

P4M-1 Mercator

The Bureau of Aeronautics issued a contract for the P4M-1 to Martin Company on 6 July 1944. Martin delivered 21 aircraft to the U.S. Navy. On 28 June 1950 VP-21 became the first squadron to receive the P4M-1. VQ-1 was the last squadron to report the P4M-1 in its inventory on 31 May 1960.

Models Accepted from the Manufacturer

XP4M-1

A long range maritime patrol/reconnaissance land-based aircraft with a crew of 8. The aircraft's first flight was on 20 September 1946.

P4M-1

Production versions of the aircraft had higher powered engines and increased armament protection.

Crew	9
Range	2,840 miles
Power Plant	Two 3,250 hp Pratt & Whitney R-4360-20A and two Allison J33-A-23 with 3,825 lbs of thrust, each mounted in the same nacelle as the radial engines

Weight:

Empty	48,536 lbs
Gross	82,500 lbs

Dimensions:

Wing area	1,311 sq ft
Wing span	114 ft
Length	85 ft 3 in
Height	26 ft 1 in

Armament: Four 20-mm cannon in nose and tail turrets, two 50-caliber machine guns in dorsal turret
12,000 lbs of various bombs, mines or torpedoes

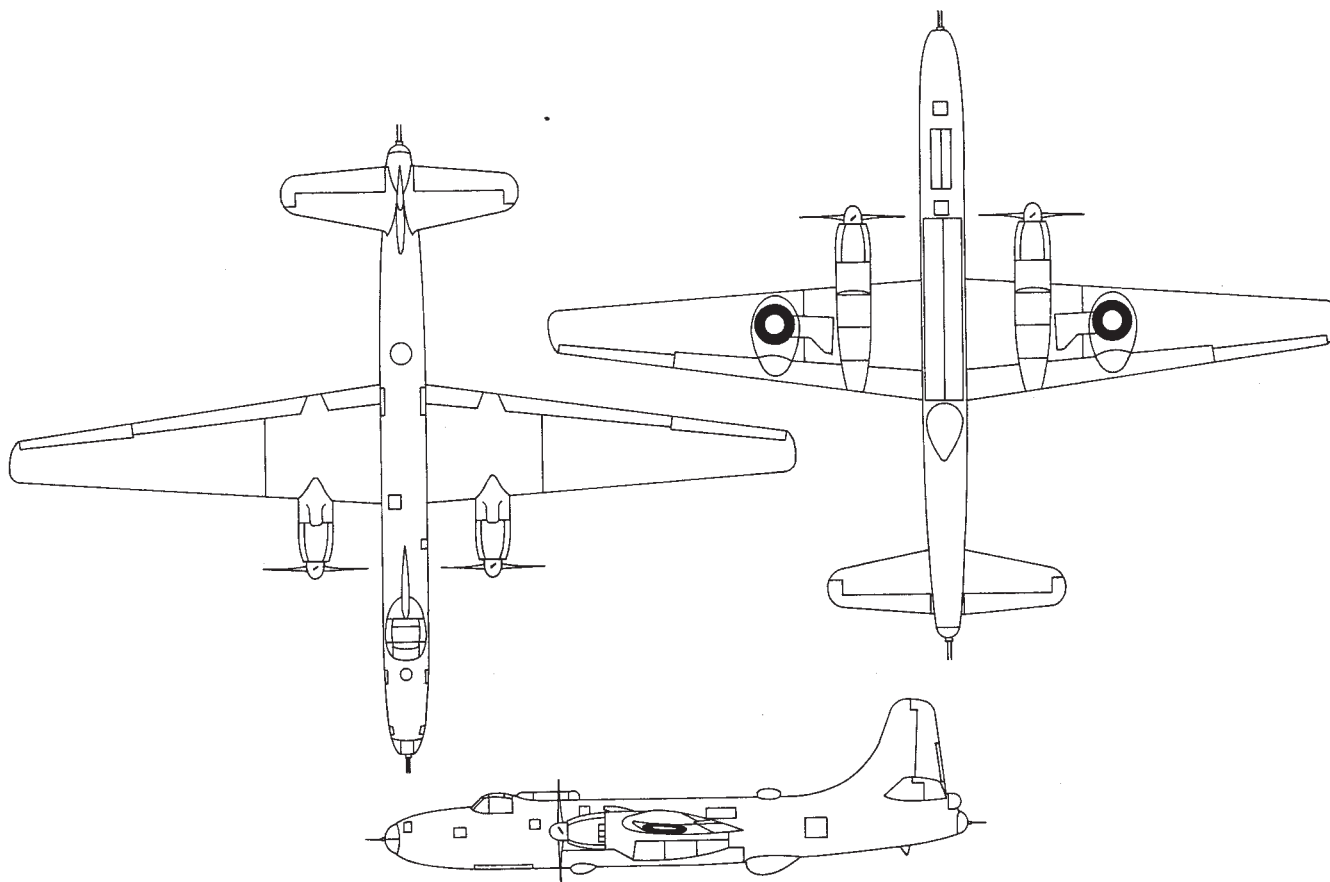
Modification to Existing Airframes

P4M-1Q

All but two of the production P4M-1s were modified for electronic reconnaissance missions. This version had a crew of 14 including all the electronic surveillance equipment operators.

Bureau Numbers

XP4M-1	02789-02790
P4M-1	121451-121454
P4M-1Q	122207-122209; 124362-124373



Three view drawings for P4M-1.



The XP4M-1.



A P4M-1 in flight.

P5M (P-5) Marlin

The Bureau of Aeronautics issued a contract for the P5M to the Martin Company on 26 June 1946. Martin delivered 239 aircraft to the U.S. Navy and an additional 21 for use by other organizations or countries. On 23 April 1952 VP-44 became the first squadron to receive the P5M Marlin. VP-40 was the last squadron to report the P5M (SP-5B) in its inventory on 31 October 1967. The P5M designation was changed to P-5 in 1962.

Models Accepted from the Manufacturer

XP5M-1

A twin-engine antisubmarine patrol bomber flying boat. It was originally powered by two 2,790 hp Wright Cyclone R-3350-30 engines and equipped with radar operated nose and tail turrets as well as a power operated dorsal turret. The first flight of this aircraft was 30 May 1948.

P5M-1

Modifications to the P5M-1 included replacing the nose turret with a large radome for the APS-80 search radar, removing the dorsal turret and raising the flight deck for better visibility. Up-rated engines, 3,250 hp Wright Cyclone R-3350-30WA, were mounted in lengthened nacelles which incorporated weapons bays.

Crew	7
Range	2,880 miles
Power Plant	Two Wright R-3350-26W
Weight:	
Empty	39,075 lbs
Gross	60,000 lbs
Dimensions:	
Wing area	1,407 sq ft
Wing span	118 ft 2 in

Length 94 ft 6 in

Height 38 ft 5 in

Armament: Two 20-mm radar-directed cannons in the tail turret

Bomb load of 8,000 lbs

P5M-2 (P-5B)

A major redesign with a T-tail, improved crew accommodations, lower bow chine line and 3,450 hp Wright R-3350-32WA engines.

Modification to Existing Airframes

P5M-1S (SP-5A)

Fitted with AN/ASQ-8 magnetic anomaly detection equipment, Julie active echo-sounding, Jezebel passive sonobuoy detection and other new equipment.

P5M-1G (TP-5A)

Transferred to the Coast Guard, but redesignated P5M-1T (TP-5A) when it was returned to the Navy.

P5M-2S (SP-5B)

Julie/Jezebel systems and other new equipment.

P5M-2G (PSP-5B)

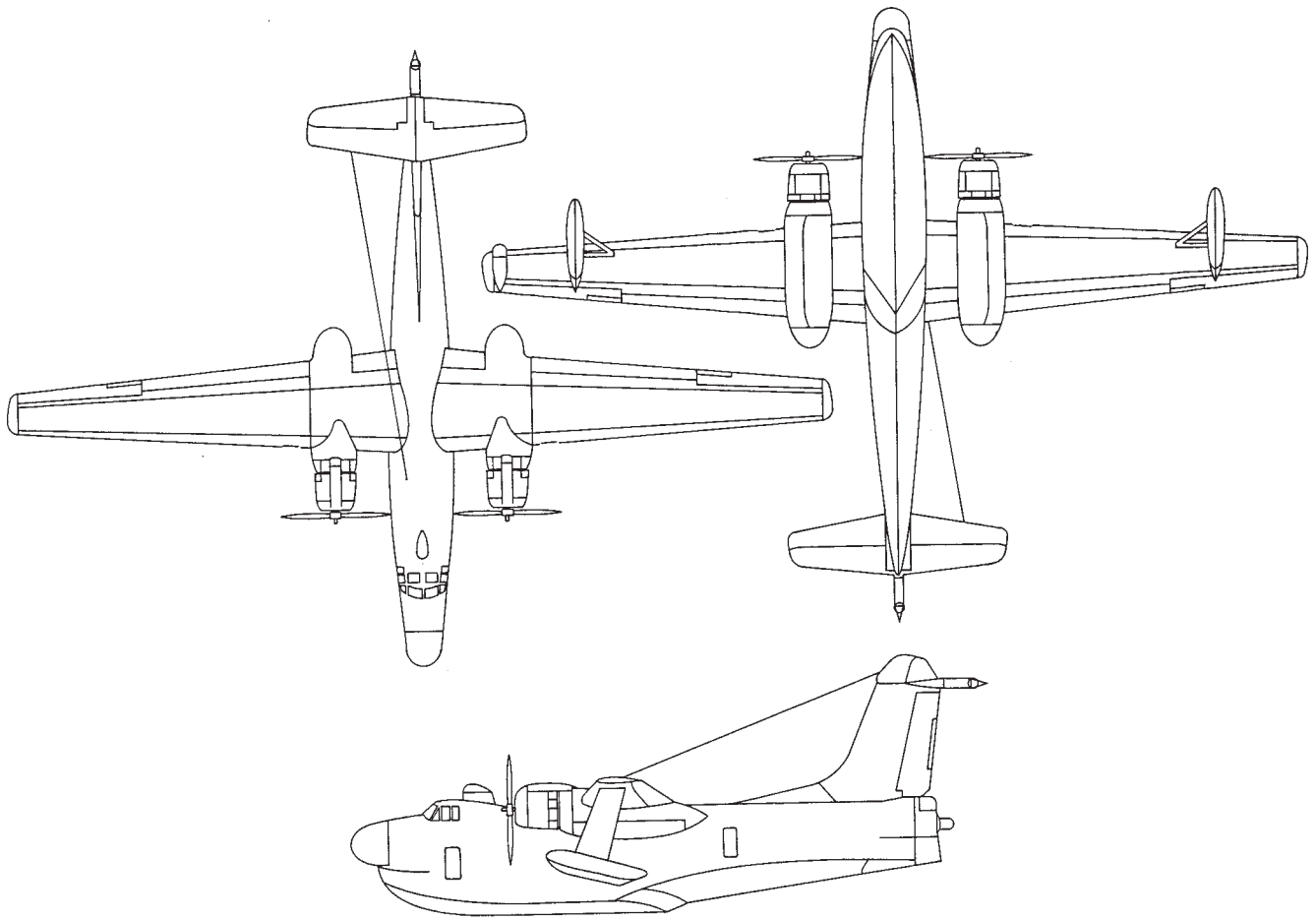
Transferred to the Coast Guard with the ASW equipment removed and equipped for air-sea rescue.

