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Consolidated PBY Catalina

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The **Consolidated PBY Catalina**, also known as the **Canso** in Canadian service, was an **American flying boat**, and later an **amphibious aircraft** of the 1930s and 1940s produced by **Consolidated Aircraft**. It was one of the most widely used seaplanes of **World War II**. Catalinas served with every branch of the **United States Armed Forces** and in the air forces and navies of

PBY Catalina



PBY-5 landing at [Naval Air Station Jacksonville](#).

Role	Maritime patrol and search-and-rescue seaplane
Manufacturer	Consolidated Aircraft
Designer	Isaac M. Laddon
First flight	28 March 1935
Introduction	October 1936, United States Navy
Retired	January 1957 (United States Navy Reserve) 1979 (Brazilian Air Force)
Primary users	United States Navy United States Army Air Forces Royal Air Force Royal Canadian Air Force
Produced	1936–1945
Number built	3,305 (2,661 US-built, ^[1] 620 Canadian-built, 24 Soviet-built ^[2])
Unit cost	US\$90,000 (as of 1935)

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many other
nations.

Variants

Adjusted for inflation: US\$1553374

[Bird Innovator](#)

During World War II, PBYs were used in [anti-submarine warfare](#), [patrol bombing](#), [convoy escorts](#), [search and rescue](#) missions (especially [air-sea rescue](#)), and [cargo transport](#). The PBY was the most numerous aircraft of its kind and the last active military PBYs were not retired from service until the 1980s. In 2014, nearly 80 years after its first flight, the aircraft continues to fly as a [waterbomber](#) (or airtanker) in [aerial firefighting](#) operations all over the world.

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Naming

The designation "PBY" was determined in accordance with the [U.S. Navy aircraft designation system of 1922](#); *PB* representing "Patrol Bomber" and *Y* being the code assigned to [Consolidated Aircraft](#) as its manufacturer. Catalinas built by other manufacturers for the US Navy were designated according to different manufacturer codes, thus [Canadian Vickers](#)-built examples were designated **PBV**, [Boeing Canada](#) examples **PB2B** (there already being a [Boeing PBB](#)) and [Naval Aircraft Factory](#) examples were designated **PBN**. In accordance with contemporary British naming practice of naming seaplanes after coastal port towns, [Royal Canadian Air Force](#) examples were named **Canso**, for [the town of that name in Nova Scotia](#).^[*citation needed*] The [Royal Air Force](#) used the name **Catalina** and the US Navy adopted this name in 1942.^[3] The [United States Army Air Forces](#) and later the [United States Air Force](#) used the designation **OA-10**. US Navy Catalinas used in the Pacific against the Japanese for night operations were painted black overall, and as a result were sometimes referred to locally as "*Black Cats*".

Design

Background

The PBY was originally designed to be a [patrol bomber](#), an aircraft with a long operational range intended to locate and attack enemy transport ships at sea in order to disrupt enemy [supply lines](#). With a mind to a potential conflict in the [Pacific Ocean](#), where troops would require resupply over great distances, the [U.S. Navy](#) in the 1930s invested millions of dollars in developing long-range flying boats for this purpose. Flying boats had the advantage of not requiring [runways](#), in effect having the entire ocean available. Several different flying boats were adopted by the Navy, but the PBY was the most widely used and produced.

Although slow and ungainly, Catalinas distinguished themselves in World War II.

Allied forces used them successfully in a wide variety of roles for which the aircraft was never intended. They are remembered for their rescue role, in which they saved the lives of thousands of aircrew

downed over

water. Catalina airmen called their aircraft the "Cat" on combat missions and "Dumbo" in air-sea rescue service. [4]



PBY riding at sea anchor.

Development

As American dominance in the Pacific Ocean began to face competition from Japan in the 1930s, the U.S. Navy contracted Consolidated, Martin and Douglas in October 1933 to build competing prototypes for a patrol flying boat. [5] Naval doctrine of the 1930s and 1940s used flying boats in a wide variety of roles that today are handled by multiple special-purpose aircraft. The U.S. Navy had adopted the Consolidated P2Y and Martin P3M models for this role in 1931, but both aircraft were underpowered and hampered by inadequate range and limited payloads.

Consolidated and Douglas both delivered single prototypes of their new designs, the XP3Y-1 and XP3D-1, respectively. Consolidated's XP3Y-1 was an evolution of the XPY-1 design that had originally competed unsuccessfully for the P3M contract two years earlier and of the XP2Y design that the Navy had authorized for a limited production run. Although the Douglas aircraft was a good design, the Navy opted for Consolidated's because the projected cost was only \$90,000 per aircraft.

Consolidated's XP3Y-1 design (company *Model 28*) had a [parasol wing](#) with external bracing struts, mounted on a pylon over the fuselage.

