

THE NEW 1941 Stinson Voyager (complete details and specifications on page 41) is a top-notch performer—and that also goes for our model presentation this month. The rubber-powered craft is, but for the enlargement of the tail surfaces and propeller, a true flying-scale job in every respect.

It will be well to call to the attention of the prospective builder that, if longer flights and additional power are desired, the landing gear—which has been found to suffice for the size craft shown in the plans—should be made a little longer so that a larger prop may be used.

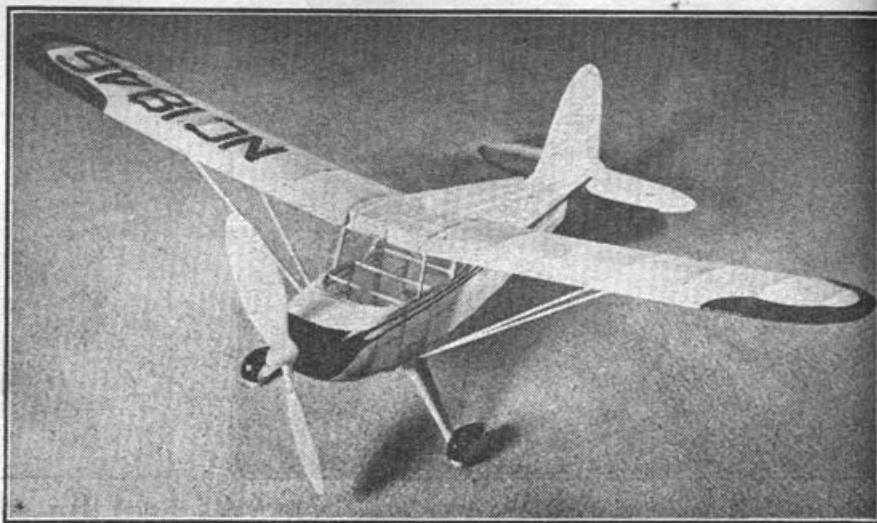
The squat little model weighs but a scant 1.27 ounces. Construction is simple but well planned. It is suggested that to save the landing gear from early repairs, as is the fate that befalls most scale model landing gears, the use be made of small rubber tired wheels instead of hard wood or celluloid.

FUSELAGE CONSTRUCTION

LONGERONS, cross braces, and upright members used in the fuselage construction are cut lengths of 1/16" square hard balsa. Build one side of the frame at a time and upon completion join both sides with cross braces as indicated by their positions in the top view of the fuselage.

The cabin structure, depicted clearly in perspective view on Plate 4 is built up of 1/16" square hard balsa pieces in the manner shown. Note from the top view plan that the sides of the cabin slant inward. Cross members B and C are cut from 1/16" sheet and cemented in position. Directly behind C, top fuselage, former T-1 is cemented and followed inclusively down to former T-6. However, before mounting all formers above and below, be sure that the notches are cut accurately to accommodate 1/16" sq. stringers. The positions for the notches are indicated by small vertical lines spaced evenly about the formers. All formers are shown in halves although they are full in scale.

The rear portion of the cabin sides as well as part of the front is covered with 1/32" sheet balsa. Apply cement lightly along the edges and insert small model pins to assist in holding



Rugged construction, sufficient power, and generously bladed propeller give lasting flights.

STINSON

This craft is not only a fine performer in the air, but it also makes a beautiful exhibition job.

BY JEROME JACOBS

Plans by Harry Appel

the sheet balsa in position until the cement dries thoroughly. Later the pins should be removed. Two full sized wing ribs are cemented against the sides of the cabin roof with a length of 1/16" sheet running horizontally on each side of the ribs. This serves as a wing rest.

A single strip of 1/16" square is cemented directly in front of the cabin between former A and cross piece B. Upon completion of the cabin, thin sheet celluloid is used for the windows and windshield. A template for the windshield is shown in full scale on Plate 1.

Apply cement along the wood parts and also along the edges of the celluloid windshield. Place in position and insert pins.

cement until the general contours have been carved. Complete with a smooth sanding before prying the halves apart. The inner sides of each portion are then scooped out to the wall thickness indicated by the dotted lines shown in the side and top view drawings. Upon completion, the halves are then generously cemented and pressed firmly together. A small hole is bored in the center which can accommodate a brass eyelet bearing. Insert the bearing into the hole so that it fits tightly and dab a bit of cement around the face of it. If the bearing is rather small, add another one in the rear so that both bearings act as a sort of tube in which the prop shaft will turn without wobbling.

Tail plug parts are made simply by following the series of steps shown in perspective on Plate 3. Although the material list calls for medium balsa in most cases, it is suggested that hard balsa be used for shaping out both tail plug parts. The front portion is cemented permanently to the rear of the fuselage frame after it is shaped, hollowed out, and sanded to a fine finish. When attached it should provide the rear end of the body with a continuous smooth flow.

The rear view shows a square opening which accommodates the detachable plug indicated on the plan by the letter R. To the flat face of B cement a square piece of hard balsa, its thickness being the same as the inner sides of the opening of the

NOSE AND TAIL PLUGS

NOSE PLUG blocks upon whose sides and top, outline views are traced preparatory to their shaping, should be free of knots. For the time being, the halves should be held together firmly with a thin layer of

Later and directional stability are its outstanding features.



hollowed out plug indicated by the letter F. When the parts are fitted together they should form a perfect streamlined conical design. The rear plug hook is bent as shown on Plate 2. The prop shaft is bent to shape from number .040 wire. Do not bend the front end of the shaft yet.

