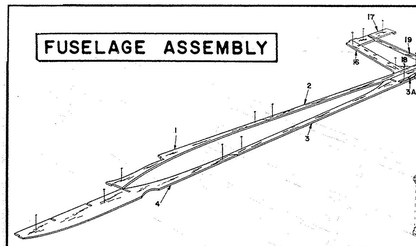
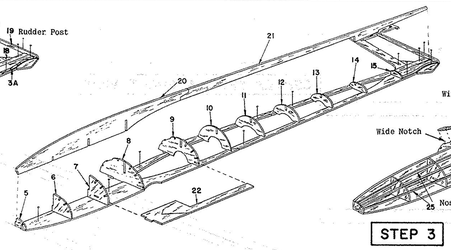
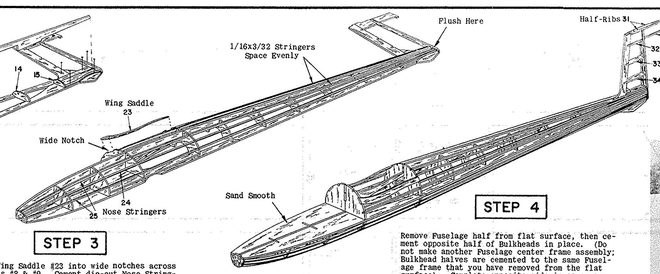
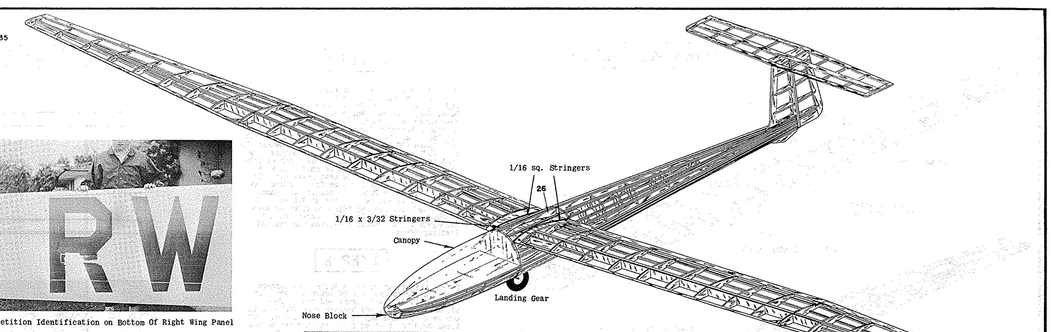
FUSELAGE ASSEMBLY









STEP 1

Saran Wrap (or similar) placed under the frame will prevent frame from sticking to Plan. Fuselage is built on flat surface, directly on Plan of Fuselage-Fin frame assembly drawing. Spread Saran Wrap, then pin Fuselage parts #1 thru #4 in place, followed by Fin parts #16 thru #19 as shown. Cement #3A at rear of Fuselage on top of #3.

STEP 2

Cement Bulkhead halves #5 thru #15, vertically in place as shown, capturing and installing #22 at same time between #7 & #9. Side Keel is now cemented in place into notches. Cement #21 in place first, followed by #20. Keel is flush with Bulkheads back to #9, and is 3/32" higher than Bulkheads #10 to #15 and is flush with Rudder Post #19 at rear.

STEP 3

Cement Wing Saddle #23 into wide notches across Bulkheads #8 & #9. Cement die-cut Nose Stringers in place. #24 is cemented into center notch between Bulkheads #5 & #9; #25's go into the adjoining notches against rear of #5. Complete step by adding 1/16x3/32 Stringers into remaining notches around Bulkhead #9. Stringers extend from this point to rear where they are cut to fit against #19. Stringers should be spaced evenly and tapered together at rear as shown on sketch on full size side view. Stringers are installed in this manner, so that they extend above the Bulkheads in same manner as side Keels.

STEP 4

Remove Fuselage half from flat surface, then cement opposite half of Bulkheads in place. (Do not make another Fuselage center frame assembly; Bulkhead halves are cemented to the same Fuselage frame that you have removed from the flat surface). Complete opposite side in same manner as described in Steps #2 & #3. Cement Top Pin half-Ribs #31's to either side, and flush with top of #17, as shown. Note that protruding key for Stab extends past Ribs. Ribs #32, #33 & #34 are now cemented in place, followed by #35, which slips in place under #17, as shown. Allow frame to dry thoroughly. Sand all Stringers slightly to a smooth surface, trimming and sanding if necessary flush with Rudder Post #19 as shown. Be sure to sand smooth the front Cockpit area, which is later covered and painted.

