Authentic markings indicate our miniature Kingfisher was flown by the section leader, Airplane Four, Observation Squadron Three (VO-3), aboard battleship Mississippi. Scale: inch-foot.

The Kingfisher

By JIM MOYNIHAN

Build scale? Fly for sport? Carrier event? This man's size model of one of the most colorful planes of World War II flies as well as it looks. For .29 to .35 engines.

Much like Dumbo, the Catalina flying boat, the Vought OS2U-1, was designed for one thing and wound up its service career having done nearly everything. Many are the Navy veterans who lived to go on fighting because they were "Kingfished" out of the briny by this airplane. Unsung, it hit the front pages with rescue of Eddie Rickenbacker from the Pacific wastes. But the topper was the time a Kingfisher landed in Truk harbor, Japan's Gibraltar, in the middle of a big raid and loaded seven downed Navy pilots on wings and floats, taxied 16 miles through the ocean's open water to deposit them safely with the submarine Tang, then flew back into action.

Small, rugged and versatile, the Vought OS2U-1 was among the first airplanes to use welding extensively in its structure. Note too the use of spoilers for lateral control at low speeds when the ailerons dropped with the flaps on landing runs. Powered by a 450 hp Pratt and Whitney radial, it was no ball of fire, but in 1941 it was an airplane when we needed airplanes. Originally brought out in 1939 as a gunnery spotting and observation plane for catapult fleet duty, it stayed in service until 1944, and in some cases later, fianlly bowing to progress in the form of the helicopter.

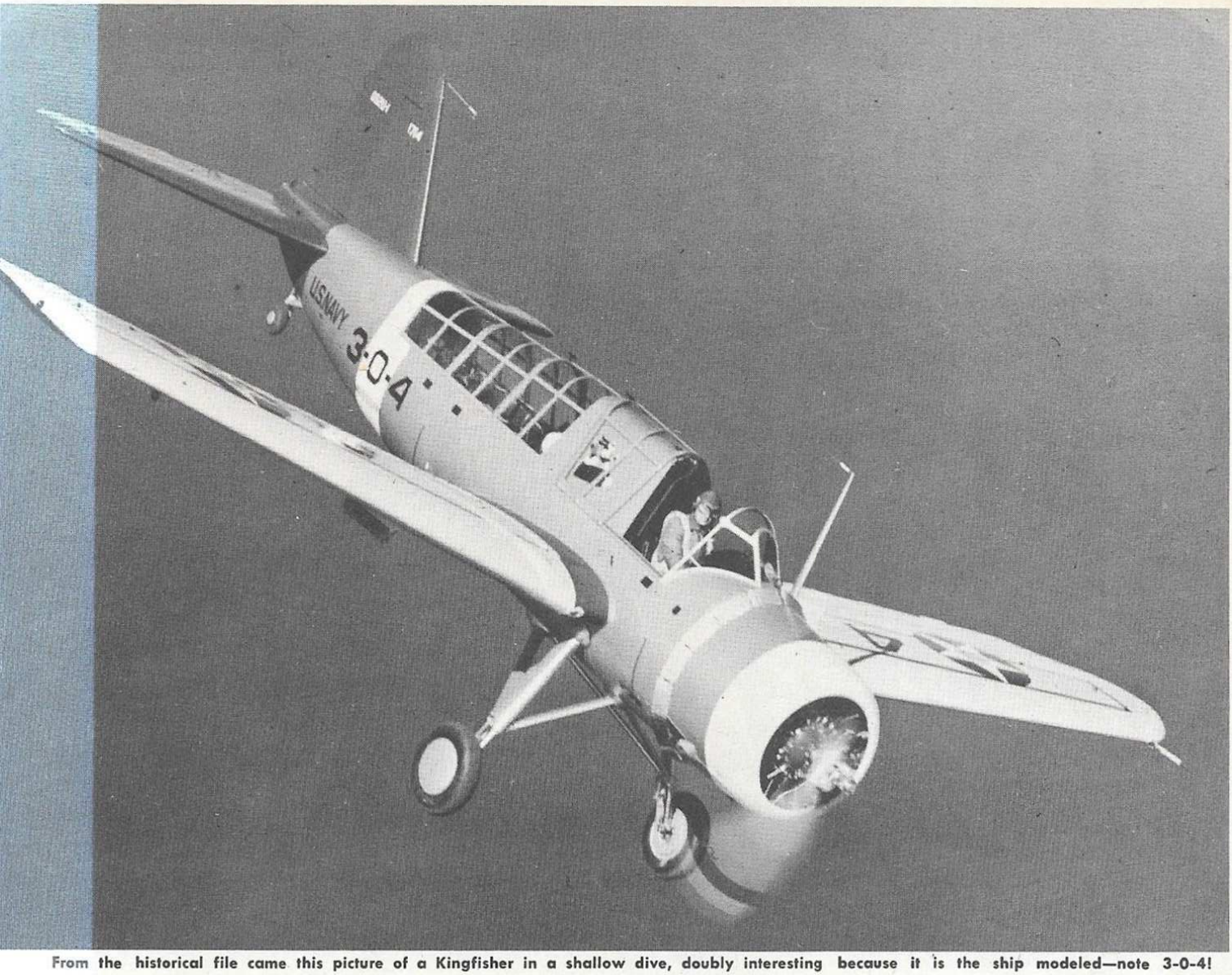
The drawings are scaled directly from Vought Sikorsky Co. prints: one inch to one foot scale. The markings shown are authentic, pre-war and colorful. This ship represents the machine flown by the leader of Section One, Airplane Four, Observation Squadron Three (VO-3), aboard the 33,000 ton New Mexico Class battleship, the Mississippi. When shore based, the wheel gear shown replaced the usual single large float and the two wing tip floats.

