PASSENGER carrying airplane service between New York and Europe—long the dream of the aviation industry—is in the process of inauguration by Pan American Airways.

Poised on this side of the Atlantic ocean, ready for the first history-making flight, is an 83,500-pound, all-metal Boeing flying boat—the largest in the world—powered by four great engines and capable of flying 4,275 miles, non-stop, with full load. With a day capacity of seventy-four passengers, the mighty ship is expected to carry forty passengers in luxurious quarters on its maiden journey across the Atlantic. It has a cargo capacity of 5,000 pounds.

Scarce will the first clipper roar eastward, within a few weeks, before a second ocean-going greyhound of the air will be hauled from a hangar at Baltimore, Md., and prepared for the start of the second scheduled voyage. Other sister clippers, now being constructed, will be added to Pan American's Atlantic fleet within a short time, enabling the company to offer service to Europe several times a week.

While the clippers will be serviced at Baltimore, the takeoff terminal will be at North Beach on Long Island sound or at Pan American's temporary base at Port Washington, N. Y. From there a northern
route, which will be used during summer, is by Shediac, New Brunswick, to Botwood, Newfoundland, thence across a 1,985-mile overwater jump to Foynes, Ireland, and finally to Southampton, England. Passengers may reach London by air taxi or train. Flying time will be approximately twenty-four hours, necessitating an overnight
flight for the trip across the open Atlantic; hence capacity of the clippers will be limited to that of night service, forty passengers. Another route, known as the southern, is by way of the Azores and Lisbon, Portugal, to Marseilles, France. Requiring about thirty-six hours, this route is the one the most favored for winter service and is being considered for the maiden flight. Baltimore probably will be the terminal for winter flights.

Even persons accustomed to the best in air travel will find clipper accommodations a surprise. With its two decks and eighteen separate rooms, its soft carpeted floors, its ducenport-type lounging chairs and its modern styling throughout, the Atlantic air queen is virtually a "Park Avenue suite on wings." You board the ship by gangplank that leads to the broad upper surface of one of the hydro-stabilizers, which is a 1,500-gallon fuel reservoir but serves as a loading deck. Entering the passenger deck by a side door, you step down three steps into the dining saloon and recreation center, the largest room in the ship with the exception of the control room on the upper deck. The ten and one-half by twelve-foot dining room has a gay color scheme, with a spirited blue pattern on furniture upholstery, rich carpeting and walls of silvery beige. Double windows on either side of the room have modern Venetian-type blinds, as do windows of all passenger compartments. There are five dining tables of polished black walnut and deeply upholstered chairs for fifteen persons to be served at a time.

Arched doorways at either end of the central lounge lead to passenger quarters fore and aft. Going aft, you pass through three standard compartments, each with floor dimensions of seven and one-half by twelve feet and a height of seven and one-half feet. Seats are upholstered in beige wool tapestry, tailored with leather trimmings. The cabins are exceptionally quiet, the result of double insulation and sound-proofing in the walls and
soft carpeting on the floors.

At night two triple seats and two double seats in each compartment will be converted into upper and lower berths all more than six feet long. Each berth has an outside window, individual ventilator, reading light, steward's call button, clothes rack and hangers.

Further toward the stern you find a four-passenger port side compartment, opposite which is the women's dressing room. Furnishings of this dressing room include leather-covered upholstered dressing table stools, long double dressing table with two plate-glass mirrors and modern lighting fixtures, wash basin with hot and cold running water, another large mirror and a dental lavatory. Finally, in the aft-most section, you enter a de luxe compartment, or 'bridal suite.' This room contains a love

(Continued to page 151A)
New York to Europe by Clipper

(Continued from page 152A)

seat by the starboard window, two end tables, a davenport-style triple seat that converts into berths, a combination dressing table and writing desk, a folding washstand cabinet, an occasional chair and a coffee table.

Ahead of the lounge you find another standard compartment, then a section containing a galley to the port and a man's dressing room to the starboard, and beyond is another standard compartment. The men's dressing room has a dental lavatory, two wash basins with hot and cold running water, two plate-glass mirrors and a plug-in for electric razors. The galley contains compact equipment designed by Pan American for serving full-course meals en route and an arrangement for setting up a cocktail bar between meals.

For the comfort of the passengers, the clipper has a thermostatically controlled heating system capable of circulating five times more warm air than the heating system of the modern seven-room home. There are two "furnaces" using exhaust heat from two of the four engines.