Wingtip stabilizing floats were retractable in flight to form streamlined wingtips and

had been licensed from the [Saunders-Roe](#) company. The two-step hull design was similar to that of the P2Y, but the Model 28 had a cantilever [cruciform tail](#) unit instead of a strut-braced [twin tail](#). Cleaner aerodynamics gave the Model 28 better performance than earlier designs.

The prototype was powered by two 825 hp (615 kW) [Pratt & Whitney R-1830-54](#) Twin Wasp [radial engines](#) mounted on the wing's leading edges. Armament comprised four .30 in (7.6 mm) [Browning](#) AN/M2 machine guns and up to 2,000 lb (910 kg) of bombs.

The XP3Y-1 had its maiden flight on 28 March 1935, after which it was transferred to the U.S. Navy for service trials. The XP3Y-1 was a significant performance improvement over previous patrol flying boats. The Navy requested further development in order to bring the aircraft into the category of *patrol bomber*, and in October 1935, the prototype was returned to Consolidated for further work, including installation of 900 hp (670 kW) R-1830-64 engines. For the redesignated XPBY-1, Consolidated introduced redesigned vertical tail surfaces which resolved a problem with the tail becoming submerged on takeoff, which had made lift-off impossible under some conditions. The XPBY-1 had its maiden flight on 19 May 1936, during which a record non-stop distance flight of 3,443 [mi](#) (2,992 [nmi](#); 5,541 [km](#)) was achieved.

The XPBY-1 was delivered to [VP-11F](#) in October 1936. The second



PBY waist gunner mounting port side gun blister. 

squadron to be equipped was **VP-12**, which received the first of its aircraft in early 1937. The second production order was placed on 25 July 1936. Over the next three years, the design was gradually developed further and successive models introduced.

The aircraft eventually bore the name Catalina after **Catalina Island**; the name was coined in November 1941, as Great Britain ordered their first 30 aircraft.^[6]

Mass-produced U.S. Navy variants

Model	Production period and distinguishing features	Quantity
PBY-1	September 1936 – June 1937 Original production model.	60
PBY-2	May 1937 – February 1938 Minor alterations to tail structure, hull reinforcements.	50
PBY-3	November 1936 – August 1938 Higher power engines.	66
PBY-4	May 1938 – June 1939 Higher power engines, propeller spinners, acrylic glass blisters over waist guns (some later units).	32
PBY-5	September 1940 – July 1943 Higher power engines (using higher octane fuel), discontinued use of propeller spinners, standardized waist gun blisters. Self-sealing fuel tanks introduced during production run.	684
PBY-5A	October 1941 – January 1945 Hydraulically actuated, retractable tricycle landing gear , with main gear design based on one from the 1920s designed by Leroy Grumman , for amphibious operation. Introduced tail gun position, replaced bow single gun position with bow "eyeball" turret equipped with twin .30 machine guns (some later units), improved armor,	802

	self-sealing fuel tanks. ^[7]	
PBY-6A	January 1945 – May 1945 Incorporated changes from PBN-1, ^[7] including a taller vertical tail, increased wing strength for greater carrying capacity, new electrical system, standardized "eyeball" turret, and a radome over cockpit for radar .	175

An estimated 4,051 Catalinas, Cansos, and GSTs of all versions were produced between June 1937 and May 1945 for the U.S. Navy, the [U.S. Army Air Forces](#), the [U.S. Coast Guard](#), Allied nations, and civilian customers.

PBN Nomad

The [Naval Aircraft Factory](#) made significant modifications to the PBY design, many of which would have significantly interrupted deliveries had they been incorporated on the Consolidated production lines.^[8] The new aircraft, officially known as the **PBN-1 Nomad**, had several differences from the basic PBY. The most obvious upgrades were to the bow, which was sharpened and extended by two feet, and to the tail, which was enlarged and featured a new shape. Other improvements included larger fuel tanks, increasing range by 50%, and stronger wings permitting a 2,000 lb (908 kg) increase in gross takeoff weight. An auxiliary power unit was installed, along with an improved electrical system, and the weapons were upgraded with continuous-feed mechanisms.^[8]

138 of the 156 PBN-1s produced served with the Soviet Navy. The remaining 18 were assigned to training units at [NAS Whidbey Island](#) and the Naval Air Facility in [Newport, Rhode Island](#).^[9] Later, improvements found in the PBN such as the larger tail were incorporated into the amphibious PBY-6A.

Operational history

Roles in World War II

Around 3,300 aircraft were built, and these operated in nearly all operational theatres of World War II. The Catalina served with

distinction and played a prominent and invaluable role against the Japanese. This was especially true during the first year of the war in the Pacific,



A radar-equipped PBY-5A from VP-6(CG) over Greenland, in 1945. 

because the

PBY and the [Boeing B-17 Flying Fortress](#) were the only aircraft available with the range to be effective in the Pacific.

