

CONSOLIDATED XBY-1

An Experimental Navy Bomber

By MARK FINEMAN. . . This Vega lookalike is the military version of the Consolidated Fleetster. You can build it from full-size plans, available through our plan service, or turn the page and build a peanut version.

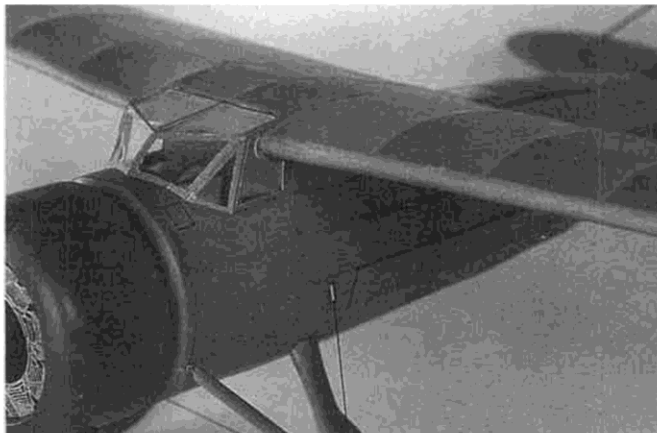
• In answer to everybody's first question: no, this is *not* a navalized version of the Lockheed Vega! The resemblance between the Lockheed and Consolidated products is striking to be sure. And the Consolidated Fleetster (the progenitor of the XBY-1) was a contemporary of the much more successful Lockheed ship. The Fleetster, like the Vega, was intended to be a single-engine commercial aircraft, but, for reasons about which one can only speculate, the Fleetster never equalled its Burbank contemporary.

The Fleetster was actually produced in two versions, a high-wing cabin job (the

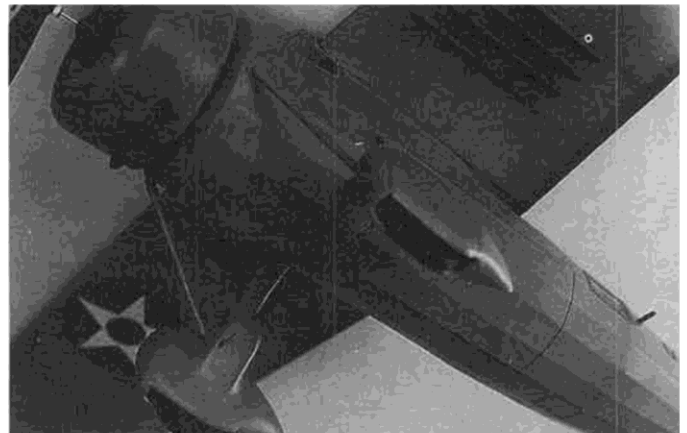
Vega look-alike) and a parasol wing version with the pilot situated aft of the wing. The Fleetsters, incidentally, used an all-metal monocoque fuselage, unlike the all-wood Vegas. Only about two dozen Fleetsters of all types were ever built.

The depression economy provided little market for the Fleetster, a fact that was not helped by Reuben Fleet's own indifference to the big transport, even though it was named in his honor! In an effort to breathe new life into the project, Consolidated engineers reconfigured the Fleetster into a military aircraft, resulting in the XBY-1, a

handsome, monoplane Navy bomber in an era when the Navy was hopelessly smitten with biplanes. Besides being an all-metal monoplane, the XBY-1 had an internal bomb bay, a flush-fitting dorsal gunner's hatch, and beautifully painted fixed landing gear. The XBY-1 was intended for carrier work, being equipped as it was with a tail wheel and retractable arresting hook. With a fixed span of 45 feet, the big ship might have been quite a job to handle within the confines of a hangar deck, but the XBY-1 was scratched by the Navy before she ever saw the deck of an aircraft carrier. This in-



Cockpit detail on the XBY-1. Acetate and paper cockpit frame are built over a simple basswood framework.



Bottom details: ribbed flotation gear is glued to a 1/20 balsa plate in the wing of the craft.



The top gunner's hatch. The hatch slide rails are drawn in ink.

novative bomber was believed to have lived out her remaining years as a hulk in a mechanics' training school.

As a subject for a scale model, the XBY-1 is all but perfect. It has good moments and areas coupled with the usual stability of a high-wing cabin job. There are just enough details to make the project interesting, but not enough to cause frustration. The entire model, except for a slightly enlarged stabilizer, was built to 1/20 scale in honor of my Czech model building friends, who design all of their scale models to that criterion.