Up on the flying bridge, which is entirely lined with black to eliminate glare, will be two pilots to handle the controls on the clipper's maiden scheduled journey. Back of the bridge is the navigation and radio room, directive brain of the mighty ship. Here will be the radio officer, pilot-navigator and flight engineer, all of whom have telephone communication with the bridge. Curtained off and just behind this room is the master's office.

Actual operation of the power plant, consisting of four 1,500-horsepower Wright engines, will be supervised by the flight engineer. Engine stations are maintained in the big nacelles, one behind each motor, and are connected to the flight deck by telephone. One panel before the flight engineer contains twenty-six instruments which serve the functions of sixty-two different indicators. Most of the instruments are dual indicators and one multiple indicator gives engine head and base temperatures at sixteen different points. The radio officer has charge of three transmitters and three receivers, with which he will maintain contact with land stations and ships.

(Continued to page 152A)
throughout the flight. Over his equipment will flash weather reports and instructions to the clipper’s master from both sides of the Atlantic, with Pan American Airways and the governments of the United States and Great Britain cooperating to guard every air voyage from the ground.

Behind the spacious control room, within the wings, are the main cargo compartments for mail and express, and directly behind them are complete sleeping and living quarters for the crew. At the bow of the ship is the anchor and gear room, which also holds a mooring post which slides out when the hatch is opened. Beneath the main, or passenger deck, are watertight compartments running the length of the ship, an additional safety feature.

When the Yankee Clipper—flagship of the fleet—takes the air on the first voyage, its officers will follow a carefully charted route that has been surveyed by Pan American’s weather and flight experts. Many survey flights have been made by company planes, in conjunction with similar journeys made by Imperial Airways of England. On July 6, 1938, Capt. Harold Gray and his crew aboard the Pan American Clipper III crossed from Botwood to Foyennes in twelve hours and twenty-nine minutes. Flying above 10,000 feet all the way, this survey crew took astronomical observations from sun and stars to make certain of bearings and picked up messages radioed from ships at sea. The clipper, which weighed twenty-two and three-fourths tons, about half that of Christopher Columbus’ ship, the Nina, averaged 198 miles per hour. At the same time, Imperial Airways’ flying boat, the Caledonia, flew the route from east to west in fifteen hours and twenty-eight minutes, averaging 192 miles per hour. This crossing is the more difficult because of prevailing headwinds.

Upon completion of that survey flight, Captain Gray said: “The trip was fairly easy, but it would hardly be fair to judge Atlantic weather on the basis of one journey. Nevertheless, I do not think there should be any difficulty in operating a regular service across the Atlantic.”

Transatlantic air service, made safer by Pan American’s experience in regular flights across the Pacific, is about to become a reality, and Captain Gray’s opinion is about to become a certainty.
Weather Ships Chart Air for Atlantic Clippers

Top, left, Lieutenant Commander Edward H. Smith, commanding the cutter "Ches)> and Lieutenant Fred Stee[ preparing radio meteorograph for trip ahead; right, sighting departing balloons with theodolite, to compute wind velocity and direction.

Left, attaching radio meteorograph to balloon, which must be checked for proper carrying weight. Parachute is provided to bring instruments down safely after balloon bursts in stratosphere. Above, releasing automatic weather observer, which rises until it disappears but continues signaling.

Forecasts of weather along the Atlantic seaboard and over the British Isles are not enough to satisfy a pilot starting from New York for Europe with a load of passengers and mail. So, when regular transatlantic flights begin, floating weather stations will make daily observations along the air route.

The U. S. Coast Guard cutters "Ches" and "Champlain" will pioneer the service, sending aloft balloons with radio meteorographs to report temperature, pressure and humidity to ship while observers track balloons for wind direction. Right, chief radio officer on coast guard ship tuning in to receive data from meteorograph.
Two-Story Transocean Plane Has Six Engines

Six motors of 1,500 horsepower each will power the vast flying boat the French war ministry has ordered built for the transatlantic service of Air France. Its cabin will be a two-story structure with the first floor lounge and drawing room so designed that it can be converted into separate passenger cabins at night. Upstairs are the piloting and navigation posts, a room for the crew, two cabins for passengers, two drawing rooms and a kitchen. The ship will have a maximum speed of about 150 miles an hour and fuel capacity to cruise 3,750 miles nonstop. It will be 135 feet long and thirty feet high, with 173-foot wing span, and will weigh seventy-five tons.