

# SeaBee

## HISTORY

by Don Kyte



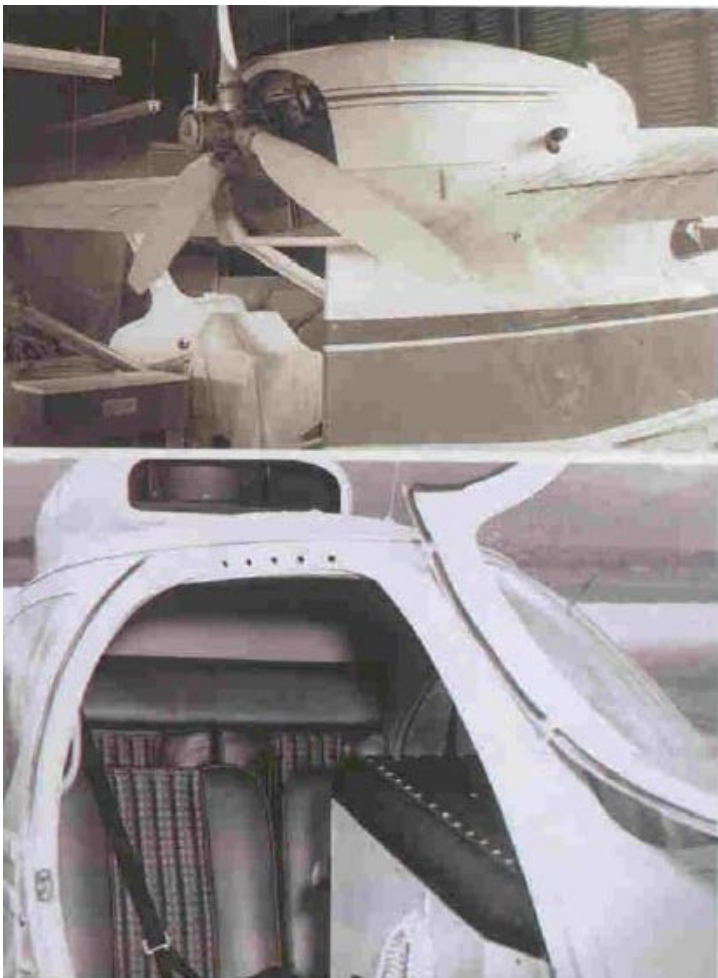
An example of a well-cared for and highly modified Seabee owned by Bruce Hinds. The engine is the 295 hp version of the GO-480 Lycoming. Other Simuflight modifications include wing extensions and droop tips. Hinds reports a useful load of 850 pounds, cruise of 110 mph burning 12 gph, takeoff on wheels of 500-feet, and water performance similar to that of a Cessna 185.

The big bumblebee: despite the airplane's rarity, most seaplane pilots are familiar with the Seabee's unique design, but its hidden performance and utility have been all but forgotten. Younger landplane pilots are generally unaware of the craft, often approaching me when I'm refueling and ask, "What is a Seabee?"

The Seabee is a unique four-place amphibious aircraft built by Republic Aircraft Corporation in 1947 to satisfy a perception that the returning WWII pilots would want to own and fly their own airplane. Unfortunately, the vast majority of these pilots didn't even want to look at another airplane, much less buy one, so production was terminated after Republic lost piles of money when sales did not meet expectations. All the other manufacturers that tried to introduce new light plane designs at this time had similar problems. The Seabee was named in honor of the Navy Seabees (Construction Battalion) and its logo was the bumblebee, which according to aeronautical engineers, is not supposed to fly because of its non-aerodynamic, bulbous body. After many years of Seabee ownership, I consider the bumblebee logo to be most appropriate. Some people think it looks more like a flying tadpole but who would want an airplane named Tadpole?

The Seabee quickly developed a reputation of poor performance and flying qualities. In reality, the main performance inhibitor is its roomy cabin and baggage compartment. I understand the Seabee was strong enough to

A photo of Joe McHugh's original Simuflight Lycoming conversion (center). The Seabee's large forward door (bottom) and easy cockpit access makes loading through the nose simple.



have a gross weight of at least 3,500 pounds but was limited to 3,150 pounds due to the size of the engine. Right away, though, people tended to overload it. Pilots flying light GA aircraft of this era were taught to fill the fuel tanks before every flight; the large 75-gallon fuel tank in the belly of the 'bee holds 450 pounds of fuel. The Seabee was one of the first light planes that would be overweight with a full fuel tank and four 180 pound passengers – and this without any baggage! It is little wonder that the Seabee was branded as a poor performer.

Republic Aircraft Corporation, however, had a reputation for building very strong aircraft – especially the rugged and durable, highly successful P-47 Thunderbolt WWII fighter nicknamed the “Flying Jug”.