Bureau Numbers

XP5M-1	98616
P5M-1	124910-124914; 126490-126511; 127696-127719; 130265-130351; 135449-135476 (135449-135451 canceled)
P5M-2	135477-135543; 137846-137848; 140140-140150; 141252-141260 (141259-141260 canceled); 146440-146445; 147539-147542; 147926-147945 (147938-147945 canceled); 149825-149835



A P5M-2 taking off on its maiden flight.



Three view drawings for SP-5B (P5M-2).



A P5M-1 at NAS Patuxent River, February 1953.

PB-1 (B-17G) Flying Fortress

The Navy acquired a small number of surplus B-17 bombers from the USAAF and on 31 July 1945 designated the aircraft PB-1s.

Models Accepted from the Manufacturer

PB-1

The Boeing B-17Gs obtained by the Navy were designated PB-1. These aircraft provided a long range, fixed wing, land-based airplane which could be equipped with radar systems to operate an airborne early warning system. Some were retained in their original configuration, minus most of the armament, for use as flight trainers to prepare the pilots expected to fly the aircraft assigned to operational squadrons.

Crew	13
Range	2,500 miles
Power Plant	Four 1,200 hp Pratt & Whitney R-1820-97

Weight:

Empty	36,135 lbs
Gross	55,400 lbs

Dimensions:

Wing area	1,420 sq ft
Wing span	103 ft 9 in

Length	74 ft 4 in
Height	19 ft 1 in

Modification to Existing Airframes

PB-1W

Modifications included the removal of the armament and installation of the General Electric AN/APS-20 radar and its large bulbous radome under the old bomb bay position, advanced IFF, relay-radar transmitter, and advanced radio equipment so the aircraft could communicate with both the shipborne CICs and other aircraft. This was the beginning of the Airborne Warning and Command System (AWACS).

PB-1G

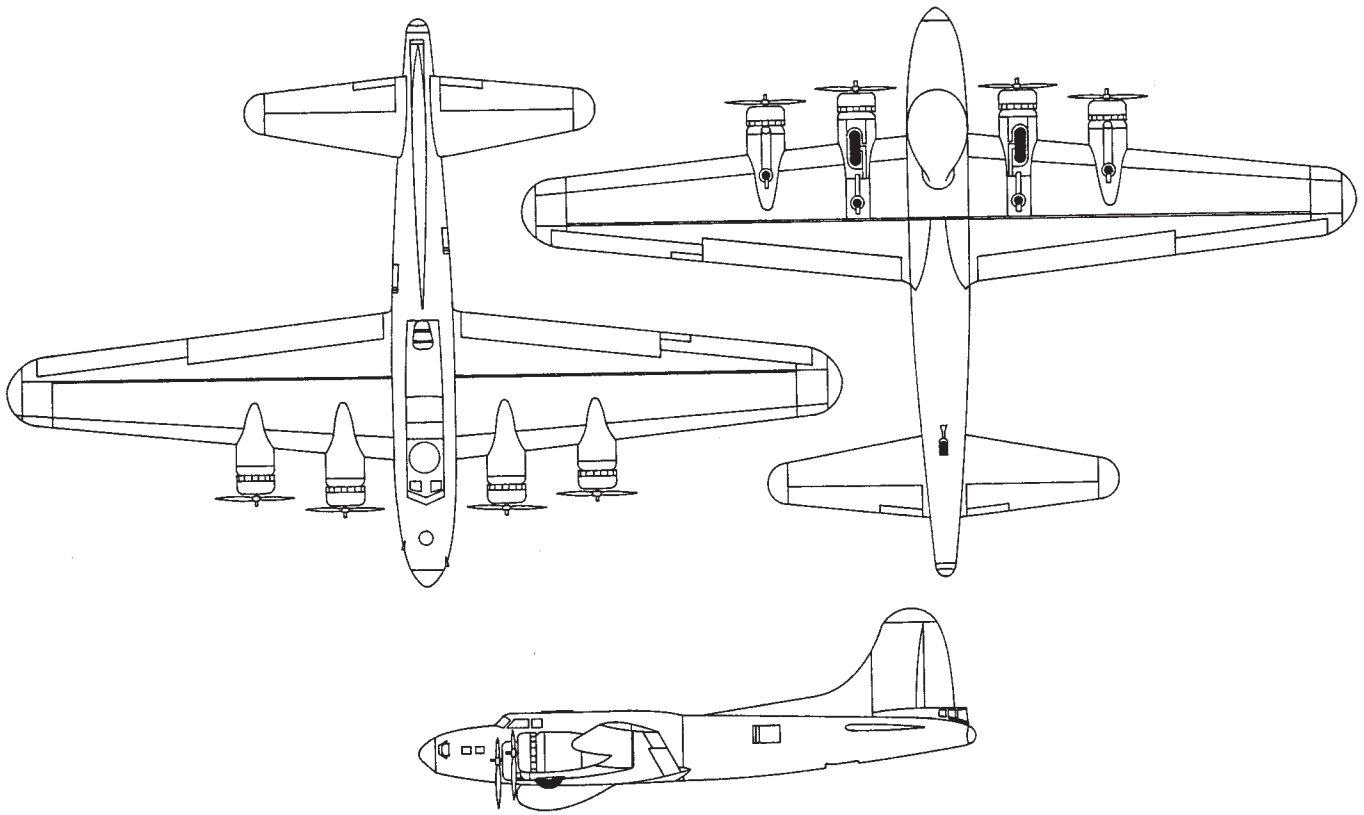
Obtained by the Coast Guard for use in Air-Sea Rescue missions, these aircraft had all armament, including power driven gun turrets, removed and accommodations made for the hanging of a Higgins A-1 lifeboat under the bomb bay. Search radar was installed in the position of the old chin gun turret.

Bureau Numbers

PB-1G	77245-77257; 82855-82857
PB-1W	34106; 34114; 77137-77138; 77225-77244; 77258; 83992-84027 (83999-84027 canceled)



A PB-1W, May 1949.



Three view drawings for PB-1W.

PB2Y Coronado

The Bureau of Aeronautics issued a contract for the PB2Y to the Consolidated Company on 23 July 1936. Consolidated delivered 176 PB2Ys to the U.S. Navy and an additional 33 for use by other organizations or countries. Besides the production from Consolidated, Rohr also manufactured 41 PB2Ys. On 31 December 1940 VP-13 became the first squadron to receive the PB2Y Coronado. The last PB2Ys were reported in the inventory on 30 November 1945.

Models Accepted from the Manufacturer

XPB2Y-1

A four engine flying boat patrol bomber with shoulder mounted wings carrying four 1,050 hp Pratt & Whitney Twin Wasp XR-1830-72 engines. It had retractable wing tip floats and a single tail. The armament consisted of two 50-caliber machine guns in the nose and tail and two 30-caliber guns in the waist with a third in the tunnel. The aircraft was first flown on 17 December 1937.

PB2Y-2

A redesigned deeper hull using R-1830-78 engines with two-stage superchargers. The armament was increased to two 50-caliber machine guns in the bow, tail and dorsal turrets.

PB2Y-3

In response to reports from the war in Europe, the armament and horsepower were increased and self-sealing fuel tanks installed.

Crew	9-10
Range	1,380 miles
Power Plant	Four 1,200 hp Pratt & Whitney R-1830-88

Weight:	
Empty	40,935 lbs
Gross	68,000 lbs

Dimensions:	
Wing area	1,780 sq ft
Wing span	115 ft
Length	79 ft 3 in
Height	27 ft 6 in

Armament: Eight 50-caliber flexible machine guns
Up to four 1,000 lb bombs external and eight 1,000 lb bombs internal

PB2Y-3R

The turrets were removed and faired over and other modifications were made to convert the aircraft to a transport configuration.

PB2Y-5

Installed low-altitude R-1830 engines and increased fuel capacity.

PB2Y-5R

Converted to transport configuration.

PB2Y-5H

The cabin was modified to accommodate 25 stretchers for casualty evacuation.

XPB2Y-4

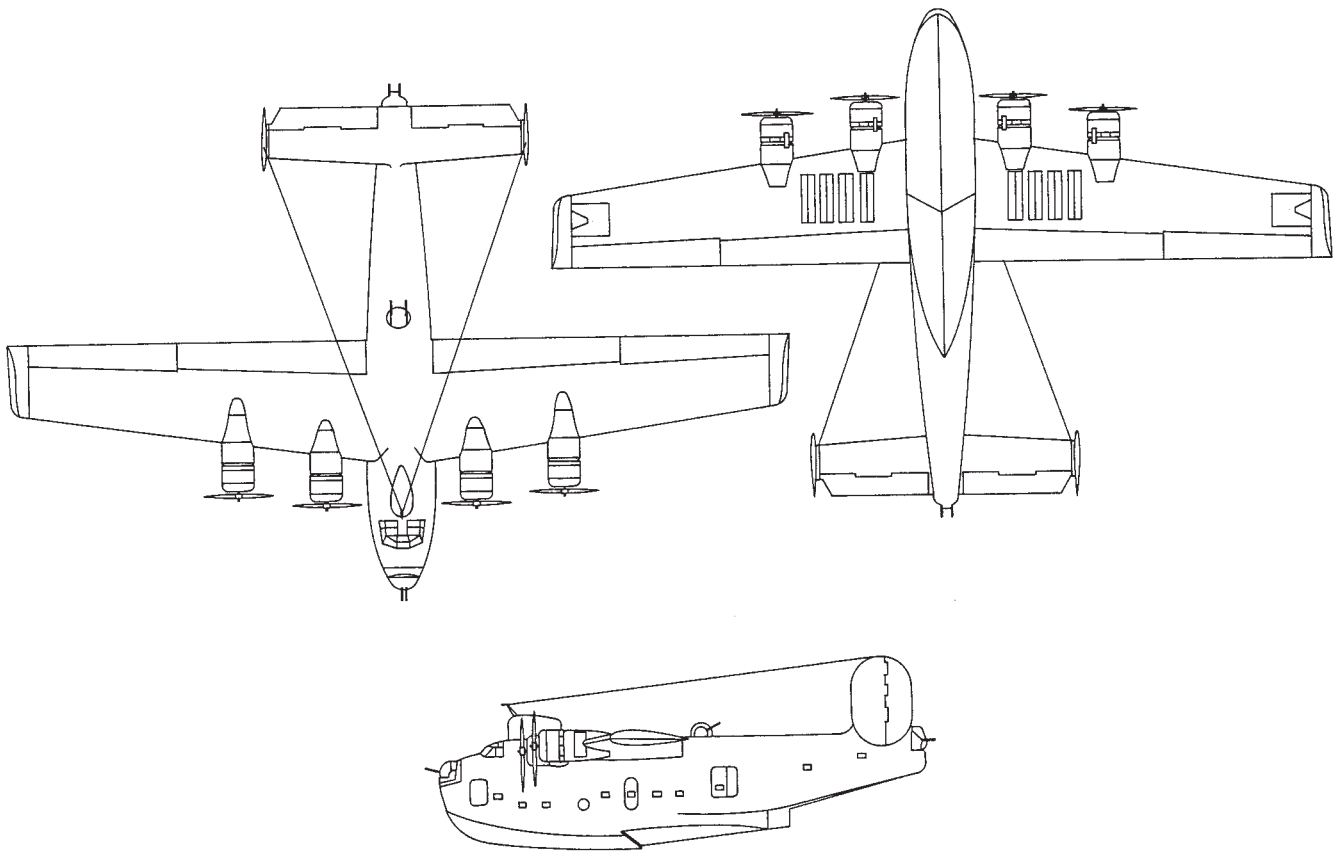
A single example equipped with Wright Cyclone R-2600 engines.

