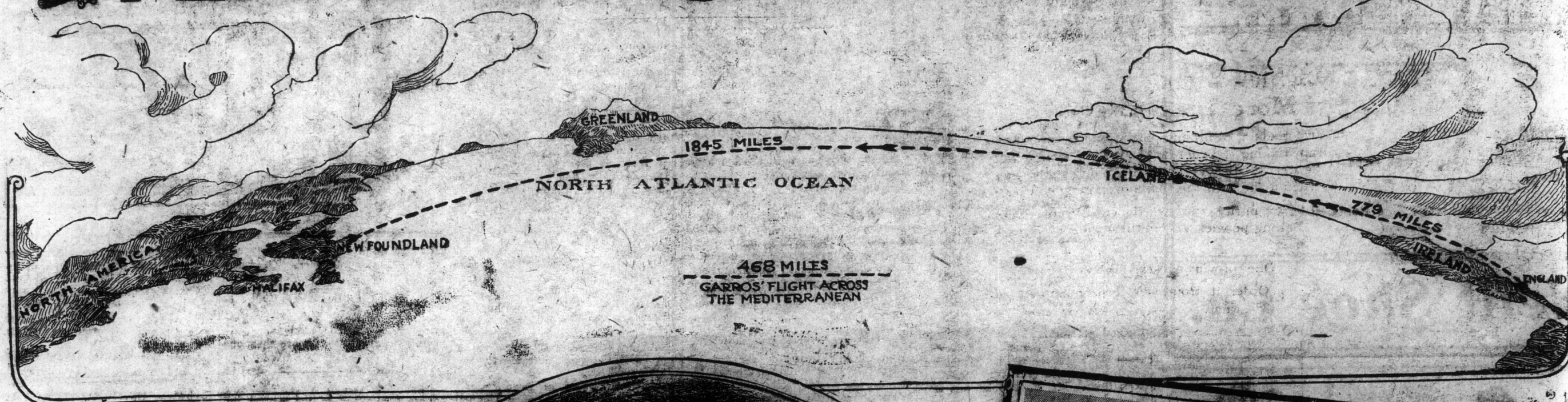


# AERIAL CONQUEST of the ATLANTIC



Probable Route of First Transatlantic Flight.

BY ALAN R. HAWLEY,  
President of the Aero Club of America.  
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**C**ERTAINLY and speedily we are coming to the day when the aviator will cross the Atlantic Ocean in a heavier than air machine. How far away that day is can only be conjectured, but many of the most conservative persons interested in aircraft are firmly convinced that the crossing will be made in their day and generation.

We have arrived at that stage in aerial navigation that has recorded sustained flights of nearly fifteen hours. We have seen the crossing of the Alps and the St. Petersburg to Paris flight of about two thousand miles by one craft; we have gloried in the flights over the English Channel, and more recently have seen the crossing of the Mediterranean Sea. There have been performances of up-to-date aviators, who have demonstrated that they have more control over their aircraft than has a bird over its wings when suddenly tossed into the air. We have had aeroplanes making a speed of close under 150 miles an hour and have arrived at that point where the attainment of 200 miles an hour is no longer a theory. It is a matter of practical, reasonable construction.

It has been demonstrated that a machine of the racing type can fly 100 miles an hour easily and that it can stay in the air for practically a day. Two such flights and one shorter one of less than a day's duration would bring the aviator across the Atlantic Ocean. Roland P. Garros, most enthusiastic of aviators, has just crossed the Mediterranean and his journey was a miniature of what a flight over the Atlantic Ocean would be. But it is so infinitesimally small in comparison that it must be considered very carefully. He covered approximately 500 miles without a stop. True, he followed Corsica and Sardinia and had to travel only about 250 miles over open water, but he accomplished the long journey successfully. His machine was able to continue the flight if need be to show that it had not by any means exhausted its life in the one journey. A machine of twice or thrice the sustaining power, speed and endurance certainly would be able to cover more than twice or three times the distance over the Mediterranean, and that would be sufficient to encompass each leg on the voyage across the Atlantic.