Anti-submarine warfare

Catalinas were the most extensively used [anti-submarine warfare](#) (ASW) aircraft in both the [Atlantic](#) and [Pacific Theaters](#) of World War II, and were also used in the Indian Ocean, flying from the [Seychelles](#) and from [Ceylon](#). Their duties included escorting convoys to [Murmansk](#). By 1943, [U-boats](#) were well-armed with anti-aircraft guns and two [Victoria Crosses](#) were won by Catalina pilots pressing home their attacks on U-boats in the face of heavy fire: Flying Officer [John Cruickshank](#) of the RAF, in 1944, for sinking [U-347](#) (although the submarine is now known to have been [U-367](#)^[10]) and in the same year Flight Lieutenant [David Hornell](#) of the [Royal Canadian Air Force](#) (posthumously) against [U-1225](#).

Catalinas destroyed 40 U-boats, but not without losses of their own. A Brazilian Catalina attacked and sank [U-199](#) in Brazilian waters on 31 July 1943. Later, the aircraft was baptized as “Arará”, in memory of the merchant ship of that name which was sunk by another U-boat.^[11]

Maritime patrol

In their role as patrol aircraft, Catalinas participated in some of the most notable naval engagements of World War II. The aircraft's parasol wing and large waist blisters provided excellent visibility

and combined with its long range and endurance, made it well suited for the task.

A [RAF Coastal Command](#)

Catalina, piloted by Ensign

[Leonard B.](#)

[Smith](#) of the

U.S. Navy and flying out of [Castle Archdale Flying boat base](#), [Lower Lough Erne](#), Northern Ireland, located, at 10:30, on 26 May 1941, some 690 nmi (1,280 km; 790 mi) northwest of [Brest](#), the German battleship *Bismarck*, which was attempting to evade Royal Navy forces. ^{[N 1][12][13][14][15][16]} This sighting eventually led to the destruction of the German battleship.

A flight of Catalinas spotted the Japanese fleet approaching [Midway Island](#), beginning the [Battle of Midway](#).^[17]

A [Royal Canadian Air Force](#) (RCAF) Canso flown by Squadron Leader [L.J. Birchall](#) foiled Japanese plans to destroy the Royal Navy's Indian Ocean fleet on 4 April 1942 when it detected the Japanese carrier fleet approaching [Ceylon](#) (Sri Lanka).^[18]

Night attack and naval interdiction

The [Royal Australian Air Force](#) (RAAF) also operated Catalinas as night raiders, with four squadrons Nos. [11](#), [20](#), [42](#), and [43](#) laying mines from 23 April 1943 until July 1945 in the southwest Pacific deep in Japanese-held waters, bottling up ports and shipping routes and forcing ships into deeper waters to become targets for U.S. submarines; they tied up the major strategic ports such as [Balikpapan](#) which shipped 80% of Japanese oil supplies. In late 1944, their mining missions sometimes exceeded 20 hours in duration and were carried out from as low as 200 ft (61 m) in the dark. Operations included trapping the Japanese fleet in Manila



A PBY-5A of VP-61 over the Aleutian Islands in 1943. 

Bay in
assistance of
General
[Douglas
MacArthur's](#)
landing at
Mindoro in
the
Philippines.
Australian
Catalinas also
operated out
of Jinamoc in
the Leyte Gulf,
and mined



Squadron Leader [Leonard Birchall](#) aboard a Consolidated Catalina before being shot down and captured near Ceylon by the Japanese

ports on the Chinese coast from Hong Kong to as far north as Wenchow. Both USN and RAAF Catalinas regularly mounted nuisance night bombing raids on Japanese bases, with the RAAF claiming the slogan "The First and the Furthest". Targets of these raids included a major base at [Rabaul](#). RAAF aircrews, like their U.S. Navy counterparts, employed "terror bombs", ranging from scrap metal and rocks to empty beer bottles with razor blades inserted into the necks, to produce high pitched screams as they fell, keeping Japanese soldiers awake and scrambling for cover.^[19]

Search and rescue

Catalinas
were
employed by
every branch
of the U.S.
military as
rescue aircraft.
A PBV piloted
by [LCDR
Adrian Marks](#)
(USN) rescued
56 sailors in
high seas from the [heavy cruiser Indianapolis](#) after the ship was



Search and Rescue OA-10 at [USAF Museum](#)

sunk during World War II. When there was no more room inside, the crew tied sailors to the wings. (The aircraft could not fly in this state; instead it acted as a lifeboat, protecting the sailors from exposure and the risk of shark attack, until rescue ships arrived.) Catalinas continued to function in the search-and-rescue role for decades after the end of the war.

