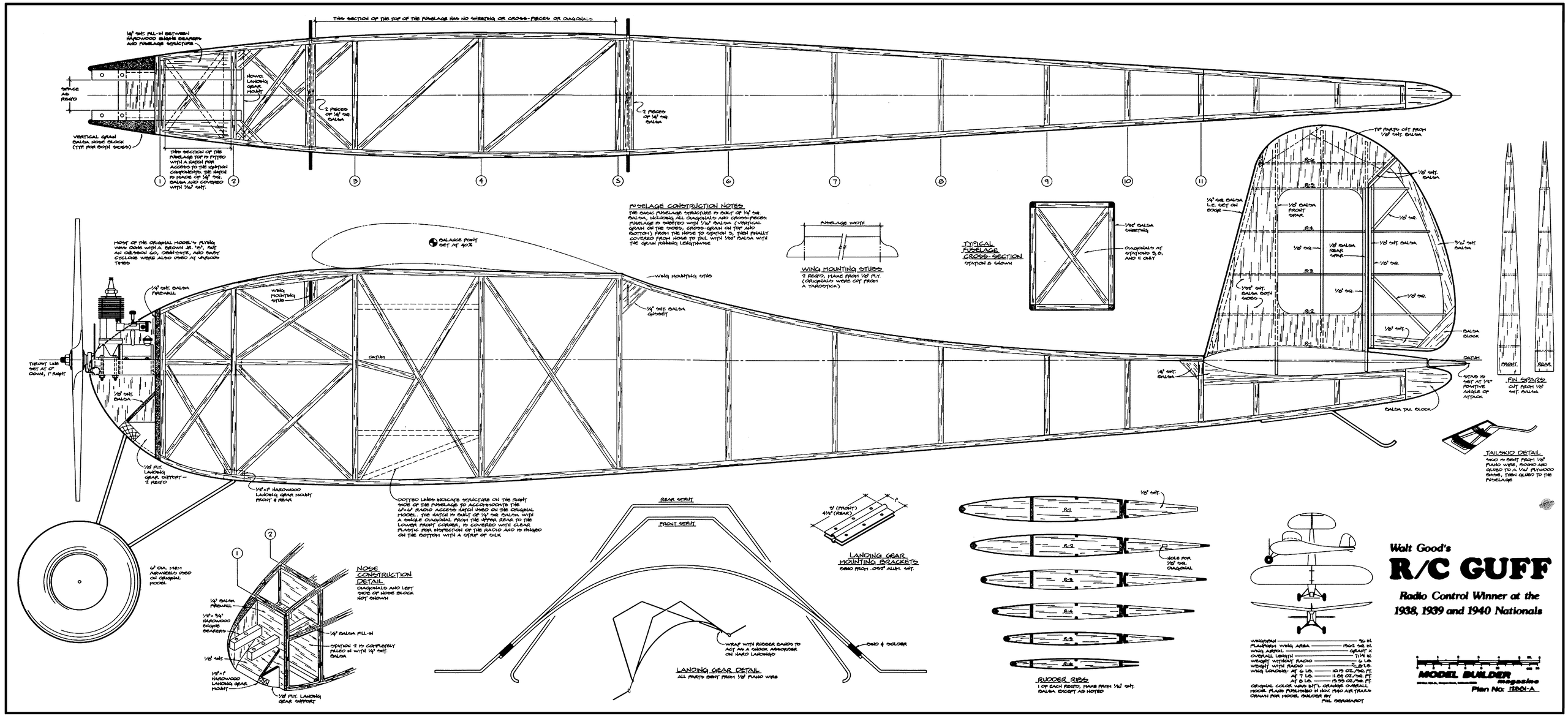
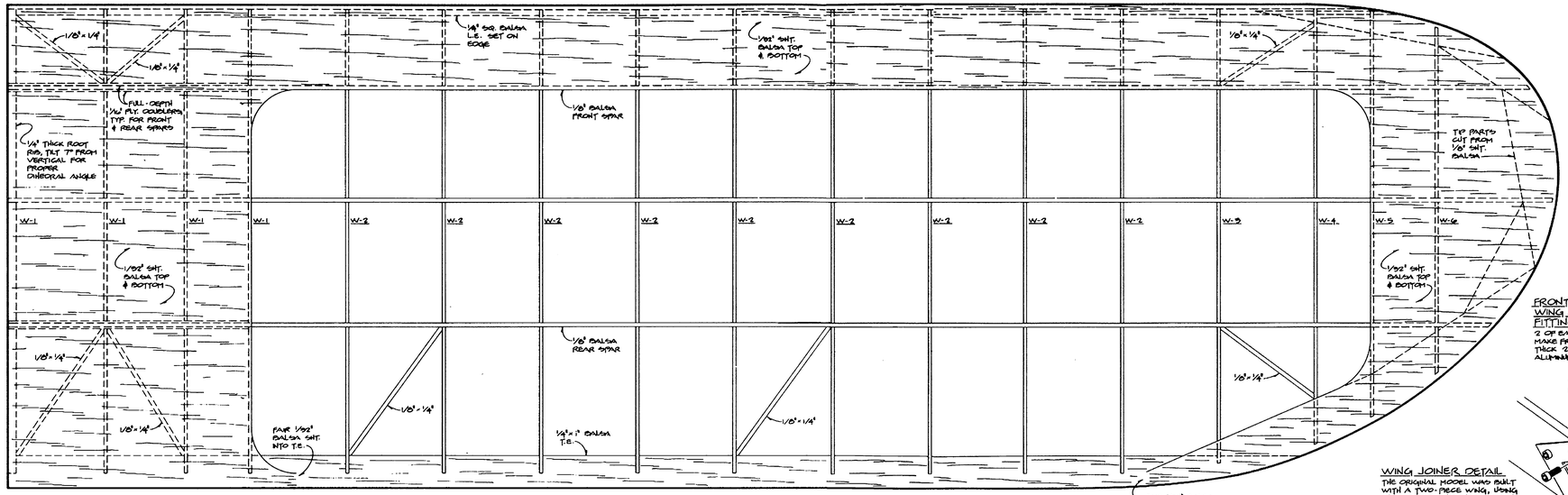