Bureau Numbers

XPB2Y-1	0453
PB2Y-2	1633-1635, 1637
XPB2Y-3	1638
PB2Y-3, -3R	7043-7242; 0273-02746
XPB2Y-4	1636



A PB2Y taking off.



Three view drawings for PB2Y.



A PB2Y-2 in flight.

PB4Y-1 (P4Y-1) Liberator/PB4Y-2 (P4Y-2) Privateer

The Royal Air Force's (RAF) successful use of Consolidated's land-based B-24 Liberator on long-range patrols against German submarines and surface vessels induced the U.S. Navy to acquire a quantity of these aircraft. The Bureau of Aeronautics issued a contract for the PB4Y-1, the U.S. Army Air Forces' B-24D, to Consolidated Aircraft Company on 7 July 1942. In October 1942 VP-51 became the first squadron to receive the PB4Y-1 Liberator. The Navy accepted a total of 977 PB4Y-1s for use as long-range patrol planes. This number did not include the RY-1 and RY-2 versions accepted as transport aircraft. The PB4Y-1 was redesignated P4Y-1 in 1951. VJ-62 was the last squadron to report the PB4Y-1 in its inventory on 31 May 1956.

The PB4Y-2 Privateer, redesignated P4Y-2 in 1951, was a Navy modified version of the PB4Y-1. The Navy accepted a total of 739 PB4Y-2s for use as long range patrol planes. This number did not include the RY-3 versions accepted as transport aircraft. In August 1944 VB-200 became the first squadron to receive the PB4Y-2 Privateer. VW-3 was the last squadron to report the P4Y-2 in its inventory on 30 June 1954. At the time of the redesignation in 1962, the only variant of the aircraft remaining in Navy use was the target drone P4Y-2K, which was redesignated QP-4B.

Models Accepted from the Manufacturer

PB4Y-1

The PB4Y-1 was the Navy version of the Army Air Forces B-24D bomber. It was a land-based long-range medium altitude patrol plane with a crew of nine or ten. Models were first received by the Navy in August 1942.



A PB4Y-2 in flight.

Crew	9-10
Range	2,800 miles
Power Plant	Four 1,200 hp Pratt & Whitney R-1830-43

Weight:	
Empty	36,950 lbs
Gross	60,000 lbs

Dimensions:	
Wing area	1,048 sq ft
Wing span	110 ft
Length	74 ft 9 in
Height	29 ft 2 in

Armament: Eight flexible 50-caliber machine guns in the nose, dorsal and tail turrets and waist mounts

Bomb load: 4 bombs at 2,000 lbs each, 8 bombs at 1,600 lbs each, 8 bombs 1,000 lbs each, 12 bombs at 500 lbs each, 12



A PB4Y-1 in flight.

bombs at 250 lbs each or 40 bombs at 100 lbs each

Depth Bombs: 8 depth bombs at 650 lbs each, or 8 depth bombs at 325 lbs each
Mines: 8 MK 13 mines

PB4Y-2

The Navy version of the PB4Y-1 was modified to a single tail and used as a long-range medium altitude patrol land-based plane. It was armed with twelve flexible 50-caliber machine guns in turrets and waist mounts and carried a bomb load similar to the PB4Y-1. The PB4Y-2 used a Mk 9 illuminated sight in the nose, tail and waist positions and the Mk 18 computing sight in the deck turrets.

Crew 11
Combat Range 1,920 miles
Power plant Four 1,350 hp Pratt & Whitney R-1830-94

Weight:

Maximum Takeoff 64,000 lbs
Empty 37,464 lbs

Dimensions:

Wing Span 110 ft
Wing Area 1,048 sq ft
Length 74 ft 9 in
Height 29 ft 2 in

Armament: Twelve 50-caliber guns: 2 in the nose turret, 2 in the tail turret, 4 in the waist, 2 in the forward deck and 2 in the after deck
Provisions for four 2,000 pound or eight 1,000 pound or twelve 500 pound bombs; or twelve 324 pound depth charges; or four 2,000 pound or eight 1,000 pound mines

Modification to Existing Airframes

PB4Y-1P

The Navy photographic version was modified to serve as a long-range, high-altitude, day and night

photoreconnaissance and mapping aircraft. The armament was the same as the PB4Y-1 but with the following cameras in place of the bomb load: four vertical K-17 or F-56 or K-18, Trimetrogon K-17 and a Type A radar recording camera.

PB4Y-1Z

The PB4Y-1 converted for administrative purposes.

XPB4Y-2

The experimental version of the PB4Y-2.

PB4Y-2B

A PB4Y-2 modified to act as a parent aircraft for the guided missiles known as the Bat (ASM-N-2).

PB4Y-2C

The PB4Y-2 with an Emerson turret in lieu of the ERCO turret in the bow.

PB4Y-2M

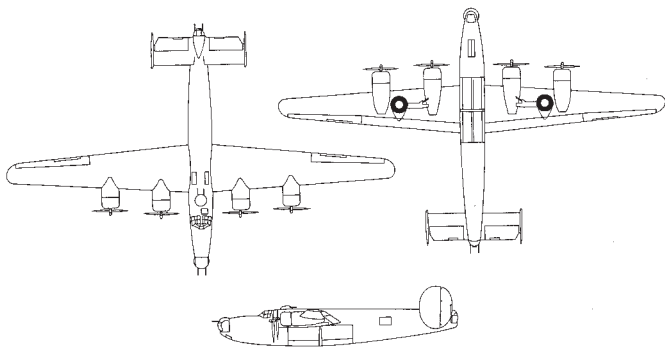
The demilitarized version of the PB4Y-2 used for weather reconnaissance.

PB4Y-2S

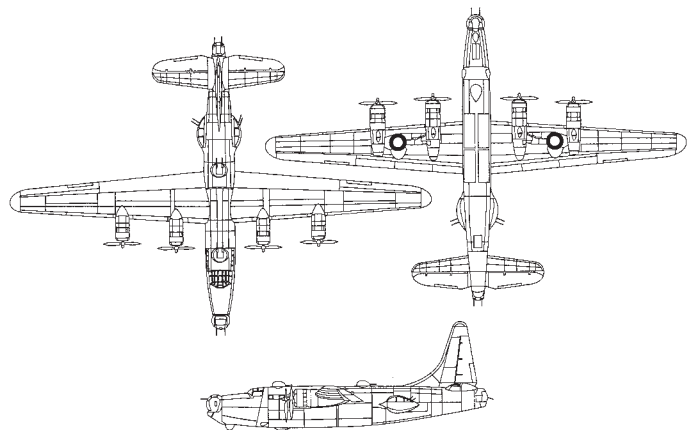
The PB4Y-2 modified for antisubmarine warfare.

Bureau Numbers

PB4Y-1 31936–32085; 32087–32094; 32097–32335; 46737; 63915–63991 (63960–63991 canceled); 65287–65396; 90132–90271; 90462–90483
XPB4Y-2 32086; 32095–32096
PB4Y-2 59350–59924 (59554 canceled); 59926; 59929–59937; 59939–59944; 59946–59948; 59950–59954; 59970–60009; 66245–66394 (66325–66394 canceled); 66795–67054 (all canceled); 76839–77138 (all canceled)
PB4Y-2B 59925
PB4Y-2S 59927
PB4Y-2M 59928; 59938; 59945; 59949; 59955–59969



Three view drawings for PB4Y-1.



Three view drawings for PB4Y-2.

PBM Mariner

The Bureau of Aeronautics issued a contract for the PBM to the Martin Company on 30 June 1937. Martin delivered 1,366 PBM aircraft to the U.S. Navy. On 1 September 1940 VP-55 became the first squadron to receive the PBM Mariner. VP-50 was the last squadron to report the PBM in its inventory on 31 July 1956.

Models Accepted from the Manufacturer

XPBM-1

A flying boat gull-winged monoplane patrol bomber with provisions for nose and dorsal turrets plus additional gun positions at the waist and tail. The aircraft was powered by two 1,600 hp Wright Cyclone R-2600-6 engines and designed to carry 2,000 lbs of bombs or depth charges. It had retractable stabilizing floats under the wings and, as first flown, the horizontal tail surfaces carried the vertical tails on each end. This was changed when dihedral was added that canted the fins inward forming one of the aircraft's most recognizable characteristics. The aircraft's first flight was on 18 February 1939

PBM-1

The production version of the XPBM-1.



A PBM in pre-World War II colors.

XPBM-2

Added capabilities for this version included carrying large bomb loads up to 4,000 lbs, extra fuel tanks and a strengthened hull for launching from a giant barge-mounted catapult.

PBM-3

Fixed wing floats replaced folding wing floats, engine nacelles were lengthened to increase bomb bay capacity, and crew armor was added. The PBM-3 was powered by two 1,700 hp Wright R-2600-12 engines.

PBM-3C

This version had twin 50-caliber machine guns in three power operated turrets, plus two more flexible mounts in waist positions, an APS-15 radar in a dome behind the cockpit and two 1,700 hp Wright R-2600-12 engines.

PBM-3D

Changes included more powerful 1,900 hp Wright R-2600-22 Cyclone engines, a Norden bombsight, and additional armor and self-sealing fuel tanks for regular patrol bomber missions.

PBM-3R

The armament and armor were removed and the floors were strengthened for use as transports. The aircraft was powered by two 1,700 hp Wright R-2600-12 engines.

PBM-3S

This variant eliminated armor and power turrets for a 25 percent greater range than the -3C version for use in the ASW mission and was powered by two 1,700 hp Wright R-2600-12 engines.

XPBM-5

A prototype with increased horsepower engines.

PBM-5

A twin engine high-wing monoplane flying boat patrol bomber. Some were configured to mount up to eleven jet assisted take off (JATO) bottles.

Crew	7-9
Range	2,420 nautical miles as a patrol plane
Power Plant	Two 2,100 hp Pratt & Whitney Double Wasp R-2800-34
Weight:	
Empty	32,840 lbs
Gross	46,500 lbs
Dimensions:	
Wing area	1,408 sq ft
Wing span	118 ft
Length	79 ft 10 in
Height	24 ft 10 in (when on beaching gear)

Armament: Two 50-caliber machine guns each in nose, dorsal and tail turrets

Single flexible 50-caliber machine gun at waist positions

The following bombs, or combination, could be carried in the bomb bay:

8 bombs at 1,600 lbs each; 8 bombs at 1,000 lbs each; 12 bombs at 100 lbs each; 8 bombs at 325 lbs each; 8 MK 26-1 mines; 4 MK 13 or MK 13-5 mines

Under wing racks: 2 MK 13-3 torpedoes; 2 mines of 2,000 lbs; 2 mines of 1,600 lbs

PBM-5A

The amphibian version of the PBM-5.



A PBM-5A, January 1949.

PBM-5E

This design was for testing electronic equipment.

PBM-5G

A designation assigned for the Coast Guard version.

PBM-5M

Designed for monitoring missile tests.

PBM-5N

Designed for all-weather operations.

