1/2" SQUARE HARD BALSA LEADING EDGE SHAPED TO AIRFOIL
SEE SIDEVIEW NOTE AS TO PLACEMENT
30-5/8"
5° DIHEDRAL AT TIP
COVER WITH 1/20" SHEET BALSA PER SIDEVIEW
1/4 x 1/8 HARD BALSA SPARS
3/16" X 1/4"
WR 3/16"
3/16" X 7/8" HARD BALSA TRAILING EDGE
W1
W2
W3
W4
W5
W5A
W6
W7
W8
W9
W-G
W-4
W-5
TWO PLY 3/32
1/8" BALSA
1/8" x 3/16"
1/8 HARD BALSA
TWO PLY 3/32" BALSA
FLATTEN TOP OF 3/16 TO FIT S-10 & R-3
TWO PLY 3/32
S-10 1/8" BALSA
R-3
STAB SPARS
ADD BALSA STRIPS TO EACH FACE
SAND TOP FLAT & PROVIDE PLATFORM
TO MOUNT HORIZONTAL STABILIZER
T-8
R 4
1/8 HARD BALSA
RUDDER HORN POSITION
R 6
R 7
R 8
R 5
R 3
R 2
R 1
1 1/2" BY 31" 1/20" SHEET
1/2" SQUARE STOCK SANDED TO AIRFOIL
BALSA BLOCK
CELLULOID
WINDSHIELD
3/16 DOWEL
HEAVY PAPER COWLING
1/4 x 1/8
3/16 x 3/8
1/4" DOWEL
W-G
K 5 1/8" X 1/2"
WR 3/32" BALSA
CT 1/8" BALSA
3/16 SQ. BALSA
1/8" BALSA SERVO MOUNT
3/16" SQ. BOTH SIDES
FLATTEN BOTTOM OF 3/16 TO FIT K-5
3/32" SQ. STRIP
FLATTEN TOP OF 3/16 TO FIT R-1
T-7 1/8"
T-6
T-5
T-4
T-3
T-2
T-1
1/8 x 3/16
1/4" DOWEL
3/32" FILLER
1/8 HARD BALSA
1/8 x 3/8 BALSA STRIP
ALL RIBS 3/32" RIB W-1 1/8" BALSA
3/16" DOWEL
BALSA BLOCK
REQ'D
1/20" SHEET RADIO HATCH
BB-3 PLACED DIAGONALLY
1/8" BALSA BALLAST BOX SIDES
BB-3
1/8" SQ
BB-1
1/8" X 3/16" BALSA
RECEIVER AREA
RUDDER SERVO
1/4" x 1/8" BALSA
TOW HOOK
K 1
K 2
K 3
K 4
1/8 HARD BALSA
3/16" Hardwood Skid
B-3
B-7
B3
T 1
T 2
T3
T 4
1/2 X 1/8 SPAR
3/16" SQ. SAND TO AIRFOIL
S-12A
S-11A
S-11B
S-3
S-4
S-10
TAPER SPARS
GUSSET
HORIZONTAL STABILIZER CONSTRUCTION
TYPICAL SECTION FOR FUSELAGE
CT
CT
1/8" SQ.
3/16" SQ.
T3
B3
HOLE FOR SERVO WIRES
1/4" X 1/8"
1/8" X 3/8" KEEL STRIP
K-1
Super Sinbad Construction Notes:
The construction of the Super Sinbad glider is rather straightforward and apparent by any experienced model builder. The Super Sinbad is made up from a couple of subassemblies. These subassemblies can be constructed concurrently, and thus negating the need to complete one assembly before proceeding to the next step. The builder can also read ahead and determine possible suassemblies which need to be built, and construct these in advance of their installation, and thus keep several items going at once and saving some overall drying time and thus speed completion. The basic subassemblies for Super Sinbad are the two joined wingh halves, fuselage, horizontal stabilizer and the vertical stabilizer assembly.
The original aircraft was built as a simple hand launch glider, afterwhich it was modified for single channel radio control. The radio control receiver indicated upon the original plans was of the tube type, with room for B batteries, A batteries, escapement batteries. There is enough room within cockpit area of the Super Sinbad to install any late model radio control system. The plans are not indicative of placement for receiver, batteries, and servos, as the types available on the market today are quite varied and individual. The builder will find that there is no urgent need to install the most modern or exotic radio set-up, but he can use any older and cheaper radio as is available. Should the builder modify the Super Sinbad for available equipment, he should give thought to modification of control surfaces for elevators, ailerons or speed brakes not indicated upon this plan.