Early commercial use

Further information: [The Double Sunrise](#)

Catalinas were also used for commercial air travel. The longest commercial flights (in terms of time aloft) ever made in aviation history were the [Qantas](#) flights flown weekly from 29 June 1943 through July 1945 over the Indian Ocean. Qantas offered non-stop service between [Perth](#) and [Colombo](#), a distance of 3,592 nmi (4,134 mi; 6,652 km). As the Catalina typically cruised at 110 [kn](#) (130 [mph](#); 200 [km/h](#)), this took from 28 to 32 hours and was called the "flight of the double sunrise", since the passengers saw two sunrises during their non-stop journey. The flight was made in radio silence because of the possibility of Japanese attack and had a maximum payload of 1,000 lb (450 kg) or three passengers plus 143 lb (65 kg) of military and [diplomatic mail](#).^[20]

Post-World War II employment



Civilian Catalina, modified for aerial firefighting, arrives at the Seaplane Base, [NAS Whidbey Island, Oak Harbor, Washington](#), 18 September 2009

An Australian PBY [named "Frigate Bird II" - an ex RAAF aircraft, registered VH-ASA]] made the first trans-Pacific flight across the South Pacific between [Australia](#) and [Chile](#) in 1951

by (Sir) Gordon Taylor,^[21] making numerous stops at islands along the way for refueling, meals, and overnight sleep of its crew. flown

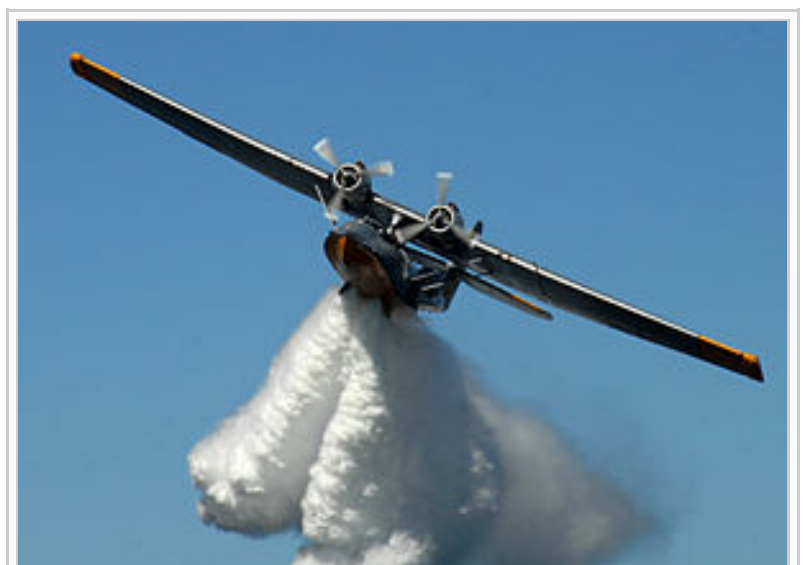
from Sydney to Quintero in Chile after making initial landfall at Valparaiso via Tahiti and Easter Island.^[22]

With the end of the war, all of the flying boat versions of the Catalina were quickly retired from the U.S. Navy, but the amphibious versions remained in service for some years. The last Catalina in U.S. service was a PBY-6A operating with a Naval Reserve squadron, which was retired from use on 3 January 1957.^[5] The Catalina subsequently equipped the world's smaller armed services into the late 1960s in fairly substantial numbers.

The [U.S. Air Force's Strategic Air Command](#) used Catalinas (designated OA-10s) in service as scout aircraft from 1946 through 1947.

The [Brazilian Air Force](#) flew Catalinas in naval air patrol missions against German submarines starting in 1943. The flying boats also carried out air mail deliveries. In 1948, a transport squadron was formed and equipped with PBY-5As converted to the role of amphibious transports. The 1st Air Transport Squadron (ETA-1) was based in the port city of Belem and flew Catalinas and C-47s until 1982. Catalinas were convenient for supplying military detachments scattered along the Amazon. They reached places that were otherwise accessible only by helicopters. The ETA-1 insignia was a winged turtle with the motto "Though slowly, I always get there". Today, the last Brazilian Catalina (a former RCAF one) is displayed at the Airspace Museum (MUSAL) in [Rio de Janeiro](#).^[23]

[Jacques-Yves Cousteau](#) used a PBY-6A (N101CS) to support his diving expeditions. His second son, [Philippe](#), was killed in an accident in this aircraft that occurred



A PBY-6A Catalina drops a load of water from its bomb-bay doors

on the Tagus River near Lisbon. The Catalina nosed over during a high speed taxi run undertaken to check the hull for leakage following a water landing. The aircraft turned upside down, causing the fuselage to break behind the cockpit. The wing separated from the fuselage and the left engine broke off, penetrating the captain's side of the cockpit. [24]

[Paul Mantz](#) converted an unknown number of surplus Catalinas to flying yachts at his Orange County California hangar in the late 1940s and early 1950s.

