

STINSON "VOYAGER"

by Paul DelGatto



► For the private pilot who wants "big plane comfort with small plane handling ease" the "Stinson Voyager" has always been a favorite. Created just after World War II, this ship has the ability to get in and out of ninety percent of airports that can service a "Cub". Model builders generally don't think in terms of seating capacity and baggage load, but are concerned with inherent stability and trim appearance when considering a new scale model, which makes this design an excellent choice.

When designing the "Voyager", we used the idea of "scale power" in order to maintain the graceful realism of flight, of the full scale version. With this aim in mind and using only an .020 "Pee-Wee", we were completely successful. Just out of curiosity though, we did try an .049 and while it helped our balance it did prove to be a bit too much power, and created other trim problems.

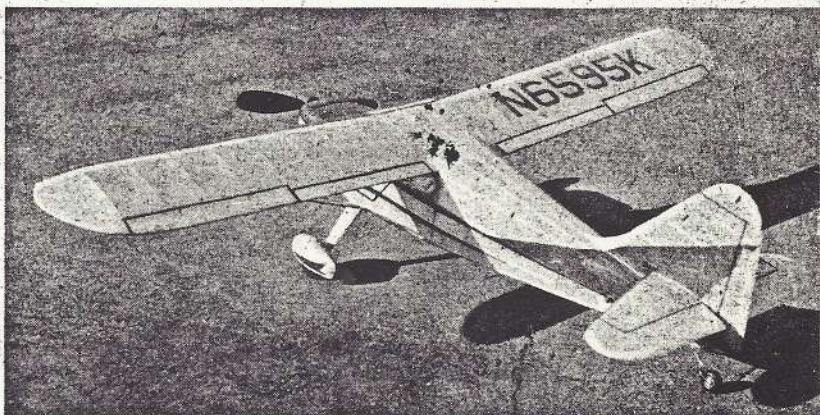
By minimizing the rubber to six or eight strands, rubber-power enthusiasts get amazingly long motor runs, without power burst difficulties often encountered with larger amounts of power. In this way, the performance achieved closely approximates the realism which is achieved with an .020 engine.

Construction: Begin construction

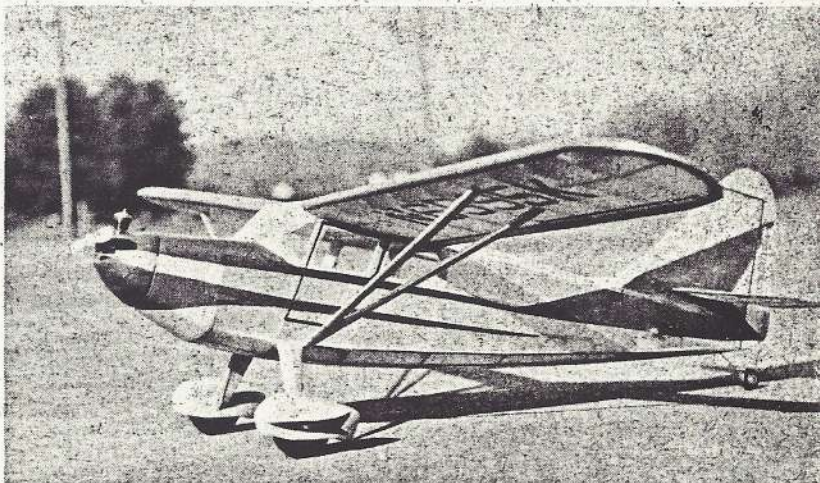
.020 or Rubber Power—Nose removable for on-field conversion!
This 1" scale design is a realistic flyer, fine for small fields.



At left: If it's so calm, why is he holding the wingtip? Above: The "Pee-Wee" mill all but lost here. Most scale types are overpowered for realism.



