General Aviation (Fokker) PJ-1/2

Other designations: FLB-50 Series; AF-15; FLB (Flying Life Boat)

Aircraft Specifications

PJ-1 (specifications as of 1932):

CONTRACT NO.: Teg-12154
COST: $73,343.00 (per unit)
WING SPAN: 74' 2"
WING AREA: 754 sq. ft.
LENGTH: 53' 6"
HEIGHT: 15' 6"
BEAM OF HULL: 7' 2"
ENGINES: 2 Pratt & Whitney Wasp C radial engines @ 840 hp total
PROPELLERS:
FUEL:
EMPTY WEIGHT: 7,000 lbs.
GROSS WEIGHT: 11,200 lbs.
TOP SPEED: 125 mph
STALL SPEED:
CRUISE SPEED:
SEA-LEVEL CLIMB:
SERVICE CEILING:
RANGE: 1,100 miles
CREW: 4

Aircraft List

PJ-2 CG-51*Antares*

FLB-51 as it was originally numbered began its life as a PJ-1. It was accepted by the Coast Guard on 16 April 1932. It was christened as *Antares* on that day by the wife of the then-Commandant, Mrs. F. C. Billard.* Its engines were modified from a pusher-type to tractor-type by the Coast Guard in 1933 and it was redesignated as a PJ-2. It was later given the designation V-116. It was initially stationed at Air Station Cape May, New Jersey and later transferred to Air Station Biloxi, Mississippi.

PJ-1 CG-52 *Altair*

FLB-52 was accepted by the Coast Guard and commissioned in August, 1932. It was christened *Altair* and launched on that day by Miss Aline Beverly Chalker, daughter of CDR & Mrs. Lloyd Toulmin Chalker, USCG at the General Aviation Manufacturing plant in Dundalk, MD.** It was later designated V-112 and was decommissioned in May, 1940.

PJ-1 CG-53 *Acrux*

FLB-53 was accepted by the Coast Guard and commissioned on 1 September, 1932. It was christened *Acrux* and launched on that day by the daughter of the Commandant, Miss Jean Hamlet.*** Its designation was later changed to V-113. It was decommissioned in October, 1940

PJ-1 CG-54 *Acamar*

FLB-54 was accepted by the Coast Guard and commissioned in September, 1932. It was christened *Acamar* and its designation was later changed to V-114. It was decommissioned and "abandoned" in August 1937.

PJ-1 CG-55 *Arcturus*

FLB-55 was accepted by the Coast Guard and commissioned in November, 1932. It was christened *Arcturus* and its designation was later changed to V-115. In 1935 it was stationed at Air Station Miami. It was at one point assigned to Air Station Salem before being transferred to Air Station St. Petersburg, Florida on 11 December 1938. It was decommissioned in August, 1941. It may have then been cut up and burned as scrap.

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* Billard, Frederick Chamberlayne. "The Commissioning of the New *Antares*. [PJ-1]" *U.S. Coast Guard Magazine* (July 1932), p. 16.

** "For the Coast Guard's Airfleet." *U.S. Coast Guard Magazine* (September, 1932), p. 22.

*** "Admiral's Daughter Names New Boat." *U.S. Coast Guard Magazine* (October 1932), p. 16.

History:

Based in part on the success of the Loening amphibians then in service Coast Guard Commandant Frederick C. Billard decided to acquire state-of-the-art flying boats capable of performing rescues by landing on the open sea. What became known as the Coast Guard's "PJs" or "FLBs" (for Flying Life Boats) were the first aircraft acquired by the service that were designed from the start for Coast Guard use. The Coast Guard awarded the $360,000 contract to build five seaplanes to the Fokker Aircraft Corporation, which was then known as the General Aviation Manufacturing Corporation in Dundalk, Maryland. The design of the new FLBs was based on the civil F-11A design and were the last Fokkers built in the U.S. The specifications called for a strong and durable aircraft capable of "observing, landing and returning with rescued crew of distressed craft and / or capable of landing, taking aboard fifteen or more passengers and standing by for lengthy periods on [the] surface until rescued members can be transferred to surface craft."

LCDR Carl C. von Paulsen was ordered to supervise the seaplanes' construction. LT L. M. Melka was later assigned on temporary duty directly with General Aviation. As for the aircraft they would be watching over, a period article noted that:

As built by Fokker to the Coast Guard specifications the 72-foot wing monoplanes will have a gross weight of 10,000 lbs. They will have a top speed in excess of 115 miles per hour and a range at cruising speed of 100 miles per hour of a little better than 1,000 miles. They will be able to fly for an hour on either engine alone without losing altitude. They will be maneuverable on the water in winds up to 20 knots and must be able to land and take off without bumping under such conditions. . .They will be equipped with the very latest tricks in radio, including telegraph, telephone, long and short wave, and direction finding.