1: Wing assembly notes: Begin by cutting the 3/8 by 3/16 main spar to a bit longer than the plan indicates. Cover the plan with waxpaper, and lay out the main spar on the plan. Shim up the spar with 1/8" wood and hold in place with weights. Slip on and glue into place all the W-2 ribs and the W-3 rib in positions indicated on the plan. While glue is setting, weight the trailing edge end of each rib so that upon setting the ribs they will be on a straight line. Without moving the parts on the plan, set in the upper 1/8 by 1/4 hard balsa spar. When completely dried and set, remove holding weights, flip over and glue into place the lower 1/8 by 1/4 spar. Lay out the trailing edge on the plan and hold into position with weights. Lay out a 1/2" square strip on the plan along the position of the 1/8 by 1/4 spars. Then lay the spar/rib assembly upside down on the plan and slide into the trailing edge and glue into place. When finished, this ought to aim the trailing edge down at the proper angle. After assembly is set and removed from plan, install the 1/2" square leading edge material using rubber bands to hold in place. You may also want to set the wingtip onto flat surface and weigh down to prevent possible warping. Note that there is a bit of overhang in the 1/2" strip beyond the edges of the ribs so that the 1/20" sheets can be flushed in on. Lay out all the "W" parts for the tips, and glue and laminate those noted on the plans. Join together wingtip parts W-9 and W-8 over plan. Join together W-6 and W-7 over the plan. Lay the wingtail on the plan again, and then test fit the two tip assemblies in place per the plan. From the main 3/16" by 3/8" spar so they fit the tip assembly and taper cut W-6 and W-9 to fit appropriately into the trailing edge and leading edge. Then glue the two assemblies into place taking note that a 1/8" shim may be necessary for the wingtip to obtain an undercamber similar to the main ribs. The two 1/4" by 1/8" spars can be initially bent to each side of the tip assemblies, but do not glue in place. After dried, they can be trimmed to fit the tipassemblies. Slide in place rib W-4 and rib W-5 between the two strip spars and glue in place as per the plan, taking care to taper the trailing edge to match the curvature of the tip assembly. Squeeze together the two trimmed spar strips and glue into place in the tips. Add Rib W5A in place, and taper the small end to match the tip assembly. Razor saw to rough shape, block plane and sand the leading edge into the wingtip per the shape shown on the plan. Taper the upper edges of the wingtip and spars to match the section shown on the plan. Cut some 1/20" by 3" by 36" balsa down the middle, test fit and then glue into place a half of the 1/20" material to the upper leading edge, allowing to incorporate some overhang for trimming. Use common clothes pins to hold into place. To ensure no warps, it is best to set the wing assembly onto a flat surface, weighing it down until the glue sets. Add the lower 1/20" in similar routine to upper. Sand the entire wingshaft, and tips to a smooth surface, and round the tip edges and taper the trailing edges as per plan. Build the second wingshaft in similar order. Using a machinists square, mark and trim off excess material at the centerline of the wing. Sand to a vertical taper, such that when joined the correct 5° dihedral measurement will be obtained at each tip. Slide in rib W-1 and glue in dihedral gussets W-G to one wingshaft and let set. Then slide together and test fit the other wingshaft and glue tight when satisfied.
2: Fuselage assembly. The fuselage is based upon a horizontal framework, a lower keel and an upper crutch, each assembly being treated separately and then combined into a final assembly. Soak about 12" of a pair of 32" long 3/16" square balsa strips. Using the plan framework view, cut a few (but not all) of the short perpendicular 3/16" to lengths indicated. Lay out the wetted strips on the plan, and bend to shapes noted, trim and taper the rearmost of the 3/16" long strips to match the plan. Hold in shape with heavy weights or pins until dry. Then lay into position and glue in the 3/16" square lengths. Using the finished shape, then cut and taper additional lengths to match the inside of the framework. Layout and glue together all K parts as per plan. After dry, slip on to the keel all B parts, but do not glue. Part B-1 will be glued perpendicular to the keel and should align with the most forward edge of the framework. See that the remainder of the B parts align onto the 3/16" square balsa framework, and that the overall length of the keel terminates at the joined 3/16" sides. Lightly sand the upper and lower sides to the joints of the framework and glue the adjusted keel and B parts into place. After set, trim and taper the 1/8" by 3/16" keel supports and set in place, noting that the lower portion should be blunt, and not pointed. Sand flat the bottom of the keel, the B parts, and the supports, and then glue on the 1/8" by 3/8" keel skid strip. The forward end of the strip may need to be wetted to bend. Add in the two long 1/8 by 1/4 strips to the lower sides of the fuselage. Square up and fit ballast box parts BB-1 and BB-2 into the fuselage framework. Check that the correct distance forward in the placement for BB-2 is met. Note that BB-1 lies onto the edge of the recently installed 1/4 by 1/8 strips. Trim, fit and glue into place the ballast box sides BB-3. Using a square, glue K-5 into the upper slot in T-3. Mark K-5 at 6 3/4" from the inside face of T-3, and glue in place part T-4 square to. Glue this assembly onto the top of the framework as per plan. Glue on the remainder of the T parts in positions noted on the plan. Being careful, bevel the mating edges of parts C-1 to each other, and then attach to the top of K-5 and T-3. The mating line goes down the center of K-5 and that the rear of each C-T fits flush up to the rear face of T-4. Square off a little about 3" from one edge of some 16" long by 3/32" square stock. Then square off about 4" from the opposite edge and end. Place the 3/16" square onto the tapered portion of K-5 and the Vees of the rear T parts. You may need to soak the strip to make it conform to the arc. Add on two 3/16" strips to each flank of the strip as shown on the plan, then sand flat. Add on the two upper 3/32" square longerons to the side of the T parts as per plan and add in the uprights in the area below the wing. Glue in place the semicircular cockpit parts T-1 and T-2 and then the dowel from T-2 to the forward end of C-T. Cover T-1 and T-2 with 1/20 sheet balsa as noted on plan. Glue in the vertical dowel at B-1, then glue in and form the two side nose blocks and the upper nose block. Consideration for installation of radio gear must be done at this time. As late model radio gear is lighter, it is suggested that the area forward of B-3 be used. A platform for servos should be fabricated underneath the windshield and the radio gear under-neath this. Access can be via the upper semi-circular section at T-1/T-2.
