EMPIRE flying boat of Imperial Airways, a twenty-four passenger air liner which weighs eighteen tons, fully loaded, and makes 200 miles an hour.

AROUND the WORLD by AIR

MODEL of Empire type flying boat of Imperial Airways. It contains a promenade, kitchen, smoker, separate radio room and carries twenty-four passengers.

By H. W. MAGEE

PART II

ON the third lap of your trip around the world by air, you hop across the Pacific. Sounds simple, doesn't it! And, as a matter of fact, it is quite simple today as compared with five or six years ago.

In 1931 no seaplane had been built that could fly the 2,400-mile stretch from San Francisco to Hawaii with a safe fuel reserve, let alone a pay load. Nowadays the China Clippers of Pan American Airways are covering the 8,000 miles from San Francisco to Manila in five days—sixty hours of actual flying.

The air conquest of the Pacific stands as a brilliant chapter in aviation history—bold pioneering as thrilling as the building of the first transcontinental railroad. That railroad brought New York and San Francisco within less than a week's travel. The Clippers have brought San Francisco within five or six days of the Orient, and New York, by air, is about as close to the Orient now in terms of travel as it used to be to San Francisco.

Pan American was operating 25,000 miles of aerial trade routes between the Americas when it began to cast a speculative eye on the Pacific. And at first glance, the thousands of miles of trackless ocean wastes seemed unconquerable. Who ever heard of flying on regular schedules over an ocean extending over about one-third the circumference of the globe? But then, who ever heard of a transcontinental railway until one was built? Pan American decided to conquer the Pacific.

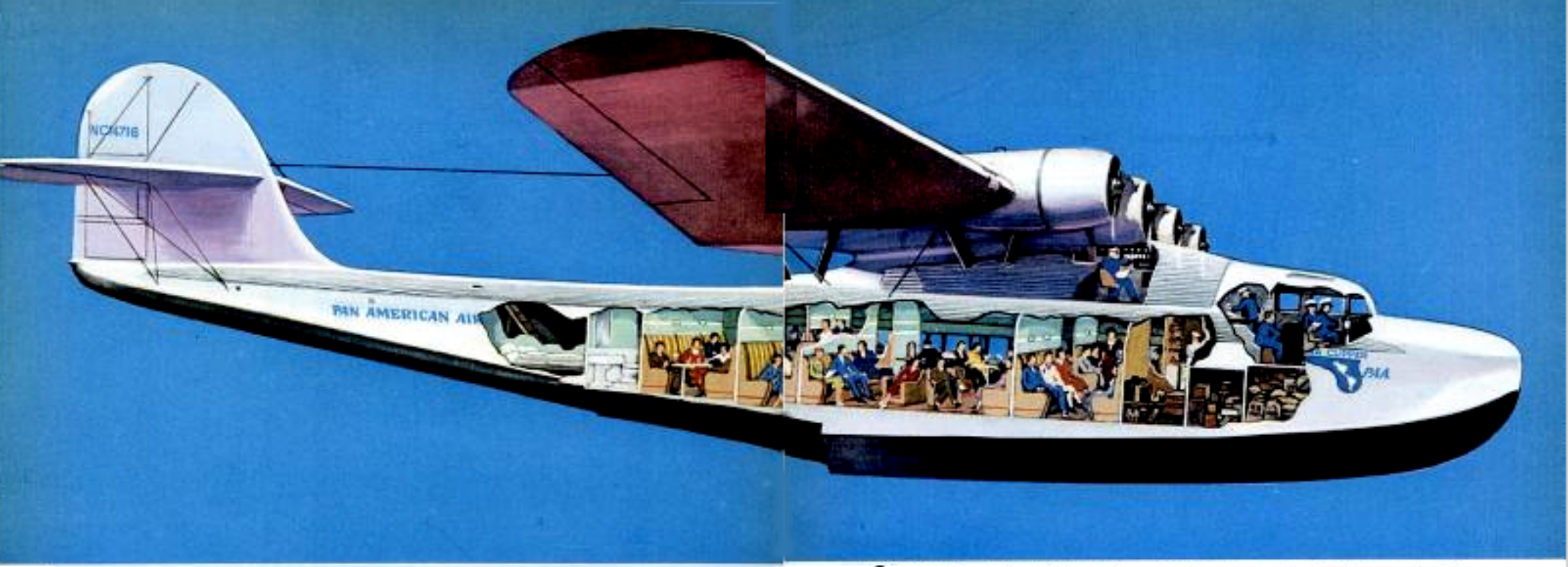
A survey revealed that fate or destiny had taken a hand in the matter by dotting the only logical route with four little islands—Hawaii, Midway, Wake and Guam. What could be more practical than to convert these specks of land, all possessions of the United States, into

