN ON FULL SIZE SIDE VIEW DRAWING SO THAT IT RESTS FLUSH ON TRAILING EDGE, AND OPPOSITE SIDE PRESENTS A FLAT CEMENTING SURFACE TO SKIN COVERING WHICH IS INSTALLED LATER IN STEP. CEMENT IN PLACE SECURELY. CEMENT 3/16 X 3/8 TOP SPAR ACROSS NOTCHES IN TOP OF RIBS BETWEEN W1*S. ADD W18 GUSSETS TO ALL 4 CORNERS OF CENTER SECTION AS SHOWN, AS WELL AS TO EITHER SIDE OF W24. ALLOW FRAME TO DRY THOROUGHLY THEN REMOVE FROM FLAT SURFACE. TURN OVER AND INSTALL 3/16 X 3/8 BOTTOM SPAR IN NOTCHES ACROSS BOTTOM OF RIBS AS W1. W25 IS NOW PREPARED ONLY IF RADIO AILERONS ARE USED, OTHERWISE IT IS CEMENTED IN PLACE ACROSS BOTTOM OF W1*S AS SHOWN. WHEN DRY REMOVE FROM FLAT SURFACE AND TURNED OVER. BOTTOM 3/16 X 3/8 SPAR IS CEMENTED IN PLACE INTO 4 NOTCHES FROM W2 TO WING TIPS. REMOVE PINS THRU W17 AND W16 HOLDING AILERONS IN PLACE. CEMENT HINGE ASSEMBLY FLUSH WITH EDGE OF AILERON. COMPLETE BY CEMENTING TRIANGULAR GUSSETS W18 INTO REAR CORNERS OF BOTH ENDS AND CORNER AT AILERON HORN AS SHOWN ON SKETCH. CONSTRUCT CENTER SECTION DIRECTLY ON PLANS TO KEEP SQUARE. SLIDE RIBS W1 ONTO EITHER SIDE OF PLYWOOD GUSSETS W20, W21, AND W22 AS SHOWN, AND CEMENT IN PLACE. BOTTOM OF RIBS ANGLE IN SO THAT WHEN WING IS ASSEMBLED, TIPS ASSUME THE PROPER DIHEDRAL ANGLE AS DESCRIBED IN WING STEP 2. CEMENT TRAILING EDGE AGAINST REAR OF RIBS SO THAT RIBS ARE IN CENTER OF SAME, USING 1/16 BALSA AS SHOWN. SLIT IN MAIN WING INSERT W23 INTO NOTCHES FOR SAME BETWEEN W20 AND W21 AS SHOWN. INSERT W26 INTO NOTCH IN W22 AND OVER CENTER OF TRAILING EDGE. CEMENT W24*S TO EACH SIDE OF W26 FLUSH WITH BOTTOM OF SAME. BEVEL EDGES OF W27 ON ANGLE SHOWN ON FULL SIZE SIDE VIEW DRAWING SO THAT IT RESTS FLUSH ON TRAILING EDGE, AND OPPOSITE SIDE PRESENTS A FLAT CEMENTING SURFACE TO SKIN COVERING WHICH IS INSTALLED LATER IN STEP. CEMENT IN PLACE SECURELY. CEMENT 3/16 X 3/8 TOP SPAR ACROSS NOTCHES IN TOP OF RIBS BETWEEN W1*S. ADD W18 