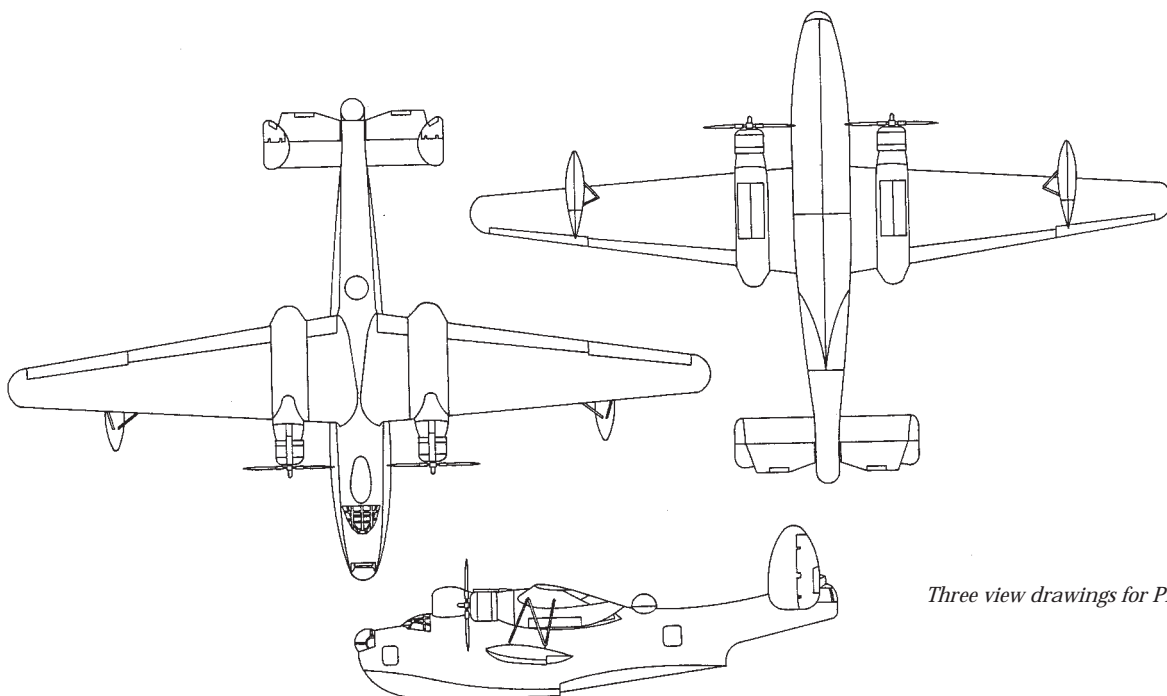
PBM-5S

An antisubmarine version with a 50 million candle-power searchlight.

XPBM-2	1247
PBM-3	6455; 6457-6458; 6471-6498
PBM-3C	6505-6655; 6656-6692; 6694-6754; 01650-01673
XPBM-3D	6656
PBM-3D	45205-45274; 45277-45404; 48124; 48164-48223
XPBM-3E	6456
PBM-3R	6459-6470; 6499-6504
XPBM-3S	6693
PBM-3S	01674-01728; 48125-48163
XPBM-5	45275-45276
PBM-5	45405-45444; 59000-59348; 84590-84789; 85136-85160; 98617-99073 (all canceled)
PBM-5E	98602-98605; 98607-98615
PBM-5N	98606
XPBM-5A	59349
PBM-5A	122067-122086; 122468-122471; 122602-122613

Bureau Numbers

XPBM-1	0796
PBM-1	1246; 1248-1266



Three view drawings for PBM-3D.

PBO-1 Hudson

The Bureau of Aeronautics issued a contract for the PBO to Lockheed in September 1941. Lockheed delivered 20 aircraft to the U.S. Navy. On 29 October 1941 VP-82 became the first squadron to receive the PBO-1 Hudson. VP-82 was also the last squadron to report the PBO-1 in its inventory on 31 October 1942.

Models Accepted from the Manufacturer

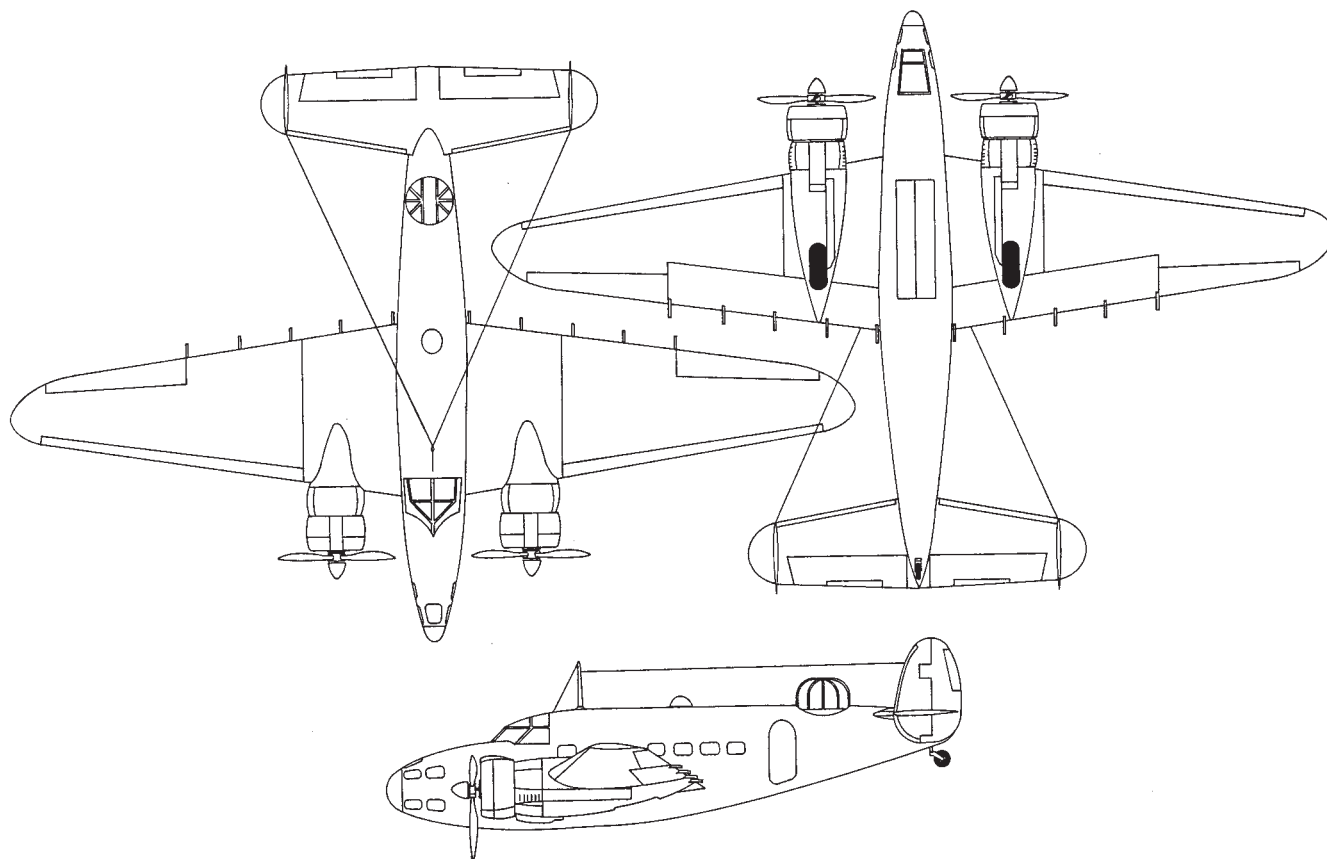
PBO-1

Based on the Lockheed model 14 transport, the PBO-1 was originally developed for use by the British Coastal Command. With the increased tension prior to WWII the Navy needed an aircraft to conduct patrol missions over the North Atlantic. Since these aircraft were already in production for the RAF, the Navy requisitioned 20 for its own use.

Crew	5
Range	1,750 miles with 4 depth bombs
Power Plant	Two 1,000 hp Wright R-1820-40 Cyclone
Weight:	
Empty	12,680 lbs
Gross	18,837 lbs
Dimensions:	
Wing area	556 sq ft
Wing span	65 ft 6 in
Length	44 ft 4 in
Height	16 ft 10 in
Armament:	Two fixed and three flexible 30-caliber machine guns
	Four 325 lb depth charges

Bureau Numbers

PBO-1 03842-03861



Three view drawings for PBO-1.

PBY Catalina

The Bureau of Aeronautics issued a contract for the prototype of the PBY, the XP3Y-1, to Consolidated on 28 October 1933. Consolidated produced 2,387 Catalinas for the U.S. Navy and 636 for other organizations and countries. These versions included XP3Y-1, XPBY-5A, PBY-1, PBY-2, PBY-3, PBY-4, PBY-5, PBY-5A, PBY-6A, and OA-10. Besides the production from Consolidated, three other companies produced the Catalina. Boeing produced 290 Catalinas for the Navy under the designation PB2B-1 or PB2B-2 and 270 for other organizations or countries. The Naval Aircraft Factory produced 155 Catalinas for the Navy under the designation PBN-1 and 137 for other organizations or countries. Vickers produced 230 Catalinas for the Navy under the designation PBV-1A or OA-10B (for USAAF) and 230 for other organizations or countries. The PBY Catalina had the largest production run for any Navy patrol aircraft.

On 5 October 1936 VP-11F became the first squadron to receive the PBY Catalina. VP-32 was the last squadron to report the PBY Catalina in its inventory on 1 June 1949.

Models Accepted from the Manufacturer

XP3Y-1 (XPBY-1)

A parasol mounted cantilever winged, twin-engine flying boat patrol plane. Stabilizing floats folded upward to become the wing tips in flight. The aircraft was powered by two 825 hp Pratt & Whitney R-1830-58 engines and accommodated a crew of seven to nine. Prior to production it was determined that the ability to carry a large bomb load moved it into the patrol bomber category. The aircraft's first flight was in March 1935.

PBY-1

Redesigned with a less angular fin and rudder and with more powerful Pratt and Whitney R-1830-64 engines.

PBY-2

Generally the same as the PBY-1 but with 900 hp R-1830-66 engines.

PBY-3

Generally the same as the PBY-1 but with 1,050 hp R-1830-72 engines.

Crew	5–8
Range	2,289 miles
Power Plant	Pratt & Whitney R-1830-66 900 hp
Weight:	
Empty	14,509 lbs
Gross	22,123 lbs
Dimensions:	
Wing area	1,400 sq ft

Wing span	104 ft
Length	65 ft 2 in
Height	18 ft 6 in

Armament: Two 30-caliber and two 50-caliber machine guns
Four 1,000 lb bombs

PBY-4

Generally similar to the PBY-3 but with 1,050 hp Pratt & Whitney R-1830-72 engines. The propeller hubs were covered with spinners which was a feature peculiar to the -4s only.

PBY-5

A modified fin design with 1,200 hp Pratt & Whitney R-1830-92 engines. The blister fairings over the waist gun positions could be opened for firing the guns.

XPBY-5A

The last production PBY-4 was converted to the first Navy PBY amphibian by adding a retractable tricycle landing gear. The nose wheel was fully retractable, while the main wheels retracted into recesses in the side of the hull between the wing struts.

PBY-5A

The nose wheel was fully retractable, while the main wheels retracted into recesses between the wing struts.

PBN-1

A Naval Aircraft Factory major redesign incorporating extensive hull, wing and tail changes to improve performance and handling both on the water and in the air.

PB2B-1

Built by the Boeing Canadian plant and similar to PBY-5s.