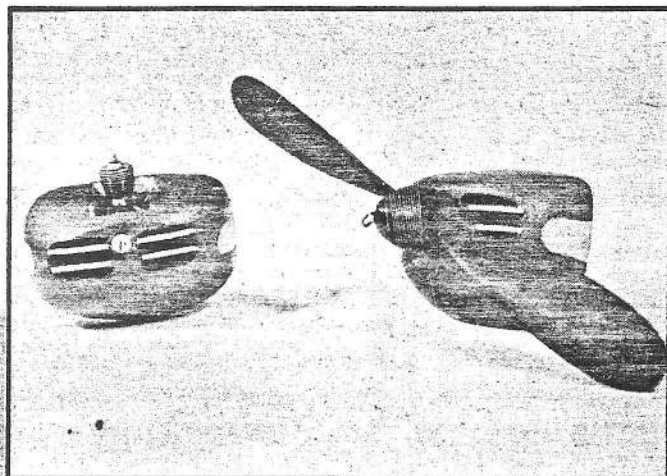
"Voyager's" configuration lends itself well to simplified structure, rare in scale types. Keep trim and color dope to minimum for increased performance.



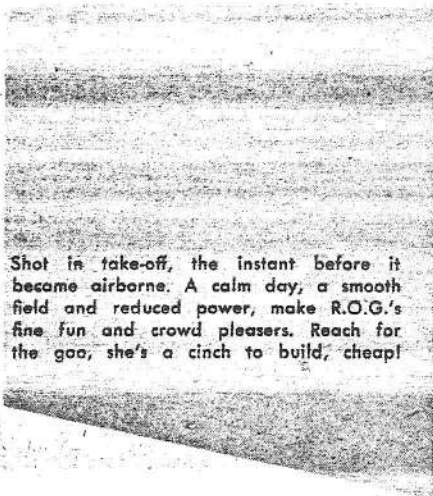
Set to go, anxious craft waits for photog to get lost. Structure visible gives a clue to the basic simplicity. Plans are easily scaled with dividers.

STINSON "VOYAGER"

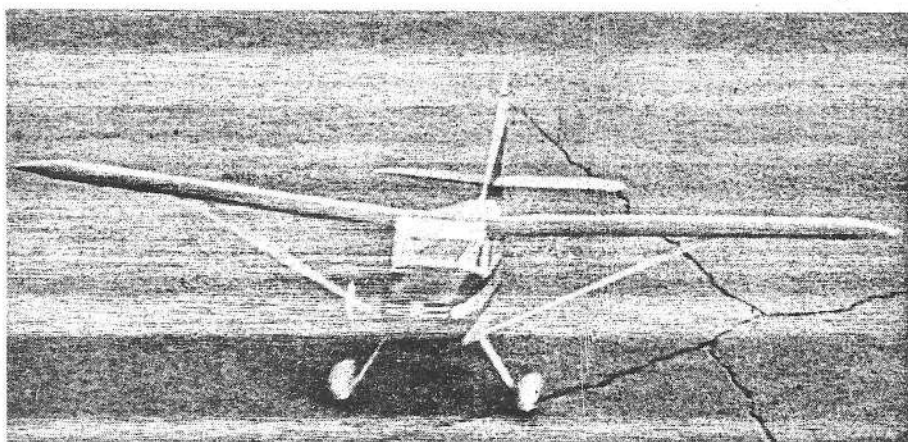
continued



Above: Assemble alternate nose for instant on the field conversion from engine to rubber. Design was test flown with both, proved fine flying fun on small fields with rubber power—and soul satisfying with higher altitudes achieved with the .020's. At left: The wide stance and gear placement fine for take-offs. In the air, design is stable, easily trimmed.



Shot in take-off, the instant before it became airborne. A calm day, a smooth field and reduced power, make R.O.G.'s fine fun and crowd pleasers. Reach for the goo, she's a cinch to build, cheap!



with the fuselage, which is straight-forward. We made use of a box type frame built up of $\frac{1}{8}$ " square hard balsa, with formers and stringers added to give the proper contours. Start assembly by pinning down the longerons over a full-size layout of the fuselage side, which can be easily scaled from the plans. Cement the uprights in place, allowing ample time for all the joints to dry thoroughly. Then construct a second side, over the first, separating them with a sheet of wax paper.