GUSSETS TO ALL 4 CORNERS OF CENTER SECTION AS SHOWN, AS WELL AS TO EITHER SIDE OF W24. ALLOW FRAME TO DRY THOROUGHLY THEN REMOVE FROM FLAT SURFACE. TURN OVER AND INSTALL 3/16 X 3/8 BOTTOM SPAR IN NOTCHES ACROSS BOTTOM OF RIBS AS W1. W25 IS NOW PREPARED ONLY IF RADIO AILERONS ARE USED, OTHERWISE IT IS CEMENTED IN PLACE ACROSS BOTTOM OF W1*S AS SHOWN. WHEN DRY REMOVE FROM FLAT SURFACE AND TURNED OVER. BOTTOM 3/16 X 3/8 SPAR IS CEMENTED IN PLACE INTO 4 NOTCHES FROM W2 TO WING TIPS. REMOVE PINS THRU W17 AND W16 HOLDING AILERONS IN PLACE. 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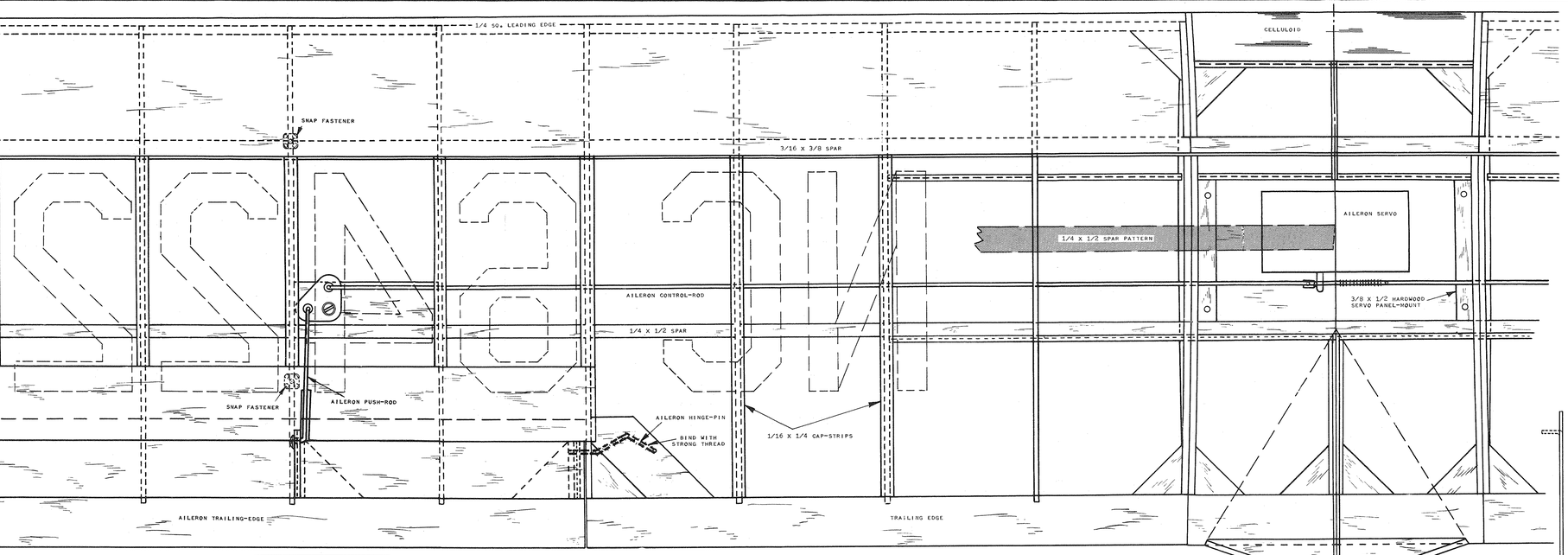
CEMENT 3/16 X 3/8 TOP SPAR ACROSS NOTCHES IN TOP OF RIBS BETWEEN W1*S. ADD W18 GUSSETS TO ALL 4 CORNERS OF CENTER SECTION AS SHOWN, AS WELL AS TO EITHER SIDE OF W24. ALLOW FRAME TO DRY THOROUGHLY THEN REMOVE FROM FLAT SURFACE. TURN OVER AND INSTALL 3/16 X 3/8 BOTTOM SPAR IN NOTCHES ACROSS BOTTOM OF RIBS AS W1. W25 IS NOW PREPARED ONLY IF RADIO AILERONS ARE USED, OTHERWISE IT IS CEMENTED IN PLACE ACROSS BOTTOM OF W1*S AS SHOWN. WHEN DRY REMOVE FROM FLAT SURFACE AND TURNED OVER. BOTTOM 3/16 X 3/8 SPAR IS CEMENTED IN PLACE INTO 4 NOTCHES FROM W2 TO WING TIPS. REMOVE PINS THRU W17 AND W16 HOLDING AILERONS IN PLACE. CEMENT HINGE ASSEMBLY FLUSH WITH EDGE OF AILERON. COMPLETE BY CEMENTING TRIANGULAR GUSSETS W18 INTO REAR CORNERS OF BOTH ENDS AND CORNER AT AILERON HORN AS SHOWN ON SKETCH. CONSTRUCT CENTER SECTION DIRECTLY ON PLANS TO KEEP SQUARE. SLIDE RIBS W1 ONTO EITHER SIDE OF PLYWOOD GUSSETS W20, W21, AND W22 AS SHOWN, and CEMENT IN PLACE. BOTTOM OF RIBS ANGLE IN SO THAT WHEN WING IS ASSEMBLED, TIPS ASSUME THE PROPER DIHEDRAL ANGLE AS DESCRIBED IN WING STEP 2. CEMENT TRAILING EDGE AGAINST REAR OF RIBS SO THAT RIBS ARE IN CENTER OF SAME, USING 1/16 BALSA AS SHOWN. SLIT IN MAIN WING INSERT W23 INTO NOTCHES FOR SAME BETWEEN W20 AND W21 AS SHOWN. INSERT