Apparently there was "mutual cooperation" of the engineering and operating staffs of the Coast Guard and General Aviation. The FLB-50 series, as it was known, was a unique aircraft. Its engines were placed facing the rear of the aircraft with "pusher" propellers rather than the standard "tractor" type to negate the negative effects of sea spray, prevent the carburetors and ignition systems from "drowning," keep the windshield free of oil and fuel spray and to protect small boats that approached the forward hull of a floating FLB from menacing propeller blades. They were placed in protective nacelles mounted on high pylons on the wing. The FLBs were of "all-metal construction. . .with a cantilever wing covered with wood veneer." In the final design the large wing was made entirely of wood except for the wing tips. The FLB was also designed to have a retractable beaching gear which was folded up against the lower side of the wing while in flight. Once the FLB was on the water this beaching gear was lowered and locked into place and the aircraft could then exit the water on to dry ground from a seaplane ramp. This beaching gear was not able to withstand a landing on the ground or a landing strip.

A Coast Guard Fact Sheet and an article in the *U.S. Coast Guard Magazine* (July 1932, pp. 32-33) described the final approved design of the FLB and its performance after initial testing:

Hull and float structures were constructed of aluminum alloy with Alclad skin sheets. The hull is 54' long, 104" high, and 86" maximum beam. This gives a displacement of 57,000 pounds, or approximately 400% of reserve buoyancy. The body is divided roughly into two parts: the hull proper with three compartments which provides the flotation, cargo space and support of the wings, and an after portion, monocoque in design, which has as its primary function the support of the tail surfaces. This after portion because of its static balance relation to the center of gravity of the ship cannot be used for cargo stowage. The body is divided by three water tight bulkheads into four separate compartments, access from one to the other being made through water tight doorways.

Wings were made of two-spar construction in which the beams took all the bending movements. The wooden laminated cover skin of the wings (spruce, birch and ash) was joined by casine glue. The ailerons were made of sheet Alclad corrugated for stiffness and designed so that they could be inspected internally by opening trailing edges. Welded steel fabric covered the tail surfaces.

The boat trims at 2° by the stern while it rests on the water. All taxiing qualities in choppy water during winds up to 25 knots have proven satisfactory. Full loads have been taken off with tail winds in less than 700 yards. The hull lines are such that the boat may be "planed off" before flying speed is attained. The lack of protuberances and simplicity of structural members as well as the external stringers of the hull bottom all contribute to a remarkably "dry" take off. Maximum spray occurs as the plane settles "off" the step. Mooring is accomplished by lines from either a mooring pintel just forward of the bow cockpit or by means of a pendant secured to the keel. As the bow is particularly free of spray, this mooring operation is quite easily accomplished.

Beaching operation from water borne to land borne is accomplished by the dropping of the two light aluminum alloys legs pivotly secured at their upper ends to the forward spars and having low pressure tires secured to their lower ends. These are normally carried. . .

General Aviation delivered the first FLB, FLB-51, on 16 April 1932. It was christened *Antares* by the daughter of Commandant Billard. The other four aircraft were delivered later in the year. FLB-51 was assigned to Air Station Cape May where, while undergoing acceptance testing, it responded to an emergency radio call from the U.S. tanker *Samuel Q. Brown* which reported that two crewman were seriously injured and needed medical assistance. The FLB was being flown at that time by LCDR C. C. von Paulsen and he responded to the distress call. He landed near the tanker which was 50 miles out at sea some 30 minutes later. After loading the two injured men aboard he took off and landed back at Air Station Cape May where the medical staff there suggested the men would receive the treatment they needed in Philadelphia. So von Paulsen took off once again and landed at the naval aircraft factory where an awaiting ambulance took the seaman to the hospital.

Photographs:

Original caption: "'ALTAIR' being christened at General Aviation Manufacturing Corp., Dundalk, MD. Miss Aline Beverly Chalker, daughter of Commander & Mrs. Lloyd T. Chalker, USCG, and Rear Admiral Harry G. Hamlet, Commandant of the U.S. Coast Guard."; August, 1932; no photo number; photographer not listed.

The Coast Guard, following a similar practice as the Navy, christened and commissioned its flying boats (the PJ's landing gear was removable). The five PJs were the first aircraft designed and built specifically for Coast Guard service.

