

General history of the B-314

PART I

THE LAST OF THE FLYING CLIPPER SHIPS

by

M. D. Klaas

(Story History - - B-314 Flying Boat)

Late in 1936, the Pacific air routes had already been conquered for commercial aviation by Pan American World Airways. The transatlantic routes were now waiting for their inevitable conquest. Competition for commercial air service over the Atlantic was between England and the United States while Pan American, representing the U. S., desired to be first.

Realizing their present type aircraft incapable of transatlantic flights and desiring to provide the best and safest plane service, Pan American consulted Boeing, Douglas, Consolidated, and Sikorsky Aircraft Corporations for a new type seaplane. Since land planes were still considered impractical for over-ocean travel, Pan American planned to extend their service with flying boats.

At this particular time, Douglas Aircraft Corporation was involved with the manufacturing of the Douglas DC-4 land plane for American and United Airlines and thus "bowed out" for the designing and undertaking job of building a new commercial flying boat for Pan American Airways. Sikorsky Aircraft Corporation submitted their design of a flying boat known as the S-44 but this ship was not up to standards since it was found to be too small in size, unable to meet the proposed payload and passenger capacity that Pan American desired for it's transatlantic service. Consolidated's design was also not up to PAA's standards for what the airline demanded.

Boeing Aircraft Company's bid was the closest and later agreed to undertake the designing of the new "dream ship" while Pan American retained approval rights to all design aspects which were soon on the drawing boards.

The primary requirements for the flying boat, to be known as the B-314, were fourfold:

1. To transport up to 10,000 lbs., of payload. To be able to have 2,400 statute miles against a 30 mile-per-hour headwind at a cruising speed of 150 miles-per-hour at an altitude of 10,000 feet.
2. To produce a machine which could be efficiently operated with a minimum of fatigue to the crew and a maximum of maintenance.
3. To provide efficiently unprecedented comfort, spaciousness and luxury for the passengers.
4. To be able to develop an aircraft which would be as inherently safe as it could be possibly made with the existing knowledge of materials, equipment and the science of aviation at that time.

After reviewing the problems faced, the next main concern was what type and how large an aircraft would fulfill the primary requirements. It was soon determined that the aircraft's gross weight would be over 80,000 pounds. At the outset it was decided that 4 engines would be required, but in return would be the largest 4 engines ever used. Fortunately, Wright Aeronautical was just concluding some tests on their then new 14-cylinder double-row engine which would very easily develop a 1,500 horsepower. The Hamilton hydromatic full-feathering propeller was selected, each 3-bladed prop being 14 feet 9 inches in diameter.

The drawings on the board gave the following specifications for the new ship: a wing span of 152 feet, a spread never before built or dreamed of for a commercial plane; a length of 106 feet; a hull depth of just under 19 feet. The total gross weight was 82,000 pounds. The maximum fuel tankage was 5,448 gallons with a maximum oil tankage of 300 gallons. These quantities were more than enough to meet the proposed payload, speed, and range requirements found to be so necessary. The B-314 was considered, at that time (1937), the largest practical airliner ever designed for commercial aviation.

The hull of the new Clipper was constructed so that the center wing spar would be supported on the upper portion of the fuselage.

This gave a clear-cut version of a modern flying boat and was found to reduce wind drag as compared to the usual wing-type-mounting atop the fuselage of earlier aircraft such as the Dornier Do-X, Martin M-130, and the Sikorsky S-40, S-42 passenger carrying seaplanes.

It was the arrangement of flush wing and hull intersection which gave additional volume for passengers and crew accommodations. The hull bottom had a pointed rear step and an athwartship main step. The purpose of the pointed rear step was to reduce aerodynamic drag since the usual athwartship rear step, found on most flying boats, created considerable drag. This gave the B-314 excellent water running characteristics and allowed, for practical purposes, the installation of a water rudder that was found so necessary on such a large flying boat.

At the completion of the design aspects, a gigantic airship was revealed on the drawing boards; the new Clipper was so enormous that a mechanical engineer was able to adjust and at times repair any of the 4 engines by way of catwalks leading into the wings via the flight deck. Each nacelle could hold four men comfortably for they measured 69 inches in diameter. The "in-flight inspection" was a desirable qualification of the new plane and upon many occasions, in later years, saved the aircraft from disastrous consequences.

As for the Clipper's luxury, it was unbelievably plush and modern in decor and has not since been reproduced in any way, shape, or form for commercial transports. Truly, the B-314 was to go down in history as one of the most luxurious aircraft of our time. Not even the jet liners of today could meet the rigorous luxury standards set forth by the B-314.