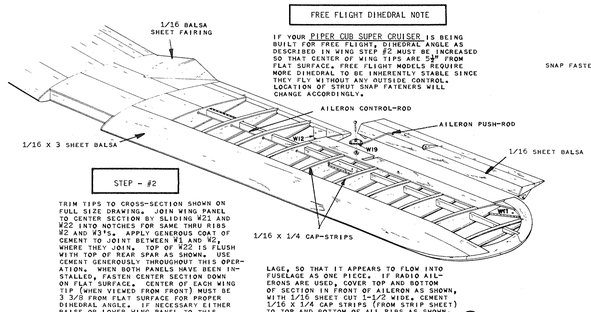
STEP - #2

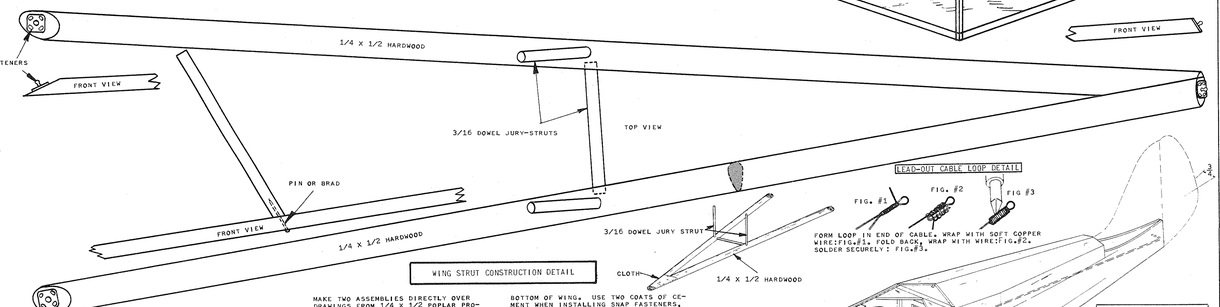
TRIM TIPS TO CROSS-SECTION SHOWN ON FULL SIZE DRAWING. JOIN WING PANEL TO CENTER SECTION BY SLIDING W21 AND W22 INTO NOTCHES FOR SAME THRU RIBS W2 AND W3*S. APPLY GENEROUS COAT OF CEMENT TO JOINT BETWEEN W1 AND W2, WHERE THEY JOIN. TOP OF W22 IS FLUSH WITH TOP OF REAR SPAR AS SHOWN. USE CEMENT GENEROUSLY THROUGHOUT THIS OPERATION. WHEN BOTH PANELS HAVE BEEN INSTALLED, FASTEN CENTER SECTION DOWN ON FLAT SURFACE. CENTER OF EACH WING TIP (WHEN VIEWED FROM FRONT) MUST BE 3 3/8 FROM FLAT SURFACE FOR PROPER DIHEDRAL ANGLE. IF NECESSARY EITHER RAISE OR LOWER WING PANEL TO THIS MEASUREMENT. APPLY A SECOND HEAVY COAT OF CEMENT TO ALL JOINTS. CHECK THAT WING IS FREE FROM WARPS AND ALLOW TO DRY THOROUGHLY BEFORE PROCEEDING. WHEN DRY COVER TOP AND BOTTOM OF LEADING EDGE WITH 1/16 X 3 X 36 SHEET BALSA. MOISTEN SHEETS SO THAT THEY WILL ASSUME CURVES. APPLY COAT OF CEMENT TO ALL FRAMEWORK COVERED AND HOLD IN PLACE WITH PINS UNTIL DRY. CHECK CONSTANTLY AGAINST WARPS WHILE COVERING. ALIGN POINT (IF USED) AILERON RADIO CONTROL ROD INSTALLED AS SHOWN IN DETAIL NOTE. IF RADIO AILERONS ARE NOT USED CEMENT SECURELY IN PLACE TO REAR OF W16 BEING CAREFUL THEY ARE IN LINE WITH WING WHEN VIEWED FROM SIDE. COVER CENTER SECTION ACROSS W1*S IN THREE STAGES, USING 1/16 X 2 X 36 SHEET BALSA. COVER BOTTOM IN SAME MANNER, COVER TOP AND BOTTOM OF WING FROM W2 TO W3 ON EACH SIDE, IN SAME MANNER AS WITH SAME MATERIAL. COVER WING FAIRING WITH TWO