OPERATING one of the many navigational aids carried on board the Clipper ships of Pan American Airways. During the night celestial navigation is carried on by the stars. Of course, the ship is kept on course by constant radio compass bearings as well. Below, commercial air line map of the world, showing how they connect.

intermediate air bases? But even after the route had been broken up into laps by these islands, the task of flying the Pacific still challenged the imagination.

Better power plants were necessary. Some of the islands were nothing more than barren stretches of coral and sand. Precision methods of navigation were necessary if seaplanes were to fly over thousands of miles of trackless ocean. No flying crews were trained for trans-oceanic service. No ground organization existed for servicing ocean airliners from the island bases.

Each of these problems was faced and solved before there were any wings over



CROSS section drawing of China Clipper which has wing spread of 130 feet, length of ninety feet and a cruising speed of 150 miles an hour.

the Pacific. The design and construction of the Clipper ships was an epic in itself. Pan American wanted seaworthy flying boats able to cruise 3,000 miles, even against a head wind, at 150 miles an hour. Also they must carry a profitable pay load. Igor Sikorsky built a nineteen-ton flying boat to fulfill trans-oceanic conditions and Glenn Martin built a twenty-five and one-half ton ship. Both planes emerged from flight tests with flying colors. The Brazilian Clipper, Sikorsky's ship, was licensed to carry 99.8 per cent of its own dead weight, the China Clipper produced by Martin, 102.1 per cent. Each had a top speed of more than 180 miles an hour and a cruising speed of 157 miles.

Next in importance were the island bases. Thousands of tons of supplies were taken to the little dots of land. Ground crews were left there to build everything from hotels to weather stations and air beacons. Then there was the matter of developing lightweight, low-powered radio to cover the whole Pacific and extending the range of aircraft radio direction-finding devices. Crews were trained so that each man could perform the duties of every other member as well as his own. Test flights were made to prove the plans and everything went off like clockwork. Soon Clipper ships were making regular trips over the ocean—the Pacific had been conquered.

And now the Clippers are carrying passengers in five days over a route which the old sailing clippers required two months or more to travel. On your journey over the Pacific, you hop off from Manila, headed for Guam, 1,600 miles distant. The trip gives you ample opportunity to become acquainted with a modern air Clipper. Its two roomy compartments and main salon are equipped with comfortable divan seats. You can stroll about at leisure or, through the large windows, watch the clouds paint shadows on the water below. You see an occasional steamer plodding through the waves, rising and falling on the skyline. Tired of looking, you play cards, read, write, eat or sleep.

Up front the four twin-row 800-horsepower Wasp engines purr smoothly and on the flying bridge those of the crew of five on duty at the moment, are concerned with radio direction finding, navigation and maintaining radio contact with distant stations and steamers. At last your flying boat skirts a massive cliff rim and glides into the harbor at Guam. Perhaps you motor around the island, go to a movie or wander through the quaint old Spanish town. You spend the night at an Airway Inn—a hotel brought pieceмeal to the island and set up in sections.

The next lap is from Guam to Wake, one of the longest of your flight. You are off at the crack of dawn and there's another day of watching the water. You'll find Wake a tiny mid-Pacific atoll consisting of three narrow islands, each about one and one-half miles long. Laid end to end, they form a horseshoe, the open end of which is protected by a massive reef to form a lagoon on which your Clipper lands. Here you find a little village—a dozen houses, a big beacon, an Airway Inn, a dock. You may fish or dive down into the magnificent forest of coral, wearing water glasses so you can get a closeup view of the multi-colored tropical fish.