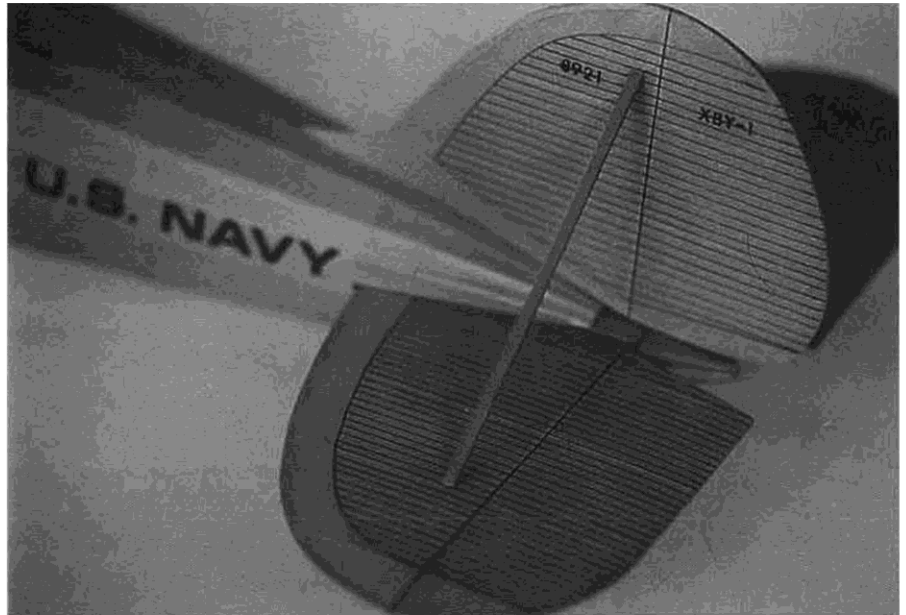
CONSTRUCTION

Construction tips. Most of the major sheet structures (wing ribs, fuselage formers, etc.) are cut from 1/16 sheet. It is recommended that you take the extra time to cut the fuselage formers from 1/16 sheet made up from cross-laminated sheets of 1/32 balsa. This will add a great deal of strength to the finished model with a negligible weight penalty. Tail outlines are also laminated from strips of 1/32 sheet softened in hot water and household ammonia, cemented around a cardboard form with diluted white glue. In much the same manner, the upper and lower fuselage keels are laminated from soaked 1/16 square stringers.

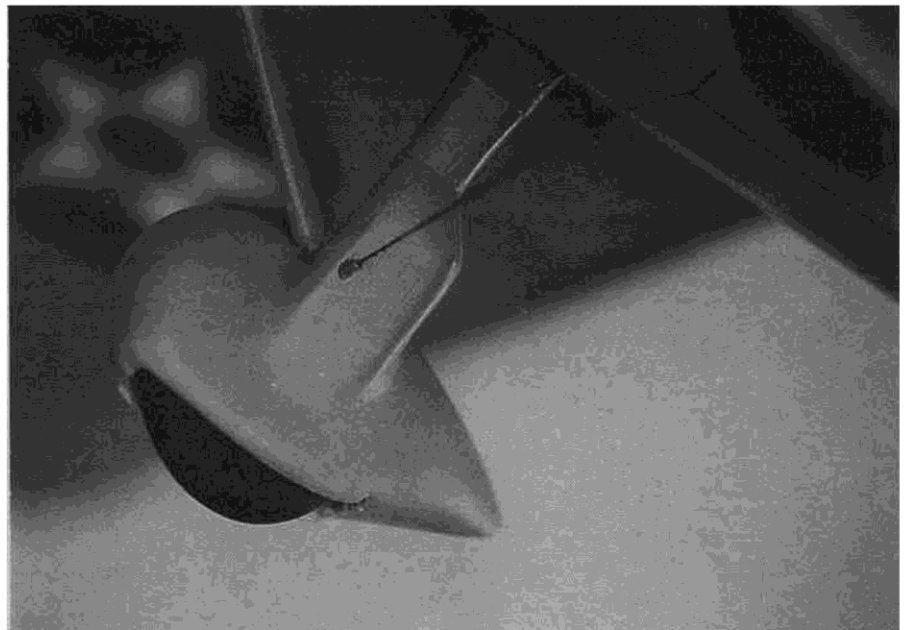
Wing. Construction is quite conventional. Note that the wing tip is raised to meet the main spar, which is a practice that adds some aerodynamic stability, much like tip washout, and simplifies covering. I added a thin strip of carbon fiber tape to the lower surface of the main spar for added strength, but this step is entirely optional. Upon completion, the flat center section of the wing should mate perfectly with formers F3, F5, and F6. The 1/20 flotation gear bases, glued between wing ribs three and four, allow you to add this detail without cementing balsa strips directly onto the wing tissue.