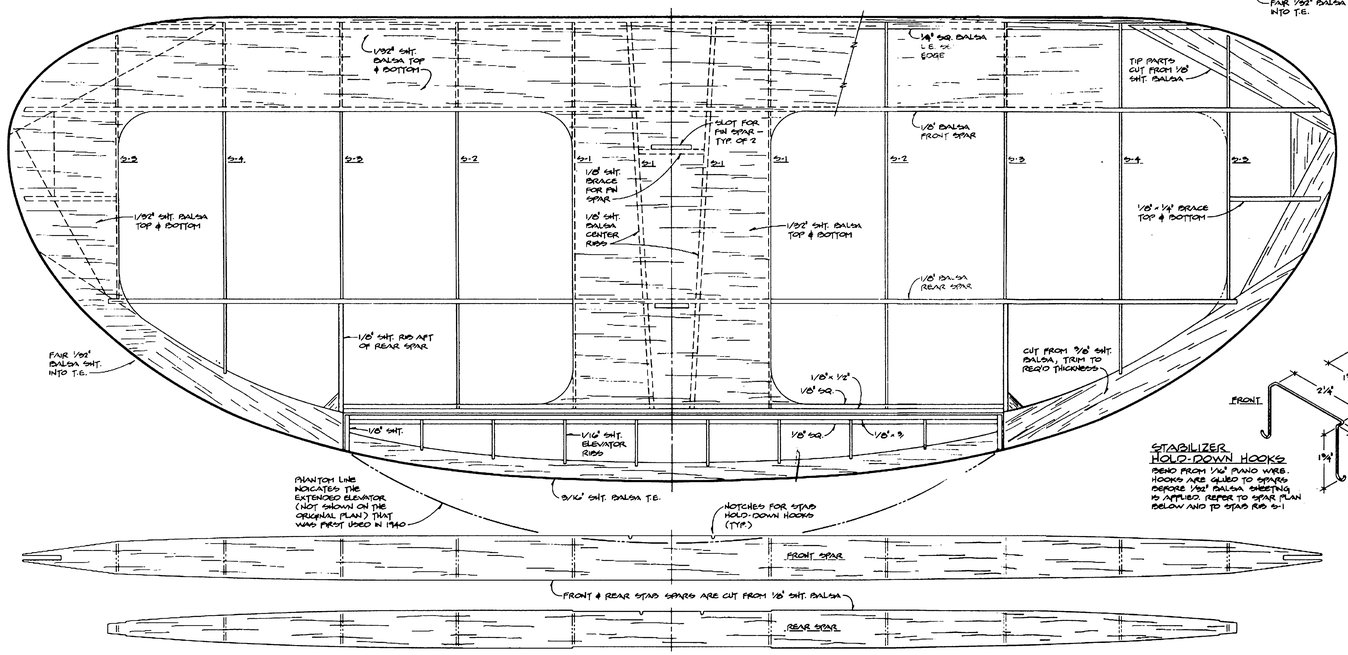
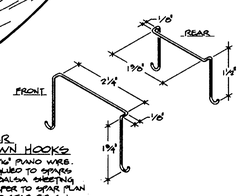