Competition Identification on Bottom Of Right Wing Panel

STEP 5 - FINAL ASSEMBLY

Install Landing Gear as shown and described in detail note. Although sketch above shows assembled model uncovered; Wing, Fuselage and Tail Surfaces must be covered before assembly is made unless R/C is being installed, in which case see detail note. Cement 3/4x7/8x1 Nose Block in place. When dry, trim and sand to shape. Completed center Section is now cemented to top of Wing Saddles #23, between Bulkheads #8 & #9. Be certain it is pressed firmly down in place to insure proper angle of incidence (angle viewed from side). When dry, cement #26 in place followed by 1/16x3/32 Stringers on each side. In order to provide surface for tissue covering, cement 1/16 sq. Stringers to top of Ring between (and flush with) #8 & #9 as shown. When dry, sand tops of all Stringers smooth. Section is now covered with Silkspan tissue. Covering should extend past 1/16 sq. strip into top of Wing to achieve a smooth Fairing. Round off front of Rudder, so it can pivot. Rudder Hinges are made from soft Copper Bell Wire. Cut three 3/4" lengths. Make pin holes at locations shown on side view. Push Wire through, separate Rudder from Fin 1/16", then bend Wire down and cement. Cement completed Stab to top of Fin, engaging in Tab. Use cement generously and hold in place with pins. Before cement is dry, slip Wing Panels onto Dowel Joiners, then check that Wing and Stabilizer are level and in line with each other. Check by placing model on flat surface. When both Wing Tips are equal distance from flat surface, the same must be true of the Stabilizer Tips. If alignment is not correct, it will adversely affect the flying qualities of your Diamant Sailplane. Install Tow Hooks and Skid on bottom of Fuselage as shown on side view and described in detail note. For best performance, it is recommended that no additional dope or paint be added to your Diamant, so that the model is kept as light as possible. If, however, you wish to finish your model in color, original was painted all white. Be sure to paint the Cockpit area either white or gray. Outline of scale Flaps and Ailerons may be drawn with pen and India ink. Stab has no movable sections, since the Stab was a floating type in which the entire unit moved. Authentic Decals complete paint scheme. Dip in warm water and slide off into position shown. Trim Canopy to fit. (For models being built for R/C, see R/C note at this point). Slip Wing Panels and Canopy in place (not cemented) and check model for balance. Model must balance at point shown on side view. If necessary, add weight to Nose or Tail to achieve this. OTHERWISE MODEL WILL NOT FLY PROPERLY. After balance has been achieved, Canopy can be permanently cemented in place and painted as shown on side view and full color box wrap. Your HSV Diamant Sailplane is now completed. See Flight Instructions before flying. Your comments are welcomed. Write to Sterling Models, Inc., Enfield Ave. & Winter St. Philadelphia, Pa., U.S.A. GOOD LUCK! HAPPY LANDINGS!