Steward-Davis converted several Catalinas to their **Super Catalina** standard (later known as **Super Cat**), which replaced the usual 1,200 hp (890 kW) [Pratt](#)



An OA-10A converted by Steward-Davis Inc to their *Super Cat* standard. It is additionally fitted out for survey work for Geoterrex Inc

[& Whitney R-](#)

[1830 Twin Wasp](#) engines with [Wright R-2600 Cyclone 14](#) engines of 1,700 hp (1,300 kW). A larger, squared-off rudder was installed to compensate for the increased yaw which the more powerful engines could generate. The Super Catalina also had extra cabin windows and other alterations. [25]

Chilean Air Force (FACH) Captain [Roberto Parragué](#), in his PBY Catalina FACH No. 405 called "[Manu-Tara](#)", which means Lucky Bird in the Rapanui language, undertook the first flight between [Easter Island](#) and the continent of South America (from [Chile](#)), as well as the first flight to [Tahiti](#), making him a national hero of France as well as of Chile. The flight was authorized by the Chilean President in 1951, but a second flight he made in 1957 was not authorized, and he was dismissed from the Chilean Air Force.

Of the few dozen remaining airworthy Catalinas, the majority are in use as [aerial firefighting](#) aircraft. [China Airlines](#), the official

airline of the [Republic of China \(Taiwan\)](#) was founded with two Catalina amphibians.

Platforms are folded out and deployed from Catalinas for use in open ocean fishing and [Mahi Mahi](#) tracking in the Pacific Ocean.

Catalina affair

Main article: [Catalina affair](#)

The Catalina Affair is the name given to a [Cold War](#) incident in which a Swedish Air Force Catalina was shot down by Soviet fighters over the [Baltic Sea](#) in June 1952 while investigating the disappearance of a Swedish [Douglas DC-3](#) (later found to have been shot down by a Soviet fighter while on a [ferret](#) mission; it was found in 2003 and raised 2004–2005).

Variants

US Navy

XP3Y-1

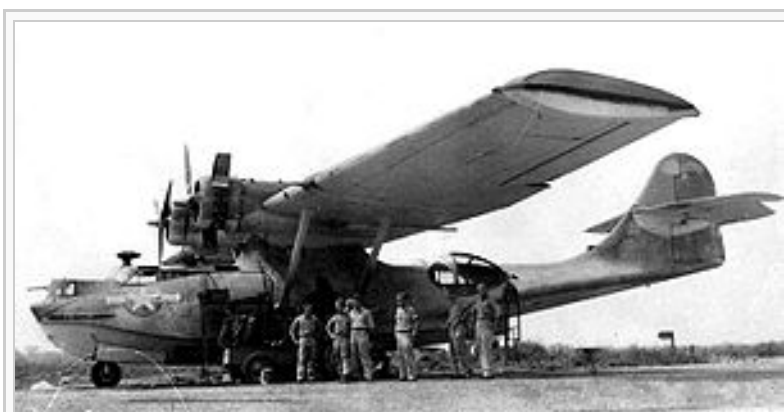
Prototype
Model 28
flying boat
later re-
designated
XPBY-1,
one built
(USN
Bureau
No. 9459).

Later fitted
with a 48-
foot-
diameter
(15 m) ring
to sweep
magnetic
[sea mines](#).

A 550 hp
Ranger
engine



Prototype Model 28 flying boat, later re-designated XPBY-1. 📄



A US Army Air Force OA-10 and her crew. 📄

drove a generator to produce a magnetic field.^[26]

XPBY-1

Prototype version of the Model 28 for the United States Navy, a re-engined XP3Y-1 with two 900 hp R-1830-64 engines, one built.

PBY-1 (Model 28-1)

Initial



Canadian Vickers SA-10A Catalina 44-33939 (USN BuNo 67903), USAF 4th Rescue Group, Hamilton AFB, California, 1952. Sold in 1958 to Cuban Air Force as 191



Catalina Is of 205 Sqn. RAF undergoing service in their hangar at Seletar, Singapore.



A United States Coast Guard PBY-5A at Tern Island in 1953

production variant with two 900 hp R-1830-64 engines, 60 built.

PBY-2 (Model 28-2)

Equipment changes and improved performance, 50 built.

PBY-3 (Model 28-3)

Powered by two 1,000 hp R-1830-66 engines, 66 built.

PBY-4 (Model 28-4)

Powered by two 1,050 hp R-1830-72 engines, 33 built (including one initial as a XPBY-4 which later became the XPBY-5A).

PBY-5 (Model 28-5)

Either two 1,200 hp R-1830-82 or -92 engines and provision for extra fuel tanks (with partial self-sealing protection). 683 built (plus one built at New Orleans), some aircraft to the RAF as the Catalina IVA and one to the United States Coast Guard. The PBY-5 was also built in the Soviet Union as the GST.

XPBY-5A

One PBY-4 converted into an amphibian and first flown in November 1939.

PBY-5A (Model 28-5A)

Amphibious version of the PBY-5 with two 1,200 hp R-1830-92 engines, first batch (of 124) had one 0.3in bow gun, the remainder had two bow guns; 803 built including diversions to the United States Army Air Forces, the RAF (as the Catalina IIIA) and one to the United States Coast Guard.