Cement the nose plug firmly in proper position. In the meantime, the propeller may be carved. Before doing this, however, you will have to decide at this point whether you intend to leave the landing gear as shown in the drawings or drop it to any length so that the width and length of the propeller may be determined and bottom clearance allowed. When decided upon choose a hard block, mark out the X, cut it to shape and proceed in the conventional manner. Be sure it is perfectly balanced before you insert the propeller shaft. Before the

the wheel pants from working loose. Apply cement between the landing gear strut and the inside of the wheel pants to make a firm joint. The tail wheel is placed in a fork type axle and cemented into the under portion at the tail end.

Rudder and elevator parts are made of the same material throughout. Since the layouts are full size, dimensions may be taken directly from the plan. Cement all joinings equally well to prevent twisting tendencies. The tail surface parts are covered with jap tissue and water sprayed after the wrinkles have been worked out of the dry tissue. Do not apply dope to the surfaces.

WINGS, ASSEMBLY AND FLYING
WING PANELS made in halves are of simple but strong construction. Full size layout and dimensioned

The stabilizer halves are cemented to each side of the tail as shown in the top view on Plate 2. Be sure that they are in perfect horizontal alignment and at right angles to the rudder which is mounted last. Note that the rear of the rudder is not cemented as this would obviously prevent the removable tail plug from working as freely as it should.

Test glide the model until a reasonably good glide is attained. Note any tricky characteristics that would make flying unsafe for the model. Usually they are caused by slightly warped tail parts or drooping trailing edges. Fifteen or twenty power turns would be sufficient to try the model out in its first power flight. Gradually more turns may be applied as tests prove the model's stability throughout.

BILL OF MATERIALS

All wood medium balsa
Ten pieces 1/16" sq. for longerons, braces, stringers, etc.
Four pieces 1/6" by 1/8" by 8 1/8" for leading and trailing edge
Four pieces 1/16" by 1/8" by 5 1/2" for wing struts

Four pieces 1/6" by 3/16" by 9" for wing spars

Four pieces 1/4" by 5/8" by 1 3/8" for wheel pants

Four pieces 1/16" by 5/8" by 1 3/8" for landing gear legs

Two pieces 1 1/8" by 1 1/2" by 1 3/4" for the nose cowling

One piece 1/16" by 2" by 12" for all fuselage formers

One piece 1/16" by 2" by 18" for wing ribs and tail surface parts

One piece 3/8" sq. for the propeller spinner cap

One piece 5/8" by 3/4" by 1" for the rear plug

One piece 3/8" by 5/8" by 1" for the removable tail plug

One piece music wire number .040 for propeller shaft and rear hook

One piece music wire .034 for the landing gear and tail wheel fork

One piece sheet celluloid for the cabin windows and windshield

One piece 1/32" by 2" by 4" for the cowl, cabin, etc.

Jap tissue, cement, dope, thread, washers, model making pins.

Color scheme for your ship is naturally optional. However, once you've got the "bugs" ironed out and wish to make your model more attractive, choose any two-tone colors.

The original job was covered with plain white Japanese tissue first, water sprayed, then given one coat of dope. The parts shown darkest are done with black dope and red striping along the fuselage sides.

THE END

VOYAGER

rear part of the shaft is bent, slip on a couple of copper washers, insert the straight end through the eyelet bearings of the nose, and from the inside, using a pair of long nose pliers, curve the hook as shown in position on Plate 1.

Four strands of 1/8" brown flat rubber with a two inch slack allowance is strung between the propeller shaft and the rear hook. This done, use the long nose pliers to tighten up the hooks a bit more to prevent the rubber from slipping out while it is being unwound.



In flight, the Stinson Voyager model bears a remarkable resemblance to its prototype.

LANDING GEAR AND TAIL SURFACES

MUSIC WIRE number .034 is used for the landing gear and is bent to shape as shown in full scale on Plate 3. It is bound to the lower fuselage former B-2 with cement and thread. The landing gear struts are made in halves with each half grooved to accommodate the landing gear wire. Apply cement to the inner sides of the strut halves and press firmly together. Perspective views on Plate 2 show the manner in which the landing gear struts are made before attaching in position.

The wheel pants are made in halves and streamlined. After both parts are cemented firmly together, the wheels are slipped in position inside the pants with the protruding portion of the landing gear wire extending completely through the pants and wheel. The remaining end of the wire is turned up slightly to prevent

materials are provided. All balsa wood is of medium strength with the exception of the wing tips which should be of a harder variety. Upon completion, cover each wing panel carefully and water spray. Later one coat of dope may be applied. Further applications are unnecessary. The fuselage may be covered at this time, also. Apply one coat of dope after the water spray has shrunk the tissue.

The wings are cemented to each side of the cabin roof top with a generous application of cement. The dihedral angle should not exceed more than 1". Use small model making pins to assist in holding the wing at the required angle while the wing struts are cemented into position between the landing gear struts and fourth wing rib from the cabin. Later remove all the pins. Front view shows the correct alignment for the model.