Will the America Fly to the Pole?

By WALTER WELLMAN.

Illustrations from Photographs by the Author.

[NOTE.—A recent cablegram stated that the Wellman airship had started for the Pole, but was unable to proceed owing to the guide rope becoming damaged.]

IN seeking the North Pole in an airship, it is no toy that we are playing with. The America is no plaything, no fragile, short-lived balloon built to run for a few hours as the wind listeth, and then succumb—but a machine, big and stout, steel-muscled, full-lunged, strong-hearted, built for war, for work, for endurance, able to fight the winds that sentry the Pole and perhaps to defeat them. It is no flight of rhetoric to say that this airship is huge. It is gigantic. Its length is 183 feet, and its greatest diameter 52.5 feet. The steel car underneath it is 115 feet long, and from the bottom of this car to the top of the gas-reservoir, the distance is 65 feet, the height of a four-storey house. The surface of the gas-reservoir or balloon is 21,000 square feet, or more than half an acre, and the weight of the envelop of cotton, silk and rubber is two tons.

PAUL BJOERVIG,

Norwegian sailor, now at Danes Island for the winter. Bjoervig has thrice accompanied Mr. Wellman on his Arctic expeditions. In the winter of 1898-9 he was one of two men left by Mr. Wellman at an outpost in Franz Josef Land. His companion died, and for two months of Arctic darkness he slept beside the body of his dead comrade, which he was unable to bury.

When the ship sets out upon its voyage, it will embrace, all told, 20,065 pounds—ten tons—of material and cargo.

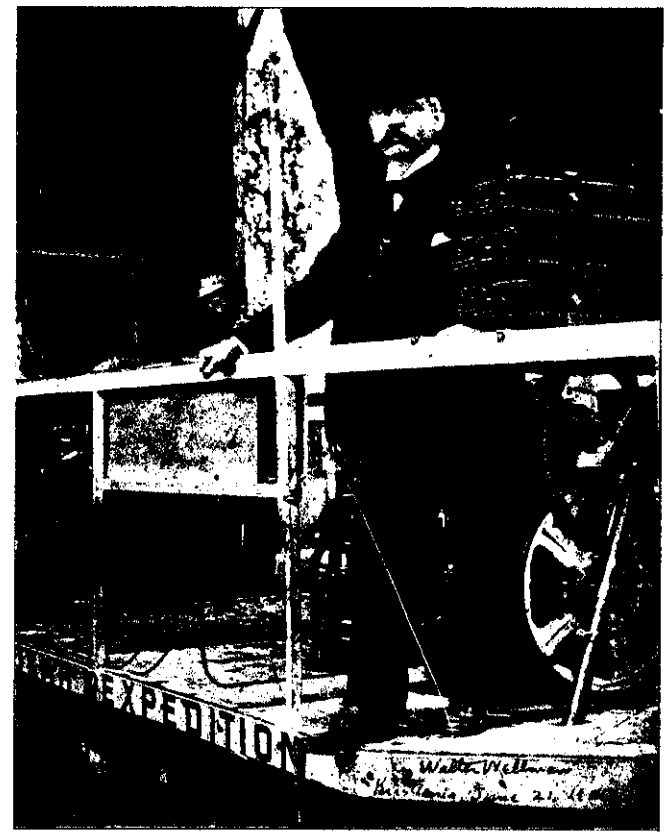
If we add the weight of the hydrogen in the reservoir—1,875 pounds—we have 22,840 pounds of men and materials moving northward in this engine of the air.

Using Surplus Gas As Fuel.

We need have little fear lest the lungs of our machine fail us. In point of fact, it is pretty certain that we shall have gas to spare, and it is unnecessary to give further answer to the oft-asked questions: "Can you make more gas on the way?" "Can't you carry a supply of gas with you, compressed in steel tanks?" Actually, instead of needing new supplies of gas en route, we shall have gas "to burn." And we propose to burn it—that is to say, burn the surplus, be it much or little. The more we work the motor, the more rapidly we reduce the weight of the load carried; and the more the load is reduced, the more gas we have to dispose of. Ordinarily, this surplus gas is released, deliberately, through the valves into the surrounding air. But when we remembered the high calorific value of hydrogen, that its heating power per pound is more than three times that of gasolene, we said: "A pity to waste so much energy, to throw away, when it lies within ten feet of our motor. Can't we burn it as fuel?"

