

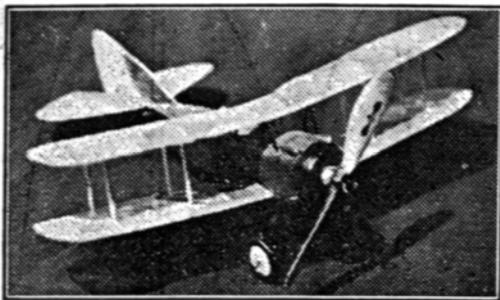
Famed Fighter of the World War!

Rickenbacker! Fonck! Guynemer! Luke! These are but four of the many World War aces who rode to triumph in the cockpit of a Spad. And it was partly to these ships that the pilots owed their fame, for these sturdy little "bipes" would stay in the fight as long as a scrap of tracer-scorched fabric would stick to their frames. And now, readers, Henry Struck gives you his model: "ship of the heroes." So get out your balsa and ----

Build the Spad XIII

Trail Blazers of the Air – No. 8

By Henry Struck



Above: Ready for the Dawn Patrol! You can almost sense the tenseness in the chill morning air as the ship awaits the ackemmas' twist of her prop. But here again' the ship shown is only our model. To the right and left are other pictures proving how truly realistic a model plane can be. It's attention to detail that does it, you know. And you'll find a careful study of these pictures will be of great help in building your own model Spad XIII.

TWO QUALITIES were responsible for the outstanding success of the Spad as a pursuit ship during the World War. For few other ships at the time could dive as fast as the Spad or absorb as much punishment and still be able to fly home.

So it is little wonder that the Spad became the favorite sky-horse of

American and French flyers. And the combination of these dependable little planes and daring pilots helped make the exact type of action that fiction writers love. Accordingly, almost every story hero of the "war in the air" jockeys a Spad!

But not all the mighty deeds of the Spad were performed on the printed page. For such great French aces as Rene Fonck, Pere Dorme, and Georges Guyriemeyer chalked up many victories while flying Spads. And from our own tarmacs, Eddie Rickenbacker and his "Hat in the Ring" squadron added to the prestige of the Spad.

The first Spad XIII--after which our current model is patterned--came out late in 1916. It was an immediate success, and in that latter half of the War held its place as a first line pursuit job until the end.

With a wing-span of scarcely, twenty-six feet, the Spad XIII was constructed entirely of wood with fabric covering. The trailing edges of the wing and tail surfaces were of wire, which caused a scalloped effect when the covering was shrunk. The landing gear was placed well

forward and its sturdy shock-absorbing construction helped considerably in reducing the hazards of setting down a ship on the makeshift aerodromes of the War.

The 220 h.p. Hispano-Suiza motor with which the Spad was equipped permitted efficient streamlining of the nose, which added greatly to the appearance and performance of the entire job. And on the ground the Spad seemed ever eager for a quick spring into the air.

And if you'll follow the instructions I give here for building a model of the Spad XIII, you'll find your job will have that same air of being always "on the alert." So let's get alert ourselves, and start work on---

MODEL CONSTRUCTION

CUT two sides of 1/16" soft sheet balsa to the pattern given in full size on the Plate 2. The formers are also cut from 1/16" sheet. Join the sides at the top by Formers 1 and 3 and on the bottom by Former 5 and 7. After the cement has dried pull the sides together at the rear. The rest of the formers may then be added.

Five stringers of 1/16" sq. balsa are cemented on the top and bottom to maintain the shape of the fuselage; note however that the top of the fuselage from Formers 1 to 3 and the bottom from 5 to 6, are covered with soft 1/16" sheet balsa.

Use the balsa in small pieces about 1/2" wide. After the covering has been cemented in place the compound curves of the cowl can be easily shaped with a razor blade and

sandpaper.

