# Pan Am's Captains Courageous

## How the great flying boats conquered the Pacific.

BY JEFF SKILES

**AMONG THE KEEPSAKES** from a long and full life, my father, James Skiles, possesses a faded certificate recognizing his service to the United States in World War II. Dated June 12, 1942, it's signed by the Chief of the Bureau of Aeronautics and conveys the honorary rank of Captain Aircraftsman of the U.S. Navy.

We're a family of pilots. My father and my mother, Deloris, both earned wings, Dad at 29 and Mom a decade later. Inspired by flying with them in our Piper Tri-Pacer as a child, I got my license at age 17. Eventually, I became a first officer for US Airways, and in 2009, I was in the right seat next to Captain Chesley Sullenberger as we ditched Flight 1549 on the Hudson River.

Years ago, when I came across my dad's memento, I wondered what heroic aviation service he had performed but never told me about. Turns out there was a good reason he'd never mentioned it: When the war broke out, he was just 13 years old.

Like thousands of other young lads, Dad gave his support to the war effort by crafting a wooden scale model for aircraft recognition training. The Navy provided teenagers throughout the country with plans for more than 50 types of aircraft. But while his friends picked sleek new fighters or the latest four-engine bombers to model, Dad chose romance over action, and sent the Navy a tiny version of one of the last great flying boats, the Boeing 314.

My father grew up in St. Louis, Missouri, the gateway to the west on the banks of the Mississippi River. In the early years of aviation, St. Louis was a center of aerial activity in the Midwest. In this self-described City of Flight, Theodore Roosevelt became the first U.S. president to fly in an airplane, taking off from what is now Lambert Field. Barnstorming pilot Archie League launched the air traffic control system here—from a deck chair. Waving a selection of flags, he signaled pilots to proceed or hold. And, of course, Charles Lindbergh briefly called the city home and got local financiers to back his famous transatlantic solo flight; he named his Ryan monoplane after the city's spirit.

Though the nearest ocean was a thousand miles away, Dad, influenced by his aviation-mad city, became captivated by tales of the Pan American Airways flying boats exploring the globe. "As a young boy, I can remember the excitement in the country after the first Pan Am flight across the Pacific," he says.

Carefully following the Boeing 314 plans the Navy sent to him, Dad carved the wood they provided into the shape of a flying boat he had seen only in magazines. After a local panel inspected and deemed the model suitable for military use, he painted it black and packed it up for shipment. Dad never saw it again, but to him—and later, when he told the story, to me—that model represented the tremendous feats of exploration being conducted by a passenger airline.

As its name implied, Pan American Airways was founded with aspirations of servicing far-flung locations. Few airports had been built, however, and building them everywhere Pan Am wanted to fly would have been too expensive. Since the world is mostly covered with water, the logical way to travel it was clear: The airline's future would be built around the flying boat.

Pan Am took to the air in a humble enough fashion: In 1927, the airline chartered a single-engine Fairchild FC-2 floatplane to inaugurate mail service between Key West, Florida, and Havana, Cuba. The company's routes quickly spread across the Caribbean and Central and South America like a spider web, as the company's ambitious leader, Juan Trippe, lobbied hard for airmail contracts and gobbled up smaller airlines that had the access he wanted. To expand beyond the Americas, however, Pan Am would have to adopt different tactics.

Flying the vast distance across oceans required the airline to commission advanced airplanes and develop

**A new Boeing 314 taxies across Elliott Bay in Washington's Puget Sound. In 1939 it went into service with Pan American Airways as the *Honolulu Clipper*, joining the fleet of flying boats carrying passengers across the Pacific Ocean.**

make it from the west coast to Honolulu.

These first four-engine flying boats, each with its own Clipper name, just like the sailing ships, began to open the world to the American public, carrying 30 to 40 passengers to the Carribean and South America. The refined service they offered set the tone for the aircraft that would inaugurate Pan Am's transpacific service.

The Glenn L. Martin Company won a contract for its design of a new flying boat, delivering the first of three M-130s to Pan Am in October 1935. The aircraft was 22 feet longer than the S-42 and carried more than three times the fuel, giving it the ability to haul 18 passengers with sleeping accommodations and seven crew members 3,000 miles. New York theatrical set decorator Norman Bel Geddes created luxurious interiors with touches of practicality that made a long haul to Asia more comfortable. So careful were his designs that the underside of the plates and saucers created a bit of a vacuum seal with the tabletop, so they would cling to the table in turbulence. Pan Am was ready for the Pacific.