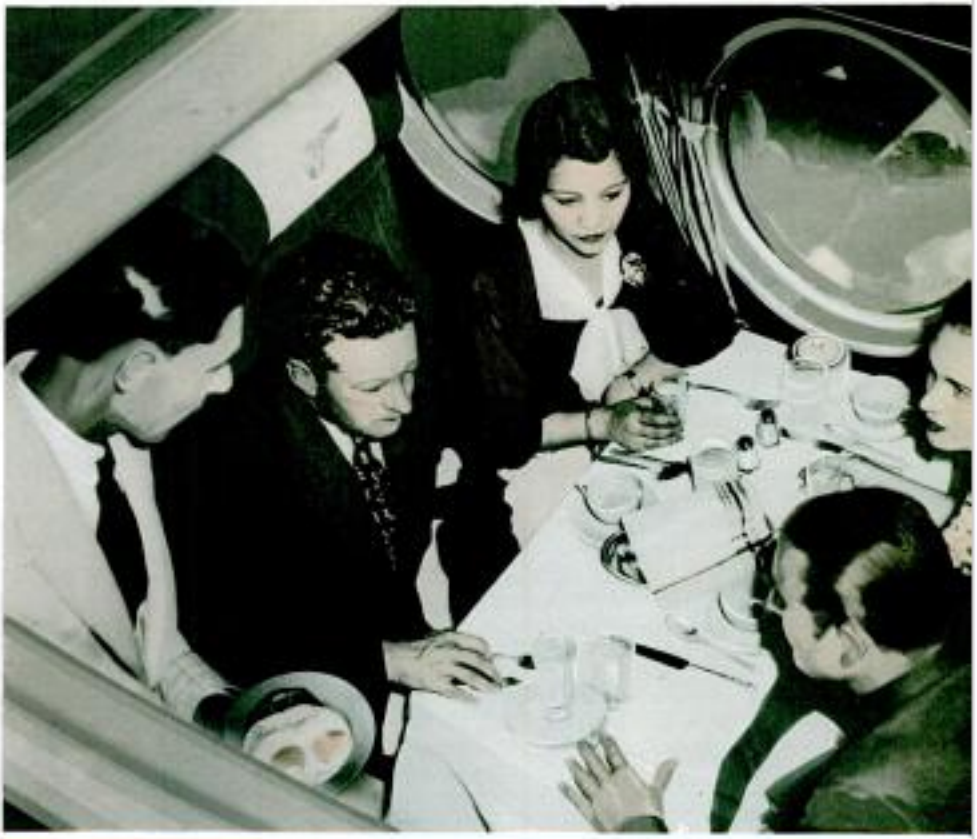
Another dawn and you're on your way to Midway, 1,300 miles east. On this leg you cross the international date line and lose track of time. If you left Wake Friday morning, you'll land at Midway Thursday evening. Midway consists of two small islands surrounded by a coral reef. On the larger is a cable station which, until the arrival of Pan American, was the only form of habitation. Now there's a hotel with dining rooms, lounges, porches and showers to accommodate forty-eight passengers. Here is a miniature forest of Australian pines, the result of thirty years of effort by cable company employes. Here also, ironically, are three graves of three doctors who, in the course of a quarter

PILOT and co-pilot on the flying bridge of the China Clipper. Below, interior of Clipper ship, showing berths. The China Clipper has space for forty-eight passengers on short hops, but on the long haul from San Francisco to Honolulu it carries twelve passengers and a crew of five.

of a century have come to the island to look after the health of these employes.

There's a sand golf course, seals basking in the sun on the beach and there are gooney birds — creatures about two feet tall which carry on a ludicrous and amazing dance. There is a regular routine to the dance—papa and mama gooney address each other, bob heads up and down, put them side by side and click beaks, then reverse sides, jump up and down and scream. A gooney dance is worth a trip around the world to see. If you tire of gooney birds, try collecting shells. If you're lucky you may find a great glass ball used by some Japanese fishermen as a net float. It started its voyage in Japanese waters and followed the Pacific currents all the way to Midway.