The flying boat could carry up to eighty-nine passengers and crew, but for the chic, dernier cri in comfort, the passengers and crew accommodations were reduced to fifty-six plus a crew of twelve.

Even the crews' quarters located on the upper deck, designed in a manner so a flight crew of six would be on duty at all times, resembled that of a living room of an up-to-date home.

On the flight deck there was found plenty of extra space for the men (crew) which consisted of a master (watch officer), a first pilot, a second pilot, a navigator, a radio operator, a flight engineer, and two stewards who usually remained on the passenger deck below. At times an assistant navigator, radio operator, and flight engineer were added to the crews' list. As for the control deck itself, it was the largest ever conceived and would put some modern ocean going vessels to shame. The prime purpose for being so large was to reduce crew fatigue on long ocean hops. Over 6 feet high and 21 feet 4 inches long, by 9 feet 6 inches wide, the control room was plushly decorated, all chairs being deeply upholstered while a wall-to-wall carpet adorned the floor.

Directly behind the flight deck was the meteorologist's compartment, sleeping accommodations for crew members, and baggage holds which extended out into the wings. Just forward of the flight deck and bridge, partitioned by the main bulkhead, was the anchor room (seaman's compt.) which housed mooring gear, extra cargo, mail, and sleeping accommodations for the crew. A small door, located between the pilot and co-pilot (bridge) opened to a ladder which led down into the anchor room. Forward, in the anchor room towards the extreme bow, another ladder led up to the mooring hatchway. A second hatchway, known as the baggage and cargo hatch, opened out on the left side of the fuselage from within the anchor room itself.

Below the flight deck was located the passenger area, joined by a spiral staircase. The lower deck consisted of 5 standard passenger compartments each holding ten persons; 1 special compartment seating four; 1 deluxe bridal suite, dining lounge, galley, and 2 rest rooms.

Both rest rooms were unique as they were the first to have disposal out-of-the-plane while in flight over the ocean. The men's room was even equipped with a standing urinal, a first innovation feature for a plane. Primping stools and large mirrors were an added luxury for the womens' powder room. The de luxe bridal suite, located in the extreme aft and usually occupied by persons of social stature, was furnished with plush items such as a love seat, coffee table, dressing and writing table, plus other conveniences of home.

The galley itself was an important part of the ship and was not only equipped with an icebox, but with a steam table, a gallon-capacity drip coffee maker, and a bar which was rigged up across the galley doorway once the ship was airborne. Since the galley measured only 2 feet by 4 feet, the equipment had to be compact and complete. The total equipment, such as dinner ware, weighed only 234 pounds, while the estimated weight of food stuffs and other galley supplies was 256 pounds. Combined, the total weight was only 490 pounds, a relatively light load considering the number of passengers and crew on a single transoceanic flight. Passengers were served their meals at linen draped tables, displayed with flowers, silver, and the best of china, in the star-studded upholstered fourteen-person dining room. On some flights there was a "captain's table" where nobility were seated!

For overnight operations, passengers were reduced to thirty-four since only 6 berths (3 uppers and 3 lowers) were allowed in each of the 5 standard passenger compartments, plus 2 berths in both the de luxe bridal suite and special compartments. When the berths were assembled they resembled those of a pullman car, but were considered more commodious.

The new B-314 had the most advanced safety precautions of any aircraft for its time. It was equipped with life jackets, life boats, and 30 emergency exits in all.

The final result was not only the most advanced aircraft of 1938, but the B-314 was a sleek and beautiful metal bird which was soon to make air travel throughout the world famous.

In May, 1938, the first Boeing Clipper was launched at Seattle's Duwamish Waterway. The following months the plane was exhaustively tested out on Lake Washington with scientific precision so complete that one would have to be an aeronautical engineer expert to understand most of it.

During the testing some difficulties were encountered and it is interesting to note how some of these intricate problems of aerodynamics were overcome. Following extensive take-offs and landings on Lake Washington, the original single tailfin was found to be incorrect for stability while in flight. This was one of the many changes which occurred during the tests. It was found that a single fin and 2 stabilizers would be necessary and that the hydrostabilizers (sea-wings) had to be lowered from a dead rise to a lower angle which gave the Clipper a righting moment at 3° less the angle of the keel. In short, the sea-wings mounted to the fuselage on either side directly below the main wings were at such an angle it was difficult for operations while the plane was on the water. By slightly lowering the sea-wings, a greater stability for taxiing purposes was discovered.

The sea-wings were found to be more desirable than that of regular floats usually mounted on the under section of the wing tips. Sea-wings had 3 advantages over the standard floats found on most seaplanes. They acted as fuel storages; they were used as loading ramps for passengers and crew; they caused less resistance or air drag while the plane was in flight.