PBY-6A

Amphibious version with two 1,200 hp R-1830-92 engines and a taller fin and rudder. Radar scanner fitted above cockpit and two 0.5 in nose guns; 175 built including 21 transferred to the Soviet Navy.

PBY-6AG

One PBY-6A used by the United States Coast Guard as a staff transport.

PB2B-1

Boeing Canada built PBY-5 for the [RAF](#) and [RCAF](#) from 1942. 240 built.

PB2B-2

Boeing Canada built version of the PBY-5 but with the taller fin of the PBN-1. 67 built. Most supplied to the RAF as the Catalina VI.

PBN-1 Nomad

Naval Aircraft Factory built version of the PBV-5 with major modification including a 2ft bow extension, modified hull lines with a modified step, re-designed wingtip floats and tail surfaces and a revised electrical system. A total of 155 were built for delivery to the RAF as the Catalina V although 138 were Lend-Leased to the Soviet Navy as the KM-1

PBV-1A

[Canadian Vickers](#)

built version of the PBV-5A, 380 built including 150 to the [Royal Canadian Air Force](#) as the Canso-A and the rest to the USAAF as the OA-10A.



[Canadian Vickers](#) PBV-1A Canso A at [RIAT, England](#) in 2009. A version of the PBV-5A Catalina, this aircraft was built in 1944 for the [Royal Canadian Air Force](#)



Restored Catalina, displayed in [IWM Duxford](#)

USAAF

OA-10

United States Army Air

Forces designation for PBV-5A, 105 built; 58 aircraft survivors re-designated A-10 in 1948.

OA-10A

USAAF designation of Canadian Vickers-built version of the PBV-1, 230 built. Survivors re-designated A-10A in 1948. Three additional aircraft from Navy in 1949 as A-10As.

OA-10B



Swedish Air Force Consolidated PBX Catalina on display at the Swedish Air Force museum in Linköping, Sweden

designation of PBX-6A, 75 built. Re-designated A-10B in 1948.

RAF

Catalina I

Direct purchase aircraft for the Royal Air Force, same as the PBX-5 with six 0.303 in guns (one in bow, four in waist blisters and one aft of the hull step) and powered by two 1,200 hp R-1830-S1C3-G engines, 109 built.

Catalina IA

Operated by the Royal Canadian Air Force as the Canso, 14 built.

Catalina IB

Lend-lease PBX-5Bs for the RAF, 225 aircraft built.

Catalina II

Equipment changes, six built.

Catalina IIA

Vickers-Canada built Catalina II for the RAF, 50 built.

Catalina IIIA

Former U.S. Navy PBX-5As used by the RAF on the North Atlantic Ferry Service, 12 aircraft. These were the only amphibians that saw RAF service.

Catalina IVA

Lend-lease PBX-5s for the RAF, 93 aircraft.

Catalina IVB

Lend-lease PB2B-1s for the RAF, some to the Royal Australian Air Force.

Catalina VI

Lend-lease PB2B-2s for the RAF, some to the RAAF.

RCAF

Canso-A

RCAF designation for PBV-1A

Other Users

GST

Soviet built version of the PBV-5 ("Gydro Samoliot Transportnyi").

Steward-Davis Super Catalina ("Super Cat")

Catalina converted to use 1,700 hp [Wright R-2600 Cyclone 14](#) engines, with enlarged rudder and other changes.

Avalon Turbo Canso

Proposed turboprop conversion of Canso water bombers, powered by two [Rolls-Royce Dart](#) engines.

Operators

Main article: [List of PBV Catalina operators](#)

Survivors

Main article: [PBV Catalina survivors](#)