SILKSPAN TISSUE COVERING

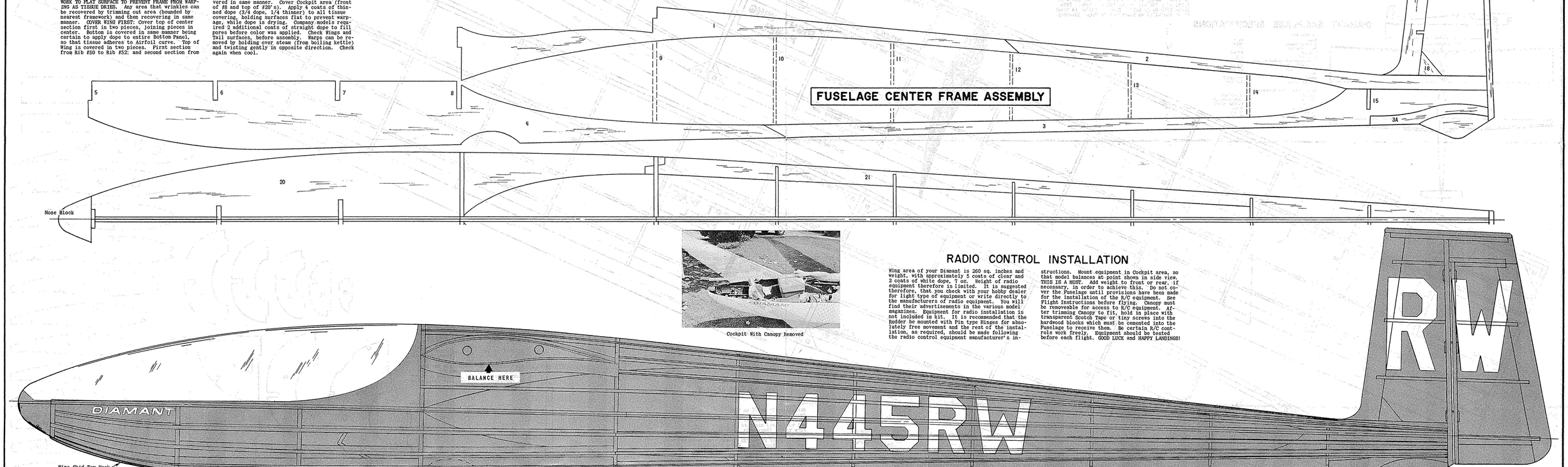
The finest grade wet strength Silkspan Tissue provided in this kit, permits covering of most compound curves without wrinkling, WHEN MOISTENED WITH WATER BEFORE APPLYING TO FRAME. Although tissue packed in kit may be wrinkled, these wrinkles all come out when tissue, (after being cut to pattern size) is placed on flat surface and thoroughly moistened with water. Tissue shrinks (when dry) to tight smooth surface. Use clear dope to attach tissue to frame as follows: Apply a coat of dope to the outside edges of the area to be covered. When dry, cut tissue to shape needed, about ⅛" oversize. Place tissue on flat surface and dampen with water-moistened cloth by dabbing. Apply a second coat of clear dope to the outer edges of the frame, then place moistened tissue on frame. Pull tissue GENTLY WITH FINGERS working out all wrinkles. WHEN COVERING WING AND TAIL SURFACES, PIN FRAMEWORK TO FLAT SURFACE TO PREVENT FRAME FROM WARPING AS TISSUE DRIES. Any area that wrinkles can be recovered by trimming out area (bounded by nearest framework) and then recovering in same manner. COVER WING FIRST: Cover top of center section first in two pieces, joining pieces in center. Bottom is covered in same manner being certain to apply dope to entire Bottom Panel, so that tissue adheres to Airfoil curve. Top of Wing is covered in two pieces. First section from Rib #50 to Rib #52; and second section from Rib #52 to Tip. Bottom is covered in same manner, except that the rear portion of Ribs that has the reverse curve (under Camber) must also be coated with clear dope so that tissue adheres to it and follows the curve. COVER TAIL SURFACES NEXT: Hinge Rudder as described in Final Assembly. Then cover each side of Rudder (Fin) and also Stabilizer with one piece for each side. Cover both sides of Fuselage from Bulkhead #8 to rear and from #23 down to #25 with one piece each. Cover each side of bottom from Bulkhead #8 to rear, going from #25 to center Keel. Top rear, from Bulkhead #9 back, is covered in two pieces in same manner, joining over center Keel. Pairing tissue into bottom of Fin. Section over Wing is covered after structure has been completed as described in Final Assembly note. Section from #6 to #8 is covered two Stringers widths at a time. Section between #5 & #6 is covered in same manner. Cover Cockpit area (front of #8 and top of #20's). Apply 4 coats of thinned dope (3/4 dope, 1/4 thinner) to all tissue covering, holding surfaces flat to prevent warpage, while dope is drying. Company models required 2 additional coats of straight dope to fill pores before color was applied. Check Wings and Tail surfaces, before assembly. Warps can be removed by holding over steam (from boiling kettle) and twisting gently in opposite direction. Check again when cool.

The Beautiful Diamant On The Right Side

OUR THANKS TO:

Dale Willoughby, whose wonderful cooperation in securing the Plans and snapshots of the full size Diamant Sailplane, is gratefully acknowledged. Diamant in snapshots is owned by Robert Hayt, of Tustin, Cal.; it won the 25th Mid-Winter Soaring Championships at Torrey Pines in 1971. To Mr. Hayt, our thanks.