All tests were directed by R. J. Minshall, Vice-President of Engineering for Boeing under the supervision of Wellwood E. Beall, Engineer in charge of all commercial projects, and designer of the B-314. The test pilot was Boeing's "No. 1" man, Edmund T. Allan, who praised all flight characteristics of the new Clipper. Altogether about 450 miles of taxiing and 5,000 miles of in-flight operations were conducted. All the tests proved the ship conclusively acceptable for commercial service. Boeing and Pan American were extremely pleased with the control mechanism of the B-314 since the $42\frac{1}{2}$ ton flying boat, while in flight and on a steady course, could easily be controlled by two fingers of the pilot's hand.

Following Boeing's tests, the Civil Aeronautics conducted extensive tests on their own after which the B-314 was found to be fully acceptable and was granted it's approved-type certificate by the Government on January 26, 1939. The first Clipper (NC 18601) was shortly thereafter christened the "Honolulu Clipper." There were rumors where it would be dubbed the "South Sea Clipper," however this was later changed. The NC 18601 was kept in experimental use (not commercially licensed with markings of "NX" instead of "NC" on tail and wing surfaces) until after the second and third B-314s were built. The second ship was later christened the "California Clipper" (NC 18602) and was put on the Pacific Division of Pan American Airways since survey flights on the Atlantic were still being conducted with Sikorsky S-42 type flying boats.

Not until the middle of 1939, were inaugural flights over the Atlantic about to make come true the realization of mans' dream of conquering this vast stretch of water with ships of the air. All prior survey flights had been concluded. By early January, 1939, PAA had already received it's third B-314. On March 3rd, it was christened by the first lady, Eleanor Roosevelt.

A bottle of water, collected from the 7 seas, splashed against the bow of the "Yankee Clipper" (NC 18603), marking the christening ceremonies which took place at the Tidal Basin, Washington, D. C. Flashbulb cameras snapped and the general public mobbed the shore-line; service across the Atlantic had now become a reality.

On May 20, 1939, Captain A. E. Le Porte, of Pan American, lifted the "Yankee Clipper" from the waters of Port Washington, Long Island, inaugurating the first regular airmail service across the North Atlantic. The Clipper arrived at Lisbon, Portugal the following afternoon, 26 hours and 54 minutes after departure from Long Island. The mail load consisted of 200 thousand letters and some cargo. The following day the "Yankee Clipper" continued on to Marseilles, France and thus completed the first scheduled airmail flight to Europe.

On this particular flight, mail for European countries was picked up at Marseilles and transported by foreign airlines to other points throughout Europe; return mail was flown to Marseilles for the return trip to America via the "Yankee Clipper." On May 27, 1939, the "Yankee Clipper" arrived back at Port Washington, thus completing the first commercial airmail flight (round-trip) over the Atlantic.

The race for establishing the first regular service was over and the United States had placed first through the efforts of Pan American Airways. The amount of mail carried on that flight, eastbound, was 1,804 pounds compared to later flights which carried up to 13,000 pounds on a single trip.

On June 17, 1939, the fourth Clipper to be built, dubbed the "Atlantic Clipper" (NC 18604), made the first passenger crossing of the Atlantic carrying sixteen passengers which consisted of newspaper and radio reporters plus two officials of Pan Am.

Regular passenger service did not really start, however, until 11 days later.

Exactly 7 days after the "Atlantic Clipper's" flight, on June 24, 1939, Captain Harold E. Gray piloted the "Yankee Clipper" on the first commercial mail flight to South Hampton, England. The direct route was between Shediac, New Brunswick, and Hythe, Southampton, crossing the Atlantic between Botwood and Foynes, where Captain Gray was able to refuel. The first commercial passenger service to Europe was completed by the "Dixie Clipper" (NC 18605), the fifth B-314 to be built. Compared to Captain Culbertson's flight aboard the "Atlantic Clipper" with sixteen passengers, Captain R. O. D. Sullivan carried twenty-two paying passengers across the Atlantic on June 28, 1939. The "number one" passenger was Mr. W. J. Eck, of the Southern Railway System who had made reservations 9 years prior to the flight. By the end of 1939, 6 B-314s were built, the sixth being the "American Clipper" (NC 18606).

