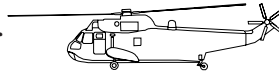


# Belcher Bits No. 7:

## PBY-6A Conversion

Kit: Pro Modeller PBY-5A 1/48

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### Background

In 1940, BuAer directed the Naval Aircraft Factory to design and manufacture the PBN-1, an improved version of the Catalina flying boat. A desire for increased range and payload led to several changes to the hull of the boat including a finer bow, changes to the step and redesigned wingtip floats. At the same time, the NAF decided to tackle the problem of poor lateral stability which had dogged the PBY since 1935. The resulting taller tail and balanced rudder solved this problem, and although the PBN was never widely accepted (most going to Russia), the tall tail was adopted for use on PBYs, starting with the -6 variant. Consolidated never built any PBY-6 flying boats, although Boeing of Canada did make a number under the designation PB2B-1 (most went to Lend-Lease, although some were transferred back to the USN). However, a large number of amphibian PBY-6As were built; most were used post-war by both USN and USAF. The Pro Modeler 1/48 PBY-5A offers the opportunity to convert to the PBY-6A, with the substitution of a new taller tail and modified elevators. The truly ambitious can also use these parts as a start to convert the PBY-5 to a PBN; major changes to the nose are required, including a different turret, and references are very sketchy.

### Installation of the Tail

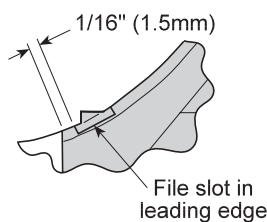
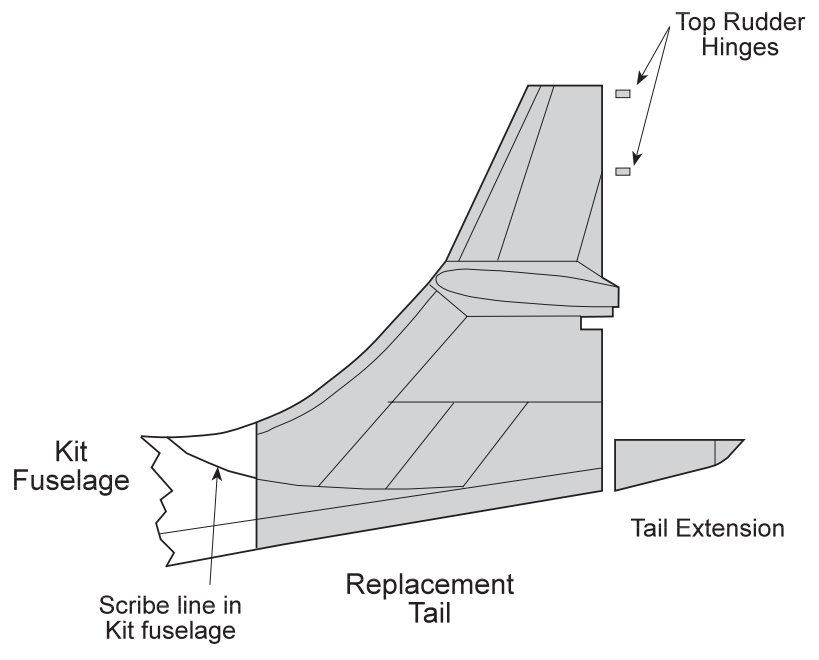
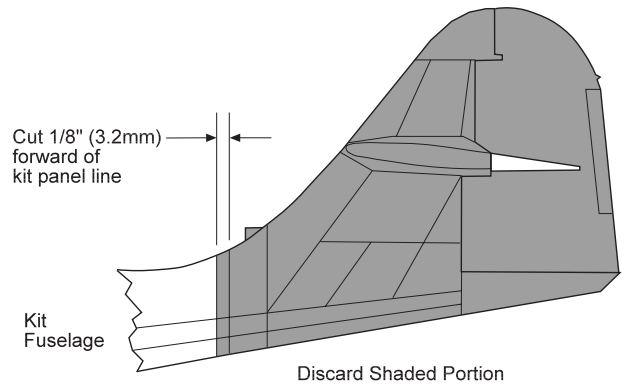
Remove flash from resin parts. As with all resin conversion sets, give the resin parts a good scrub with soapy water to remove any mould release. A light coat of lacquer-based primer is also recommended (The Tamiya primer in the spray can works very well).

The Pro Modeler kit can be assembled as per the kit instructions but leave off the horizontal stabilizers. Use as much nose weight as possible; the kit is a notorious tail-sitter by itself and the resin parts only make this worse. When the fuselage is glued and set, cut off the tail end of the fuselage at a point 1/8" (3.2 mm) ahead of the panel line just ahead of the tail. Sand the cut surface smooth and remove any scarf on the inside.

Use cyanoacrylate (Crazy glue) adhesive and glue the two halves of the replacement tail together. It is designed to fit snugly to the fuselage, but double check the part is vertical as it should be and attach the tail. Fill the joint using your favourite filler; some minor filing of the fuselage may be required to match contours. Add a scribed line for the fin fillet as shown. Glue on the tail extension. You should use the rudder to help position the part.

The top rudder hinges are made from pieces of 0.060" x 0.100" strip provided. Cut to length and install using the rudder to position these parts accurately. Trim to be flush with the tail and radius the trailing edge a little.