Fuselage and engine cowling. Once the upper and lower fuselage keels have been laid down, the fuselage formers are added at the locations shown on the plan. Follow the usual practice of laying down fuselage former halves, adding stringers, and then completing the second side of the fuselage. A length of top keel should be left between formers F2 and F3 for ease of construction. It will be removed after all of the 1/16 stringers have been added.

The cowling is shown in the side view on the plan. Use a drafting compass to make up the balsa rings that act as cowling



Strut is added only after the model has been flight adjusted.



The gear wires are embedded in the struts and pants. Use filler to obtain curved fillets.



The radial engine is a paper cut-out. Note the elastic thread used to simulate wire.

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formers, consulting the plan for inside and outside diameters. The cowling should be built directly over the plan, using half-shell construction, with lengths of 1/16 square stringers to hold the formers in place during construction (located at the top, bottom, and side positions). When both sides are completed, the cowling framework resembles a drum; wrap with 1/32 sheet and add the three 1/8-inch thick rings at the front of the assembly, cross-laminating as you go along. Finally, sand the front rings to a smooth, rounded contour.

Landing gear. This is the only unusual aspect of construction. Although the landing gear must be firmly attached to the fuselage, it must also be springy enough to absorb rough landings. The main landing gear wire is bent as shown on the plan and glued in place on fuselage former F4. Add a doubler on top of the wire to complete the sandwich arrangement.

On my model, I ran an additional wire from F2 to the main gear wire and soldered the two together for additional strength. This brace strut wire was anchored to F2 through a short length of 1/16 aluminum tubing glued into F2. The balsa landing gear structures, wheel pants, and brace strut were then built up around the wires. Each brace strut, for example, was made up of two 1/16 x 1/8 lengths of balsa that were glued around the brace strut wire and then sanded to shape. The wheel pants were built as separate units but grooved to accept the main gear wire. Lots of sanding sealer and lightweight spackling were needed to fill and smooth the landing gear contours to the streamlined shape shown in the accompanying photos. The finished model has several thread "wires" attached to the landing gear that were simulated with very fine sewing elastic.

Finish and details. The entire model was covered with white Japanese tissue, alcohol shrunk, and given two coats of very thin, clear, nitrate dope. As a general rule, try to do as much detailing as you can on the separate assemblies. The scrap details, like the ribbed flotation gear, intake scoop, and exhaust stubs are added right before painting. The entire model is medium gray, except for the tops of the wing and horizontal tail surfaces, which are yellow-orange. The color was Aerogloss dope applied with an artist's mouth atomizer.

A separate instrument panel, if you want one, can be added at this point. All of the "windows" are thin acetate. The main cockpit structure was built up from short lengths of 1/16 square basswood, covered with acetate, and then gray paper window frames. All of the black lettering ("U.S. NAVY" and tail codes) are pressure-sensitive letters applied to clear decal sheet that are then transferred to the finished model. Control surface lines were done with a black, Pilot brand, permanent fine-line marker. The four "star 'n' ball" insignias are best created from color-doped tissue or decals, if you're lucky enough to have them. Three access steps on the right rear fuselage can be simulated with rectangles of black tissue.

Finally, a word or two about the simulated corrugations: All of these were drawn with light gray ink in a capillary technical pen. In order to get neatly spaced lines, each of the tail surfaces was laid out on my drafting table, the 1/8-inch rulings lightly drawn in soft pencil, and then inked-in, using a T-square to insure good alignment.

AT THE FLYING FIELD

Several nine-inch propellers were tried, but they all seemed about equal to the task. A commercial plastic prop was eventually selected. Power comes from two loops of 3/16 FAI, 26 inches in length and braided to take up some of the slack. The finished model was slightly nose-heavy, requiring a tiny glob of clay on the tail cone. A 1/8-inch down-and-right shim was needed for thrust adjustment.

It is suggested that you leave an enlarged slot for the stabilizer, should small up or down adjustments be needed during trimming. Once the model is trimmed, the open areas around the tail can be finished with gray tissue and the tail struts added.

How does it fly? The model now puts in regular flights of 45 seconds, with occasional joy rides in excess of a minute. It is capable of impressive altitude, and it surely looks like a craft that might have been flown by Don Winslow of the Navy!

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