THIS SECTION OF THE TOP OF THE FUSELAGE HAS NO SHEETING OR CROSS-PIECES OR DIAGONALS
1/4" SHT. FILL-IN BETWEEN HARDWOOD ENGINE BEARERS AND FUSELAGE STRUCTURE
SPACE AS REQ'D
HOWO LANDING GEAR MOUNT
2 PIECES OF 1/4" SQ. BALSA
VERTICAL GRAIN BALSA NOSE BLOCK (TOP FOR BOTH SIDES)
THIS SECTION OF THE FUSELAGE TOP IS FITTED WITH A HATCH FOR ACCESS TO THE IGNITION COMPONENTS. THE HATCH IS MADE OF 1/4" SQ. BALSA AND COVERED WITH 1/64" SHT.
1
2
3
4
5
6
7
8
9
10
11
MOST OF THE ORIGINAL MODEL'S FLYING WAS DONE WITH A GROWL JR. "D", BUT AN OLDSON GO, GERMINATE, AND BABY CYCLONE WERE ALSO USED AT VARIOUS TIMES
BALANCE POINT SET AT 40%
1/4" SHT. BALSA FIREWALL
WING MOUNTING STUD
WING MOUNTING STUDS
1/4" SHT. BALSA GUSSET
DATUM
THRUST LINE SET AT 0° DOWN, 1° RIGHT
1/8" SHT. BALSA
1/8" PLY. LANDING GEAR SUPPORT - 2 REQ'D
1/8"x1" HARDWOOD LANDING GEAR MOUNT FRONT & REAR
DOTTED LINES INDICATE STRUCTURE ON THE RIGHT SIDE OF THE FUSELAGE TO ACCOMMODATE THE U-I-U RADIO ACCESS HATCH USED ON THE ORIGINAL MODEL. THE HATCH IS BUILT OF 1/4" SQ. BALSA WITH A SINGLE DIAGONAL FROM THE UPPER REAR TO THE LOWER FRONT CORNER, IT COVERED WITH CLEAR PLASTIC FOR INSPECTION OF THE RADIO AND IS HINGED ON THE BOTTOM WITH A STRIP OF SILK
4" DIA. MAIN WHEELS USED ON ORIGINAL MODEL
1/4" BALSA FIREWALL
1/8" x 3/4" HARDWOOD ENGINE BEARERS
1/8" SHT.
1/8"x1" HARDWOOD LANDING GEAR MOUNT
1/8" PLY. LANDING GEAR SUPPORT
NOSE CONSTRUCTION DETAIL
DIAGONALS AND LEFT SIDE OF NOSE BLOCK NOT SHOWN
1/4" BALSA FILL-IN
STATION 2 IS COMPLETELY FILLED IN WITH 1/4" SHT. BALSA
FUSELAGE CONSTRUCTION NOTES
THE BASIC FUSELAGE STRUCTURE IS BUILT OF 1/4" SQ. BALSA, INCLUDING ALL DIAGONALS AND CROSS-PIECES. FUSELAGE IS SHEETED WITH 1/64" BALSA (VERTICAL GRAIN ON THE SIDES, CROSS-GRAIN ON TOP AND BOTTOM) FROM THE NOSE TO STATION 5, THEN FINALLY COVERED FROM NOSE TO TAIL WITH 1/32" BALSA WITH THE GRAIN RUNNING LENGTHWISE
