

WINGS *Over the*



San Francisco Harbor, Possible Terminus of Pacific Airline; a Philippine Ox Cart and Street in Canton, China

AMERICAN engineers, inventors, pilots and airplane builders will claim the honor of being first to heave an airline across the largest body of water on the map—the mighty Pacific ocean, 68,000,000 square miles in area.

A brand new airway 8,678 miles long, one-third of the way around the globe, will be in operation by Pan American Airways before the end of 1935.

What formerly required months on a sailing vessel, and even now takes three weeks on a steamship, will be covered in about four days by a fast fleet of clippers cruising at 150 miles per hour.

Not even the Orient is remote any more. If you have 100 hours to spare and a desire to see a good bit of the world from the air, you may soon hop aboard a Pan American clipper at a California port and speed across the blue Pacific faster than a trade wind.

With the same energy and re-

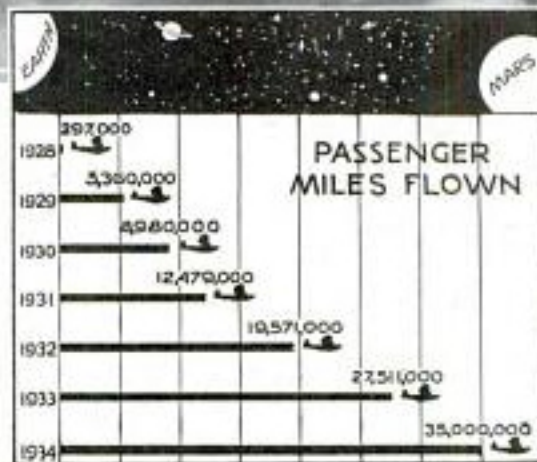
PACIFIC



sourcefulness with which it conquered the Caribbean sea, Pan American is proceeding on this new venture, one of the most audacious and courageous in maritime history. To weave an airway net over the jungles of South and Central America is no mean undertaking, but to blaze a commercial air trail across the greatest water body on the map is something that until recently appeared foolish and next to impossible.

But these engineers go about it with an assurance and confidence that overcomes every obstacle. They are now somewhere in the Pacific ocean wastes, laying foundations, erecting radio towers, surveying harbors, and assembling machinery where such things were scarcely known heretofore. On Wilkes island, for instance, they are establishing an airway base and the first human settlement, so far as is known.

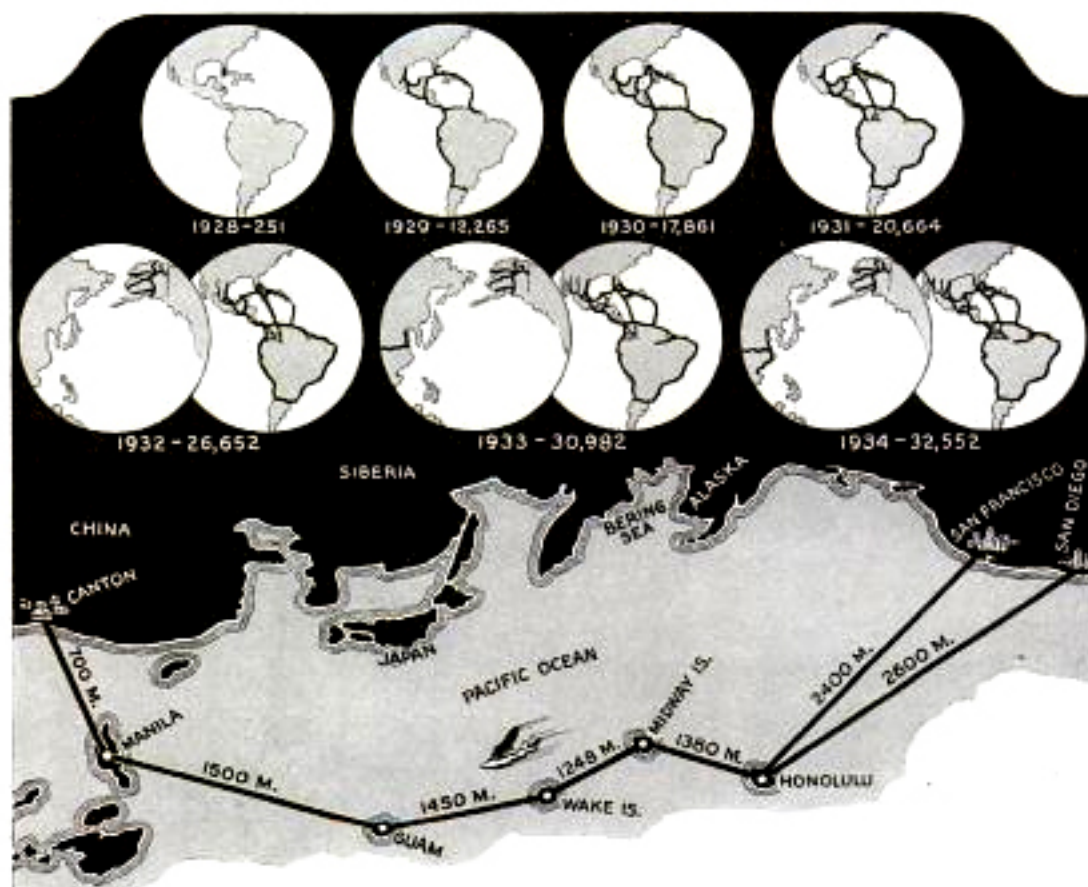
By a fortunate coincidence, it happens that all the islands necessary for air bases are under the jurisdiction of the United States. Except for the last stop, Canton, China, the entire airway covers territory controlled by the United States. At the