Famous overnight because of the historical flights made, it now became a fad to go by Clipper to Europe instead of the usual crossing by ocean liner. Top personalities preferred the Clipper trip. To mention but a few, there were Queen Wilhelmina, Princess Juliana and Archduke Otto, Lord Halifax, Lord and Lady Mountbatton, Myron C. Taylor, Noel Coward, Ambassador Winant, Sir Winston Churchill, Madam Chiang Kai-shek, Clare Booth Luce, Alfred and Lady Diana Duff-Cooper, John Gunther, Babe Daniels, and others not to mention Ernie Pyle, the famed World War II Correspondent. Flash bulb departures and arrivals were the rage. It was not only a fast and convenient way to travel abroad, but considered glamorous as well.

Exaggerations of the Clippers soon became evident due to their sudden popularity. People not only pictured them as gigantic flying hotels, but imagined them complete with individual private staterooms and having promenade decks.

In order to show the humor behind these exaggerations, on one flight a woman passenger was asked by a steward if he might take her coat. The woman replied, "No thank you. I'll be needing it later when I go out on the promenade deck!" To say the least, the B-314 Clippers were an unhesitating, world renowned adulated success.

Following the first transatlantic crossings, which made headlines throughout the world, the flying boats began 3 round-trip flights per week to Europe. The "California Clipper" and "Honolulu Clipper" were already famous in the news flying the Pacific routes. On July 12, 1940, Pan American established regular fortnightly mail service from Los Angeles, California, to Auckland, New Zealand with B-314 service. Passenger service was inaugurated a month later. All arrivals and departures of B-314 flights were posted in the newspapers along with ship movements until the advent of World War II.

The latter part of 1941, saw the completion of the remaining 6 Clippers to be built by Boeing. There were now a total of 12 "queen of the skies" winging over the vast areas of the world. Before the completion, however, of the 12 Clippers, early in 1941, the "California Clipper" opened the first scheduled airline trip from San Francisco, to Singapore, via the stepping-stone islands in the Pacific. The inaugural flight took place May 10, 1941. Standard Clipper fare from San Francisco, to Singapore, was posted as \$825.00 or \$1,485 round-trip with a much higher price set for occupancy of the de luxe bridal suite. On September 28, 1941, Pan American's "Dixie Clipper" inaugurated the first air express service between the United States and Europe, carrying among it's first shipments, an afghan for Queen Elizabeth.

The Clippers flying the Atlantic run had only a brief summer of peace time operation in 1939. Soon after the inaugural flights took place, Europe became engulfed in war.

His Clipper was heading for Japanese aircraft, which were reported in the near vicinity, when he was contacted from New York, under the most difficult conditions, to change course. Although not 1 B-314 Clipper was ever destroyed or wounded in combat, the following account gives details of a tragic accident which occurred in early 1943.

On the morning of February 21, 1943, the most famous of all Boeings, the "Yankee Clipper," lifted her bow from Bowery Bay, La Guardia Field, New York, home base for the 9 Pan American Boeings. It's destination was Foynes, Eire, via Bermuda; Horta, Azores; Lisbon, Portugal, the city of international intrigue and gateway to warring Europe. Heading the Clipper out over the Atlantic was Pan American's top pilot, Captain R. O. D. Sullivan, who but a month earlier put down a mark "100" for the number of times he crossed the Atlantic and which no airman at that time had yet equalled.

Onboard were thirty-nine passengers and crew which included seven U. S. O. entertainers, all top Broadway stars, and war correspondent, Ben Robertson Jr., of the New York Herald Tribune. The following day, February 22nd, the "Yankee Clipper" arrived at the mouth of the Tagus River, Lisbon, it's third stop.

The ship proceeded approximately $11\frac{1}{2}$ miles up river and arrived at the landing area at 6:35 P. M., Lisbon time. A thunder storm had just passed to the south of Lisbon, and a light rain was falling. The landing itself was considered normal in appearance by all onboard including personnel in the Pan Am launch, moored on the Tagus, waiting for the Clipper to alight. But as the colossal ship banked to the left for it's final approach, the left wing started to skim the water. At 6:47 P. M., without warning, the left wing dug into the river and was shorn off just outboard of the outboard (No. 1) engine; the plane's fuselage started to break up.

In a sudden crash, the empennage was severed and silhouetting itself against the sky, like the "R. M. S. Titanic's" final moments on that fatal night in 1912, slowly sank. Water tight bulkheads below the flooring in the hull were torn away as the main section of the Clipper continued to careen along the surface of the Tagus. Water cascaded through the various compartments, uprooting the divan-type seats occupied by the passengers, heaving them into the river.

Following the "Yankee Clipper's" reverberating halt, the once proud airship's shattered hull remained afloat for approximately 10 minutes and then disappeared beneath the black, inky water. A total of twenty-four persons were killed including Ben Robertson Jr., and lovely Tamara Drasin, who but a short time earlier introduced the immortal song, "Smoke Gets In Your Eyes." Captain R. O. D. Sullivan, one of the fifteen survivors, reported later in a Lisbon hospital that he was unable to explain the sudden crash. "Nothing is broken, but my heart," he exclaimed.