Garros says he can cross the Atlantic. That, of course, is only theory; but many warmly believe that he or some other aviator equally confident soon will step forth with a well tested craft and make the effort. Members of the Aero Club of America and of the Royal Aero Club of London do not hesitate to express the belief that the aerial route across the Atlantic will be discovered within the next five years. And once the way is shown, a dozen such voyages within the year following would not surprise those foremost in the aerial world.

Garros selects his route from the British Isles to Iceland, thence to Newfoundland and New York. This would make the first leg of his journey 1,000 miles long, the second 2,400 miles and the third 1,000 miles—a complete voyage of 4,400 miles. This would be more than twice as long as any flight recorded and counts only two relay points, Iceland and Newfoundland. He might alter the first leg of the flight and land at the Faroe Islands, approximately 500 miles from the British Isles, and thence fly to Iceland. But even this would not eliminate the grave disadvantages under which he would labor by selecting such a long route.

The initial stage of the journey is made when motor, man and mood are best. It might be accomplished without a mishap, Iceland possibly could be reached easily, but from Iceland to Newfoundland is a great gap over probably the worst section of the Atlantic Ocean the aviator could choose. This leg of the journey would be 2,500 miles long, about the same as from Ireland to Newfoundland. It would be over a part of the ocean which is

little traversed by ships and where sudden blasts out of the Arctic Circle would bring great changes in the temperature that might be fatal to the motor.

No haven of safety would be open to the imperilled aerial mariner, for the only land within hundreds of miles would be the bleak and barren coasts of Greenland and Labrador. The former is perpetually a mountain of ice, with a plateau that might afford an excellent landing place, but a most dismal staying place if this emergency arose. The whole region is uninhabited except along strips of the east coast and west coast, and these habitations would be so far away that the aviators would be unable to reach them before their scant supply of food became exhausted. Hope of rescue would be more remote even than if the aviators dropped into the ocean, because in the latter extremity they would have a slight chance of being picked up by a straggling sealer or other fishing boat.

Labrador, which would be several hundred miles out of the course, would make the most perilous kind of a refuge, even worse than Greenland, because a landing place could not be found there with any more ease than in the Rocky Mountains. Where there are not vast virgin forests, with no open places that might offer a landing, the earth's contour is volcanic in its nature, dating back to prehistoric times, when all was molten, as scientists believe. Great hills of igneous formation, jagged, tumbled and cloven by abrupt chasms winding in all directions make the coast line formidable as a place for the best aviator to land on.

Aside from these drawbacks to the Iceland route over the Atlantic, the aviators would have to traverse more than thirty degrees of northern latitude with the attendant atmospheric changes that would call forth the utmost vigilance to keep the machine and men from freezing. Around Iceland and Davis Strait the most impetuous and persistent fogs abound, so dense that the aviators would be seriously handicapped, even if they rose high enough to clear the fog. Then, again, the Arctic storm is so sudden it might overtake the aviator before they could make a landing. It is the belief of many that some such evil influence overtook Salomon Auguste Andrée and his daring companions, fifteen

years ago, when they attempted to navigate the Arctic Circle and reach the North Pole by balloon. They flew from Spitzbergen in what seemed most promising conditions, but good weather, and after some hours they disappeared. Few believe they came down in the Polar Sea or any other body of water, because their expedition was so equipped that in such an event parts of it would float out in time to let the world know of the tragedy. But a vestige of it ever has been found, and those most versed in polar lore believe the balloonists came to earth somewhere on Greenland's icy mountains and were unable to make their way to a habitation on either coast.

Just why such a route should be selected it is hard to imagine. Its longest leg is about the same distance as from the Irish coast to Newfoundland, with no apparent advantages over the latter.

A far more favorable route lies open. The aviator could leave the European coast along the shores of Spain, fly thence to the Azores Islands, to Newfoundland and to New York. The three legs of this journey would be very nearly the same length. From Spain to the

Azores is approximately 1,000 miles; thence to Newfoundland, 1,500 miles, and to New York, 1,200 miles, or 3,700 miles in all.