PB2B-2

Built by the Boeing Canadian plant, these aircraft incorporated the tall tail of the PBN into the PBY-5 and included most of the late production changes including the thermal wing, tail de-icing, eye ball bow turret and radome.

PBV-1A

Built by Canadian Vickers Ltd. and similar to the PBY-5A.

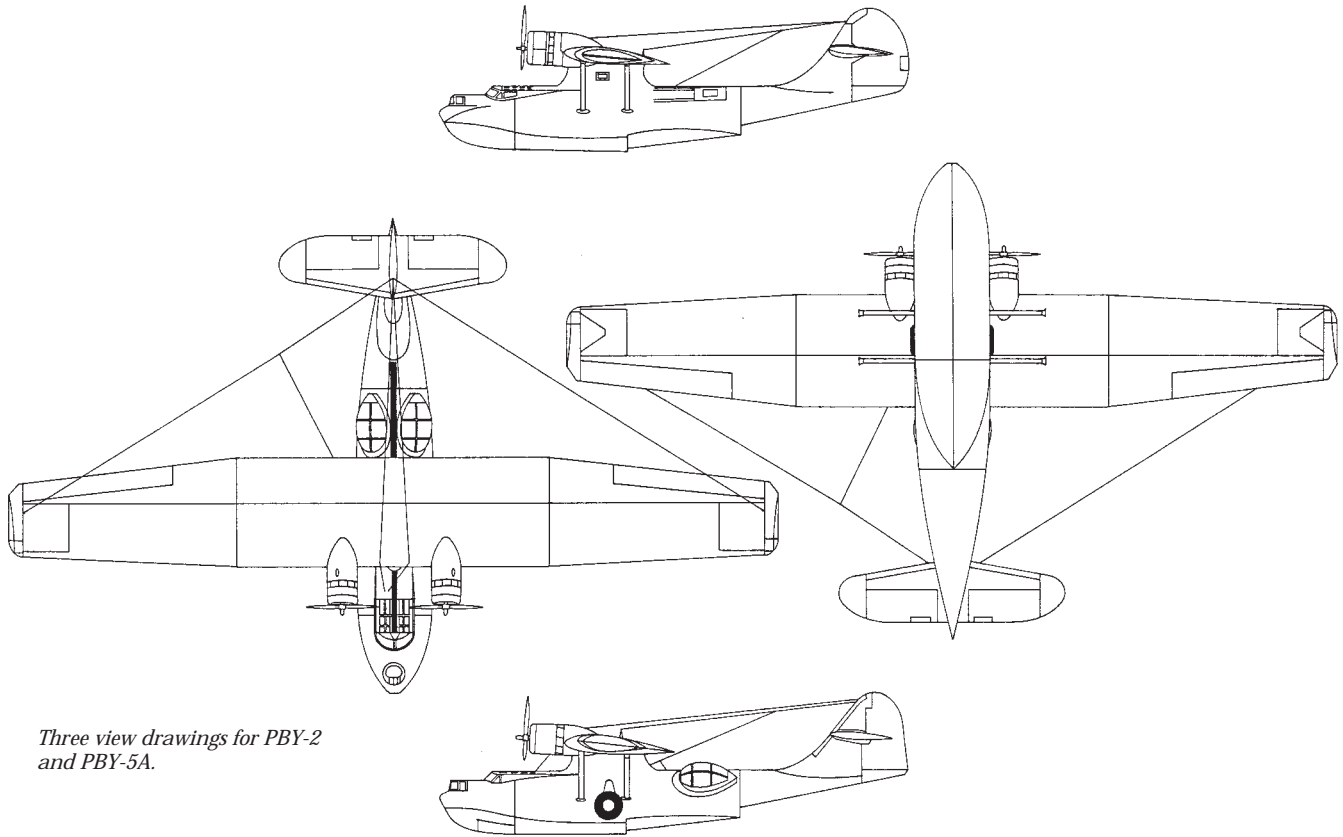
PBY-6A

Numerous design improvements such as those found in the PBN-1 were incorporated into the PBY-6A, plus additional armor, armament and radar.

Bureau Numbers

XP3Y-1 (PBY-1)	9459
PBY-1	0102–0161
PBY-2	0454–0503
PBY-3	0842–0907

PBY-4	1213-1244		46638; 48252-48451
PBY-5	2289-2455; 04425-04514; 08124-08549; 63992	PBY-6A	46639-46698; 46724; 63993-64441 (64100, 64108-64441 canceled)
XPBY-5A	1245	PBN-1	02791-02946
PBY-5A	2456-2488; 7243-7302; 02948-02977; 04339-04420; 04972-05045; 08030-08123; 21232; 33960-34059; 46450-	PB2B-1	44188-44227; 72992-73116
		PB2B-2R	44228-44312 (44295-44312 canceled)
		PBV-1A	67832-68061



An XPBY-5A in flight.

PD-1

The Bureau of Aeronautics' first contract for the PD-1 was issued to the Douglas Company on 29 December 1927. Douglas built 25 PD-1s and VP-7B received the first PD-1 on 10 July 1929. The aircraft was of aluminum alloy construction with fabric covered wings. It was last reported in squadron inventory on 31 October 1936, assigned to VP-6F.

Models Accepted from the Manufacturer

PD-1

The PD-1 was a Douglas built version of the Naval Aircraft Factory's PN-12 design. The unique design of the flattened engine nacelles at the rear for smooth air flow was its primary recognition feature. The PD-1's first flight was in the spring of 1929.

Crew 4
 Range 1,871 miles
 Power Plant Two 525 hp Wright Cyclone R-1820-64

Weight:

Empty 7,486 lbs
 Gross 14,415 lbs

Dimensions:

Wing area 1,191 sq ft
 Wing span 72 ft 10 in
 Length 49 ft 2 in
 Height 16 ft 8.5 in

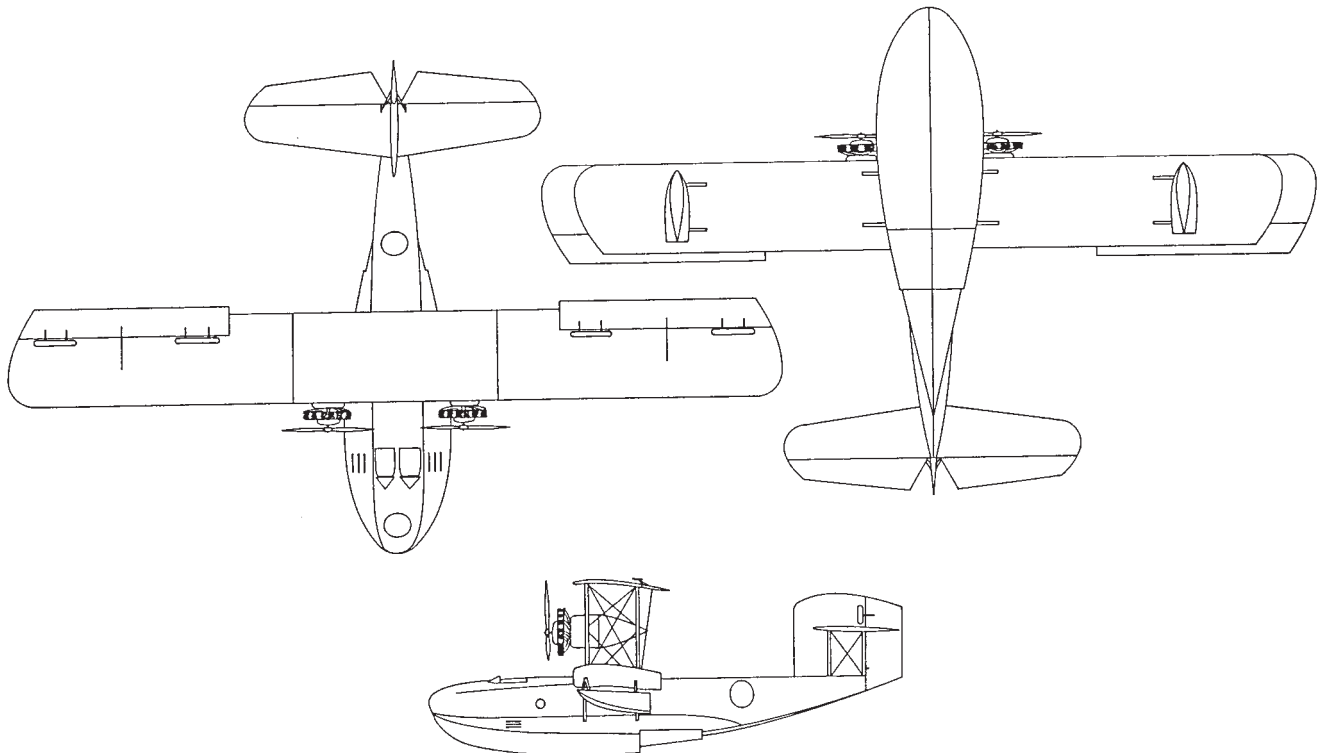
Armament: A single flexible 30-caliber machine gun in the open bow cockpit and one at the open midship position
 Up to 2,000 lbs of bombs or torpedoes on external racks under the lower wing

Bureau Numbers

PD-1 A7979–A8003



A head on view of a PD-1, January 1931.



Three view drawings for PN-12 (PD-1).

PH-1

In December 1927, the Navy awarded a contract to the Hall Aluminum Company to develop an amphibious biplane flying boat from the Naval Aircraft Factory's PN-11 design. The PH-1 had a lightweight metal structure with fabric covered wings. The Navy accepted ten of these articles and the aircraft remained in squadron use from June 1932 until May 1937.

Models Accepted from the Manufacturer

XPH-1

This design was closely related to the PN-11 but with a large fin and rudder and two 537 hp Wright GT-1750 engines with closed cowling. The open cockpit arrangement included two pilots side by side, a bow gunner and another gunner behind the wings.

PH-1

A rudimentary enclosure over the pilots and increased horsepower with installation of two 620 hp Wright R-1820-86 radials with short-chord cowlings. Its first flight was in October 1931.

Crew	5
Range	16.2 hours at 70 mph (1,866 miles)

Power Plant	Two 575 hp Wright Cyclone R-1820E
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Weight:	
Empty	7,963 lbs
Gross	15,249 lbs
Dimensions:	
Wing area	1,171 sq ft
Wing span	72 ft 10 in (upper) 67 ft 1 in (lower)
Length	51 ft 11 in
Height	17 ft 6 in

Armament: Four flexible 30-caliber machine guns

PH-2

Built for the Coast Guard but with 750 hp Wright Cyclone R-1820F-51 engines.