Original caption: "The late RADM Norman G. Hall, USCG, pioneer in U.S. Coast Guard aviation, shown here as a CDR, watches a crew working on a PJ-1 (Fokker) seaplane at the water's edge at the Naval Air Station, Norfolk, Va., in 1932."; 22 November 1932; no photo number; photo by C. S. Borjes of *The Virginian Pilot*.

The Fokker PJs were known by Coast Guard aviators of the time as "FLBs" (for flying life boats).

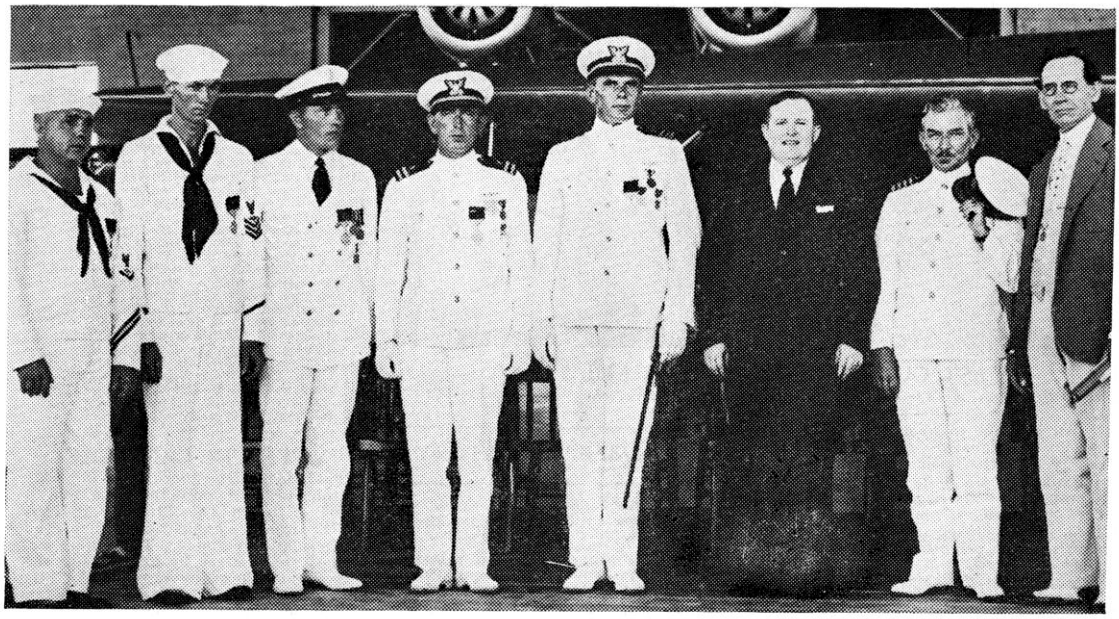
Original caption: "Coast Guard plane ANTARES at steamer SAMUEL Q. BROWN for stretcher case."; no date/photo number; photographer not listed.

The Coast Guard PJs and their aircrews pioneered this kind of SAR case--flying far over the horizon, landing at sea near a merchant vessel, recovering the victim/patient, taking off at sea and returning to base. In this instance two merchant crewmen sustained serious burns and were evacuated by ANTARES and its crew 50 miles off the Delaware Capes in early 1933.

Original caption: "A welcome from the air! Coast Guard planes from the Coast Guard Air Station Miami, Florida, greeting the new 165-foot patrol boat PANDORA upon her arrival at that Port on December 6, 1934, to take station. From top to bottom are Flying Boat ACAMAR, Amphibian SIRIUS and Flying Boat ARCTURUS."; Photo No./date 12-25-34 (9) N; photographer not listed.

The amphibian flying in front of the PJs is a Douglas RD Dolphin. The Coast Guard acquired 13 RDs beginning in 1931. It proved to be a popular choice amongst Coast Guard aviators.