3: Horizontal stabilizer. Glue laminate the S parts so noted on the plan. Using the plan, connect together the assemblies for S-4, S-3 and S-2 on a flat surface. Glue in place the long 1/8 by 3/8 spar, then the rear rib halves on a flat surface. Sand and taper the rear edges to the installed S part assemblies, and then the center section of the spar. Laminate in the short spar center support, and sand to taper in the center. Glue in place ribs S-11A through S-13A per positions on the plan. To one side, glue in an overly long 3/16" square leading edge. After dry, cut off excess of the square strip where it meets assembly S-1, and fit and glue in place each. Do the same for other side of horizontal stabilizer, but do not join the two leading edges at the indicated centerline. Sawcut and sand a little portion at a time each half of the leading edges, and coincidently fit part S-10. Once fit, flatten about 1" of the interior edge of the square leading edges and then glue in S-10 and the two gussets. Sand, round or taper the exterior surfaces preparatory to covering.
4: Vertical stabilizer. Glue laminate the R parts so noted on the plan. Then lay out and join assemblies R-1 through R-3 over the plan. Sand or otherwise make sure the connection and bottom of R-1 and R-3 is straight. Shim into center and glue R-8 in place. Install the three 1/8" by 1/4" rudder ribs, tapering to fit at R-1. Sand entire assembly to airfoil section, tapered at the forward edge, but square at the rudder join edge. Glue parts R-5 and R-5 to R-4, then taper sand the assembly towards the rear. Drill R-5 and R-6 as per plan for pin hinges. Drill R-8 such that the assembly will rotate freely. Sand once again vertical stabilizer and rudder preparatory to covering, and then install covering and colors. Install R/C rudder horn on R-4, and install pin hinges, then mount on finished horizontal assembly. The rudder and horizontal stabilizer assembly becomes a unit, and held in place with rubber bands.
R-3
COVERING
S-4
S-10
STAB SPARS
FLATTEN TOP OF 3/16" SQ.
1/4" X 9/16" GLUE TO SIDE OF 3/16" SQ. & FLATTEN TOP
1/4" X 1/8" FOR COVERING ATTACH. TRIM AWAY EXCESS
T7
3/32" SCRAP FILLER
1/4" X 1/8"
B7
KEEL STRIP
SUPER SINBAD
REDRAWN MAY 2001
By: PassTime Hobbies
Laser Cut Parts and Plans Available
Contact: CoosBayLumberCo@Yahoo.com
BB-2
BB-3
3/16" SQ.
3/16" DOWEL
BALSA NOSE BLOCK
BB-1
BALSA BLOCK
T-1
T-2
B-3
1/4" DOWEL
CELLULOID WINDSHIELD
CT - 1/8" BALSA
T-8
R-8
T-7
T-6
T-5
T-4
T 4
T 1
B1
T 5
T 6
T 7
T 8
B7
WR
CT
BUILD FRAMEWORK OVER THIS CRUTCH VIEW. THEN ADD ON KEEL PARTS, 1/8" X 3/16" UPRIGHTS, BALLAST BOX PARTS AND LONGERON AND KEEL STRIP
B-7
TAPER EACH 3/16" SQ.
S 3
S 4
S 2
TAPER SPAR S12 TO S1
TWO LAYERS
S 1
1/2" x 1/8"
1/2" x 1/8"
S 10
3/16" SQ.
1/8" GUSSETS
SEE OTHER DRAWING ON PLAN FOR CONSTRUCTION DETAILS
S 11 A
S 11 B
S 12 A
S 12 B
S 13 A
S 13 B
3/32"
3/32"
1/8"
1/8"
ALL HOZSTAB EDGE PARTS LAMINATED AS NOTED
S 11A
S 12B
S 12A
S 11B
S 13A
S 13B