The most seriously injured person aboard the Clipper, singing star Jane Froman, later testified: "The crash itself I remember as a sudden shocking confusion of noise and violence. I was conscious of being flung across the compartment, of the sound of ripping crumpling metal and breaking glass---and then I was in the icy water of the Tagus River, fighting to keep myself alive." Other survivors reported similar reactions to the crash.

The Civil Aeronautics Board investigation of the accident could find no malfunction with the flying boat or it's control mechanism following salvage operations which were started the following day, February 23rd. At first it was thought the 42½ ton Clipper struck a low air current as it started to settle on the water, causing the aircraft to veer sharply from it's main course of landing and plunge out of control into the Tagus. There was also high speculation by government officials of enemy sabotage!

However, it later appeared that the probable cause of the accident was an inadvertent contact of the left wing with the water while making a left turn preparatory to landing. The Clipper was far too low to the water while making such a descending turn. In the darkness of the night, Captain R. O. D. Sullivan had simply misjudged his altitude to the water.

Up until the time of the headline making disaster, which was referred to from then on as, "that World War II plane crash," the "Yankee Clipper" had made 240 crossings and had covered over a million miles. In December of 1940, the Clipper set out for Europe with 13,402 pounds of mail, a load never equalled by a transport up to that time.

The Boeing 314 Clippers had no equal in the world for speed, range, and dependability until the advent of the 4-engine Douglas DC-4 Skymaster, introduced to the Armed Forces in November, 1942. Although the B-314s were a slower type aircraft, their size remained advantageous over land planes and thus PAA continued to operate the Clippers for the U. S. Government following the close of World War II.

In November, 1945, another accident befell the Clippers. On the night of the 4th, the famed first Clipper to be built by Boeing back in 1937-38, was forced down at sea with thirteen passengers and ten crewmen aboard. The "Honolulu Clipper" was engaged on a night flight from Honolulu to San Francisco, when the No. 3 engine began backfiring and running very rough; that sparks and flames were seen shooting forward from the vicinity of the No. 8 cylinder. It was soon noticed that smoke was present around the engineer's station on the flight deck and within the catwalk itself in the right wing. In turn, due to fire hazard precautions, the No. 3 engine was feathered and shortly thereafter No. 4 engine began running rough, consuming oil at a rate of 6 gallons an hour. Thus, No. 4 engine was also feathered and the maximum continuous power was applied to engines No. 1 and No. 2.

The huge flying boat, operated by Pan American for the Naval Air Transport Service (NATS), contacted "Station Ship No. 4" in the Pacific that they were headed for the station ship's position and that emergency landing operations were now in progress. Immediately, Captain S. E. Robbins had all gasoline and cargo jettisoned and dumped.

A short time later, while enroute to "Station Ship No. 4," the No. 4 engine was restarted but the B-314 was still unable to maintain level flight. Following the smooth landing, the No. 3 engine was thoroughly inspected. An oil leak was found around the 3 lower cylinders plus in the inboard exhaust stack; that a further inspection of No. 4 engine disclosed No. 7 cylinder had blown a head. Since the Clipper could not be repaired at sea, passengers and crew were removed and the "Honolulu Clipper" was taken under tow by the Navy's baby flattop, "Manila Bay" for a return trip to Honolulu. Under tow for 7 hours, the line suddenly parted, never to be secured again.

The "Manila Bay" stood by until the seaplane tender, "San Pablo" arrived on the scene for salvage attempts. But the sea became rough and during the securing operation, the B-314 was slammed against the tender's side shearing off the starboard wing and crushing the bow. Considered now but a floating derelict, permission was requested and granted from Naval authorities, as the Clipper was still under war-time jurisdiction to the Navy, to sink the plane by gunfire. It took 1,300 rounds of 20 mm. shells to sink the still hardy B-314! She soon disappeared beneath the blue waters of the Pacific, an ocean so many times crossed and recrossed by this "queen of the skies." This Clipper alone, when she sank, had 18,000 hours of flying time credited to her record, enough miles to girdle the globe 80 times. The incident, which lasted 5 days, was the first forced landing for a Boeing 314 in all their previous years of flying!

Shortly after the "Honolulu Clipper's" ditching, the remaining 7 B-314s operated by PAA, under the jurisdiction of the U. S. Government, were returned to civilian duty. Originally there were 5 Clippers assigned to the Navy since December 17, 1941. However, when the U. S. Navy finally returned their B-314s, they were minus 2, the "Yankee Clipper," and the "Honolulu Clipper." The 4 Clippers assigned to the Army (designated C-98s) were also returned to Pan American for civilian duty.