FUSELAGE WIDTH
WING MOUNTING STUDS
2 REQ'D, MAKE FROM 1/8" PLY. (ORIGINALS WERE CUT FROM A YARDSTICK)
TYPICAL FUSELAGE CROSS-SECTION
STATION 8 SHOWN
1/32" BALSA SHEETING
DIAGONALS AT STATIONS 3, 8, AND 11 ONLY
REAR STRUT
FRONT STRUT
WRAP WITH RUBBER BANDS TO ACT AS A SHOCK ABSORBER ON HARD LANDINGS
LANDING GEAR DETAIL
ALL PARTS SHT. FROM 1/8" PIANO WIRE
BAND & SOLDER
8" (FRONT) 4 1/2" (REAR)
LANDING GEAR MOUNTING BRACKETS
BEND FROM .032" ALUM. SHT.
1/8" SHT.
R-1
R-2
R-3
R-4
R-5
R-6
HOLE FOR 1/8" SQ. DIAGONAL
RUDDER RIBS
1 OF EACH REQ'D, MAKE FROM 1/8" SHT. BALSA EXCEPT AS NOTED
TIP PARTS CUT FROM 1/8" SHT. BALSA
1/8" SHT. BALSA
1/4" SQ. BALSA L.E. SET ON EDGE
1/8" BALSA FRONT SPAR
1/8" SQ.
1/8" BALSA REAR SPAR
1/8" SHT. BALSA
3/32" SHT. BALSA
1/32" SHT. BALSA BOTH SIDES
BALSA BLOCK
1/4" SHT. BALSA
STAND TO SET AT 1/2° POSITIVE ANGLE OF ATTACK
BALSA TAIL BLOCK
FRONT
REAR
FIN SPARS
CUT FROM 1/8" SHT. BALSA
TAILSKID DETAIL
SKID IS BENT FROM 1/8" PIANO WIRE, SOLDED AND GLUED TO A 1/16" PLYWOOD BASE, THEN GLUED TO THE FUSELAGE
WEIGHT ____ 36 OZ.
PLANFORM WING AREA ____ 1502 SQ. IN.
WING AIRFOIL ____ GRANT X
OVERALL LENGTH ____ 71 1/4 IN.
WEIGHT WITHOUT RADIO ____ 6 LB.
WEIGHT WITH RADIO ____ 6 LB. 6 OZ.
WING LOADING: AT 6 LB. ____ 10.13 OZ./SQ. FT.
AT 7 LB. ____ 11.81 OZ./SQ. FT.
AT 8 LB. ____ 13.50 OZ./SQ. FT.
ORIGINAL COLOR WAS INT'L. ORANGE OVERALL
MODEL PLANS PUBLISHED IN NOV. 1940 AIR TRAILS
DRAWN FOR MODEL BUILDER BY
PAUL BERNHARDT
Walt Good's
R/C GUFF
Radio Control Winner at the 1938, 1939 and 1940 Nationals
MODEL BUILDER magazine
Plan No: 12201-A