In response to this, Chief Engineer Vaniman rigged a motor with a two-way valve. Through one inlet came gasolene, through the other hydrogen. To experiment, he started the motor with the liquid fuel, then shut off the gasolene and turned on the gas. Instantly the motor accelerated its rate. This change from fluid to gas, and from gas back to fluid, was effected by the mere turn of a valve. The system worked perfectly. With check-valves to avert the danger of back-fire, and a small metal pipe leading to the gas-reservoir overhead, we see no reason why the surplus hydrogen cannot be used as so much fuel for our engine.

And how many miles per hour can the ship make at full speed? From fifteen to eighteen statute miles, which is equivalent from thirteen to sixteen sea-miles. This, of course, is the rate of progress it could make in a calm. The French call this the "proper speed" of an airship, meaning thereby its movement by its own motive power through still air, regardless of the effect of the wind. If we reckon the speed at fifteen miles per hour, and assume that the ship must go against a wind of ten miles per hour, the progress will be five miles per hour. But if the wind is blowing ten miles per hour with the course, the progress will be twenty-five miles per hour. It is apparent that, if our engineering has been sound, and the America can make about fifteen sea-miles per hour for 150 hours with the gasolene carried, or 180 hours with both liquid and gaseous fuel, our radius of action, assuming the winds neutral, would be from 2250 to 2700 sea-miles—an allowance which seems to us ample.



PORTRAIT OF MR. WELLMAN, TAKEN ON THE DECK OF HIS POLAR AIRSHIP, AMERICA.

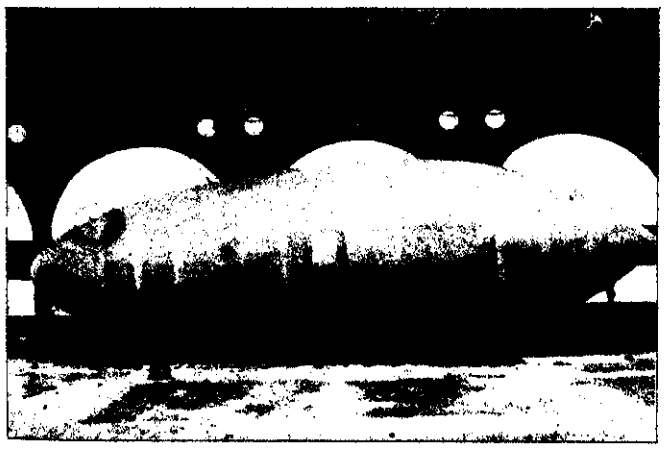
The nacelle or car shown in this picture was the one built for 1906. For 1907 an entirely new car, all of steel, has been constructed.

It may be asked how we can speak with so much confidence of the speed of an airship that has never been tried in the air, that has not even been launched. The answer is that, just as in marine engineering it is practicable to design a vessel with certain displacement, weight, lines, and power, and to calculate within a fraction of a knot her speed in actual trial, so with airships the art has now so far developed that, with a little less certainty and accuracy perhaps, the performance may be known in advance.

It appears, therefore, that our ship is much like a large yacht, able to carry enough fuel for a voyage of 2000 to 2500 miles, and reasonably certain to arrive at her destination if the storms and winds do not too much hamper her, and she can avoid the dangers of shipwreck or other disaster. There is this difference: the voyage of the ocean yacht would be in known waters, and the adverse effect of the winds upon her progress would probably be not very great. In our case the influence of the winds or other weather conditions might be controlling, and it behoves us to inquire with care what these conditions are likely to be and how well our craft is adapted to meet them.

THE PROW OF THE POLAR AIRSHIP, AMERICA.

The nose that is to be pointed toward the North Pole.



SIDE VIEW OF THE POLAR AIRSHIP, AMERICA.

The immense length—one hundred and eighty feet—is suggested by the figures standing near and under the balloon.

The Arctics the Best Field for Airships.

Most people think of the Arctics as the region of all the world least favourable for an airship voyage. They have in mind the intense cold, the frightful