Sketch of Nineteen-Ton Trans-Pacific Clipper Ship, and Chart Showing Increase in Passenger Miles Flown by Pan American in Seven Years

present state of aviation it would be virtually impossible for a foreign nation to establish a competing airway across the Pacific without the consent of the American government.

The "North Haven," a 15,000-ton vessel chartered by Pan American Airways, is the supply ship for the crew now engaged in establishing the five bases on Pacific islands. In addition to a construction crew of seventy-four, the "North Haven" carries a staff of forty-four technicians who have received intensive training in Pan



Route to Be Flown on Trans-Pacific Airline with Island Airports Where Stops Will Be Made and Charts Showing Growth of Airway Route Mileage of Pan American Airways

American's ocean flying school in the Caribbean sea.

Preparations for establishing the trans-Pacific service have been going on for more than two years, and the crews of the clippers and staffs of the island bases are now prepared to meet almost any contingency. The company has accumulated masses of geographic and meteorological material relating to the Pacific. It has developed a system of radio communication that keeps every ship in the air in constant touch with the personnel on land. All members of the marine personnel have received three years of training in ocean navigation and long-range flight technique.

The new short-wave radio direction system developed by Pan American engineers has a range of more than 1,800 miles. Traveling on the beam, pilots will find it difficult, if not impossible, to lose their way.

The Pacific airway may have its Ameri-

can base at either Los Angeles, San Francisco, or San Diego, Calif. From there, the rest of the route is virtually certain. The first stop is Honolulu, 2,400 miles from San Francisco; the second stop is Midway island, 1,380 miles from Honolulu; then Wake or Wilkes island, 1,248 miles from Midway island; Guam, 1,450 miles from Wilkes island; Manila, 1,500 miles from Guam, and finally Canton, 700 miles from Manila. Only five stops for a total of 8,678 miles!

In China, the Pacific service will connect with the 3,000-mile system of the Pan American Chinese Airlines, which covers strategic trade areas in the Far East.

This will make the Pan American system by far the greatest air transportation service in the world. Its system now includes 33,000 miles of scheduled airways touching thirty-three countries, but it does not operate within continental United

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States. It is distinctly an international undertaking.

The cargo of the supply ship, "North Haven," weighs 6,000 tons and is equivalent to that of 300 railroad freight cars. The list of equipment reads like a catalog of what any modern Robinson Crusoe would like to have were he taking up a settlement in mid-Pacific. Each air base will have a small library of books, including standard works on various phases of aviation and engineering; also books of reference and books of fiction.

The station at Midway island will be stocked with 2,500 pounds of frozen meats and a like quantity of smoked meats, 500 pounds of chicken, 700 pounds of butter, 450 dozen eggs, and canned goods sufficient to stock a grocery store. The heavy cargo of the "North Haven" includes Diesel engines for power plants, radio poles, lumber, floodlights, 1,000-gallon fuel tanks, anchors, car wheels, cable, wire, paints, screens, carpenter tools, and plumbing equipment.

For the amusement of the staffs at the airway bases, the "North Haven" carries baseball outfits, tennis balls, chess, checkers, and puzzles. Each air base will have long and short wave receivers. Each canteen will be stocked with sundries, cigarettes, candles, shaving equipment, chewing gum, sunburn cream, shoe polish, writing paper, and toilet articles. The "North Haven" also carries full kitchen equipment, and prefabricated parts for the small buildings necessary to each station.