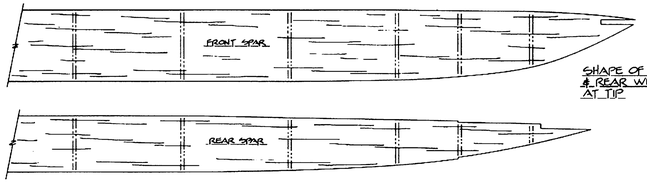






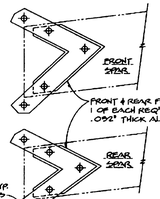
STABILIZER HOLD-DOWN HOOKS

BEND FROM 1/16" PIANO WIRE. HOOKS ARE GLUED TO SPARS BEFORE 1/32" BALSA SHEETING IS APPLIED. REFER TO SPAR PLAN BELOW AND TO STAB RIB S-1



SHAPE OF FRONT & REAR WING SPARS AT TIP

DIHEDRAL DETAIL
NOT TO SCALE

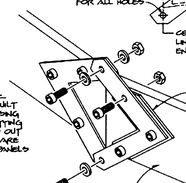


FRONT & REAR WING JOINER FITTINGS

2 OF EACH REQ'D, MAKE FROM .032" THICK 2024 T-3 ALUMINUM

FRONT & REAR FITTING SPACERS - 1 OF EACH REQ'D, MAKE FROM .032" THICK ALUMINUM

CENTER OF HOLES MUST LINE UP EXACTLY WITH END OF SPAR



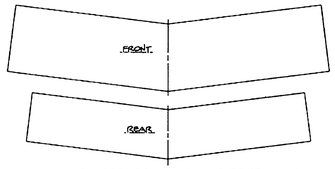
WING JOINER DETAIL

THE ORIGINAL MODEL WAS BUILT WITH A TWO-PIECE WING, USING THE FITTINGS SHOWN. THE FITTING SPACERS WERE NOT CALLED OUT ON THE ORIGINAL PLAN BUT ARE NECESSARY FOR THE WING PANELS TO MATE PROPERLY.

SPACERS ON FRONT & REAR SPARS OF LEFT WING ONLY

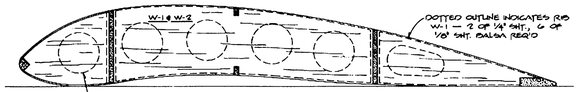
6-32 MACHINE SCREWS & NUTS USED THROUGHOUT

SPAR ROOTS ARE REINFORCED WITH 1/16" PLY. - REFER TO WING PLAN. FITTINGS ARE MOUNTED TO FRONT FACE OF SPARS

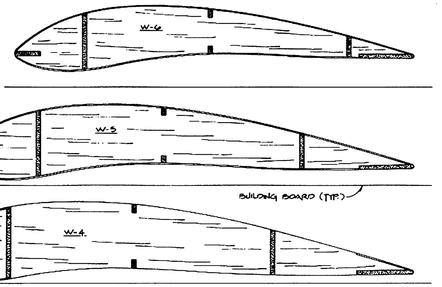


JOINERS FOR OPTIONAL ONE-PIECE WING

MAKE FROM 3/32" OR 1/8" PLY., 2 OF EACH REQ'D. WHEN USING THESE JOINERS, DO NOT OMIT THE 1/16" PLY. SPAR DOUBLERS SHOWN ON THE WING PLAN



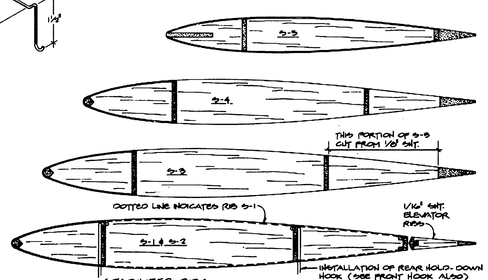
OPTIONAL LIGHTENING HOLES - TYP. FOR ALL WING RIBS. THESE HOLES WERE NOT SHOWN ON THE AIR TRAILS PLAN BUT ARE VISIBLE IN SOME OF THE ORIGINAL PHOTOS



WING RIBS

ALL CUT FROM 1/8" SHT. BALSA EXCEPT AS NOTED. 18 OF W-2 REQ'D, 2 EACH OF W-3 THRU W-6.

NOTE: EACH RIB IS SHOWN IN ITS ACTUAL POSITION RELATIVE TO THE BUILDING BOARD

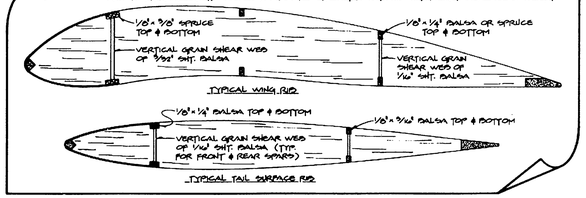


STABILIZER RIBS

2 OF EACH REQ'D, RIBS S-1 CUT FROM 1/8" SHT. BALSA, ALL OTHERS FROM 1/16" EXCEPT AS NOTED

SUGGESTED ALTERNATE CONSTRUCTION FOR WING & TAIL SURFACES

ELIMINATES THE ORIGINAL MODEL'S 3-PIECE RIBS AND FULL-DEPTH SPARS. MAKES FOR EASIER AND FASTER BUILDING, FINISHED PARTS ARE STRONGER WITH NO SIGNIFICANT INCREASE IN WEIGHT



R/C GUFF

MODEL BUILDER magazine

Plan No: 12BM-D