The nose N, is made in two sections. The front ring is of 1/8" sheet while the rear block is 1/4" thick. The radiator fins are of 1/64" by 1/16" bamboo spaced by two horizontal strips of 1/32" by 1/16" balsa.



A small door is cut in the rear of the fuselage to allow rubber to be inserted. The rear hook is formed of .034 piano wire and attached in the body with several coats of cement.

The landing gear consists of two V-struts, which in turn are built up of Struts A and B, and a spreader bar C, all of 3/32" hard sheet balsa. Using plenty of cement attach A and B in their proper positions joining their lower ends with C.

An axle of .034 piano wire cemented only at the center to the top of the spreader bar, carries a pair of 1-1/8" hardwood of balsa wheels. Since the axle is cemented only at the center, its outer ends are free to travel in the small slots in Struts A and absorb the landing shock.

WING AND TAIL

THE leading edges of the wing are of 1/8" by 3/16" sheet balsa. The trailing edges are of 1/16". Shape them to the proper cross section with

knife and sandpaper. Then pin 27 slats of soft 1/16" by 3/8" by 1-7/8" balsa together and carve the resulting block to the rib airfoil given on Plate 2.



Pin the trailing edges to a soft board, and cement the end ribs in place. Then glue the leading edges to the nose of these end ribs and add the rest.

The tips of 1/32" sheet and the spar of 1/16" sq. are now put in place. Notice on Plate 2 that the upper wing panels are of slightly different outline than are the lower ones. Be sure you make right and left wing panels. Reverse plan to get right one.

The rudder and stabilizer are made from 1/16" sq. and 1/16" sheet balsa. While the framework of the surfaces is drying, practice scalloping the trailing edges on scrap balsa. Hold the wood at the edge of a table or board, and draw a rounded sandpaper block evenly across the wood as shown on Plate 1. When you're "in practice" scallop all the trailing edges. Use a fine grade of sandpaper.

ASSEMBLY

BEFORE applying the tissue go over the entire framework with sandpaper to remove any bumps

that might spoil the covering job.

Khaki tissue with red trim is suggested, but of course, any color scheme used by your favorite Spad squadron or dictated by your own ideas may be used.

The wingtips and cowlings of the body are best covered with small sections of tissue because of the curvature. Cover all the exposed wood parts.

The center section struts D are of 1/32" by 3/32" streamlined bamboo 1" long. The ends are pointed and dipped in cement, and are then forced into the top of the fuselage and the center section of the wing.

Check the alignment of the wing carefully in all directions. For correct incidence the leading edge should be 1/16" higher than the trailing edge in relation to the top of the fuselage side. The lower wings are cemented to the sides of the fuselage in alignment with the upper surfaces and at the same angle of incidence.

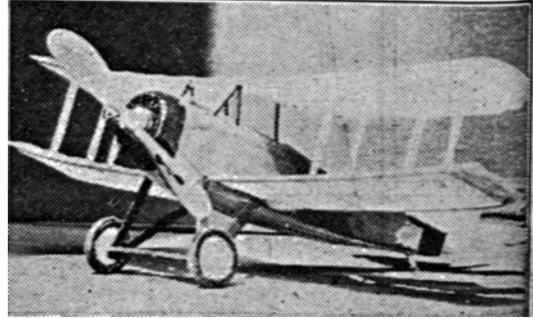
The outer E struts of 3/32" by 3/16" streamlined balsa are glued in position. The inner group of E struts completes the wing structure.

The stabilizer is cemented to the top of the fuselage and the rudder to the rear. The fully assembled Spad is now rayed with water and doped lightly to tighten the tissue.

Details such as cylinder fairings, headrest, exhaust pipes and machine guns are given on the drawings and may be easily made of scraps of balsa.

PROP AND PLUG

THE nose plug is a disc of 1/16" thick hard balsa cemented to a 3/8" length of 1/4" sq. balsa, which is cut to fit snugly into the nose block N. A hole is drilled through the plug, and washers with bushings inserted are glued to front and rear to serve as bearings.