On November 22, 1935, the M-130 named the *China Clipper* took off from San Francisco Bay and pointed its nose westward, toward Hawaii, beginning transpacific airmail service. At the controls was Captain Edwin Musick, former chief pilot of the Caribbean Division and pilot of Pan Am's first flight from Key West to Havana. In only eight years, Pan Am and Musick had progressed together from short hops over the Caribbean to risky, overnight flights to Hawaii and beyond.

While designing the aircraft to meet the challenge, Pan Am had to also develop methods to reliably navigate to the tiny islands needed as hopping points across the ocean. In my own career, I have used everything from simple short-range radio to today's highly accurate Global Positioning System. But in the 1930s, even overland pilots were only a handful of years past navigating solely by lighted airway beacons. Dead reckoning, celestial navigation, and direction-finding signals, in which beacons transmitting high-frequency, far-traveling radio communication were stationed along a route, were the only navigation systems that could be used while flying great distances over water.

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**At Pan Am's terminal in Miami, Florida, a giant globe inspired travelers to imagine the places they could go on a flying boat.**

## Friend or Foe?

**THE SURPRISE AIR ATTACK ON PEARL HARBOR** ushered the United States into World War II, and highlighted the need to train the military in recognizing aircraft types. Just months later, the Navy Bureau of Aeronautics had produced plans for building models of Allied and enemy aircraft.

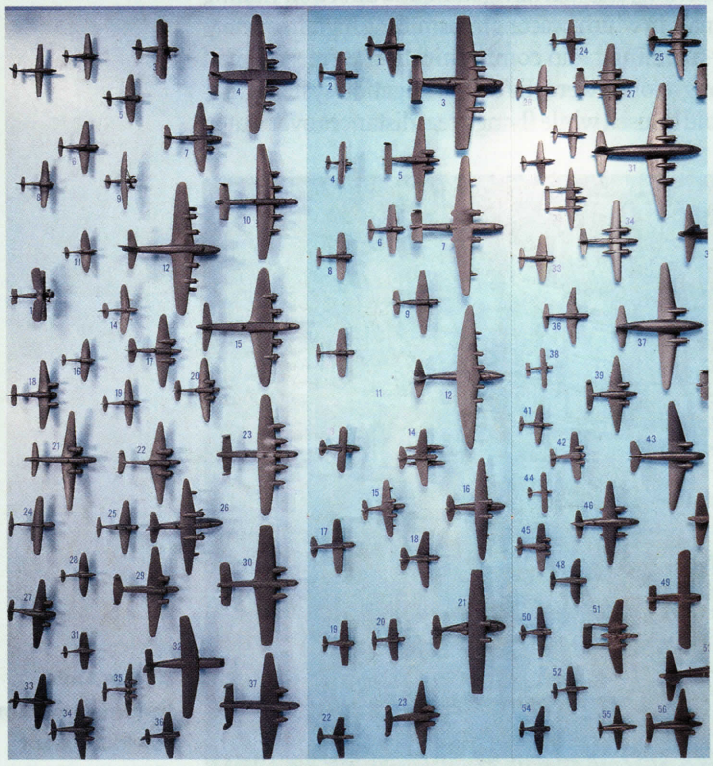
With the men rushing to war and women rushing to work, the Navy decided to tap the nation's one unused resource: kids. The U.S. Office of Education distributed the Navy's model plans through the National School Model Building Program. The Navy developed state quotas related to the number of teenagers enrolled in public and private high schools. The quota for Missouri, for example, was 15,000. Throughout the U.S. states and territories, students made more than a half-million models.

The aircraft models were produced in 1:72 scale (one inch representing six feet). A model perched 35 feet away would appear like an actual aircraft a half-mile out; this kind of simulation was used to teach gunners range estimation.

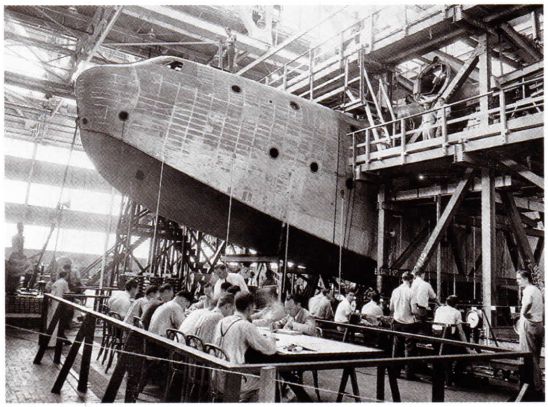
The students carefully carved pieces from wood to the proper shape and glued them together. The resulting model was checked by local inspection panels, painted black, and shipped to Naval Reserve Stations and military training facilities.