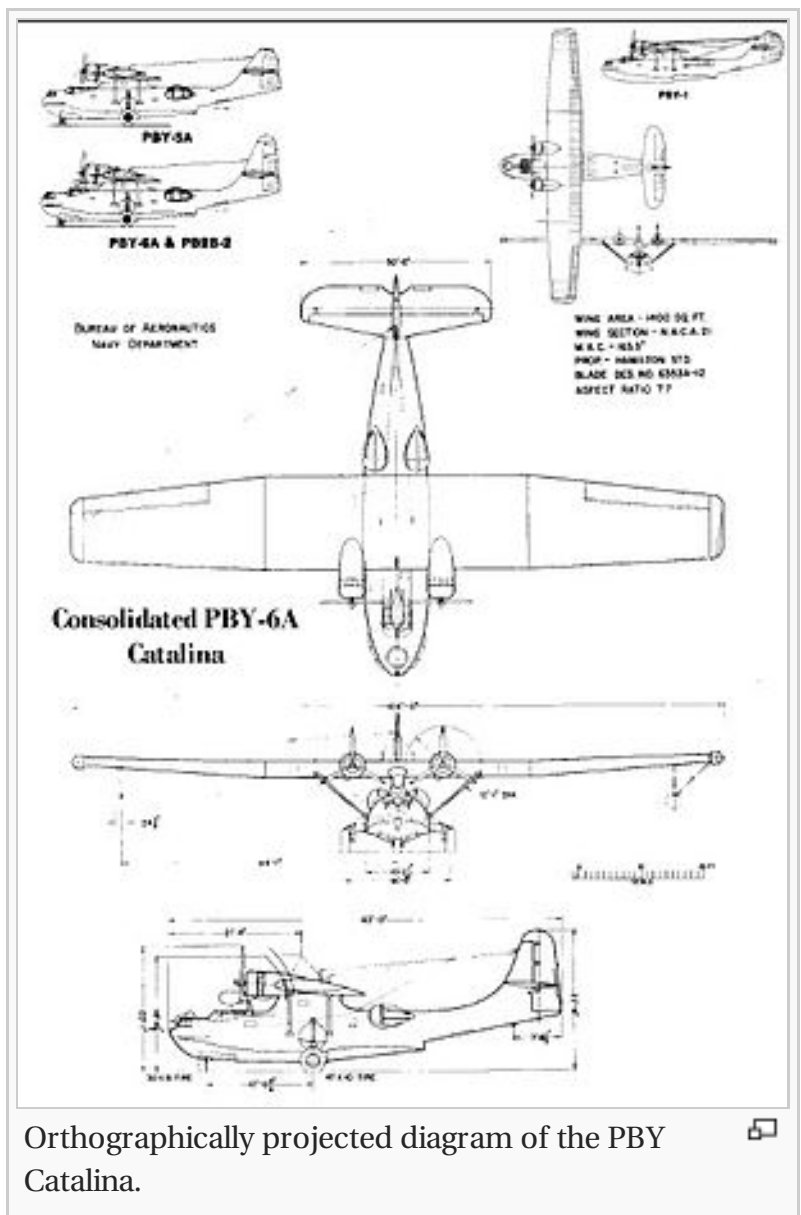
Specifications (PBV-5A)

Data from [Encyclopedia of World Air Power](#)^[27] [Jane's Fighting Aircraft of World War II](#)^[7] [Handbook of Erection and Maintenance Instructions for Navy Model PBV-5 and PBV-5A Airplanes](#).^[28] and [Quest for Performance](#)^[29]

General characteristics

- **Crew:** 10 — pilot, co-pilot, bow turret gunner, flight engineer, radio operator, navigator, radar operator, two waist gunners, ventral gunner
- **Length:** 63 ft 10 7/16 in (19.46 m)
- **Wingspan:** 104 ft 0 in (31.70 m)
- **Height:** 21 ft 1 in (6.15 m)
- **Wing area:** 1,400 ft² (130 m²)

- **Empty weight:**
20,910 lb
(9,485 kg)
- **Max. takeoff weight:**
35,420 lb
(16,066 kg)



Orthographically projected diagram of the PBY Catalina.

- **Powerplant:** 2 × Pratt & Whitney R-1830-92 Twin Wasp radial engines, 1,200 hp (895 kW each) each
- **Zero-lift drag coefficient:** 0.0309
- **Drag area:** 43.26 ft² (4.02 m²)
- **Aspect ratio:** 7.73

Performance

- **Maximum speed:** 196 mph (314 km/h)
- **Cruise speed:** 125 mph (201 km/h)
- **Range:** 2,520 mi (4,030 km)
- **Service ceiling:** 15,800 ft (4,800 m)
- **Rate of climb:** 1,000 ft/min (5.1 m/s)
- **Wing loading:** 25.3 lb/ft² (123.6 kg/m²)
- **Power/mass:** 0.034 hp/lb (0.056 kW/kg)
- **Lift-to-drag ratio:** 11.9

Armament

- 3 .30 cal (7.62 mm) machine guns (two in nose turret, one in ventral hatch at tail)
- 2 .50 cal (12.7 mm) machine guns (one in each waist blister)
- 4,000 lb (1,814 kg) of bombs or depth charges; torpedo racks were also available

See also

Related development

- Consolidated PB2Y Coronado

Aircraft of comparable role, configuration and era

- Blohm & Voss Bv 138
- Douglas P3D
- Dornier Do 24
- Kawanishi H6K
- Martin PBM Mariner
- Short Sunderland

Related lists

- List of aircraft of World War II
- List of Consolidated PBV Catalina survivors
- List of flying boats
- List of PBV Catalina operators

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Notes

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External links



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- *Popular Mechanics*, February 1943, "Here Comes The Cats"
very large and detailed article