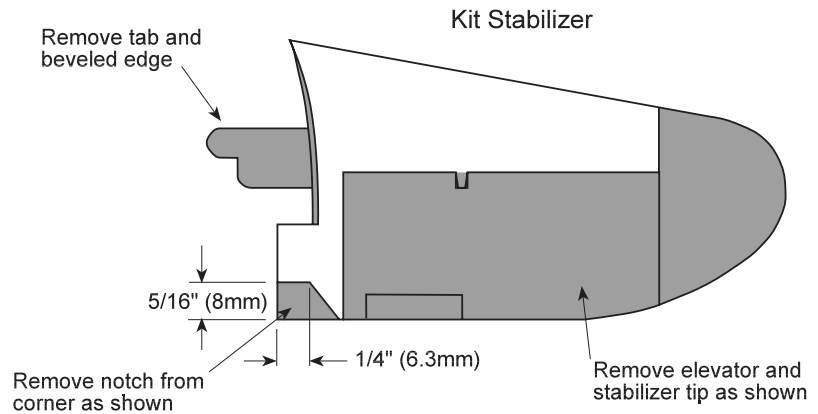
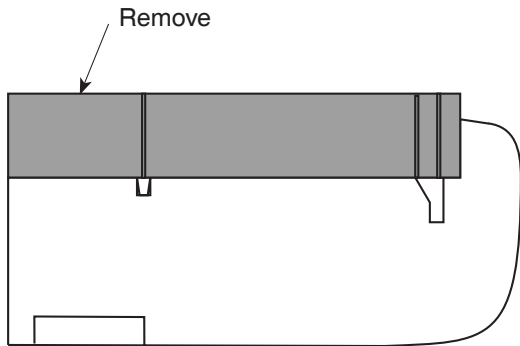
The Monogram kit includes a scoop at the base of the fin, which represents the air intake for the tail thermal de-icing system. Some PBY-6As did not have the intake. It is included as an optional part in this conversion. To install, file a slot in the leading edge starting 1/16" back from the front (see sketch below). Glue in the new intake and fair into the lead-



ing edge.

### Modification to Kit Stabilizers

The kit stabilizers must be modified. Cut off the tabs at the root, and don't fill the slot which remains; the resin part has small tabs which fit those slots. The kit parts have a beveled joint; use a hobby knife and carefully trim the root so that it is square. Test fit to the resin tail. The two stabilizers should just



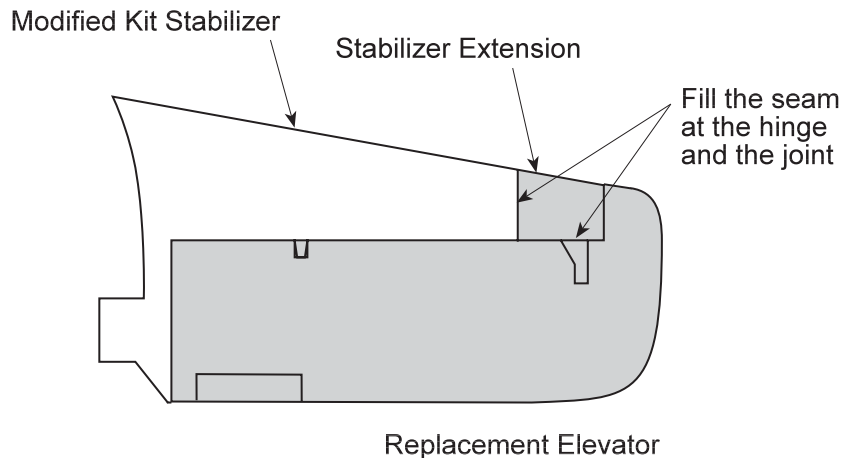
touch one another behind the fin. Remove the elevator and the outer end of the stabilizer as shown in the drawing. Trim the root end of the trailing edge per the sketch.

Remove the pour sprue (see sketch at left) from the replacement elevators and file flat.

Glue the small resin stabilizer extension to the modified kit stabilizer, fill seams and restore the surface detail.

Fit the new elevators to the modified stabilizers and glue in place. The hinges are moulded with the elevators; fill the seams at both points. If you want to drop the elevators, you will have to carefully remove the hinges and attach them to the stabs, then fit the elevators.

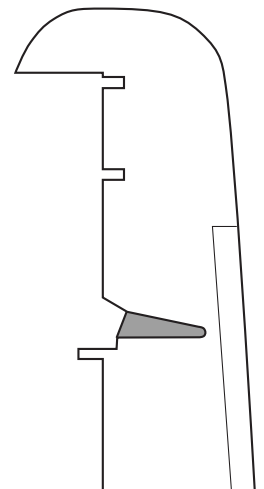
I recommend that the stabilizers be glued in place before the rudder is installed because it makes access easier. Glue the stabilizers in place, taking care that they are horizontal (check against the wing). Fill the gap at the roots and sand smooth.



### Rudder

The clearance slot in the rudder has been moulded with a spacer to help support the rudder (see the sketch at right). Be warned that the rudder will be very weak in the middle once this spacer has been removed; handle carefully until it can be glued in place. Carefully open this slot; do not use clippers to cut this spacer out; these will spread the joint slightly and most likely break the rudder just behind the slot. Instead, use a razor saw and a file to clean up the edges.

When installing the rudder, a little bit of rudder deflection is possible but if you want to really push on the pedals, some trimming of the rudder leading edge and the hinge will be required.



### References

1. Walk Around Number 5 PB Y Catalina, Squadron Signal Publications, 1995. (The best reference I have found for details of the tall tail variants).
2. PB Y Catalina in Action, Squadron/Signal Publications, 1983.
3. Scale Aircraft Modelling Vol.5 No.8 (May 1983)
4. Wings Vol.5 No.2 (April 1975)
5. Wings for the Navy (History of the NAF 1917-1956), William Trimble.