Since the 7 Clippers returned to Pan American were badly war-weary and land planes (DC-4s & Lockheed L-49s) were being introduced commercially for overseas' transport, the airline had no desire to repurchase the B-314s from the United States Government (War Department). On April 8, 1946, Pan American retired the last of the B-314 Clippers. When they were finally put up for sale by the War Assets Administration in 1946, the Clippers had flown 8,300,000 miles on 3,650 ocean flights averaging 2,270 miles per flight. The planes averaged 18,000 hours of flying time. British Overseas Airways continued to fly their 3 B-314s until January, 1948. When they were finally withdrawn from the Corporation's Baltimore-Bermuda service on the expiration of their Certificates of Airworthiness, a total of $6\frac{1}{2}$ years of operation was credited without mishap of any kind. The 3 Clippers had been taken off the transatlantic routes back in 1946, by BOAC and then placed on the short hop between Baltimore, Maryland and Bermuda where a thrice weekly service was maintained until January, 1948.

During those $6\frac{1}{2}$ years of operation with BOAC, the "Bangor," "Berwick," and "Bristol," between them, flew a total of 4,258,876 miles, including 596 Atlantic crossings with a passenger total of 40,042. It is interesting to note that the Boeings were the only British aircraft during the war years to fly under non-austerity conditions and that a first class restaurant service was maintained throughout.

The total amount of cargo and diplomatic and GPO mail carried was 432 tons.

When the 3 British owned B-314s were finally put up for sale, a non-scheduled airline purchased them. They were sold to the General Phoenix Corporation of Baltimore, Maryland, a holding company (broker) that bought, leased and resold aircraft. In turn, the 3 Clippers were sold to World Airways; however there is no available record of the Clippers performances with this particular firm. A letter received by World Airways, August 20, 1963, states: "Unfortunately the operation of these flying boats was curtailed in 1949, prior to the time when present management took over ownership and control of World Airways. As a result we have no information in our files at this time which could be of any help in connection with these famous Clipper Ships." It is known, however, that World Airways, Inc. had purchased 3 Pan American 314s through the War Assets Department after they were retired from PAA in 1946. The three Clippers that were purchased from the War Assets Department were the "California Clipper" (NC 19602), "Dixie Clipper" (NC 18605), and the "American Clipper" (NC 18606).

Including the PAA 314s and the 3 BOAC Boeings, World Airways, Inc. had acquired a total of 6 B-314s that flew the air routes for World Airways until 1949. What became of them after 1949, is obscure; they were undoubtedly sold for scrap since according to the Federal Aviation Agency files in Oklahoma City, Oklahoma, World Airways, Inc. was the last registered owner of these 6 above mentioned aircraft. The 6 314s registrations were cancelled May 5, 1954, for Civil Aeronautics Regulations non-compliance.

The War Assets Department disposed of the "Atlantic Clipper" (NC 18604) in 1946 for salvage due to the fact it was not repurchased. Two other "nonsked" airlines purchased the remaining 3 B-314 Clippers.

There is again, no record available of the Clippers performances with these firms. All that is known is that Universal Airlines, Inc. acquired the "Pacific Clipper" (NC 18609) and the famed "Anzac Clipper" (NC 18611). The "Pacific Clipper" was later damaged by a wind storm and salvaged for parts (parts for B-314s at that late date were hard to acquire) to keep their other B-314 (NC 18611) in the air.

The last registered owner of NC 18611 was Universal Airlines, Inc., and the 314's registration was also cancelled May 5, 1954, for Civil Aeronautics Regulations non-compliance. Like all the other remaining 314s, it too was undoubtedly later sold for scrap following the stripping of it's essential parts.

American International Airways, Inc., the second "nonsked" airline not mentioned, purchased the last remaining B-314, the "Capetown Clipper" (NC 18612). This ship flew for American International for about 1 year when once again a B-314 flying boat made headlines throughout the world. It was one of the last published accounts concerning a B-314. On October 14, 1947, the American International Airways, Inc. B-314 was forced down in the North Atlantic after bucking strong head winds and causing the flying boat to run short of fuel. The nonscheduled flight from Poole, England to Baltimore, Maryland, via Foynes, Eire and Gander, Newfoundland, bucked heavy seas until all passengers and crew were rescued. The Clipper, renamed the "Bermuda Sky Queen," carried sixty-two passengers plus a crew of seven, one of the largest human cargoes ever transported on a B-314.

