

BOEING'S FLYING BOAT

A Great Adventure in Aviation and a Unique Chapter in Air Transportation History

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For the first 85 years of its existence the Boeing Company's home base was Seattle. Those were years of great achievement in aviation. One such accomplishment was the Boeing 314 (B314) "flying boat" of the late 1930s and early 1940s, an airplane model that Pan American Airways named the Clipper. It was the first commercial airliner to fly around the world, first to establish regular airmail and passenger service between North America and Europe, and first to carry a United States president by air to an overseas destination.

The B314 was not Pan Am's first Clipper. There were the Sikorsky flying boats, including the Hong Kong Clipper, and the Martin 130s, including the China Clipper. But the B314 was the largest and the last.

In the late 1960s, M. D. Klaas, of Chatsworth, California, wrote a letter to *Boeing Magazine*, describing his interest in the B314s and asking for help in collecting historic information on them. Only 12 airplanes of that model had been built, and Klaas, whose fascination with the flying boats began in his teenage years in the early 1950s, had traced the lives and deaths of seven of them. Having never actually seen a B314, he now asked for our help in tracing the careers of the other five. His goal was to locate any B314s that might still exist and, eventually, to write a book on the history of the model. He hoped for help from the magazine's staff and readers, almost all of whom were in aviation, both civil and military.

Pan American Airways, for those too young to remember, was founded in 1927 by 28-year-old Juan Trippe who operated Fokker trimotors between Key West, Florida, and Havana, Cuba, on a regular schedule. Charles Lindbergh, who in 1927 was the first to fly solo across the Atlantic, joined the company in 1928 as a technical adviser. Pan Am became a giant among airlines, eventually changing its name to Pan American World Airways. Mergers, deregulation, terrorist bombings, market saturation, and management missteps in the 1980s led to the failure of many pioneering airlines, including Pan Am, which in 1991 ceased to exist. In 1993 the airline's name and logo were bought at auction by a small discount airline that subsequently failed. The Pan Am name was then acquired in 1998 by another regional airline and charter service currently operating out of New England.

The original Pan American was a pacesetter in air transportation. By 1935, as Pan Am's president, Trippe had opened airline service over the Pacific. The China Clipper, built in the first half of the 1930s by the Glenn L. Martin Company of Baltimore, could fly from San Francisco to Hawaii and island-hop all the way to the Far East. Trippe, however, was looking for a plane that could fly farther and carry heavier loads. At the time, there was no land plane available with sufficient range.

In the 1930s Pan Am began referring to all its planes as Clippers, after the fast-sailing ships of a bygone era. The first Pan Am Clipper, named the *American* (a name Pan Am repeated in the Boeing series), was an S-40 Sikorsky flown on its inaugural passenger flight (Miami to Panama) by Charles Lindbergh in 1931.

In 1936 Wellwood Beall, who later became Boeing's senior vice president, talked Boeing's management into bidding on a Pan Am flying boat contract. On July 21, 1936, Boeing agreed to sell Pan Am six B314s for \$549,846.55 each. Judging from the exactness of the figure, there appears to have been a lot of pencil-chewing during the bid preparation process.

The state of Washington adopted a sales tax in the early 1930s. In order to keep its price for the B314 to a competitive minimum, Boeing delivered the flying boats to Pan Am in Astoria, Oregon. Pan Am crews then flew the seaplanes to the company's marine air terminal in San Francisco. In later years the state government reached an accommodation with Boeing, allowing the company to deliver airplanes within the state without penalty. Despite all its penny-pinching, Boeing did not break even on the contract, but its association with the big airplane earned the company favorable attention within the industry and with the public.

The wing used for the B314 had been designed for the XB-15, a heavy bomber Boeing never put into production. The XB-15 wing had been wind-tunnel tested, saving Boeing time and money. It gave the B314 a wingspan of 152 feet, the largest transport aircraft wing built by Boeing until the Model 747 jumbo jet some 30 years later.

The flying boat's passenger accommodations were set by Pan American Airways. In one configuration, the Pan Am Boeing Clipper was designed to carry 76 passengers and a crew of 10, cruising at 184 m.p.h. for an operating range of 5,200 miles. It is doubtful that configuration ever flew. With the advent of World War II, planes with more cargo space and less passenger space were needed.

A flying boat is an airborne contradiction. The hull resists the air, pushing it aside as it does water and slowing the airplane down. As one Boeing engineer told me, "Everything that can be weighed has an L over D (lift over drag). You can fly a barn if you have enough power."

To fly this barn Boeing engineers used four Wright Twin Cyclone piston engines, each developing 1,600 horsepower. That would get the plane off the water and into the air, usually within less than a minute of charging down the waterway. In the tropics, on hot, sticky water, it sometimes took the Boeing two minutes to become airborne.