Assemble the sides by cementing the two horizontal cross-members to the front of the fuselage and join the sides at the rear with a drop or two

of cement. While these junctions are drying, cut all the necessary formers from soft $\frac{1}{8}$ " sheet balsa. Complete the basic frame of the fuselage by inserting the rest of the horizontal cross-members in place, working from the widest point, toward both ends. Add the formers and stringers to the top and sides of the fuselage. The center-section of the wing is added to the fuselage at this time. Simply cut the required ribs from $\frac{1}{16}$ " stock, build the center-section directly over an enlarged plan layout. Cement it in place and blend the top stringers into the rear wing spar.

Bend the landing gear struts from $\frac{1}{16}$ " steel wire as shown on the full

size layouts. The two pieces are soldered together and bound to the landing gear platform as indicated on the plan. The landing gear fairing and wheel pants are cut from soft balsa stock. Spot-cement the three sections of each wheel pants together, carve to shape and carefully pry one side away from the finished pant. Fit a 2" wheel in the pants: Using its drilled center as a guide, drill a $\frac{1}{16}$ " diameter hole through the unit. Re-assemble the pants using enough cement to assure a good bond.

Complete the assembly by adding the pants to the landing gear. They are cemented directly to the fairing.

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FLYING MODELS

VOYAGER

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taut. The top and bottom are best covered with smaller sections of two to three station widths. After excess wrinkles have been removed from the fuselage by water spraying, cement the wings in place at the proper dihedral angle.

Brush on two to three coats of thin butyrate clear dope over the entire model, then add the windshield which is cut as shown on the full-size layouts.

Scale details such as control surfaces can be added by doping $\frac{1}{16}$ " strips of black tissue in place on the ship. The license numbers are most easily simulated by using decals. For appearance sake, they should be the same color as the trim on the model. Shape the wing struts from $\frac{1}{8}$ " x $\frac{3}{8}$ " balsa; sand and cover with tissue and then cement in place, allow to dry.

Flying: Balance the model so that the center of gravity is approximately $\frac{1}{8}$ " back of the main spar. Test glide the model over tall grass and apply power cautiously, after a flat glide has been obtained. Once satisfied that both power and gliding trim are desirable, apply more power on successive flights.

BILL OF MATERIALS

(Balsa unless otherwise specified)

- (3) $\frac{1}{8}$ " x $\frac{1}{8}$ " x 36" Stabilizer and rudder ribs
 - (10) $\frac{1}{8}$ " x $\frac{1}{8}$ " x 36" Fuselage longerons, uprights, stringers, stabilizer, rudder and wing spars
 - (6) $\frac{1}{8}$ " x $\frac{3}{8}$ " x 36" Wing leading edge spars and struts, tail surface outlines
 - (2) $\frac{1}{4}$ " x $\frac{3}{8}$ " x 36" Wing trailing edge
 - (1) $\frac{1}{8}$ " x 3" x 36" Wing ribs, wing and fuselage planking, window outlines
 - (1) $\frac{1}{8}$ " x 3" x 36" Fuselage formers, wing, stabilizer and rudder tip outlines, landing gear platform, struts and pants
- Balsa block $2\frac{1}{2}$ " x $3\frac{1}{2}$ " x $1\frac{1}{2}$ "; $\frac{1}{16}$ " diameter steel wire; 2" diameter wheels; $\frac{7}{8}$ " diameter wheel; celluloid; Japanese tissue or similar covering material; clear butyrate dope; colored butyrate dope; decals; Cox .020 engine or similar power plant; 9" Paulownia prop; five feet $\frac{1}{4}$ " Pirelli rubber; $\frac{1}{4}$ " diameter dowel.

EQUIPMENT NEWS

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your thinking for you. The old escapement changed its appearance and brought in a partner to help more effectively with the elevator chores. The partner became the smallest servo on the scene and was called the Slim Line, tipping the scale at a mere $1\frac{1}{2}$ oz. The revamped escapement, now known as the Selector "4" and weighing a scant ounce also triggered another escapement, which was added to the line to actuate the engine throttle. For throttle control you have your choice of either S-N or 3 position escapements depending upon how much control you desire. These three units (Selector "4", Slim Line Servo and S-N or 3 position escapement), which weigh $3\frac{1}{2}$ oz. together, give rudder, elevator and motor control, when commanded by the Pilot Control stick box.