During the ordeal, the "Bermuda Sky Queen" had drifted between 60 - 100 miles from the point of it's forced landing. The Clipper was smashed against the side of the rescue cutter "Bibb" by a strong crest while rescue operations were being carried out.

Following one of the most dramatic sea rescues ever recorded in the Coast Guard annals, the B-314 was found to be unsafe, a floating derelict to surface navigation since it had a stove-in bow plus the fact that water was seeping in through the tail area and one of the sea-wings was reported weakening. By an order from her Captain, Charles Martin, the "Bermuda Sky Queen" was riddled with incendiary bullets since she could not be flown nor towed and set ablaze. In less than half an hour, the Clipper slid beneath the Atlantic in a shroud of fire and smoke.

Although similar to the "Honolulu Clipper" incident in November, 1945, in that it was a forced landing in open seas and both aircraft were crushed against the sides of their rescue ships, the "Bermuda Sky Queen" proved it's strength and stability as an aircraft by remaining afloat in a tossed, stormy ocean for over 24 hours.

The probable cause of the accident according to the CAB, was due to improper flight planning under conditions of an excess gross weight, resulting in a landing at sea. American International Airways, Inc. was therefore suspended on October 17, 1947, by the Civil Aeronautics Board with orders to file an answer and to prepare a defense. The president of the airline stated that the aircraft was well below the maximum pay load, but according to the Captain and Flight Engineer, the B-314 had an excess of 5,000 pounds over the certificated 84,000 pounds authorized for a B-314 flying boat.

It had been stated earlier that the "Bermuda Sky Queen" ran short of fuel due to fighting strong head winds resulting in the inevitable ditching at sea. However, it was later determined that the aircraft was never fully supplied with fuel prior to leaving Foynes, Eire, plus the fact that ^{the} crew failed to use cruise control and did not utilize available weather data, with reference to speed and navigational fixes.

The end resulted in the total loss of another B-314, it's registration cancelled for good on October 27, 1947!

Out of the 12 B-314s built, only 7 remained, World Airways, Inc. having their 6 and Universal Airlines, Inc. having their 1. Since these 7 B-314s registrations were cancelled on May 5, 1954, it is unlikely any remain flying today. As was previously mentioned, they were undoubtedly sold for scrap following the stripping of their essential parts. A sad end for such a mighty contributor to modern air travel and transport. The era marking THE LAST OF THE FLYING CLIPPER SHIPS had come to a close.

MK/Feb., 1964

OUTSTANDING FEATURES OF THE BOEING CLIPPERS:

1. NACELLE ACCESSIBILITY. The accessibility of the rear portion of the power plant and the nacelle in flight has proved to be invaluable in the cases of power plant malfunctioning. Many times flight engineers have feathered and stopped one engine in flight because of power plant troubles, rectified the difficulty while flying on three engines, and finally continued to destination, all four engines functioning properly.
2. THE ENGINES. In the B-314s, Pan American Airways made the first installation of production Wright Cyclone 14 engines (1500 h.p.). Up to 1949, they were the largest engines ever installed in any air transport airplane in operation. Use of this equipment in the Boeings provided service development of very important military engines for Mitchell Bomber, Avenger, Havoc, and Helldiver.
3. LOW FUEL CONSUMPTION. Pan American Airways continuously sponsored reduction of specific fuel consumption. Primarily due to the Company's efforts the average fuel consumption was reduced from .55 pounds per h.p. hour to .42 between 1930-40. The Cyclone 14 engines of the B-314s operated at the lowest specific fuel consumption of any aircraft engines in regular operation up to 1949.
4. HYDROMATIC FULL FEATHERING PROPELLER. Pan American Airways fostered the design of this improvement, which combines the advantages of variable pitch and propeller brake with less drag. Hamilton standard hydromatic propellers were first specified for the B-314s.
5. IMPROVED PROPELLER AIRFOIL SECTIONS. (Higher propulsive efficiencies). Pan American Airways was the first to use the NACA propeller airfoil sections on transport aircraft, this being installed on the B-314s in 1940.
6. FUEL FLOW METERS. (Permit improved fuel economy: increased efficiency and safety). PAA sponsored the development of the first fuel flow meter and totalizer used for other than test purposes. The first installation of the improved design was made on the B-314 in 1939. This is now a standard instrument adopted by the airlines for all long range air transport aircraft.
7. HIGH OCTANE FUELS. 100-octane fuel was first used in regular service on the B-314s in 1939. The first airline use of 100 plus octane fuel in regular service was on the B-314s in 1940. On delivery, the Boeings were by no means the efficient planes which they ultimately became. A new airplane invariably has unforeseen "bugs" which the designers do not anticipate and which test flights do not expose. The Boeings (314s) were no exception. Numerous modifications were made in the aircraft to correct the faults revealed in them under service conditions. Likewise, changes were made to incorporate engineering advance and equipment improvements developed and approved by PAA and Boeing technicians.