The propeller is carved from a block 5" by 5/8" by 1/2". After the blades have been trimmed to the outline shown for the flying prop they are doped several times. A 6" standard style, ready-made hardwood prop with the excess length cut off may be used if desired, especially if balsa wheels are used.

Form the propeller shaft of .034 piano wire. Slip it through the nose plug and prop, and embed the end in the hub. Include a couple of washers between plug and propeller.

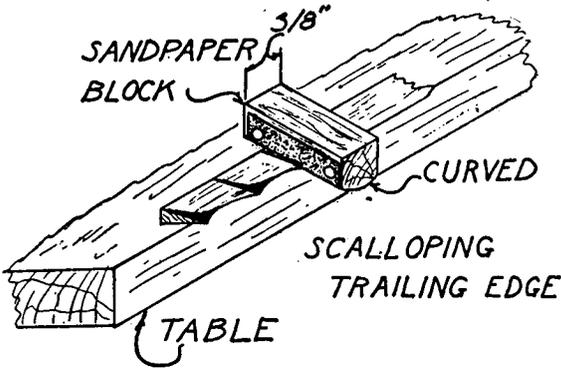
Four strands of 3/32" rubber are enough power for a Spad XIII under 1.25 ounces in weight, while four strands of 1/8" rubber will work better for a heavier model. The rubber in either case must be of good quality and preferably lubricated. Test glide the model gently, and check any tendency to stall by adding a bit of clay inside the nose. Correct diving tendencies by adding clay in the fuselage at the rear hook.

The first trial flight might be made with about 100 winds. Wash the rudder slightly to circle the ship to the right against the torque of the prop.