Getting down to the business of building, it would be best to read the details carefully since this ship was designed to be built with the engine mounts, gear, wing spar and hook all in one beefed up unit, and while construction is not difficult, the wrong sequence of construction can make it awkward. With the demands of the carrier event placing a premium on ruggedness, low speed control and short field take-off, we think this ship will please the most critical fan.

Build the wing first. It is conventional in construction, using two spars of hard balsa helped out by plywood short spar gussets as indicated on the drawings. The spars and plywood spar stiffeners extend right through and key in between the engine mounts later. Plank the wing

Typical of older aircraft, the Kingfisher has relatively large wing area, making it a fortunate choice for controlline use, especially where slow speed flying and landing are important.

Little details, pilot, loop antenna, opened cowl flaps, add realism, yet essential simplicity of the real craft minimizes fussing. Fixed gear is a welcome relief from modern single struts.



From the historical file came this picture of a Kingfisher in a shallow dive, doubly interesting because it is the ship modeled—note 3-0-4!

with 1/16 sheet, butting up to the balsa leading edge and lapping over the wing tip and lapping about 1/4 in. to form the trailing edge. The spars and stiffeners will fix the dihedral. Be sure to leave open the skin in the center section to allow positioning the wing. The bottom surface skin can be left on. Cover the unit with silk or Silkspan after sanding.

The tail is simple since the tail assembly is cut entirely from 3/8 soft sheet. Allow a 1/4 in. offset on the rudder. The elevator hinges we use are simple and foolproof. Cut strips of metal shim stock of brass or steel about 3/8 wide and 1 1/2 in. long. Pick out a piece of wire about 1/32 in diameter and bend the metal strips around the wire, pinching them at the wire to make them conform closely to the wire diameter size. Push these strips into stab. and elevators and cement. Now use the next smaller wire size as a hinge wire. If this is done properly, the elevators will droop of their own weight and will not be affected by dope. Exhaust from the engine only serves as lubrication. The rest of the tail assembly data is shown well on the drawings.

The fuselage is built swiftly and easily if done in the right sequence. As we mentioned previously, the beef in the ship lies in the engine mount-wing-spar-gear-hook basic unit. To achieve a high strength to weight ratio, we key the parts into a sort of interlocking frame, so stresses applied to any member part of the unit are transferred to all parts.

Do it like this: cut out the fuselage bulkheads, and side, bottom and top keel pieces. Carefully line up the engine beam mounts (preferably of maple) and cement them together at the hook point of attachment. Add bulkheads one through five. Now make up the arrester hook assembly and drill the mounting holes through the bracket and the maple piece connecting the engine mounts at the rear for No. 2-56 bolts, but don't mount the unit yet. Incidentally, when it is mounted, be sure to use washers under the bolt heads.

Now add the side longerons and the remaining bulkheads. Turn it upside down on a flat surface and add the bottom keel to the remaining bulkheads. Let this dry and add a few strips of planking to beef up the unit for handling. Turn it over and add the top keel and let dry. Now bend up the landing gear frame and drill the bulkheads for J bolts but don't mount the gear yet. Mount the wing,. stabilizer, and then the main and tail wheels. Now mount the hook, timer release and bellcrank. Finish planking up the bottom and add the power control device.

We used a Super Aerotrol escapment with linkage of the old RC rudder type to the engine choke, a small piece of sheet steel sized by the "try it this way" method. A relay type control to a fuel bleed· line will work just as well, although we like this escapement because one pulse of the battery is all that's needed, instead of the continuous pressure and battery drain of the relay type. Add the rubber bands for the relay, and finish planking. We sealed it all up to keep fuel and exhaust out but you can easily put in a team racer latch and make the front cockpit assembly removable. Be sure to wire up your control device to the bellcrank leads and be equally sure to use a non-metallic

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bellcrank. We used a 2 in. nylon crank.

We used a commercial aluminum cowl for our ship, attached at four points, as shown on the drawings. If you can't obtain one locally, it is a simple matter to make up a balsa unit, using a compass to draw the round bulkheads on 1/4 sheet. We found this size cowl to be common, though. Finish up the planking and sanding now and cover the new structure with silk. Treat the whole assembly to enough fuelproof clear dope to leave a fine surface after light sanding.

We'll leave to you that "system" for obtaining a fine finish. We use the oft repeated advice of dope, rub, dope, rub, etc. The colors are: fuselage, landing gear struts, cowl —light grey; wings—all yellow; tail—light blue; fuselage band and cowl ring—red.

The rest is shown clearly on the drawing. Now add the wheels, canopies, engine and tank. We believe that flying preferences rest on personality: we like one thing, you like another. But this ship is really easy to handle.