PH-3

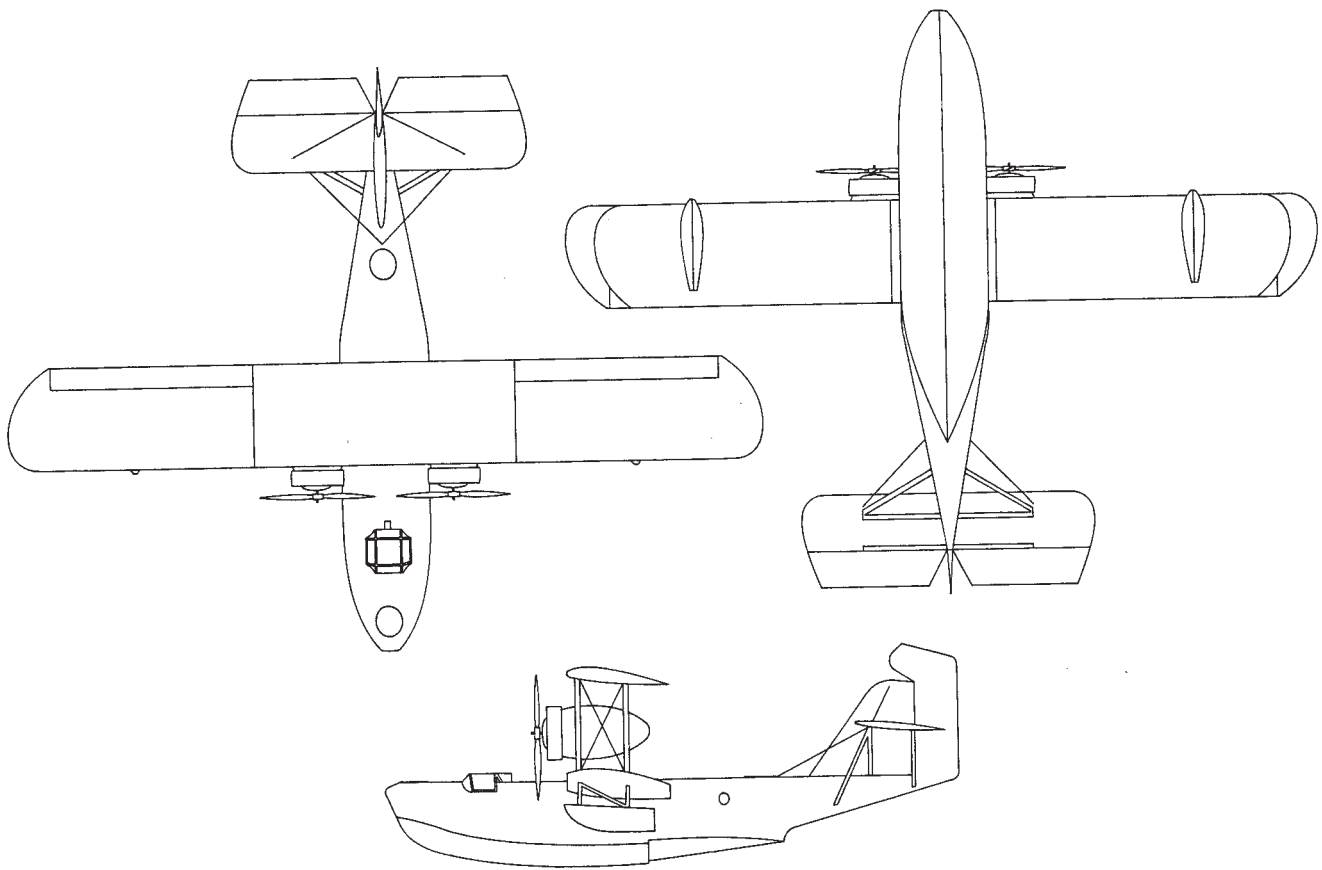
Ordered for the Coast Guard. It had a fully enclosed pilot cockpit and the same engines as the PH-2, but with long-chord cowls like the XPH-1. Those still in service after Pearl Harbor were inducted for service with the Navy.

Bureau Numbers

XPH-1	A8004
PH-1	A8687–A8695



A PH-1, November 1931.



Three view drawings for PH-1.



A PH-1 in flight.

PK-1

The PK-1 is another production aircraft by a private manufacturer based on a Naval Aircraft Factory design. The Keystone Company produced 18 articles from the Factory's PN-12 design for a biplane, twin tail flying boat for patrol. The PK-1 was in the Navy inventory from September 1931 to July 1938.

Models Accepted from the Manufacturer

PK-1

A contract was awarded to the Keystone Aircraft Corporation to build a version of the Naval Aircraft Factory PN-12. These aircraft were distinguished by their twin rudders and fully cowled 575 hp Wright Cyclone R-1820-64 engines mounted on struts between the wings. Just prior to starting construction on the PK-1, Keystone had merged with the Loening Aeronautical Engineering Company to become Keystone-Loening. The aircraft were always known as Keystone. The first flight was estimated to be in early 1931.

Crew 5
 Range 16.9 hours at 70 mph (1,309 miles)
 Power Plant Two 575 hp Wright Cyclone R-1820-64

Weight:

Empty 7,669 lbs
 Gross 14,122 lbs

Dimensions:

Wing area 1,266 sq ft

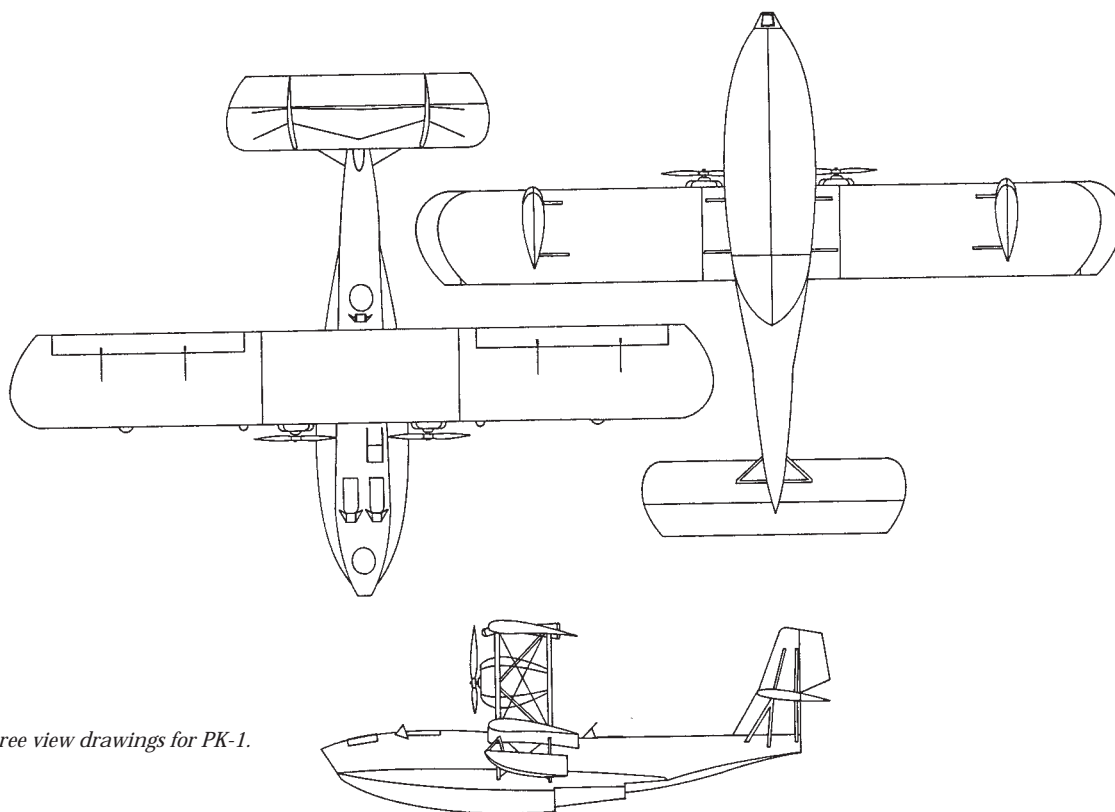
Wing span 72 ft (upper)
 67 ft 2 in (lower)
 Length 48 ft 11 in
 Height 16 ft 8.5 in
 Armament: A single 30-caliber machine gun in the bow cockpit
 Provisions for six bombs (553 lbs) under the wings

Bureau Numbers

PK-1 A8507-A8524



A PK-1 in flight.



Three view drawings for PK-1.

PM

The Bureau of Aeronautics issued a contract for the PM-1 to the Martin Company on 31 May 1929. Martin delivered 55 aircraft (PM-1s and PM-2s) to the Navy. On 21 August 1930 VP-8S was the first squadron to receive the PM-1. VP-16 was the last squadron to report the PM-1 in its inventory on 30 April 1938.

Models Accepted from the Manufacturer

PM-1

The PM-1 was the production version of the Naval Aircraft Factory PN-12 design. It was a twin engine bi-plane flying boat of metal and fabric covered metal construction with a crew of 5. Throughout the aircraft's service life it picked up minor modifications such as ring cowlings and enclosed pilot's cockpits. The first PM-1 was received on 31 May 1929.

Crew 5
 Range 865 miles
 Power Plant Two 525 hp Wright Cyclone R-1750D

Weight:
 Empty 8,680 lbs
 Gross 15,535 lbs

Dimensions:
 Wing area 1,189 sq ft
 Wing span 72 ft 10 in

Length 49 ft 2 in
 Height 16 ft 4 in
 Armament: Single 30-caliber machine guns in the bow and dorsal positions
 Four 230 lb bombs under the wings

PM-2

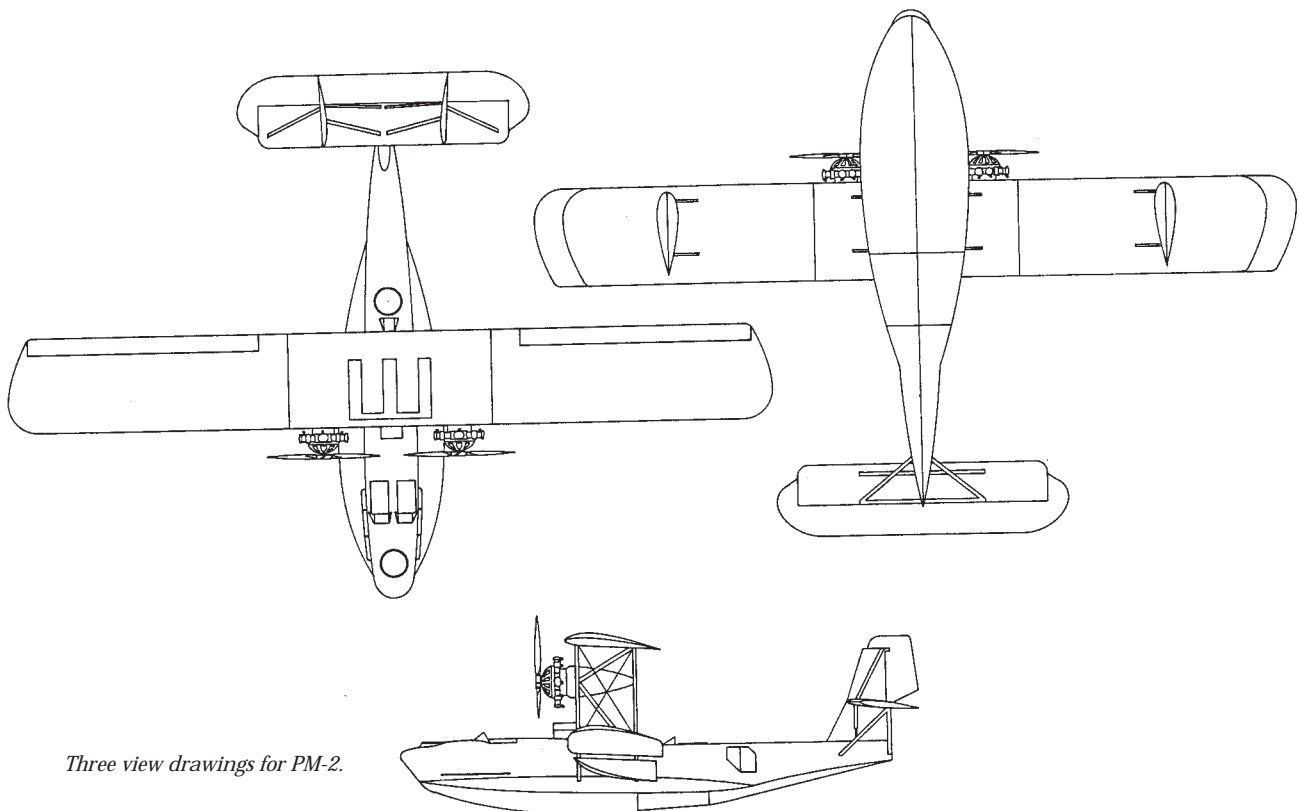
It was an improved version with larger ring cowled 575 hp Wright Cyclone R-1820-64 engines. The aircraft was distinguished by twin vertical tail surfaces.