Coast Guard Airmen Honored For Rescue

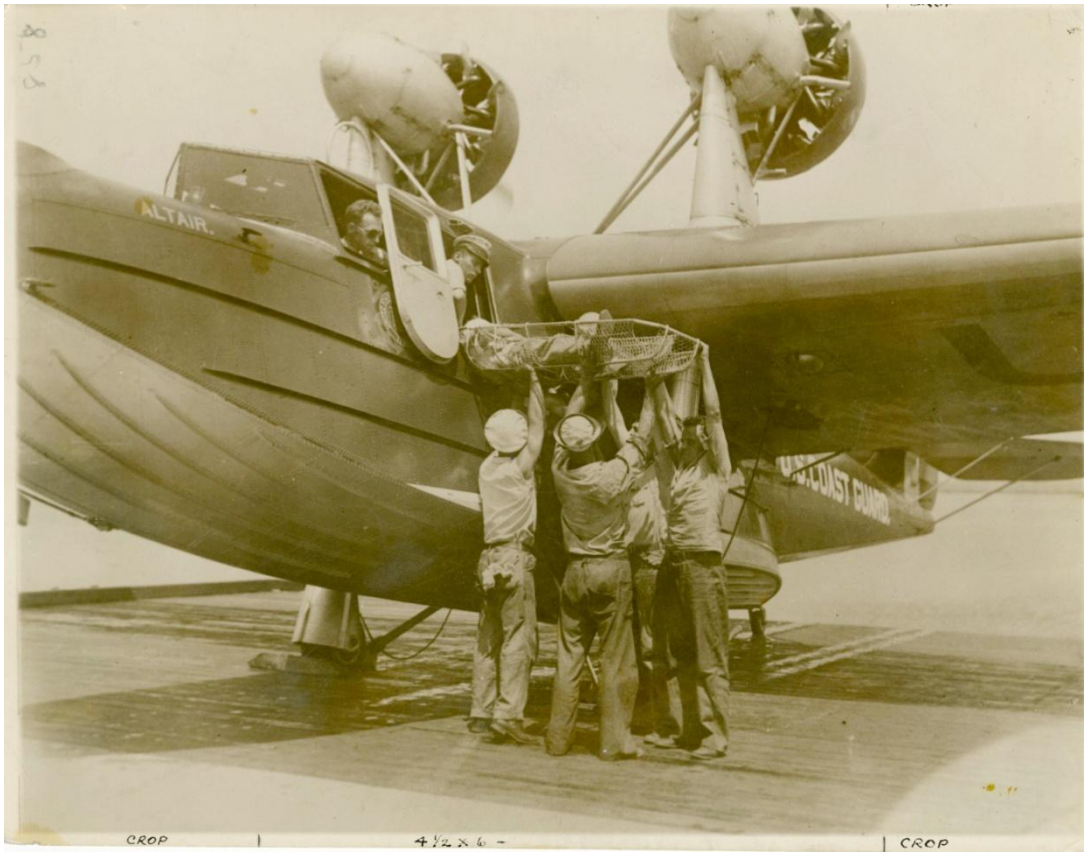


Miami Herald Photo

MIAMI MADE QUITE A "TO DO" OVER THESE MEDAL WINNERS

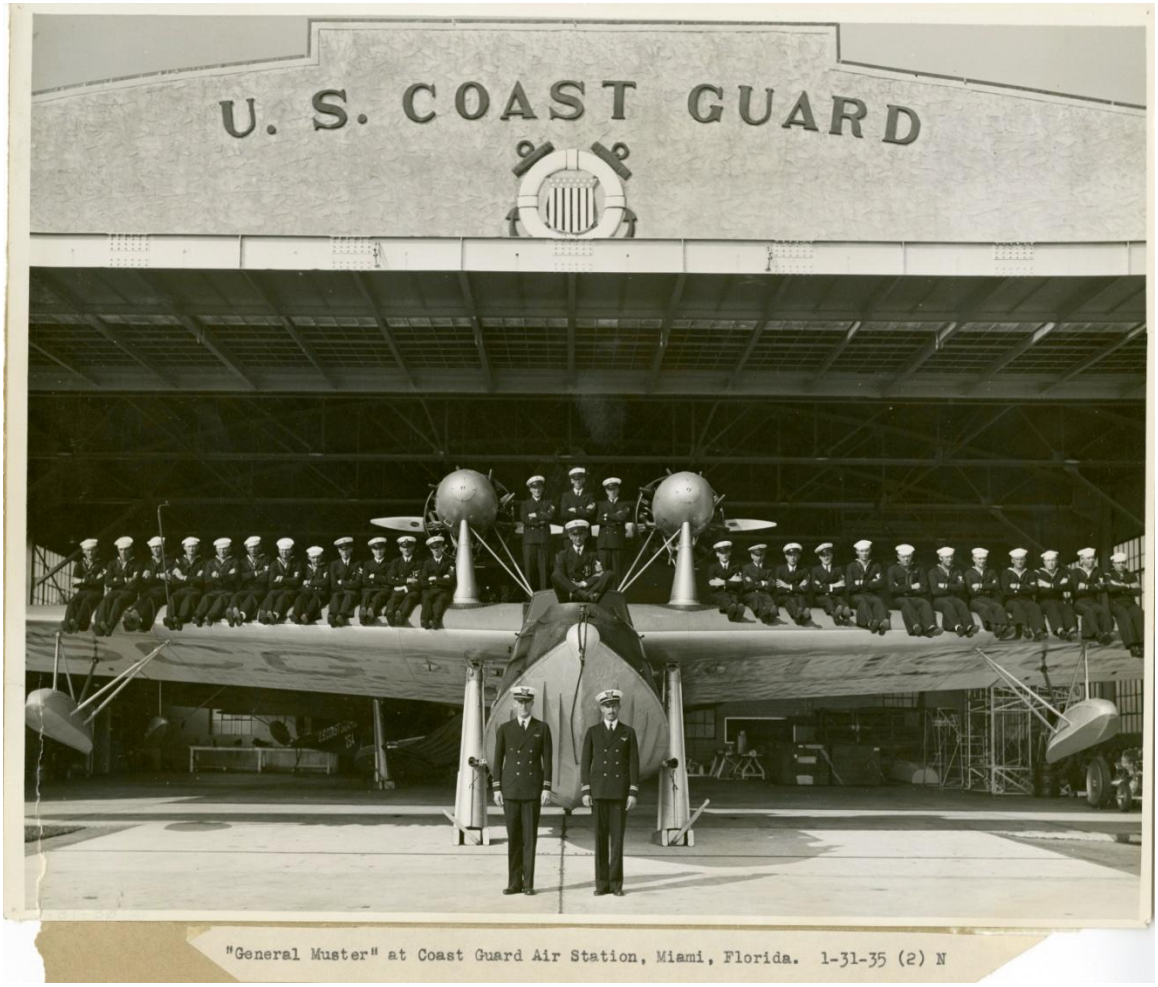
Five members of the United States Coast Guard, received Treasury Department Life Saving Medals of Honor, the Government's highest peace time award, at ceremonies pictured above. Gov. Dave Sholtz presented the medals in the presence of Capt. C. F. Howell, U.S.C.G., and Mayor E. G. Sewell. Left to right, Thomas S. McKenzie, radio operator; William D. Pinkston, aviation machinists mate, first class; James R. Orndorff, chief aviation machinists mate; Lieut. William L. Foley and Lieutenant Commander Carl C. von Paulsen, U.S.C.G., all receiving the award; Governor Sholtz, Captain Howell and Mayor Sewell.