Both for recreation and food, the personnel on the islands will take up gardening. They will add to the variety of their diet, raising such staples as coconuts, celery, cauliflower, cabbage, beets, squash, tomatoes, lettuce, onions, cucumbers, peas and spinach. Seeds for these plants will be delivered by the supply ship.

It is expected that the "North Haven" and her construction crew will complete their initial work of establishing the bases in less than 100 days. According to present plans, the ship will return to the United States by the end of July. After that, the air bases and clipper ships will be ready for the first experimental flights.

Five men already have been assigned to

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establish an airway weather and radio communication station at Honolulu. The first cargo discharge from the "North Haven" was at Midway island, at the end of the Hawaiian island group. Here, an airway crew of ten were landed and the working crew of seventy-four men assisted them in the building project.

The second cargo stop for the "North Haven" was Wilkes island. The third stop was Guam. A crew of five men has already been assigned to work at the Philippine air base. On the return trip from Guam, the "North Haven" deposited the supplies and provisions necessary to operate the island bases.

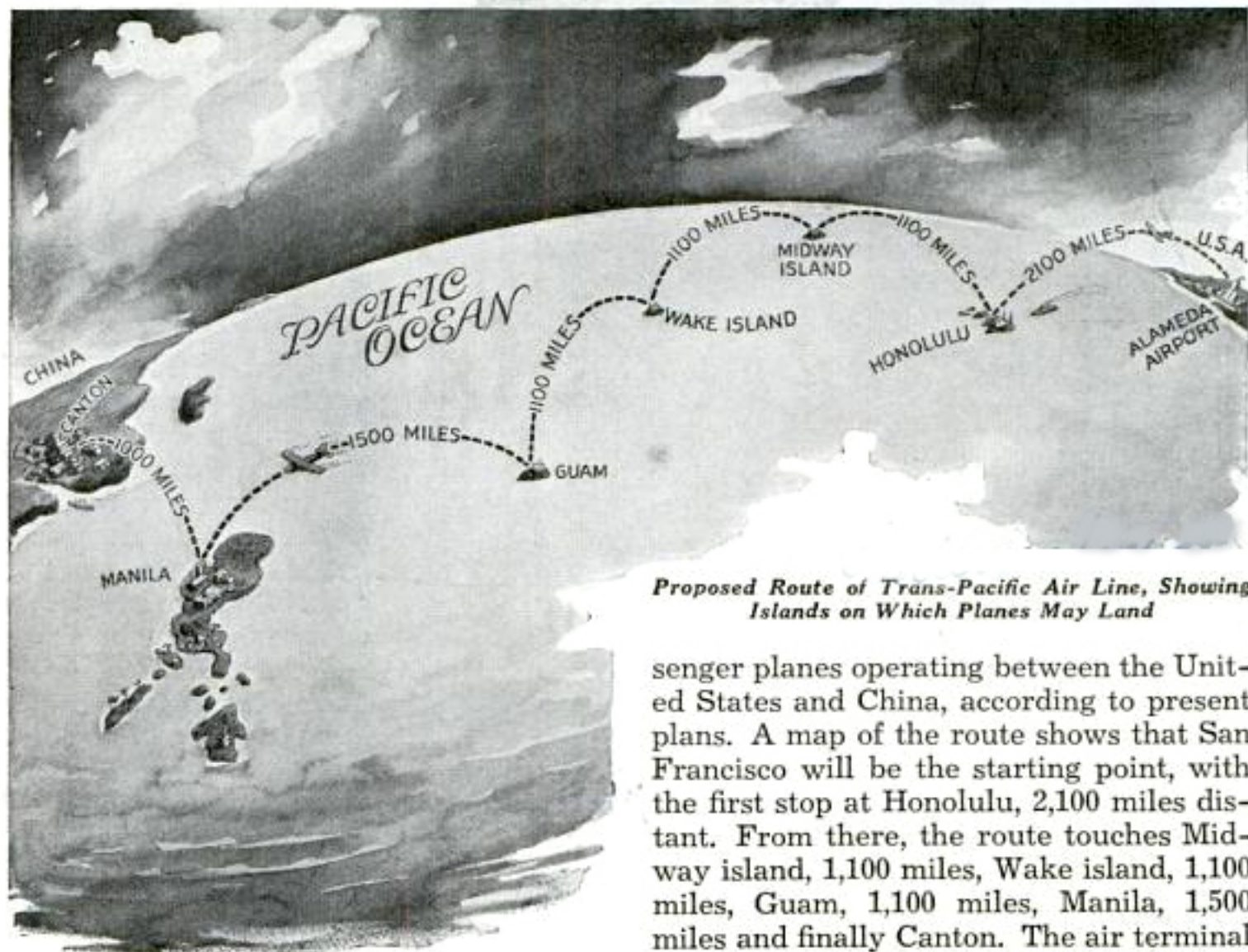
The amazing speed of establishing these bases was possible only because everything had been planned and calculated in advance. The designs of all structures had been reduced to blueprints, which governed the construction of every detail. A typical island air base has a shallow lagoon protected against high waves, and is ample in size to accommodate a nineteen-ton flying clipper. The ship will be moored to a dock, enabling the passengers to walk ashore. As one steps ashore, the underground fuel storage tanks will be on the right. Then one passes the power house. Beyond that is the radio transmitter. At a still greater distance beyond will be the transmitter of the radio direction-finder.