V **·** T **·** E

Aircraft produced by Consolidated Aircraft

Manufacturer designation

1 **·** 2 **·** 7 **·** 8 **·** 9 **·** 10 **·** 14 **·** 15 **·** 16 **·** 17 **·** 18 **·** 20 **·** 21 **·** 22 **·** 23 **·** 24 **·** 25 **·** 26 **·** 27 **·** 28 **·** 29 **·** 30 **·** 31 **·** 32 **·** 33 **·** 34 **·** 36 **·** 37 **·** 39 **·** 40

Trainers

NY **·** PT-1 **·** PT-2 **·** PT-11 **·** AT-22

Observation aircraft: O-17

Fighter: P-30

Patrol: PY **·** P2Y **·** P3Y **·** XP4Y-1/P4Y-2 **·** PBY

By role

• PB2Y • XPB3Y • PB4Y-1/-2

Bombers: X/B-24 • B-32 • XB-41 • B-36 • BY • XB2Y • LB-30A/B • Liberator B.I •

Liberator GR.I

Transports: C-11 • C-22 • C-87 • XC-99 • C-109 • RY • R2Y • Liberator C.IX

Reconnaissance: F-7

V • T • E

**USN/USMC patrol aircraft designations
1923–1962**

Patrol	Boeing	XPB • PB • P2B • P3B
	Douglas	PD • P2D • P3D
	Grumman	PF
	Hall	PH • P2H
	General Aviation	PJ
	Keystone	PK
	Martin	PM • P2M • P3M • P4M • P5M • P6M • P7M
	Naval Aircraft Factory	PN • P2N • P3N ¹ • P4N
	Lockheed	PO
	Sikorsky	PS • P2S
	Lockheed	PV • P2V • P3V
Patrol Bomber	Consolidated	PY • P2Y • P3Y • P4Y-1 • P4Y-2 • P5Y • P6Y
	Boeing	PBB • PB2B
	North American	PBJ
	Martin	PBM • PB2M
	Naval Aircraft Factory	PBN
	Lockheed	PBO
	Sikorsky	PBS
	Canadian Vickers	PBV
	PBY • PB2Y	

	Consolidated	• PB3Y • PB4Y-1 • PB4Y-2
Patrol Torpedo Bomber	Hall	PTBH
¹ Not assigned		

USAAC/USAAF observation aircraft	
V • T • E	
Observation	O-1 • O-2 • O-3 • O-4 • O-5 • O-6 • O-7 • O-8 • O-9 • O-10 • O-11 • O-12 • O-13 • O-14 • O-15 • O-16 • O-17 • O-18 • O-19 • O-20 • O-21 • O-22 • O-23 • O-24 • O-25 • O-26 • O-27 • O-28 • O-29 • O-30 • O-31 • O-32 • O-33 • O-34 • O-35 • O-36 • O-37 • O-38 • O-39 • O-40 • O-41 • O-42 • O-43 • O-44 • O-45 • O-46 • O-47 • O-48 • O-49 • O-50 • YO-51 • O-52 • O-53 • O-54 • O-55 • O-56 • O-57 • O-58 • O-59 • O-60 • O-61 • O-62 • O-63
Observation Amphibian	OA-1 • OA-2 • OA-3 • OA-4 • OA-5 • OA-6 • OA-7 • OA-8 • OA-9 • OA-10 • OA-11 • OA-12 • OA-13 • OA-14 • OA-15 • SA-16

Swedish Air Force military aircraft designations 1940–present	
V • T • E	
1-25	B/S/T/Tp 16 • Sk 16 • B/S 17 • B/S/T 18 • J 19 • J 20 • A/J 21 • A/J 21R • J/S 22 • J 23 • B/J 24 • Tp 24 • Sk 25
26-50	Sk 26 • B/S 26 • J/S 26 • J 27 • A/J/Sk 28 • A/J/S 29 • J 30 • S 31 • A/J/S 32 • J 33 • J 34 • J/S/Sk 35 • A 36 • AJ/JA 37 • A/Sk 38 • JAS 39 • Tp 45 • Tp 46 • Tp 47 • Sk 50
51-100	Fpl 51 • Tp 52 • Tp 53 • Fpl 54 • Tp 54 • Tp 55 • Sk 60 • Sk/Fpl 61 • Tp 78 • Tp 79 • Tp 80 • Tp 81 • Tp 82 • Tp 83 • Tp 84 • Tp 85 • Tp 86 • Tp 87 • Tp 88 • Tp 89 • Tp 91
100-	Tp 100 • Tp 101 • Tp 102 • Tp 103

Canadian Vickers aircraft models	
V • T • E	
Canadian Vickers	Vancouver • Vanessa • Varuna • Vedette • Vista • Vigil • Velos
Produced under license	Vickers Viking IV • Supermarine Stranraer • Avro 504N • Avro 552 • Bellanca Pacemaker • Curtiss HS-3L • Fairchild FC-2 • Fokker Super Universal • Northrop Delta • Canadian Vickers PBV-1 Canso
<i>See also:</i> Canadair • Vickers	

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