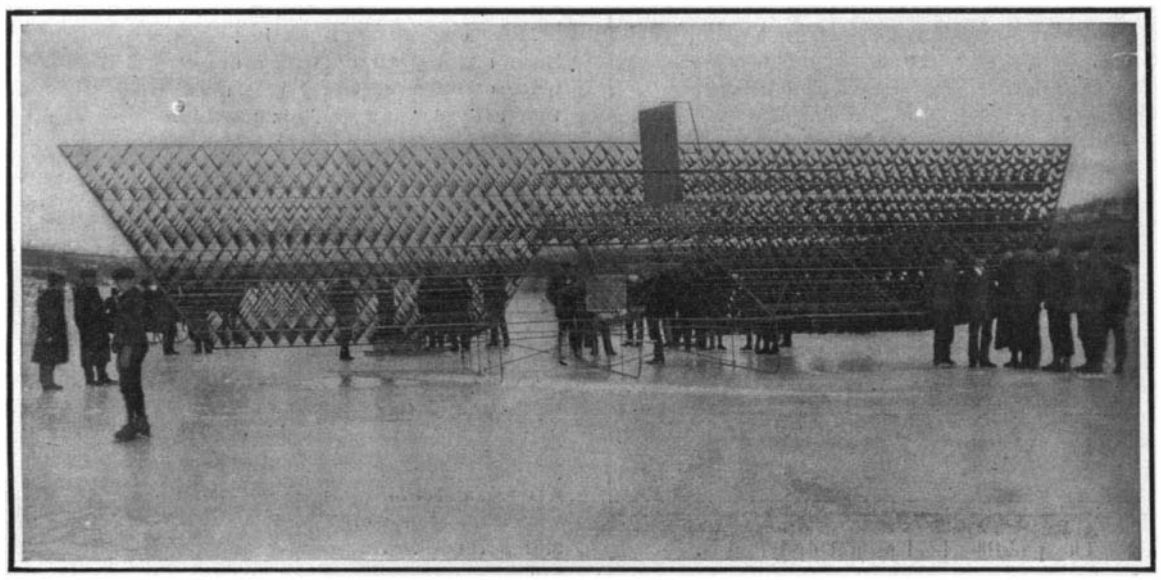
stalled in future. The lifting and conveying mechanism is operated by an individual motor plant.

Within a radius of 75 miles from the site of the project are situated a number of manufacturing centers, including the cities of Baltimore, Washington, Harrisburg, York, Lancaster, and Philadelphia. With the present system of electrical transmission for power, the current can be conveyed to any of these points. Consequently, the location is adjacent to a very large source of consumption, saying nothing of an extensive mileage of street and interburban railways, which it may furnish with current. Although the current will have to compete with steam, as fuel in this part of the country is sold at a very low price, owing to the proximity of the soft coal mines, the calculations of the electrical engineers are that electrical power can be generated and supplied to any point in the entire territory at a lower cost than steam power can possibly be generated, owing to the character of the generating machinery and the low cost and abundance of the water power.

The plan of the promoters to serve such a wide field with electric power, in spite of the competition due to the low price of steam coal, will be followed with interest, for the reason that nearly all of the generating stations recently built on water-power sites have been in sections where it was impossible for industries to be supplied with coal or other fuel except at a very high price, usually far in excess of the rates paid by manufacturers in the radius of McCall's Ferry for fuel.

Altogether, the project represents an investment of about $10,000,000. It has been taken up after an investigation made by Mr. William Barclay Parsons Mr. Cary T. Hutchinson, and other noted experts. The work was done under the general supervision of Mr. Hutchinson.



Front view of the aeroplane, showing horizontal and vertical rudders, radiator, and steering wheel.

The machine is mounted upon runners placed below its central portion.

TEST OF THE BELL TETRAHEDRAL-CELL AEROPLANE IN NOVA SCOTIA.

The accompanying photographs show Dr. Alexander Graham Bell's aeroplane "Cygnet II," which was recently tried in Nova Scotia.. The construction of the "Cygnet I" has already been described in our columns, this being on the principle of the tetrahedral kite. Dr. Bell's idea is that the difficulty experienced in aeroplanes composed of a few large planes, of maintaining the center of air-pressure coincident with the center of gravity, may be overcome by dividing the supporting and guiding planes into as large a number as possible of tetrahedral cells; as the center of air pressure upon any one pocket cannot move outside the area of that pocket, the center of pressure of the whole structure cannot move over a proportionally larger area.

This system of construction has the further advantage that the size of the machine may be indefinitely increased with an increase of weight only directly proportionate, whereas in machines composed of a few large planes, the necessary strength of construction causes the weight to increase as the cube of the dimensions.