A Boeing Clipper flight from San Francisco to Honolulu took from 13 to 19 hours, depending on winds and weight. A trip to Hong Kong took six days, including 60 hours in the air, and cost a passenger \$760 for a one-way ticket. A flight from Lisbon to New York City took 24 hours (including refueling stops) on the shorter summer route, but only if the seas were calm and any needed repairs could be made locally.

In a mid 1960s interview, Wellwood Beall, chief engineer on the B314, remembered the first Boeing Clipper flight. He had the plane barged down the waterway from old Plant 1 to Seattle's Elliott Bay in 1938. Boeing test pilot Eddie Allen took off, flew a sweeping circular route, and landed.

"How did it go?" Beall asked anxiously.

"The plane won't turn," Allen replied. "There's not enough rudder."

The test pilot had completed his horseshoe-shaped flight by powering up on two engines on one side and powering down on the other two.

"We took the plane back to the plant and added another vertical tail," Beall said. "While the second tail helped, there was still not enough rudder."

He recalled going along on a flight and opening an overhead hatch in the tail section. He stuck his head out of the hatch, expecting a great rush of wind. Instead, the air barely mussed his hair. "So we went back and put a triple tail on that bird and then she finally grabbed air."

As the plane's idiosyncrasies were overcome, it built a reputation for excellence in international airline service and introduced luxurious air travel to all parts of the world. The plane offered passengers unequalled comfort in quarters fashioned after accommodations aboard ocean liners, including sleeping quarters and a separate dining salon, complete with linens, silver, and china.

In 1941 Claire Booth Luce, whose career encompassed playwright, actress, journalist, congresswoman, ambassador to Italy, and wife of Henry Luce, publisher of *Time*, *Life*, and *Fortune* magazines, wrote an article for *Life* on her transpacific flight aboard a B314. "Fifty years from now people will look back upon a clipper flight today as the most romantic voyage of history." On a later flight she was stuck at a refueling depot in the Azores for 10 days, awaiting calmer seas and spare parts.

Of the 12 flying boats Boeing built for Pan American Airways, the first six were delivered between January and June 1939, the second six between April and August 1941. Three of the last six, by special arrangement with Pan Am and the United States government, went to British Overseas Airways Corporation (BOAC)—today's British Airways.

The names and registration numbers of the 12 planes were: *Honolulu Clipper*, NC18601; *California Clipper*, NC18602; *Yankee Clipper*, NC18603; *Atlantic Clipper*, NC18604; *Dixie Clipper*, NC18605; *American Clipper*, NC18606; *Berwick*, NC18607 and G-AGCA; *Bangor*, NC18608 and G-AGCB; *Pacific Clipper*, NC18609; *Bristol*, NC18610 and G-ACBZ; *Anzac Clipper*, NC8611; and *Capetown Clipper*, 18612.

All of the Boeing Clippers saw war duty, but none was lost to enemy fire, although they were fired upon more than once. The *Honolulu*, which had served Pan American ports of call, was in San Francisco undergoing overhaul when the United States entered the war in 1941. Like most other B314s, the *Honolulu* became a navy transport operated by a Pan Am crew.

Klaas's research includes the story of the *Honolulu Clipper's* final flight. On November 3, 1945, on a flight from the territory of Hawaii to San Francisco, the *Honolulu* lost power from two engines and made a forced landing in the Pacific 650 miles east of Honolulu. She was undamaged but helpless, and the captain radioed for assistance. The freighter *John Henry Payne*, tanker *Englewood Hills*, and aircraft carrier *USS Manila Bay* came to the rescue. The plane's passengers and crew were put aboard the rescue vessels and the *Manila Bay* took the *Honolulu* in tow. During the night the line broke in rough seas. The seaplane tender *San Pablo* recovered the flying boat and took the tow. After five days and in choppy water, the *San Pablo* and the *Honolulu* met at the top of a wave and the airplane was severely damaged. The navy declared the Clipper "a hazard to navigation" and sank her with 1,300 rounds of 20-mm ammunition.

According to Klaas's research, the second Clipper, the *California*, was ordered into the army on December 18, 1941. As a C-98 the airplane flew war materials and mail across the Atlantic. In 1943 she returned to the Pacific, flying for the Naval Air Transport Service. For both army and navy missions she carried Pan American Airways crews, as did all the other Clippers during the war. The *California* ended her Pan Am career in 1946 when, as government property (and with other retired Clippers), she was put up for sale in San Diego. She was eventually purchased by World Airways and scrapped for parts.

The *Yankee Clipper* (NC18603) was christened by Eleanor Roosevelt on March 3, 1939. On May 22 the *Yankee* delivered cargo as well as 200,000 letters to Marseilles, France—the first regularly scheduled airmail from North America to Europe via airplane. Earlier airmail to Europe had gone by dirigible.