The parts we've just mentioned make up the original line of Cobb Hobby and are available as a complete unit or individually. From this basis Cobb Hobby is continuously adding new items to their line making them one of the largest manufacturers of different types of R/C actuators.

The new items in the line come under the heading of motorized escapements and are of the Electro Series. This series, at present, consists of four units which we will briefly describe individually.

First is the Electro S-N which is as its name implies a self neutralizing motor driven escapement suitable for plane, boat or car.



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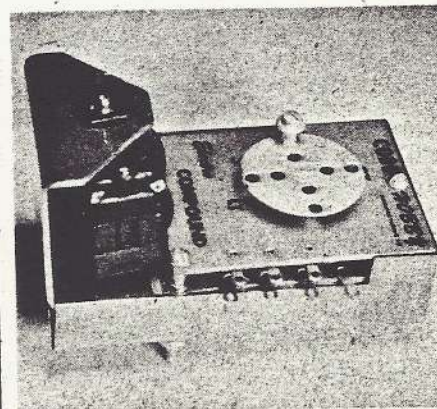
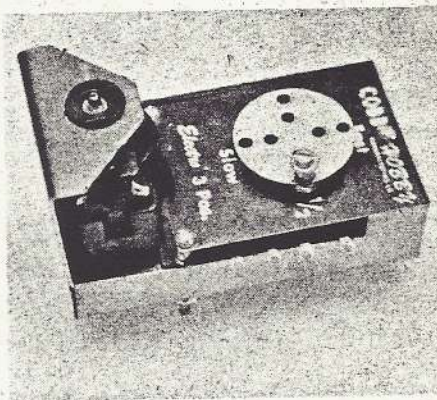
Kalmbach Publishing Co., Dept. FM, Milwaukee 3, Wis.

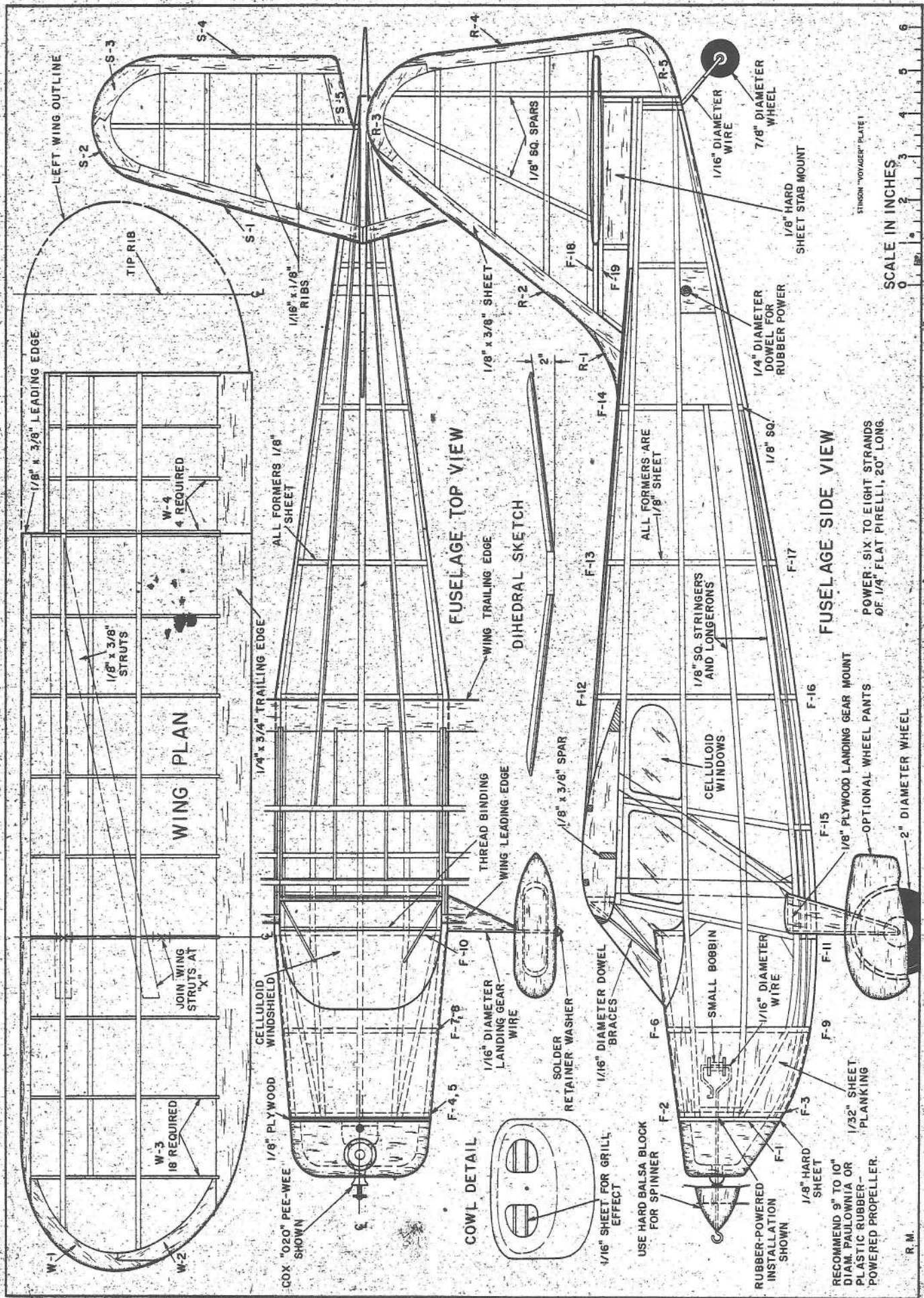
I want _____ of your new type binders for Flying Models. Enclosed is my () check () money order for \$_____. I understand these will be shipped to me postpaid.