The original caption continued: "Five members of the United States Coast Guard, received Treasury Department life Saving Medals of Honor [*sic*], the Government's highest peace time award, at ceremonies pictured above. Gov. Dave Sholtz presented the medals in the presence of Capt. C. F. Howell, U.S.C.G., and Mayor E. G. Sewell. Left to right, Thomas S. McKenzie, radio operator; William D. Pinkston, aviation machinists mate, first class; James R. Orndorff, chief aviation machinists mate; Lieut. William L. Foley and Lieutenant Commander Carl C. von Paulsen, U.S.C.G., all receiving the award; Governor Sholtz, Captain Howell and Mayor Sewell." The award was for their daring rescue off Vero Beach, Florida, on 1 January 1933 of a young man who had been "swept to sea in an open skiff during a storm" to over 30 miles off the coast. The aircraft, a Miami-based Fokker PJ-1 flying boat named *Arcturus*, "cracked up" with a damaged wing during their landing at sea. Von Paulsen then taxied miles through the rough seas back to shore in the dead of night.



Original caption: "Taking off an injured man from a Coast Guard seaplane. This man was taken off a merchant liner at sea and rushed to shore by the Coast Guard for immediate medical treatment."; no date/photo number; photographer not listed.

Original caption: "Streatcher [sic] case, Salem Air Station."; no date; Photo No. 925362.



Original caption: "'General Muster' at Coast Guard Air Station, Miami, Florida."; 31 January 1935; Photo No. 1-31-35 (2) N."; photographer not listed. The Coast Guard commissioned Air Station Miami in June of 1932 at Dinner Key, Florida, next to Pan Am's Miami seaplane base.

Sources:

Aircraft History File, U.S. Coast Guard Historian's Office.

"At [AIRSTA] Salem, Mass. [PJ-1 SAR case / F/V *Gertrude Palmer*]." *U.S. Coast Guard Magazine* (May 1939), p. 24.

"The Coast Guard's Flying Life Boat Antares." *U.S. Coast Guard Magazine* (July 1932), pp. 3, 32-36.

"New Coast Guard Seaplane Makes Thrilling Rescue." *U.S. Coast Guard Magazine* (July 1932), p. 32.

"New Coast Guard Wings: Five New Fokker Sea Planes [PJ-1 / 2] to soon be Commissioned for Service in the Varied Duties of the United States Coast Guard." *U.S. Coast Guard Magazine* (Dec 1930), pp. 8-13.

"U.S. Coast Guard's New Flying Boats." *U.S. Coast Guard Magazine* (July 1932), p. 41.