Bureau Numbers

PM-1 A8289–A8313, A8477–A8481
 PM-2 A8662–A8686



A PM-2 at NAS Anacostia.



Three view drawings for PM-2.

PN-9

PN-9

The last PN-8 was converted by the Naval Aircraft Factory to the PN-9, a one-of-a-kind aircraft. It had re-designed tail surfaces and revised engine nacelles with large nose radiators. This aircraft set a world distance record for seaplanes in September 1925 when it flew from San Francisco to Hawaii under the command of Commander John Rogers. While it had to sail the last 559 miles after running out of fuel, the 1,841 miles covered by air was recognized as a new world seaplane distance record.

Crew 4
Range 2,550 miles

Power Plant Two geared 475 hp Packard 1A-2500

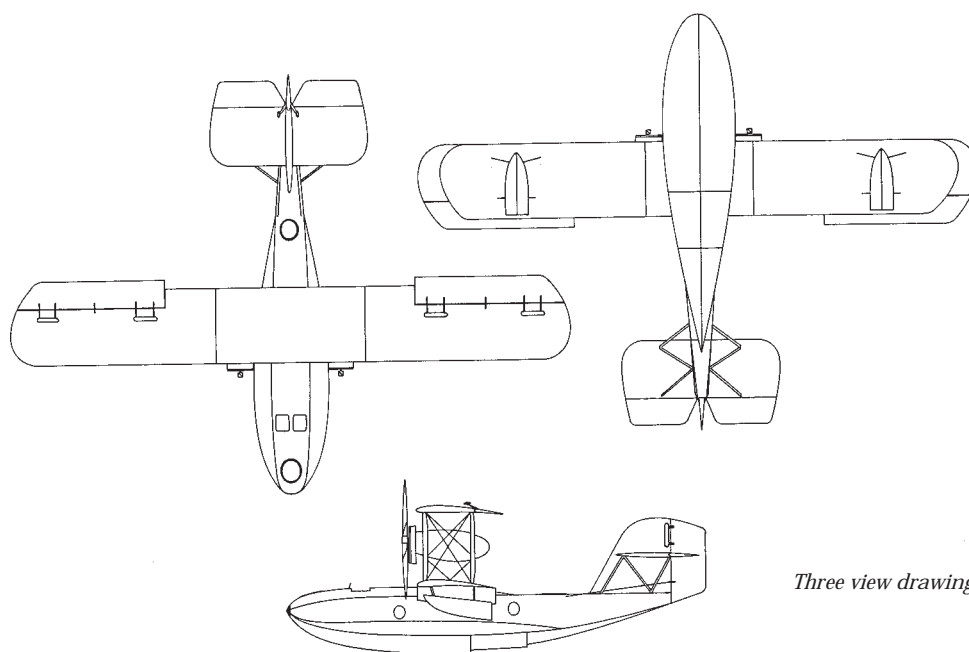
Weight:
Empty 8,995 lbs
Gross 18,125 lbs

Dimensions:
Wing area 1,217 sq ft
Wing span 72 ft 10 in
Length 49 ft 2 in
Height 16 ft 6 in

Armament: None was known to have been installed

Bureau Numbers

PN-9 A6878



Three view drawings for PN-9.



A PN-9 in flight.

PN-12

Models Accepted from the Manufacturer

PN-12

A twin-engine flying boat with an all metal hull construction built by the Naval Aircraft Factory to replace the aging F-5Ls. The normal crew was 5, but a relief crew could be carried for long patrols. Lacking the mass production capability, NAF contracted out the design to several aircraft companies. Douglas Aircraft Company built the PN-12 aircraft as the PD-1; Glenn L. Martin Company built it as the PM-1 and PM-2; and Keystone Aircraft Corporation built it as the PK-1. Each company introduced small modifications to the basic design. The first aircraft was received on 30 August 1928.

Crew	5
Range	1,309 miles
Power Plant	Two 525 hp Pratt & Whitney Hornet R-1750

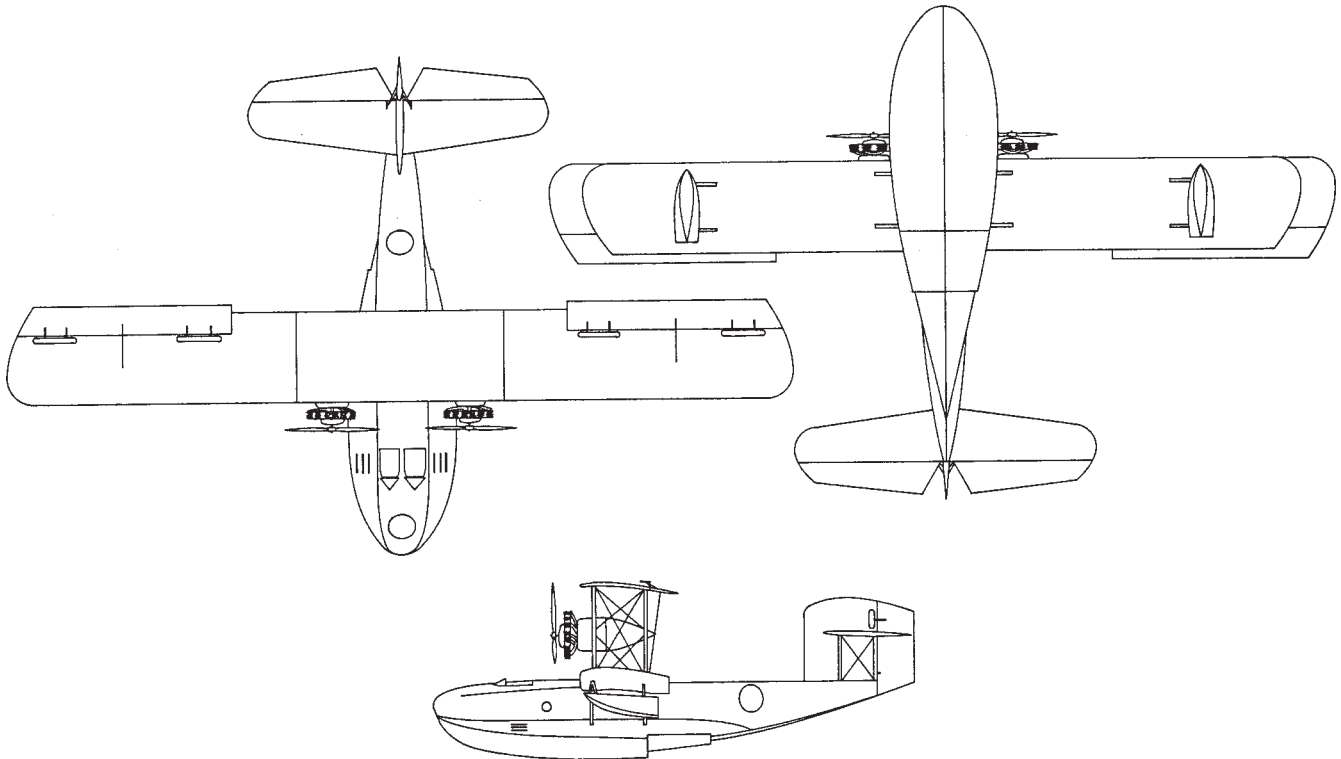
Weight:	
Empty	7,669 lbs
Gross	14,122 lbs

Dimensions:	
Wing area	1,166 sq ft
Wing span	72 ft 10 in
Length	49 ft 2 in
Height	16 ft 8.5 in

Armament: Single 30-caliber machine guns in the bow and amidships
Four 230 lb bombs externally under the lower wing

Bureau Numbers

PN-12	A7384
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Three view drawings for PN-12 (modified into the PM-1, PM-2, PD-1, and PK-1).

PV-1/3 Ventura

The Bureau of Aeronautics issued a contract for the PV to Lockheed on 7 July 1942. Lockheed delivered a total of 2,162 versions of the PV, including PV-1s, PV-2s, PV-2Cs, PV-2Ds and PV-3s. In October 1942 VP-82 became the first squadron to receive the PV-1 Ventura.

Models Accepted from the Manufacturer

PV-1

A twin engine monoplane patrol aircraft derived from Lockheed's commercial Model 18 and built to British specifications. The first Navy aircraft were acquired through an arrangement with the USAAF and designated PV-1. The first flight was made on 31 July 1941.

Crew	4
Range	1,660 miles
Power Plant	Two Pratt & Whitney R-2800-31
Weight:	
Empty	20,197 lbs

Gross	26,500 lbs
Dimensions:	
Wing area	551 sq ft
Wing span	65 ft 6 in
Length	51 ft 9 in
Height	17 ft 10.5 in
Armament:	Two 50-caliber machine guns in nose and dorsal positions, one 30-caliber machine gun in ventral position
	Six 500 lb bombs or one torpedo internal, up to two 1,000 lb bombs under wings