TRIANGULAR SECTIONS OF 1/16 SHEET. EDGES CLOSEST TO WING ARE BEVELLED TO KNIFE EDGE. PATTERNS FOR WING FAIRING ARE TAKEN FROM FULL SIZE WING DRAWING. FAIRING IS SANDED WITH WING IN PLACE ON FUSELAGE, SO THAT IT APPEARS TO FLOW INTO FUSELAGE AND ONE PIECE. IF RADIO AILERONS ARE USED, COVER TOP AND BOTTOM OF SECTION IN FRONT OF AILERON AS SHOWN, WITH 1/16 SHEET CUT 1-1/2 WIDE. CEMENT 1/16 X 1/4 CAP STRIPS (FROM STRIP SHEET) TO TOP AND BOTTOM OF ALL RIBS AS SHOWN. IF AILERON IS CEMENTED IN PLACE CAP STRIPS RUN THE ENTIRE LENGTH OF RIBS. SINCE AILERON COVERING, AND COVERING IN FRONT OF AILERON, IS OMITTED ON RADIO AILERON IS COVERED TOP AND BOTTOM OF FULL SIZE SHEET. WHEN DRY, ROUND OFF CORNERS AS SHOWN. PARTS W21, W22, W23 AND W26 ON SECTION ARE INSTALLED ONLY IF RADIO AILERON IS USED. INSTALLATION OF PARTS IS DESCRIBED IN RADIO AILERON DETAIL NOTE. MAKE SURE ENTIRE STRUCTURE IS COMPLETELY DRY, and REMOVE ALL PINS AND SAND SMOOTH. TIPS ARE REINFORCED AT TIP AND SMOOTHLY INTO LEADING AND TRAILING EDGES AS SHOWN ON DETAIL SECTION. CEMENT TO DRAWING ON FULL SIZE WING. ON CONCAVE LINE SHOWN ONLY, INSTALL APPROXIMATELY 2 OZ. OF WEIGHT TO RIGHT HAND WING TIP. (TOWARDS OUTSIDE OF CIRCLE FLOWN). BIND & CEMENT WEIGHT IN PLACE SECURELY SO THAT IT CANNOT BREAK LOOSE. COVER WING WITH SILKSPAN. APPLIED CASTER OIL, APPLY TWO COATS HOT FUEL PROOF DOPE. CHECKING STRUCTURE CONSTANTLY FOR WARPS. IF WARPS SHOULD OCCUR, APPLY ADDITIONAL COAT OF DOPE AND TWIST IN OPPOSITE DIRECTION HOLDING UNTIL DRY. WING IS NOW READY TO BE PAINTED.