Each student involved in the program was issued a certificate recognizing his or her contribution to the war effort, with an honorary rank awarded based on the quantity and quality of the models produced.

By the summer of 1942, plastic manufacturers were able to make highly accurate models, eliminating the need for the labor-intensive hand-carved models.



**Teenagers served their country during World War II by carving wood models for aircraft recognition training.**



**The Glenn L. Martin Company hoped Pan Am would buy the Martin Mars (above) for trans-Pacific passenger service, but the airline passed.**

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Positions from each navigational method were plotted on a chart, whereupon the artistry of the navigator came in to play. Often environmental factors or mistakes in the lengthy calculations caused these positions to be quite different from one another. The navigator had to use his skill and experience to determine which information was to be trusted. Over the distance between San Francisco and Honolulu, only one degree of error would cause an aircraft to miss its destination by 80 miles.

I have sometimes imagined what it must have been like for a Pan Am captain trying to find a small island on a cloudy night: tired after a 20-hour flight, gas running low, and the comforting twinkle of stars gone from view. No blue lights lining the runway, no calls from the air traffic control tower—only your math skills and intuition to guide you safely to a landing.

Even as the Martin Clippers were making their first pioneering flights, Pan Am was demanding greater range, larger passenger capacity, and higher speeds. In 1936, Boeing beat out Martin with a bid to produce six flying boats, with the designation 314, the model that Dad built for the Navy all those years ago.

Advanced features, such as engines that were accessible in flight through a crawlspace in the wings, were incorporated from Boeing's failed XB-15 long-range heavy bomber project, which the Army Air Corps deemed too slow for war use. The 314's Wright Cyclone engines produced 1,500 horsepower, almost twice the power of the M-130's Pratt & Whitney Twin Wasp engines. With a maximum range of 3,500 miles, this was the flying boat that Pan Am needed to bridge continents regularly. Soon, Pan Am advertisements highlighted the San Francisco-to-Manila island-hopping route, boasting, "It's a smaller world than ever now!"

After the war, demand for air travel increased and

around the world land was bulldozed for airports; Pan Am's market dominance waned, but the airline's conquering of the Pacific inspired countless future aviators. Imagining the Boeing 314, my dad would try to catch any glimpse of something in the air. "My mother would pack me a lunch and I would pedal my bicycle 16 miles to Lambert Field just to see an airplane land or take off," he told me. "If I got there by noon, I could see an actual airliner land. If I stayed on until 4:30, I could see two!"

Throughout his life, Dad collected articles and photos of the Boeing 314. As a child, I remember being captivated by his stack of 8-by-10 glossy photos of these giant 1930s airplanes landing on water.

In the decades after Pan Am's flying boat pilots forged the path, flying to remote corners of the globe became commonplace, yet ocean flying today is much the same. The minutiae of navigation checks, flight planning calculations, and position reports only partially help pass the endless hours aloft, along with the knowledge that a far-off destination awaits. For those of us charged with making it happen today, the sense of separation from the familiar is as strong as ever. Whether cruising in a modern airliner, a flying boat, or a 19th century sailing ship, we are at sea, far from our accustomed surroundings.

In the cockpit, I often like to raise my seat as far as it will go and rest my head on my folded arms atop the glare shield. The sound of the air rushing by on the other side of the windscreen muffles the cockpit chatter, and the vast ocean and empty sky engulf my senses. Perched like this, I often wonder about the thoughts, dreams, and fears of those that flew before me. How would their lives in the cockpit be different? The calendar has changed, but hundreds of miles from shore, the ocean and sky stretch out endlessly, just as they did for the captains of the flying boats.

The afternoon of January 15, 2009, Sully and I began our takeoff roll from Runway 4 at La Guardia within view of the former Pan American seaplane base, where in January 1942, a Boeing 314 named the *Pacific Clipper* completed Pan Am's first around-the-world flight. Minutes after departure, our Airbus A320 glided down onto the Hudson River. Nearly 70 years separated the two events, but just maybe, I can consider myself a flying boat pilot too.

**One icon of a new age above another: A Pan American Martin M-130 Clipper, at the start of a flight that would bridge continents, sails over San Francisco's soon-to-be-completed Golden Gate Bridge.**