From Midway it's a 1,400-mile hop to Honolulu. On this jump you'll see little strings of coral islands from which thousands of birds rise and if you're flying low you may discern the remains of a vanished civilization which built its temples on some of these islands. You



DINNER time aboard one of the Clipper planes operating in South American service. All meals on the China Clippers also are "on the house."

land at Pearl Harbor and have time to become acquainted with the capital city.

The flight from Honolulu to San Francisco, 2,400 miles, is the longest of the passage and requires from fourteen to twenty hours, so you will do some sleeping on this voyage. Comfortable berths are a feature of the Clippers. After a seemingly endless journey over water you'll sight the Faralone islands and soon after the Golden Gate and you land in San Francisco harbor—back in the good old U. S. A. It seems you're home, but you are still 3,000 miles from your starting point.

And the best, most luxurious part of your trip still lies before you. You hop from San Francisco down to Los Angeles, there to board the "American Mercury," giant sleeper plane of American Airlines. It carries you to New York in sixteen hours—while you sleep. Boarding this twelve-ton flying palace is an event. You walk up a gang plank into a spacious cabin divided into sections with facing seats like a Pullman car. Up front is aviation's pride, the "sky room" or private drawing room. Opposite it is the "flying kitchen." In the rear are separate dressing rooms and lavatories for men and women.

As your hotel with wings soars aloft you see up front a secretary collaborating with his employer in preparing correspondence on a noiseless portable typewriter—part of the equipment of this flagship of the American Airlines fleet. As you pass over Arizona the stewardess serves a six-course chicken

CONQUEST of the Pacific—a China Clipper leaving San Francisco on the first lap of its long journey to Manila, 8,000 miles distant.

dinner on individual tables with linen tablecloth, silverware and even real china. There's a brief stop at Tucson and soon after, the big ship takes on the appearance of a Pullman at night. Day sections are converted into berths, uppers are pulled down from the ceiling, bedding appears as if by magic, curtains are stretched and long before the "Mercury" lands at Dallas, all the passengers are sound asleep.

It's close to dawn as the "Mercury" settles briefly at Memphis but the sun is up before the first "early bird" among the sleeping passengers shows himself to get first chance at the electric razor in the men's dressing room. Over Pennsylvania breakfast is served and soon thereafter the "Mercury," the last word in elegance and luxury in the air, settles onto Newark airport.

And you're home—back where you started from—around the world in three short weeks!

Of course, most persons traveling around the world by air prefer to make a more leisurely journey with stopovers along the way and that is easy to arrange.

And now, one word of disillusionment. Don't make a trip around the world by

(Continued to Page 132A)

Around the World by Air

(Continued from Colorete Section)

air with the idea that you are enjoying the ultimate in speed. The proponents of this form of travel aver that "you ain't seen nothing yet." Your three weeks' trip around the world today is likely to be considered slow tomorrow.

There's a real probability that within the near future—say ten years—you can fly to Europe in ten hours and make a trip around the world in ten or twelve days. You would go in a huge plane weighing 100 tons or more—a size already being planned in the minds of designers—and at a speed of 300 miles an hour.

Designers anticipate that greater speed can be attained by flying at high altitudes, up to 30,000 feet or more. Up there you won't need to worry about the weather and you'll ride in a sealed cabin supplied with oxygen. Of course, no engine has yet been built for such flying and no 100-ton plane has been constructed. But when you consider that only five years ago an air trip around the world was a spectacular stunt, it does not require a very active imagination to vision 100-ton ships flying around the world at 300 miles an hour in ten more years. Perhaps, as the aviation boys say, we "ain't seen nothing yet."

Passengers to Fly Atlantic in Wings of Clipper

Cutaway view of an air leviathan designed to carry 150 passengers across the Atlantic at 250 miles an hour. Berths and observation rooms would be located in the huge wings of the eight-motored flying boat

Passenger cabins and observation rooms are located in the wings of a 150-passenger Clipper ship designed to fly from New York to London in twenty-four hours. Structural plans for this behemoth of flying boats have been completed at the Glenn L. Martin plant in Maryland. It will weigh 250,000 pounds.