FREE FLIGHT DIHEDRAL NOTE

IF YOUR PIPER CUB SUPER CRUISER IS BEING BUILT FOR FREE FLIGHT, DIHEDRAL ANGLE AS DESCRIBED IN WING STEP #2 MUST BE INCREASED SO THAT CENTER OF WING TIPS ARE 5" FROM FLAT SURFACE. FREE FLIGHT MODELS REQUIRE MORE DIHEDRAL TO BE INHERENTLY STABLE SINCE THEY FLY WITHOUT ANY OUTSIDE CONTROL. LOCATION OF STRUT SNAP FATENERS WILL CHANGE ACCORDINGLY.





WING STRUT CONSTRUCTION DETAIL

MAKE TWO ASSEMBLIES DIRECTLY OVER DRAWINGS FROM 1/4 X 1/2 POPLAR PROVIDED. SHAPE STRUTS TO STREAM LINE SECTION SHOWN. CUT TO EXACT LENGTH AND ANGLE SHOWN AND SAND UNTIL VIEW TO FIT AGAINST FUSELAGE AND BOTTOM OF WING. CUT BOTTOM TO FORM VEE AND CEMENT SECURELY TOGETHER OVER PLAN. ALLOW TO DRY THOROUGHLY THEN APPLY A SECOND COAT OF CEMENT AROUND JOINT. ALLOW TO DRY. DRILL 1/8 HOLE IN UNDERSIDE OF JOINT IS WRAPPED AROUND ENTIRE BASE WITH THREAD AND HANDS COAT OF CEMENT APPLIED. WHEN UNIT IS DRY, CEMENT MALE HALF OF SNAP FASTENER TO STRUT SECURELY. CEMENT FEMALE PORTION OF SNAP FASTENERS IN CORRESPONDING PLACE ON SIDES OF FUSELAGE AND BOTTOM OF WING. USE TWO COATS OF CEMENT WHEN INSTALLING SNAP FASTENERS, BEING CAREFUL TO KEEP CEMENT OUT OF HOLES IN FEMALE PORTION WHICH WOULD PREVENT LOCKING. DRILL SIDE HOLE IN STRUTS AT LOCATION SHOWN AND INSERT LENGTH OF 3/16 DOWEL. CEMENT SECURELY IN PLACE. CUT VERTICAL JURY STRUTS TO PROPER LENGTH AND CEMENT IN PLACE TO VEE STRUT AT ANGLE SHOWN. DRILL A SMALL HOLE THRU BOTH STRUTS AND JURY STRUTS AND SECURE BY DRIVING IN PIN OR BRAD. USE TWO COATS OF CEMENT AROUND ENTIRE INSTALLATION. WRAP FASTENED STRUTS WITH STRETCHED FLY LOOSE EASILY IN THE EVENT OF ROUGH LANDINGS.

LEAD-OUT CABLE LOOP DETAIL

FIG. #1 FIG. #2 FIG #3

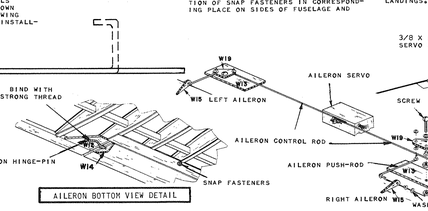
FORM LOOP IN END OF CABLE. WRAP WITH SOFT COPPER WIRE(FIG.#1). FOLD BACK, WRAP WITH WIRE(FIG.#2). SOLDER SECURELY: FIG.#3.

CAUTION:

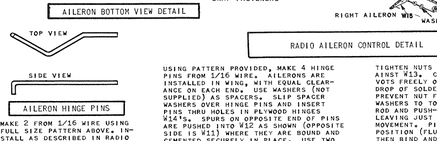
Do not fly control line models in the vicinity of electric power lines!