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SCALE IN INCHES

STIMSON "VOYAGER" PLATE 1

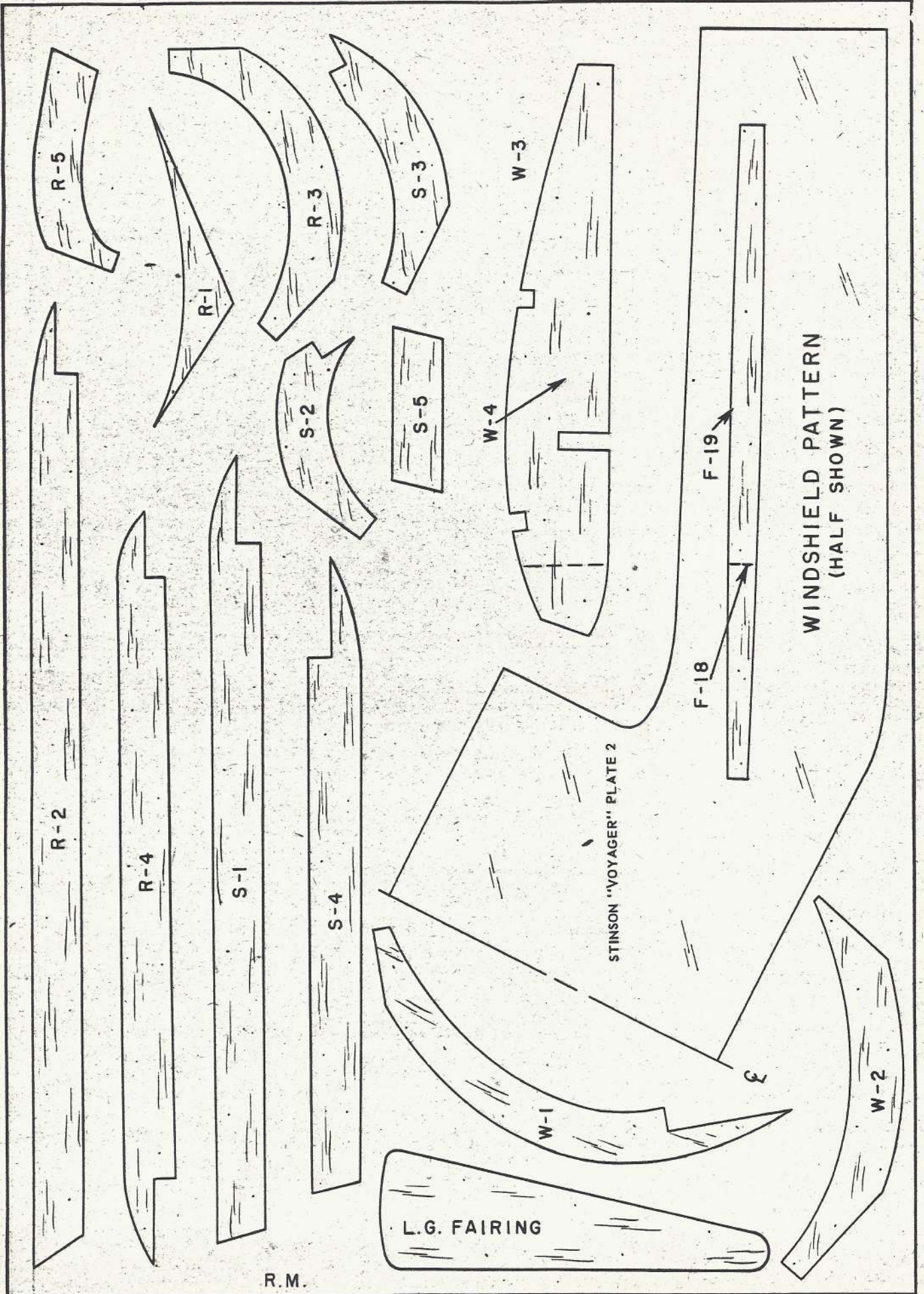
POWER: SIX TO EIGHT STRANDS OF 1/4\"/>

OPTIONAL WHEEL PANTS

1/8\"/>

RECOMMEND 9\"/>

R. M.



R-2

R-4

S-1

S-4

R-5

R-1

R-3

S-2

S-5

S-2

S-3

W-4

W-3

STINSON "VOYAGER" PLATE 2

F-18

F-19

WINDSHIELD PATTERN
(HALF SHOWN)

L.G. FAIRING

W-1

W-2

R.M.

VOYAGER

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The wheels are held in place by the wire landing gear going through the pants. A drop of cement holds both in place: Then securely cement the assembly into the fuselage. Note that the landing gear platform is cemented between the longerons. Finish the fuselage by adding the bottom formers, stringers and then planking the nose section with $\frac{1}{16}$ " soft sheet balsa.

Wings: Cut all the required ribs from $\frac{1}{16}$ " sheet and the tip pieces from $\frac{1}{8}$ " stock. The spars, leading and trailing edges should be hard, straight grained balsa to prevent warping. Assemble the right and left wing panels, angling the root rib about 1° for dihedral. Remove the wings from the enlarged plan layout, then add the $\frac{1}{16}$ " sheet planking to the wing leading edge and trim and sand each panel to finished shape.

Tail Surfaces: The outline and spars of both the stabilizer and rudder are assembled on your enlarged plan layout. The ribs are cemented in place after the units are removed from the plan, to simulate a symmetrical airfoil in the sections. After removing from the plan, trim and sand both leading and trailing edge to the desired shape.

Nose Blocks: Whether you choose rubber power or a glow engine for your "Stinson Voyager" follow the general outline on the plans for the nose block. Note that the engine version has a $\frac{1}{8}$ " plywood backing while the rubber assembly for the rubber version can be all balsa. A few minutes time studying the plan, will make clear how each type of nose block is assembled. Note that the retaining dowel for the glow engine version need only be used if you decide, as we did, to have a duo-power ship. Such an arrangement increases the versatility of the model at the expense of a little extra time and material necessary to shape the extra nose block and fitting it to the model. Be sure to add the rubber-dowel retaining plugs before covering the model if you decide to use rubber power.

Covering and Finishing: Our model was covered with yellow Japanese tissue and trimmed with red dope. Begin covering the model with the wings and stabilizer. Cover one wing panel at a time: The tail surfaces can be covered on one side at a time. Water spray the surfaces lightly after covering to eliminate wrinkles. The cabin windows are cut from celluloid and cemented in place. Cement the stabilizer in position on the rudder before doping.

The fuselage is covered in sections to minimize wrinkling tendencies over curved surfaces. The two sides can be covered separately with one large piece on each side. However, care should be exercised to pull the edges

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FLYING MODELS