Numerous advantages are offered by such a route. In the first place, the aviator would travel along the northern parallel of latitude, with a practically unvarying temperature all the way. This would insure for his motor increased efficiency under the long strain. The first thousand miles would be made when the motor is cleanest and in best working order. The second leg, heading for Newfoundland, would be not so long as the journey from St. Peterburg to Paris, but, of course, would have to be made without mishap serious enough to cause the machine to fall. Being supplied with pontoons for the purpose, it could glide to the ocean for temporary repairs. But the chief advantage of such a route would be that the worst part of the journey would be over a part of the ocean that is practically crowded with transatlantic steamships all during the flight, giving the aviator assurance that he would be near help when most likely to meet with fouling engines, diminishing fuel, diminishing sustaining power and diminishing vitality of the human machine.

the aviator would be over the New England States, with ample landing places.

A third route has been suggested—across the narrowest part of the Atlantic Ocean—from St. Pierre, Leone, on the western coast of Africa, to Cape Saint Roque, Brazil, on the northeastern shoulder of South America. For the purpose merely of crossing the ocean this might be the most promising route because it is roundly 1,600 miles from continent to continent, half the distance of the Azores route and about one-third the Iceland route. Many apparent advantages lie in this locality. From St. Pierre, Leone a flight of 900 miles in round figures would carry the aviator to the island of St. Paul, off the Brazilian coast. About 400 miles to the southwest lies the island of Fernando Noronha, with 500 miles between it and the Brazilian coast. The longest leg of this route would be very little longer than the longest continued flight yet officially recorded—700 miles. Two possible landing places in the 1,600 miles would give the aviator assurance, but he would be without the greater opportunities for assistance he would encounter from the numerous ships in the lanes of the North Atlantic. He would have a compar-

tively even temperature and the further aid of tropical calms.

Granting that an aeroplane will be built that can sustain a speed of a hundred miles an hour or more for fifteen hours, even the rankest pessimist—and there are few of them interested in aviation—can cite few things that would bring disaster to an across the ocean flyer. The collapse of a wing, the breaking of part of the framework or failure of the operator or operators with some sudden ailment would easily cause the machine to tumble. But the proportion of such accidents in aerial navigation is very small.

Many things would cause him to glide to the surface of the ocean to make temporary repairs, such as the fouling of the motor, derangement of any part of the wings or guiding planes or some indisposition of the aviator. But pontoons will make it possible for the machine to descend to the ocean surface for repairs. These pontoons, of course, will be suspended far below the motor so that the seas would break through the open framework and not injure the machine. Rough weather, of course, will be guarded against and the aviators will not venture out without first learning what is the prospect of long continued storms. Temporary storms and squalls they do not fear because many aviators have been caught high in the air in a heavy gale and have gone against it safely or have risen and escaped it altogether.

Like the automobile, the aviation engine is becoming more reliable every day. In the earlier history of the automobile few persons cared to risk a tour of more than twenty-five miles into the country for fear the motor would foul or something happen to put the automobile out of commission. To-day a man would not own an automobile that could not make a journey of 150 miles or more in a day if necessary and be ready to start out again the next morning without a thing being done to it except to replenish its supply of fuel. Many an automobile motor to-day can run a week without stopping.

So the aeroplane motor will be perfected, and before many years we will see any number of craft that will be able to sustain themselves for twenty-five hours just as easily as for five hours.

Necessarily, the craft that discovers the aerial channel across the ocean will carry two pilots. While one man could sit at the wheel for fifteen, twenty or twenty-four hours at a time, being buoyed by the air and the enthusiasm that he was making history, it would increase the danger of the journey too much. Cramped position of his arms, hands or feet or slight drowsiness caused by the long strain on the eyes might easily result in disaster, but with two men each would act as a guard for the other. Many types of aeroplanes are in use to-day, with two pilots, two steering wheels and a duplicate system of control throughout. By the merest adjustment the steering and control can be switched from one man to the other, thus relieving him at any time the strain becomes too great.

Gradually, every feature of air navigation is being brought toward perfection, and before long some one is going to cross the Atlantic Ocean and the pilots will receive a place in history and financial rewards that will make them independent for the rest of their lives.



ALAN R. HAWLEY



Roland Garros.



Claude Grahame-Smith.



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