There are few places to mount an engine and propeller on a single engine flying boat amphibian. Because of weight and balance considerations, the engine had to be mounted well forward and on top of the cabin. Franklin Aircooled Motors designed and built a 215 hp engine for the



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Seabee, which incorporated a propeller shaft several feet long to address the CG problem. This 500 cubic-inch B8F engine was good for that era, but unfortunately proved to be too underpowered for the final aircraft design. A later version of this engine, the B9F, had an automobile distributor and one magneto instead of two like the B8F, but still only produced a rated 215 hp.

I was an airline co-pilot in 1964 when I bought my stock Seabee. Various modifications had been developed since 1948 to enhance a Seabee's performance, but the biggest need was for a more powerful, reliable, modern engine.

George Mojonnier, then head of the Chicago Seaplaners Club, first had the idea of using a geared Lycoming engine, the GO-435 as a replacement engine because the reduction gear housing from the engine to the propeller was only a foot or so shorter than the Franklin's long

*Jack Daubenspeck's Seabee (above) with the Lycoming conversion. Daubenspeck never flew this Seabee after the conversion (it was taken over by his creditors). Bruce Hinds (below) uses his Seabee to explore the Pacific Northwest. He estimates that a Seabee with the large engine conversion and in good condition is valued at \$175,000.*





*The author with his Seabee in Southeast Alaska*

**THE REVERSING PROPELLER ALSO GIVES YOU A NEAT, ATTENTION-GETTING WAY TO DEPART FROM A DOCK: JUST BACK OUT UNDER POWER! ANOTHER ADVANTAGE IS USING REVERSE AT AIRPORTS TO BACK AWAY FROM AN OBSTACLE OR TO BACK INTO A PARKING SPOT.**

*The cowl of Joe McHugh's conversion (below) is made from two original Franklin engine cowls. Jack Daubenspeck (left) and the author with Daubenspeck's prototype conversion.*



propeller shaft. Mojonnier thought that the geometry of the Lycoming and the addition of more weight to the nose would keep the aircraft within acceptable CG limits. At 260 hp, the GO-435 would provide a significant improvement in performance.

About this time I moved to Seattle and started a Seabee Club patterned after Mojonnier's club in Chicago. One of our members, Steve Gross, a Boeing engineer, designed and built a motor mount for Mojonnier, but, because of a lack of aeronautical engineers in the Chicago area, he could go no further than building a plaster mock-up.

In the meantime, Jack Daubenspeck, another engineer in our club, started a design of his own using the Lycoming engine. Over the next 10 to 15 years, two different certified Lycoming conversions emerged.

I networked to promote and encourage any and all improvements for the Seabee. Daubenspeck formed a company called Aerocraft Inc., where he initially designed, produced and marketed a set of beautiful fiberglass drooped wing tips for the Seabee. The tips added some wing area and may have gained a little extra lift from altering the wing tip vortex. At any rate, they were good-looking and Daubenspeck sold quite a few of them, funding further engine development work. To get closer to the Seabee action, Mojonnier moved to the Seattle area, where he worked with Daubenspeck for a time.

As his engine project neared completion, Daubenspeck sought capital in the form of predelivery deposits from a dozen or so Seabee owners. He ran into engineering problems, however, ran out of money and had to take outside work to bridge the gap. The depositors lost confidence that a kit would be produced and threatened a lawsuit for the return of their deposits. The group decided that if Daubenspeck signed over his Seabee, the claim would be satisfied. Faced with no alternative, he agreed.

One of Daubenspeck's original depositors, John Greef, didn't go along with the group that foreclosed on Aerocraft. Instead, he formed a company called STC Bee, Inc. and hired Daubenspeck to finish his design. With Greef bankrolling and running the operation, Daubenspeck was free to solve the engineering problems that had stymied him for months. Using Greef's Seabee, they eventually had a flying prototype. Over the next few years they obtained a STC from the FAA that provided for a variety of Lycoming engines ranging from the 260 hp GO-435 to the GSO-480 which produced 340 hp and had a geared supercharger. Greef's personal test airplane was powered by a GO-480 engine. The performance increase over the old Franklin powered Seabee was spectacular.

I ordered one of STC Bee, Inc.'s first kits and bought a used GO-435 engine. I also needed a propeller. Hartzell Propeller Company had designed and built a constant speed propeller for Greef's test airplane. It did not, however, reverse. They didn't want to wait till the reverse function could be developed so took what Hartzell could send right away.



*George Pappas (left) produced the first Lycoming conversion including a new metal cowl. Pappas made many other refinements to his Seabee.*

The Seabee's Franklin engine had reverse and the airplane had been designed around this capability. Since the Seabee is equipped with wing-mounted floats, it can't coast parallel to a dock in the same manner as the typical float-equipped seaplane. It was also too large and heavy to coast in nose-first like a Lake amphibian can. The Lake also sits low in the water and can be moved around quite effectively with a paddle. The normal docking procedure for a Seabee is to approach a dock head-on under power, and then use the propeller reverse capability to ease the plane slowly up to the dock. With this in mind, the Seabee design features a bow door in front of the right passenger seat. For easy access from this door, there is no instrument panel on the right side, and the right control wheel is removable, which also provides the unintended bonus of unprecedented legroom. I have carried a seven-foot tall basketball player in that seat who said it was the most comfortable plane he had ever ridden in!