Flying Aces February 1938

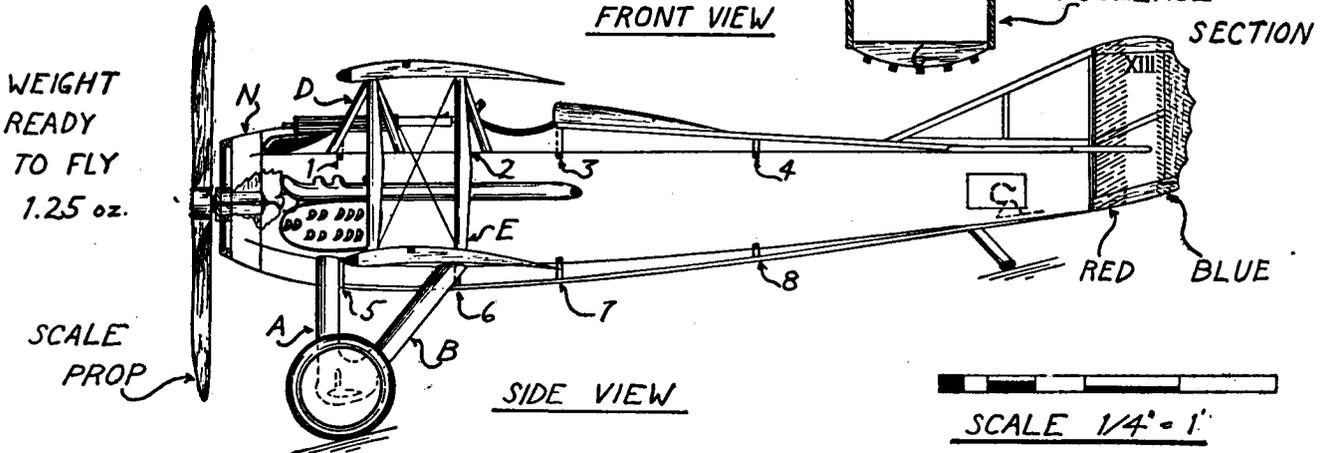
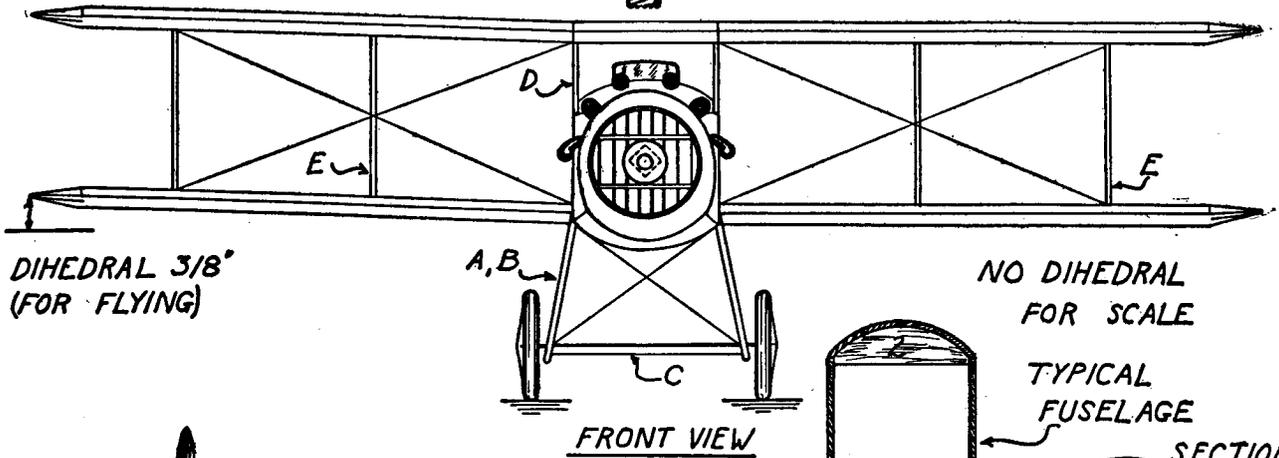
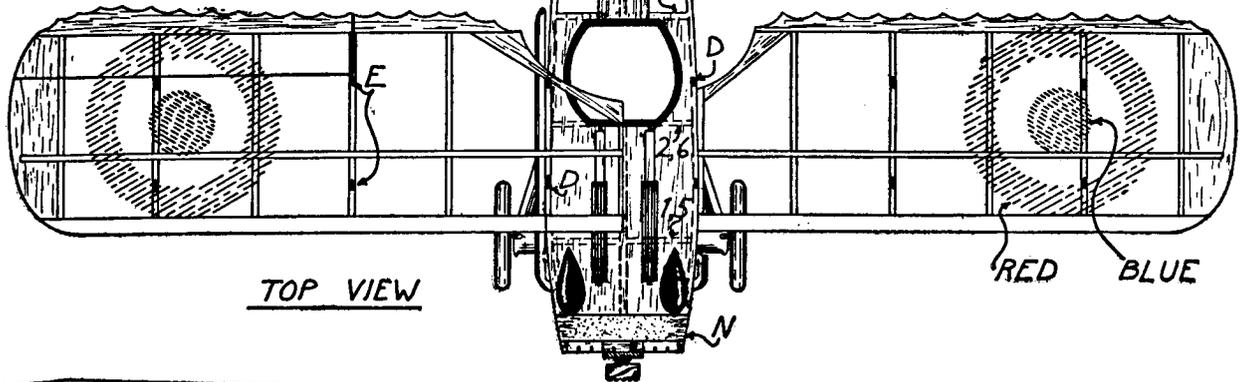
SPAD XIII 1916