CONTROL LINE WING GUIDE NOTE

WING GUIDE SHOWN HERE FULL SIZE IS USED ON CONTROL LINE MODELS ONLY. BEND TO EXACT SHAPE SHOWN USING 3/32 WIRE. INSTALL WING AS DESCRIBED IN CONTROL LINE INSTALLATION NOTE AND SKETCH.

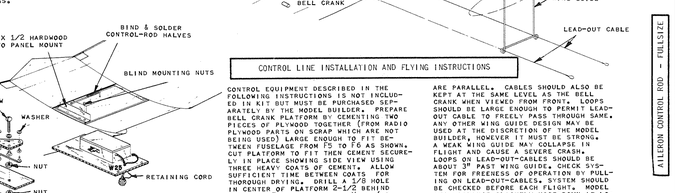


AILERON BOTTOM VIEW DETAIL



AILERON HINGE PINS

MAKE 2 FROM 1/16 WIRE USING FULL SIZE PATTERN ABOVE. INSTALL AS SHOWN IN AILERON CONTROL DETAIL.



RADIO AILERON CONTROL DETAIL

USING PATTERN PROVIDED, MAKE 4 HINGE PINS FROM 1/16 WIRE. AILERONS ARE INSTALLED IN WING WITH EQUAL CLEARANCE ON EACH END. USE WASHERS (NOT SUPPLIED) AS SPACERS. SLIP SPACER WASHERS OVER HINGE PINS AND INSERT PINS THRU HOLES IN HARDWOOD HINGES. W14*S - SPURS ON OPPOSITE END OF PINS ARE PUSHED INTO W12 AS SHOWN (OPPOSITE SIDE IS W11) WHERE THEY ARE BOUND AND CEMENTED SECURELY IN PLACE. USE TWO HEAVY COATS OF CEMENT. ALLOW TO DRY THOROUGHLY. AILERON SHOULD SWIVEL FREELY AND EASILY AND ADJUSTMENTS MUST BE REMOVED. USING FULL SIZE PATTERNS, BEND TWO PUSH RODS, AND BOTH HALVES (LEFT & RIGHT) OF THE AILERON CONTROL HORN FROM 1/16 WIRE. HORIZONTAL SPUR OF PUSH ROD IS INSERTED IN HORN W15. WASHERS (NOT PROVIDED IN KIT) SHOULD BE SOLDERED ON EITHER SIDE OF HORN BEFORE INSERTING. ALLOWING JUST ENOUGH CLEARANCE FOR FREEDOM OF MOVEMENT. INSERT BOTH HALVES OF AILERON CONTROL RODS THRU HOLES IN WING RIBS AS SHOWN. LAST BEND IN RIGHT HAND ROD AS SHOWN AND DESCRIBED ON BENDING PATTERN AND INSERT INTO HOLE IN BELL CRANKS W19, ARE NOW INSTALLED. HARDWARE FOR INSTALLATION IS NOT PROVIDED IN KIT. PLACE #4 WASHER ON VERTICAL SPUR OF PUSH ROD AND CONTROL ROD. BOTH SPURS ARE INSERTED INTO THEIR RESPECTIVE HOLES IN BOTTOM OF W19 AT THE SAME TIME THAT W19 IS MOUNTED TO W13. SLIP WASHER ON 4/40 X 1/2 PIVOT SCREWS AND INSERT INTO TOP OF W19. ADD NUT AND SCREW DOWN UNTIL 1/16 CLEARANCE IS PROVIDED (ALLOWANCE FOR W19 TO PIVOT FREELY BETWEEN HEAD OF SCREW AND NUT. INSERT BOTTOM OF SCREW THRU W13 AND MOUNT BOTTOM NUT. TIGHTEN NUTS TOWARDS EACH OTHER, AGAINST W13. CHECK THAT W19 STILL PIVOTS FREELY ON SCREW THEN PLACE A DROP OF SOLDER ON BOTTOM OF SCREW TO PREVENT NUT FROM LOOSENING. SOLDER WASHERS TO TOP AND BOTTOM OF CONTROL ROD AND PUSH-ROD SPUR TO SECURE SAME, LEAVING JUST ENOUGH CLEARANCE FOR FREE MOVEMENT. PIN AILERONS IN NEUTRAL POSITION (FLUSH WITH REST OF WING) THEN BIND AND SOLDER TOGETHER THE HALVES OF THE CONTROL-ROD IN CENTER AS SHOWN. REMOVE PINS FROM AILERONS AND SLIDE ASSEMBLED AILERON CONTROL-ROD FROM SIDE TO SIDE. AILERONS SHOULD SWING FREELY, ONE GOING UP WHILE OTHER GOES DOWN. MOUNT AILERON SERVO ON W25 USING 4/40 X 1/2 SCREWS AND NUTS NOT PROVIDED. DRILL 1/4" HOLE THRU W25 AS SHOWN FOR SERVO WIRES. INSERT WIRES THRU HOLE THEN HOOK UP TO AILERON PLUG AS DESCRIBED IN MULTI-CHANNEL WIRING DETAIL, LEAVING WIRES ABOUT 3" LONG. INSTALL RETAINING CORD (NOT PROVIDED) ON WIRE IN SAME MANNER AS DESCRIBED IN MULTI-CHANNEL RADIO CONTROL DETAIL. END OF CORD CAN BE TIED TO LOWER HOLE OF SERVO AS SHOWN IN SKETCH, OR INSTALL SERVO UNIT IN WING. CENTER CONTROL ROD SPUR INSERTS INTO HOLE IN PLASTIC ADJUSTMENT LUG. AILERONS SHOULD NOW BE IN NEUTRAL POSITION. IF THEY ARE NOT, ADJUST LUG ACCORDING TO SERVO MANUFACTURER'S INSTRUCTIONS. TO OBTAIN ADDITIONAL ADJUSTMENT, LOOSEN SCREWS HOLDING SERVO ON W25 AND SHIFT AS REQUIRED, THEN TIGHTEN SECURELY. SECURE SERVO WITH W16 AND 4/40 SCREWS (NOT PROVIDED). WHEN PLACING WING ON FUSELAGE BE SURE TO INSERT AILERON PLUG IN WING TO IT'S SOCKET IN FUSELAGE.