Sir Winston Churchill's Personal
Account on a Flight Aboard a
Boeing B-314, January, 1942.

TAKEN FROM: Life Magazine

"On the 14th of January (1942) I took leave of the President. He seemed concerned about the dangers of the voyage. We flew in beautiful weather from Norfolk to Bermuda, where the DUKE OF YORK, with escorting destroyers, awaited us inside the coral reefs. I traveled in an enormous Boeing flying-boat, which made a most favourable impression upon me. During the three hours' trip I made friends with the chief pilot, Captain Kelly Rogers, who seemed a man of high quality and experience. Presently I asked him, "What about flying from Bermuda to England? Can she carry enough petrol?" Under his stolid exterior he became visibly excited. "Of course we can do it. The present weather forecast would give a forty-miles an hour wind behind us. We could do it in twenty hours." When we landed I opened the matter to Portal and Pound. Formidable events were happening in Malaya; we ought all to be back at the earliest moment. The Chief of the Air Staff said at once that he thought the risk wholly unjustifiable. The First Sea Lord supported his colleague. It occurred to me that both these officers thought my plan was to fly myself and leave them to come back in the DUKE OF YORK, so I said, "of course there would be room for all of us." They both visibly changed countenance at this. After a considerable pause Portal said that the matter might be looked into, and that he would discuss it at length with the captain of the flying-boat and go into weather prospects with the meteorological authorities. I left it at that.

Two hours later they both returned, and Portal said that he thought it might be done. So we settled to go unless the weather deteriorated. The starting time was 2 p. m. the next day.

Commander Thompson, R. N., my Flag Commander, Tommy as I called him, was in terror that there would be no room for him. He explained how deeply wounded he was at the idea of going home by sea. I reminded him of his devotion to the naval service, and of the pleasures to a hardy sailor of a life on the ocean wave. He was quite inconsolable. However, he had a plan. He had persuaded one of the stewards of the flying-boat to let him take his place; he would do the washing up himself. Tommy thought that if at the last moment the captain were confronted with the arrangement he would make no objection. I shrugged my shoulders, and on this we went to bed in the small hours of the morning.

(continued)

I woke up unconsciously early with the conviction that I should certainly not go to sleep again. I must confess that I felt rather frightened. I thought perhaps I had done a rash thing, that there were too many eggs in one basket. But the die was cast. At noon we reached the flying-boat by launch. Tommy stood disconsolate. The captain had brushed his project aside in a way that captains have. So we taxied out to the far end of the harbour, leaving Tommy lamenting.

It was quite a job to get off the water. There was really no danger; we were in sure hands. The flying-boat lifted ponderously a quarter of a mile from the reef, and we had several hundred feet of height to spare. There is no doubt about the comfort of these great flying-boats. I had a good broad bed in the bridal suite at the stern with large windows on either side. It was quite a long walk, thirty or forty feet, downhill through the various compartments to the saloon and dining-room, where nothing was lacking in food or drink. The motion was smooth, the vibration not unpleasant, and we passed an agreeable afternoon and had a merry dinner. I went to bed and slept soundly for several hours.

I woke just before the dawn, and went forward to the controls. The daylight grew. Beneath us was an almost unbroken floor of clouds. After sitting for an hour or so in the pilot's seat I sensed a feeling of anxiety around me. We were supposed to be approaching England from the south-west and we ought already to have passed the Scilly Islands, but they had not been seen through any of the gaps in the cloud floor. As we had flown for more than ten hours through mist and had had only one sight of a star in that time, we might well be slightly off our course after such a lengthy flight. Wireless communication was of course limited by the normal wartime rules. Presently Portal, who had been studying the position, had a word with the captain, and then said to me, "We are going to turn north at once." This was done, and after another half-hour in and out of the clouds we sighted England, and soon arrived over Plymouth, where, avoiding the balloons, which were all shining, we landed comfortable.

Later on I learned that if we had held on our course for another five or six minutes before turning northwards we should have been over the German batteries in Brest. However, the decisive correction which had been made brought us in, not from the south-west, but from just east of south -- that is to say, from the enemy's direction rather than from that from which we were expected. This had the result, as I was told some weeks later, that we were reported as a hostile bomber coming in from Brest, and six Hurricanes from Fighter Command were ordered out to shoot us down. However, they failed in their mission."

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