PV-3

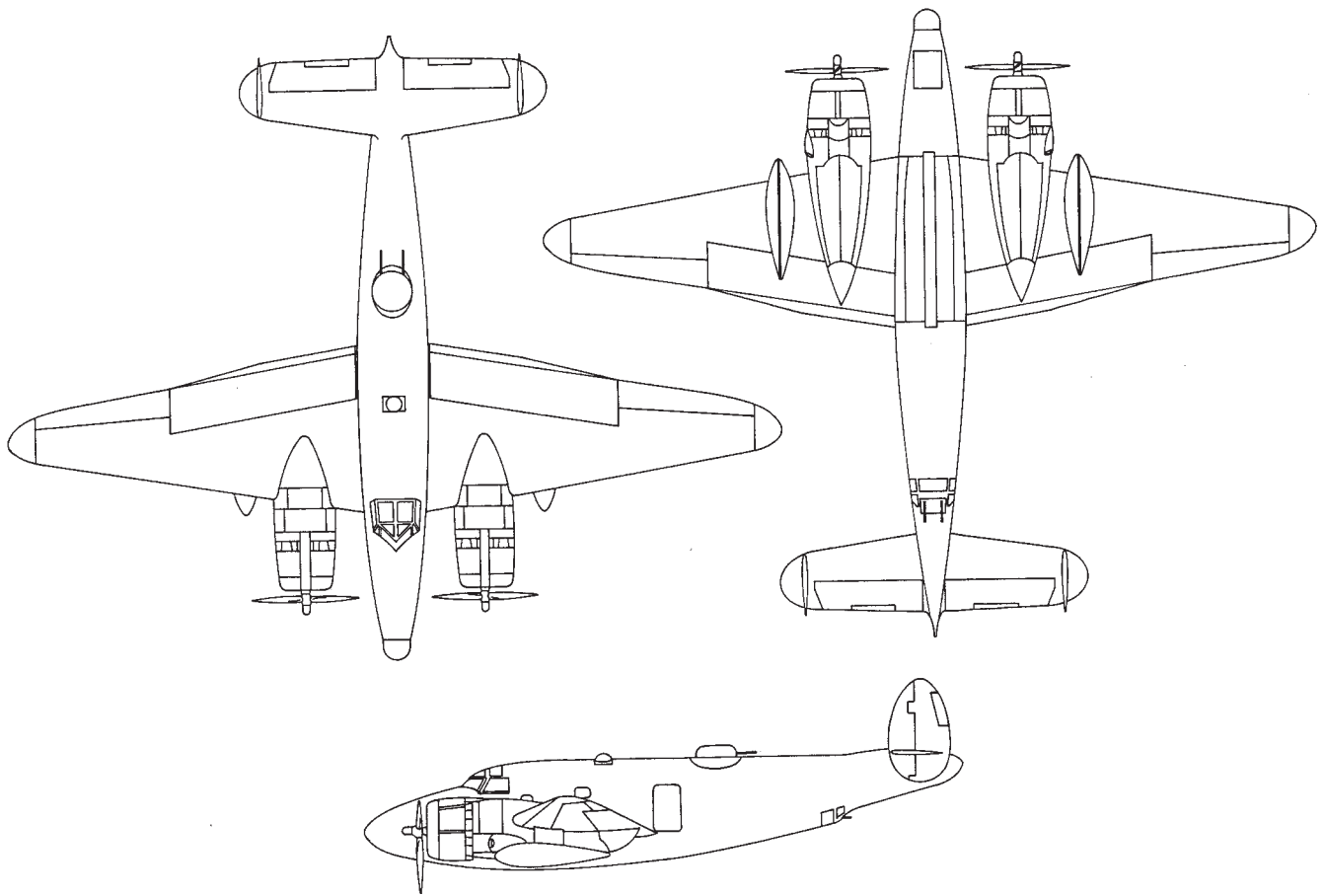
Twenty-seven Lockheed Model 37s were requisitioned by the Navy from a British lend-lease batch for training and familiarization and were designated PV-3.

Bureau Numbers

PV-1	29723-29922; 33067-33466; 34586-34997; 48652-48939; 49360-49659
PV-3	33925-33951



A PV-1.



Three view drawings for PV-1.

PV-2 Harpoon

The Bureau of Aeronautics issued a contract for the PV to Lockheed on 7 July 1942. Lockheed delivered a total of 2,162 versions of the PV, including PV-1s, PV-2s, PV-2Cs, PV-2Ds and PV-3s. VP-ML-3 was the last squadron to report the PV-2 Harpoon in its inventory on 1 August 1948.

Models Accepted from the Manufacturer

PV-2

The PV-1 Ventura was redesigned to provide additional payload and range. A completely redesigned tail assembly gave marked improvement in both ground handling and single-engine control. These aircraft were designated Harpoon.

Crew	4
Range	1,800 miles
Power Plant	Two Pratt & Whitney R-2800-31
Weight:	
Empty	21,370 lbs
Gross	30,700 lbs
Dimensions:	
Wing area	685 sq ft
Wing span	74 ft 11 in
Length	52 ft 1.5 in
Height	18 ft 3 in

Armament: Five fixed forward-firing 50-caliber machine guns in nose, two 50-caliber guns in the dorsal turret and two more in the tail tunnel.

Up to four 1,000 lb bombs internal and two 1,000 lb external.

When they became available, 5.0 inch HVAR launchers were mounted under the wings.

It was necessary to put a bulge in the bomb bay doors to accommodate the increased payload.

PV-2C

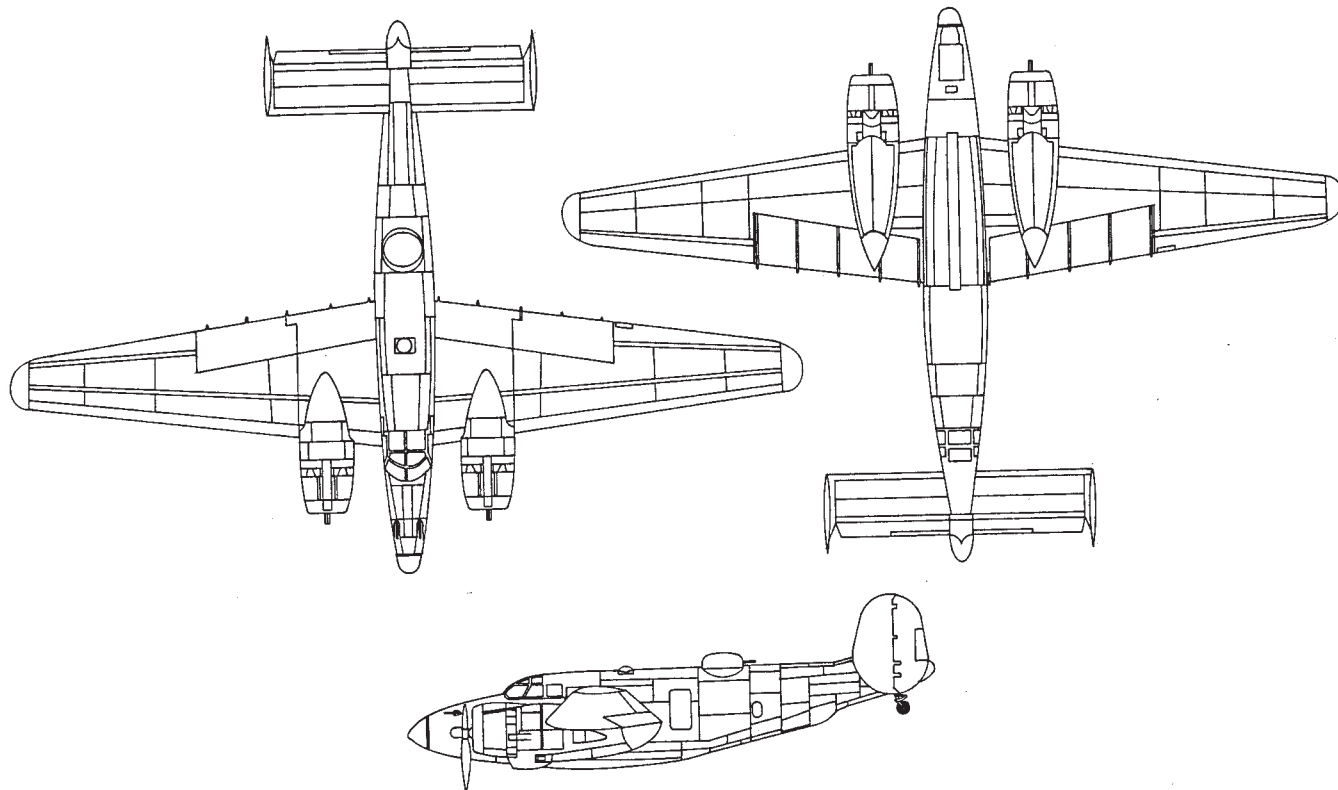
Due to problems in sealing the internal wing fuel tanks, the first 30 Harpoons had the outboard fuel tanks sealed off and were assigned to training squadrons.

PV-2D

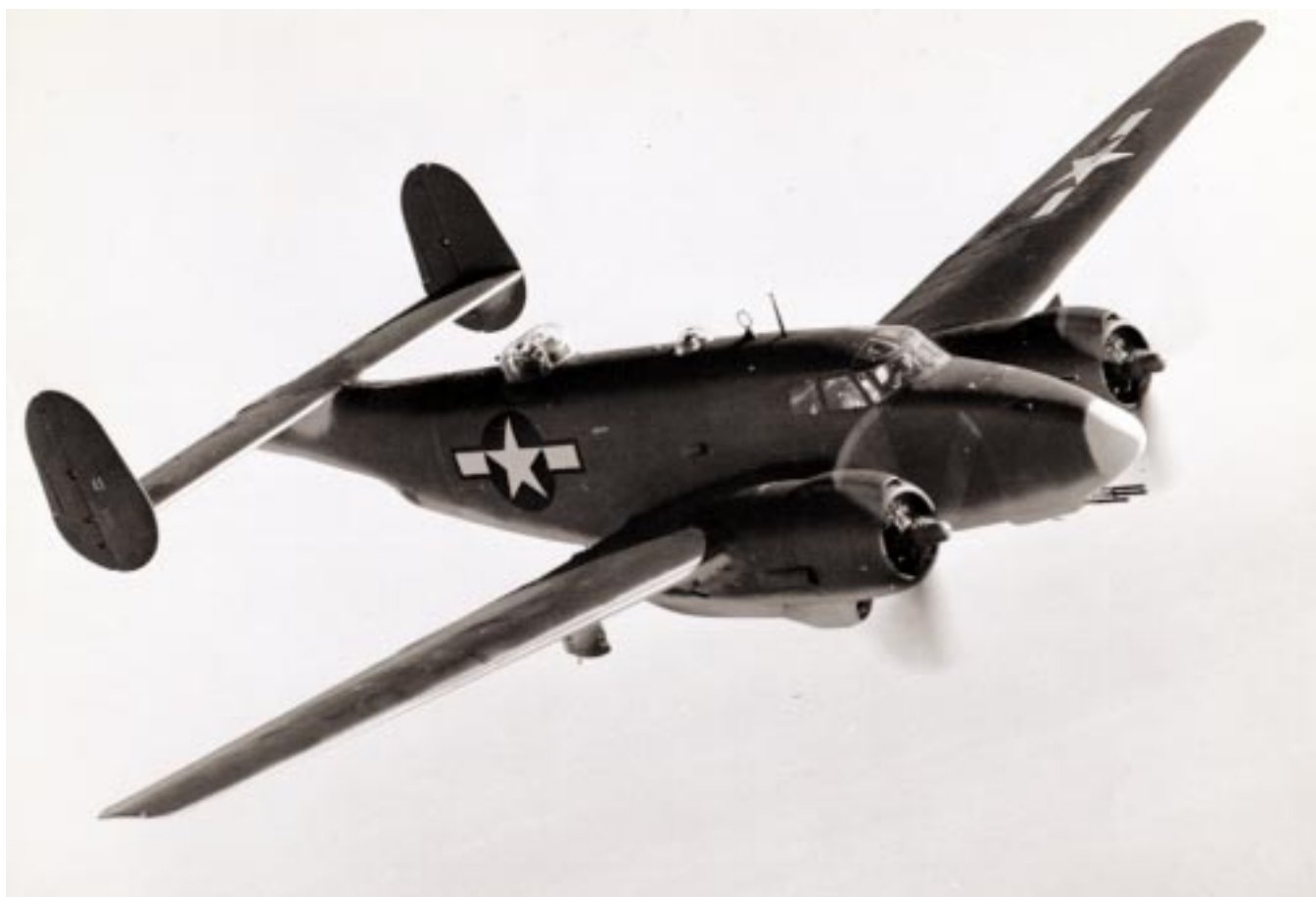
The armament was increased to eight 50-caliber machine guns in the nose.

Bureau Numbers

PV-2	37065-37534
PV-2C	37035-37064
PV-2D	37535-37623 (37551-37623 canceled); 37624-37634; 84057-84589 (84065-84589 canceled)



Three view drawings for PV-2



A PV-1 in flight.