CONTROL LINE INSTALLATION AND FLYING INSTRUCTIONS

CONTROL EQUIPMENT DESCRIBED IN THE FOLLOWING INSTRUCTIONS IS NOT INCLUDED IN KIT BUT MUST BE PURCHASED SEPARATELY BY THE MODEL BUILDER. PREPARE BELL CRANK PLATFORM BY CEMENTING TWO PIECES OF PLYWOOD TOGETHER (FROM RADIO PLYWOOD PARTS ON SCRAP WHICH ARE NOT BEING USED) LARGE ENOUGH TO FIT SNUG BETWEEN FUSELAGE FROM F5 TO F6 AS SHOWN. CUT PLATFORM TO FIT THEN CEMENT SECURELY IN PLACE SHOWING SIDE VIEW USING THREE HEAVY COATS OF CEMENT. ALLOW SUFFICIENT TIME BETWEEN COATS FOR THOROUGH DRYING. DRILL A 1/8 HOLE IN CENTER OF PLATFORM 2-1/2 BEHIND BULKHEAD F5. MOUNT LARGE VECO (OR SIMILAR TYPE)BELL CRANK. BEND CONTROL ROD FROM 3/32 WIRE (NOT PROVIDED) USING FULL SIZE PATTERNS AT TOP OF REVERSE SIDE OF PLAN. ENGAGE ROD AND LEAD OUT CABLES IN BELL CRANK. CABLES COME THRU HOLES IN CABIN SIDE. MAKE WING GUIDE FROM 3/32 WIRE (NOT PROVIDED). SECURELY FASTEN TO END WING RIB AS SHOWN. LOOPS IN GUIDE ARE SAME DISTANCE APART AS HOLES IN CABIN SIDES.LEAD OUT CABLES ARE PARALLEL. CABLES SHOULD ALSO BE KEPT AT THIS DISTANCE AT BELL CRANK WHEN VIEWED FROM FRONT. LOOPS SHOULD BE LARGE ENOUGH TO PERMIT LEAD-OUT CABLE TO FREELY PASS THROUGH SAME. ANY OTHER WING GUIDE DESIGN MAY BE USED AT THE DISCRETION OF THE MODEL BUILDER, HOWEVER IT MUST BE STRONG. A WEAK WING GUIDE MAY COLLAPSE IN FLIGHT AND CAUSE A SERIOUS CRASH. LEAD-OUT CABLES SHOULD BE ABOUT 3" PAST WING GUIDE. CHECK SYSTEM FOR FREENESS OF OPERATION BY PULLING ON LEAD-OUT CABLES. SYSTEM SHOULD BE CHECKED BEFORE EACH FLIGHT. MODEL MUST BALANCE SLIGHTLY NOSE-DOWN AT LOCATION OF FRONT LINE. DO NOT ATTEMPT TO FLY MODEL UNTIL THIS BALANCE IS CORRECT. ADD WEIGHT TO NOSE IS NECESSARY. BE CERTAIN RUDDER IS OFFSET 3/4 TOWARDS OUTSIDE OF CIRCLE FLOWN, ONLY LIMIT SETTINGS ARE REQUIRED FOR THE PIPER CUB SUPER CRUISER. GOOD LUCK!!! HAPPY LANDINGS!!!.