COLOR (OPTIONAL)
ALL SURFACES ~ KHAKI
NOSE & STRUTS ~ RED
DETAILS ~ BLACK

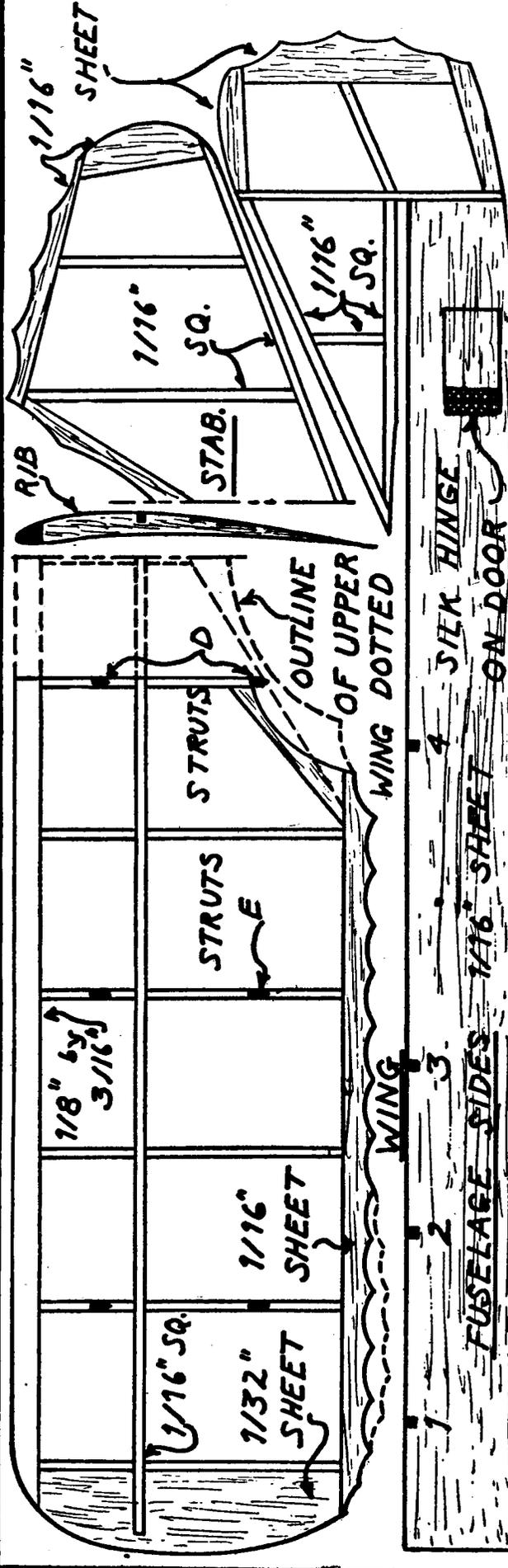


SPECIFICATIONS

SPAN ~ 25'6"
LENGTH ~ 20'
HEIGHT ~ 7'6"
SPEED ~ 120 M.P.H.
MOTOR ~ 220 H.P.
HISPANO SUIZA



SPARK



RUDDER

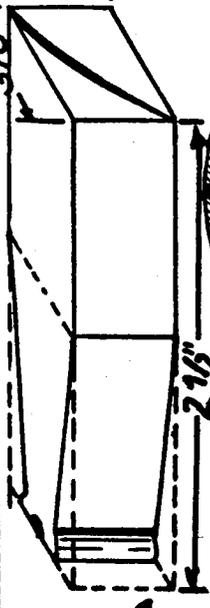


SCALE PROP



FRONT

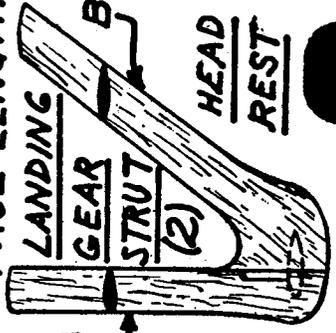
FLYING PROP



(2) GUNS



TRUE LENGTH



LANDING GEAR STRUT (2)

HEAD REST



FRONT TOP SIDE



TOP SIDE



NOSE PLUG



BUSH & WASH. INSTRUMENTS



CYL. FAIRING (2)



SIDE



TOP



8



5



3



7



4



1



6



2



TRUNK