Going toward the main part of the island station, one sees a group of white frame buildings on concrete piers. On the right is the radio receiving station, with the office of the airport opposite it. Further along, and arranged around a circle, are staff quarters, consisting of a house for the seaport's manager, and sleeping quarters for the crews of incoming clipper ships. Outside the circle of staff houses, one sees the kitchen and servants' quarters.

The staff of each base consists of a seaport manager, a radio officer and assistants, a chief mechanic and two mechanic's helpers, and five men in the service staff; cook, steward, mess boy and two cabin boys. On Wilkes island, there will be, besides those mentioned, a staff physician.

Our Bureau of Information will answer questions regarding articles in this magazine, if accompanied by return postage.

Trans-Pacific Air Liners to Touch at Islands



Proposed Route of Trans-Pacific Air Line, Showing Islands on Which Planes May Land

Several islands will be used as landing fields for the Pan-American Airways' pas-

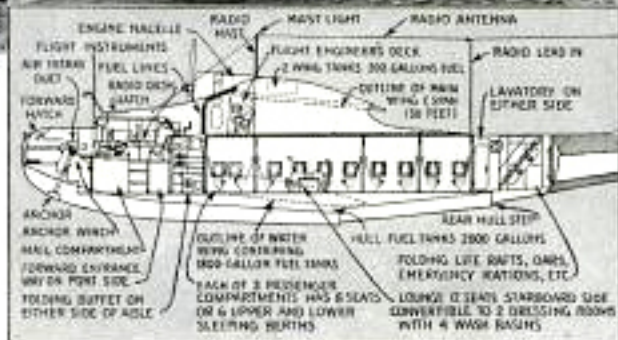
senger planes operating between the United States and China, according to present plans. A map of the route shows that San Francisco will be the starting point, with the first stop at Honolulu, 2,100 miles distant. From there, the route touches Midway island, 1,100 miles, Wake island, 1,100 miles, Guam, 1,100 miles, Manila, 1,500 miles and finally Canton. The air terminal on the American side will be Alameda, Calif. The navy department has been asked to build landing facilities on Wake island.

Clipper Brings Manila within Six Days of U.S.



Drawing © Aero Digest

The 51,000-Pound "China Clipper," One of a Fleet of Flying Boats Which Will Carry Passengers and Mail Across the Pacific. Right, Diagram Showing Arrangement of Control Cabin, Passenger Compartment, Fuel Tanks and Other Equipment



When Pan-American Airways' "China Clipper" completed the first transpacific airmail flight from the United States to the Philippines recently, it brought Manila, 8,000 miles distant, within six days of American shores and forged the last link in an aerial chain destined eventually to transport both mail and passengers across the Pacific. Carrying about 110,000 pieces of mail, the flying boat, which made the trip in six days, clipped about sixteen days from the best time made by steamers. Stops were made at the air bases at Honolulu, Midway islands, Wake island and Guam. The "Clipper," first of a fleet of huge flying boats, is the same type of plane intended to carry passengers later. It is powered with four fourteen-cylinder engines of 830 horsepower each and has a 4,000-mile flying range. Gross weight is

51,000 pounds and cruising speed is 157 miles per hour. The main wing span is 130 feet and the propellers are of the constant-speed metal type. Each of the three passenger compartments has space for eight seats or they can be changed into six upper and lower sleeping berths.