FREE FLIGHT FLYING INSTRUCTIONS

LASH WING SECURELY IN PLACE WITH 1/8 OR 1/4 RUBBER (SEE YOUR HOBBY DEALER). CHECK OUT AND ADJUST MODEL AS DESCRIBED IN RADIO CONTROL FLYING INSTRUCTIONS, BALANCING 2-1/2 BACK OF LEADING EDGE OF TOP WING. FOR TEST GLIDING IS RECOMMENDED, ONLY FOR EXPERT FREE FLIGHT MODELER. SET ENGINE FOR A 30 TO 45 SECOND RUN AT LOW SPEED. TAKE OFF SHOULD BE MADE ON SMOOTH SURFACE. IF MODEL TENDS TO LAUNCHED, NOSE SHOULD BE AIMED SLIGHTLY DOWN AT A POINT ABOUT 30 FT. AWAY. ATTEMPT TO RELEASE MODEL SMOOTHLY AT APPROXIMATELY FLYING SPEED. MODEL SHOULD EXECUTE A SMOOTH FLIGHT PATH CLIMBING SLIGHTLY AND POSSIBLY TURNING GENTLY. ANY SHARP TURNS CAN BE COUNTERACTED BY CEMENTING A SMALL ALUMINUM TAB TO THE REAR OF RUDDER AND BENDING IN OPPOSITE DIRECTION TO TURN. STALLING TENDENCIES (NOSE UP) IS CORRECTED BY ADDING WEIGHT TO FRONT OF FUSELAGE TO ACHIEVE PROPER BALANCE AS DESCRIBED IN RADIO CONTROL FLYING INSTRUCTIONS. DIVING TENDENCIES ARE CORRECTED BY ADDING WEIGHT TO REAR. IN THE EVENT THAT ADDITION OF WEIGHT DOES NOT CORRECT SITUATION, THE MODEL HAS BEEN BUILT INCORRECTLY AND WING OR STABILIZER IS WRONG ANGLE WHEN VIEWED FROM SIDE. CHECK ANGLES AND ADJUST ACCORDINGLY. FOR MINOR ADJUSTMENTS A 1/16 PIECE OF WOOD INSERTED UNDER REAR OF WING WILL CORRECT STALLING TENDENCIES. UNDER FRONT OF WING WILL CORRECT DIVING TENDENCIES. INCREASE TURNS IN RUDDER BY ADDING OR ADJUSTING MODEL TO SUIT, UNTIL FULL POWER OPTION HAS BEEN ACHIEVED. GOOD LUCK!!! HAPPY LANDINGS!!!

RADIO CONTROL FLYING INSTRUCTIONS

LASH WING SECURELY IN PLACE WITH 1/8 O