When America entered World War II, Pan Am sold the *Yankee* and the other B314s to the United States government and BOAC for well over \$1 million dollars each. After the war the federal government offered to sell the planes back to Pan Am for \$50,000 each; Pan Am declined the offer. By that time flying boats were no longer efficient international carriers.

During the war the *Yankee* was assigned to the navy and allowed to continue passenger service between the United States and Portugal (indirectly serving all Europeans able to reach Lisbon). On February 22, 1943, after completing its 241st transatlantic flight, the *Yankee Clipper* circled for a landing on the Tagus River in Lisbon, Portugal. Her port wing tip skimmed the water, dug in, and she slammed into the river, breaking into several pieces, and sank inside of 10 minutes.

Twenty-four persons died; 15 survived. Among the survivors was singer Jane Froman who was heading a seven-member entertainment troupe for Camp Shows, Inc. Although seriously injured in the accident, Froman recovered enough to continue her singing career and later was the subject of a popular biographical movie, *With a Song in My Heart*, starring Susan Hayward as Froman.

Among those who died were Tamara Drasin, the singer and Broadway actress who had introduced Jerome Kern's song "Smoke Gets in Your Eyes." The captain of the *Yankee Clipper* was blamed for the accident and dismissed by Pan American Airways.

The fourth Boeing Clipper, the *Atlantic*, was christened April 25, 1939, in Baltimore. When the war ended, the navy returned the *Atlantic* and other B314s in transatlantic service to civilian duties. She was retired in San Diego in 1946 and later scrapped.

The fifth Clipper, the *Dixie*, was the first airplane to offer scheduled passenger service across the Atlantic. The date was June 28, 1939. Occasionally, the *Dixie* was detached from scheduled passenger flights for special duty. One such assignment was a flight to Casablanca in 1943 carrying President Franklin Roosevelt and members of his staff to a conference with Winston Churchill, Josef Stalin, and other Allied leaders. FDR celebrated his 61st birthday in the dining salon aboard the *Dixie*. After landing at the Bathurst Clipper refueling stop in North Africa, the president boarded an Army Air Corps C-54 (DC-4) land plane to complete his trip to Casablanca. He returned to the United States using the same aircraft combination. In 1946 the *Dixie* also went to the San Diego scrap yard.

The sixth Pan Am Boeing Clipper was the *American*. She, too, was in Atlantic civilian passenger service before the United States entered the war. Within 24 hours after the Japanese attack on Pearl Harbor, Hawaii, the *American* was in the army as a C-98. In the following months, B314s of

both the navy and army, including the *American*, flew blood plasma and medical supplies to battle zones in Europe and the Far East. On return trips the Clippers' holds were filled with vital war materials such as crude rubber and mica. From 1943 to 1945 the *American* flew air supply support for the navy in the Pacific war. After the war she was sold as war surplus, becoming a member of the World Airways fleet in 1948. In 1968 Klaas had not yet found a record of what happened to the *American* after 1949.

He did discover that the NC18607, NC18608, and NC18610 were assigned to the BOAC for wartime service. To emphasize the cooperative efforts of Canada, Great Britain, and the United States, the planes were named, respectively, for Berwick, New Brunswick; Bristol, England; and Bangor, Maine. The BOAC Boeings could not be called Clippers because Pan Am owned rights to that name, so the British carrier came up with Speedbird, which never found popular favor.

In January 1942 the *Berwick* secretly carried British Prime Minister Winston Churchill back to England after his meetings with American and Canadian heads of state. Churchill later wrote of the trip, recounted how the plane was nearly shot down by Royal Air Force Hurricane aircraft as his flying boat neared the British coast. The Hurricanes, according to Churchill "failed in their mission." It is more likely that they heard the *Berwick's* IFF (Identification of Friend or Foe) radio signal, identifying it as a "friend," and called off the attack. The plane delivered the British prime minister to the waters of the city of Plymouth unharmed.

The BOAC's B314s were taken off transatlantic runs in 1946 and placed on a thrice-weekly service between Baltimore and Bermuda. The three BOAC flying boats were retired in 1948 and sold to General Phoenix Corporation, a Baltimore airplane broker. The other three B314s were Pan American's *Pacific Clipper*, *Anzac Clipper*, and *Capetown Clipper*.

The *Pacific* was in Auckland, New Zealand, when news broke of the Japanese attack on Pearl Harbor. Her Pan Am pilot, Robert Ford, was advised by the War Department to return to the United States by a circuitous route to avoid interception. Captain Ford landed the *Pacific* in New York's harbor on January 8, 1942, after flying more than 34,500 miles—almost 10,000 miles farther than it would take to go once around the world. Its route took the *Pacific* to Australia, India, Arabia, Central Africa, and South America before reaching New York City. After the war the *Pacific* became the property of the War Assets Administration. She was damaged in a wind storm while at anchor in San Diego's harbor and scrapped in 1946.