The Beautiful Diamant On The Left Side



Cockpit With Canopy Removed

RADIO CONTROL INSTALLATION

Wing area of your Diamant is 260 sq. inches and weight, with approximately 5 coats of clear and 2 coats of white dope, 7 oz. Weight of radio equipment therefore is limited. It is suggested therefore, that you check with your hobby dealer for light type of equipment or write directly to the manufacturers of radio equipment. You will find their advertisements in the various model magazines. Equipment for radio installation is not included in kit. It is recommended that the Rudder be mounted with Pin type Hinges for absolutely free movement and the rest of the installation, as required, should be made following the radio control equipment manufacturer's instructions. Mount equipment in Cockpit area, so that model balances at point shown in side view, THIS IS A MUST. Add weight to front or rear, if necessary, in order to achieve this. Do not cover the Fuselage until provisions have been made for the installation of the R/C equipment. See Flight Instructions before flying. Canopy must be removeable for access to R/C equipment. After trimming Canopy to fit, hold in place with transparent Scotch Tape or tiny screws into the hardwood blocks which must be cemented into the Fuselage to receive them. Be certain R/C controls work freely. Equipment should be tested before each flight. GOOD LUCK and HAPPY LANDINGS!

Wire Skid-Tow Hook

Tow Hook

Landing Gear Side View

WIRE PARTS DETAIL

Drawing for wire parts are full size. They are bent from .045 wire provided in kit and are installed as described in Final Assembly. When mounting wheel on axle assembly, make first bend, slip on wheel, then make second bend at point shown to bend wire to dotted line position.

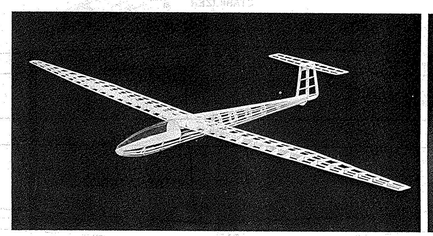
Bend Here

Landing Gear Front View

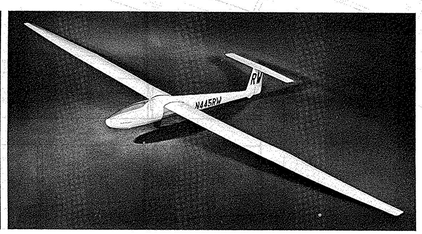
Cockpit Fully Loaded

FLIGHT INSTRUCTIONS

When model has been completed, it must balance at point shown on Side View, with or without R/C equipment. DO NOT ATTEMPT TO FLY MODEL UNTIL BALANCE HAS BEEN ACHIEVED; add weight if necessary. Check Wing and Tail to be certain that they are in line with each other, as described in Final Assembly, and also check that no warps have developed. If any surface has warps, remove using the steam method described in the Silkspan Note. Pick a calm day for test flying. Hand launch test flights should be made before tow operations are attempted. Holding model under front of wing, launch gently into any prevailing wind, slightly Nose down, to a point on the ground approximately 25 feet ahead of you. Model should descend in a smooth, gradual downward flight path. If model stalls, add weight to Nose; If it dives, add weight to Tail, until smooth glide path is achieved. If model veers to one side or the other, bend Rudder slightly in opposite direction, until a straight-line, smooth flight is achieved. To make a Tow Line (material is not supplied in kit), secure a spool of string. Tie a small washer unto the end of the string. For the dual purpose of being able to see the Tow Line release from Hook, and also to cause the wind resistance to help pull line off Hook, make a Pennant approximately 6" long and 2" wide, from a light piece of cloth, such as silk or nylon. Paste-Pennant to Tow Line, about 8" from washer. Unwind about 30 feet of Line and attach to Tow Hook. Have helper hold model at shoulder height. Flyer then tows model right out of helper's hand, into any prevailing wind, in same manner as flying a kite. Glider should ascend in a smooth straight flight path. When maximum height has been achieved, slacken Line and it will drop off Hook. If model veers to one side or the other, during tow, adjustments should be made by bending Rudder in opposite direction. Length of Tow Line is optional, according to the flyer and weather conditions. Under favorable wind condition, it is possible to use as high as 100 feet of Tow Line. Best performance would have the glider turning in circles of approximately 100 to 200 feet diameter. Testing and flying of R/C equipped model is similar. It is highly recommended that a good site be found, since a flat field usually offers no real thermal gliding conditions. Usually a slightly hilly area is more conducive to better glider flying. GOOD LUCK and GOOD FLYING!!!!!



The Graceful Diamant Sailplane Model Frame Construction



The Finished Diamant Sailplane Model - A Thing Of Beauty

KIT E3
SPAN 74"
SCALE 1-3/8"=1'.0"

DIAMANT SAILPLANE

Sterling MODELS INC. PHILA. PA. 19134 U.S.A.

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