The reversing propeller also gives you a neat, attention-getting way to depart from a dock: Just back out under power! Another advantage is using reverse at airports to back away from an obstacle or to back into a parking spot. (Just make sure the side doors are closed before reversing or the prop-wash will catch the door with predictable results.) At the time, a reversing propeller for the new conversion was essential. I was the first person to order one but had to wait a year for Hartzell to design and build it.

At the same time, Joe McHugh, another talented club member, was doing his own engineering and developed a completely different design. McHugh's conversion had a different motor mount a few inches higher than Daubenspeck's, which allowed a propeller with longer blades, giving a significant increase in takeoff performance. He also used a cowling that joined together two front halves of the old Franklin engine cowling – not as pretty as Daubenspeck's fiberglass cowling but much lighter and easier to remove for engine access. Most Seabee owners agree that McHugh's conversion, marketed under his company name, Simuflight, is superior.

Without fanfare, Mojonier, kept at it and built his own Lycoming conversion, which differed from the other two. He never intended to market his conversion, so got a one-time STC for his Seabee, which he still owns and flies. It is probably the most beautiful conversion of all. To me, George is "Mr. Seabee."

I should also mention that STC Bee's Lycoming conversion was not the first Seabee to fly with an engine other than the Franklin. This honor belongs to George Pappas, a superb mechanic and worldclass metal craftsman, who owns a company called Aircraft Builders in Anchorage, Alaska. Sometime in the late 1960s, George installed an IO-470P 250 hp Continental engine out of an Italian-built Riviera amphibian in his Seabee. Shortly after I had purchased my Seabee in 1964 I went on a search for a rumored Seabee with a "Big Engine." On my airline layovers in various cities, I visited the local airports and ask around about it. Most folks had heard about it, but upon checking, it would always be the

Franklin B9F. While slightly different than the B8F, it wasn't any bigger.

Eventually I heard about Pappas, who invited me to come up to see for myself. I was expecting to find the Continental engine tucked into the original Franklin cowling, not the thing of beauty Pappas had built. Its sleek custom cowl complemented the rest of the plane, which sported modified wing tips, a beautiful paint job and a new interior.

I visited during the winter when there were piles of snow all around. The weather wasn't good enough for a demonstration flight but Pappas did fire up the engine. Pappas' conversion impressed me further when he backed it through a small snowdrift behind the plane – a maneuver that a Franklin-powered Seabee couldn't have managed. I did get a chance to fly it later when Pappas bought it by my lakefront home in Seattle. It flew beautifully and demonstrated what the Seabee could do with more power. (None of the Lycoming conversions were yet in the air at the time.) The IO470P Continental engine was not as plentiful and more expensive than the Lycoming engines, however. In addition, the Lycoming conversions we were working on came in a variety of sizes from 260 to 340 hp.

After endless delays, my Seabee finally came out of the shop with its new conversion. The GO-435 with its 260 hp, while not as impressive as the 280 and 295 hp versions of the GO-480s, had all the extra power I needed. It now performed like a regular airplane and would fly as well fully loaded as it did with the Franklin engine, empty!

Over the years I have added a number of other modifications such as the large spray rails to deflect spray away from the propeller and provide increased planing surface to help get the Seabee off the water more quickly.

## Seabee scenery

After my mandatory retirement as a commercial pilot at age 60, I put the Seabee to work. I hooked up with a company called Biological Journeys providing Southeast Alaska guided nature tours in a 50-foot boat, The Delphinus. I started a companion company called Glacier View Airways. The Seabee was uniquely qualified to work with a boat like the Delphinus because of its roomy cabin, large windows and

ability to taxi right up to the swim platform at the back of the boat using its reversing propeller for a gentle connection.

Over time, I added a number of improvements, including longer wings and large camera ports in the passenger windows. The biggest improvement, however, was replacing the GO-435 engine with the 340 hp GSO-480, which gave me extra power to take my passengers high enough to view the upper parts of the glaciers and the snowfields above. The full-time geared supercharger gave the Seabee full sea-level power to about nine or 10 thousand feet.

I flew thousands of passengers over the whales and glaciers of Southeast Alaska, including a number of celebrities. From one boat, my clientele increased to about 15 boats during my final year in 1988, when doubling insurance rates forced me to once again retire. But, I had just enjoyed 10 years of the most enjoyable flying I have ever done. What a great way to cap off a 50-year commercial flying career! ■

*The once disbanded Seattle Seabee Club has been restarted by Bruce Hinds. He can be contacted at: [brucehinds@earthlink.net](mailto:brucehinds@earthlink.net). Just prior to press, Joe McHugh was killed in the crash of the Seabee that had been previously owned by George Mojonnier.*