The NC8611, the *Anzac Clipper*, was named for a World War I acronym (also used in World War II) standing for Australian and New Zealand Army Corps. In 1941 and 1942 the *Anzac* worked on Atlantic transport duty. In 1943 the Clipper was sent south by the United States Army Air Transport Command to Natal on the coast of Brazil. From Natal she proceeded across the Atlantic to Africa, landing at Bahrain in the Persian Gulf.

In another wartime test of her long-range capabilities the *Anzac* flew 36,728 miles on a zigzag route around the world, the first commercial aircraft to do so. After the war she, too, was put up for sale.

The 12th and last B314, the *Capetown Clipper*, named for Capetown, South Africa, had been flying from Miami to Leopoldville, Belgian Congo, carrying supplies to the British Army Africa Corps, when Pearl Harbor was bombed. In 1946, after short-term duty as civilian passenger airliners, the *American*, *Pacific*, *Anzac*, and *Capetown* were put up for sale by the War Assets Administration. Universal Airlines, a nonscheduled carrier flying passengers and cargo between New York City, Miami, and San Juan, Puerto Rico, purchased the planes. The *Pacific*, having been

badly damaged at anchor in a wind storm, was stripped for parts. The Universal venture faltered within a year, and the company's Clippers were again for sale. Later the *Atlantic* was scrapped for parts for her sisters.

A second nonscheduled airline—American International Airways of New York—bought the remaining Clippers and had at least one of them, the *Capetown*, completely overhauled and refurbished. In October 1947 the *Capetown*, by then renamed the *Bermuda Sky Queen*, took off from New York bound for Poole, England. At Poole, under charter to Air Liaison Ltd. of London, she took aboard 62 passengers bound for the United States, including 12 children and 9 returning merchant seamen. Bucking strong headwinds during the flight, the former *Capetown* ran so low on fuel that the captain landed her in a trough between gigantic waves in a stormy North Atlantic. Because of the high seas the United States Coast Guard took more than 24 hours to rescue the passengers and crew from the wallowing plane.

It was a heroic and successful effort by the Coast Guard, the airplane's crew, and the merchant seaman passengers—an event well-covered by the press and newsreels. Only the plane was lost. The crew of the Coast Guard Cutter *George M. Bibb* tried to attach a tow line to the flying boat, but she was damaged in the process. As in the case of the *Honolulu*, downed in the Pacific two years earlier, the former *Capetown* was then sunk by gunfire. An inquiry into the accident determined that the flight plan was based on insufficient and inaccurate information and the plane was overloaded by 5,000 pounds. American International Airways and the captain of the *Bermuda Sky Queen* both lost their certification to fly.

A company mentioned earlier—World Airways—took over the remaining B314s: the *American*, the *Anzac*, and the three British cousins—the *Berwick*, the *Bangor*, and the *Bristol*. World Airways flew the planes on charter flights along the eastern seaboard and to Caribbean ports of call. The B314s' paper trail ended there for several years even though Klaas continued his search for the missing planes. There were some reported sightings of a Boeing flying boat, but none could be authenticated.

In 1951 *The Boeing News*, a sister publication to *Boeing Magazine*, reported that a man calling himself Master X had a plan to raise a B314 from its watery grave in Baltimore's harbor. Master X said he had purchased the airplane at a sheriff's auction. Subsequently, the plane had been caught in a squall while at anchor and sank. This was one of the British B314s. After raising and repairing the seaplane, Master X planned to fly it to Moscow for a personal peace talk with Josef Stalin. *The Boeing News* did not carry a follow-up story.

In 1966 a gambling casino at Lake Tahoe, Nevada, was reported to be using a B314 to haul customers from San Diego. This report turned out to be erroneous. Klaas has since found that the last B314 was scrapped in 1951 but not removed from government registration rolls until 1954.

The 1968 story in *Boeing Magazine* did not result in any further reported sightings or in solid information on what happened to the last five flying boats. However, Klaas did account for their undramatic ends in his book, *Last of the Flying Clippers*, published in 1997, some 30 years

after his first letter to *Boeing Magazine*: they were sold for salvage for the price of \$6,949.74 each, or 14 cents a pound, an inglorious end to a glorious chapter in the story of air transportation.

Kenneth L. Calkins was editor of Boeing Magazine, a monthly publication primarily for Boeing customers, from 1965 to 1970. He is author of The Name on the Schoolhouse and numerous newspaper and magazine articles on historic topics and English usage.