In December, 1907, Dr. Bell tested the "Cygnet I" by towing it as a kite above Lake Bras d'Or, near Baddeck, N. S. Upon that occasion the late Lieut. T. E. Selfridge went up to a height of 168 feet, and remained aloft for seven minutes. He was greatly impressed with the stability of the kite and the feeling of security he had when in it. An illustrated account of this test was published in SUPPLEMENT No. 1681.

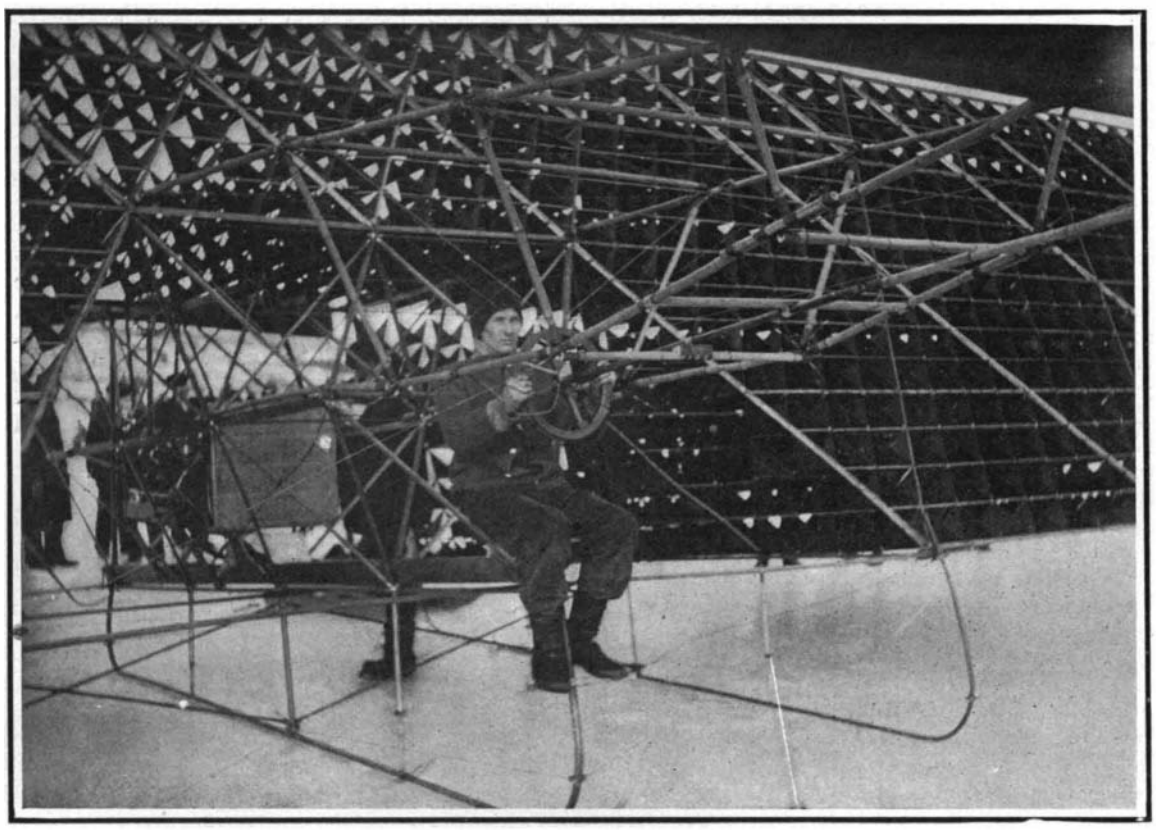
The "Cygnet II" is larger and somewhat different shaped than its predecessor. As can be seen from the photographs, it is composed of a great number of tetrahedral cells, or V-shaped surfaces. The 8-cylinder V motor and radiator are mounted upon the rear of a triangular frame extending through a cut-away part of the aeroplane, at the center, while the aviator's seat is at the front of this frame. The motor, of 3¾-inch bore by 4-inch stroke, develops 35 horse-power at 1,000 R. P. M. It drives the large propeller by means of sprockets and chain. The propeller makes 1,500 R. P. M. to 1,000 of the motor. This engine will develop 50 horse-power and it weighs complete, but without water, 202 pounds.

A double-surface horizontal rudder and a single vertical rudder are arranged upon a bamboo frame that projects out in front. Both rudders can be operated by a single steering wheel. The aeroplane is mounted upon three runners for the purpose of testing it upon ice.

It was not supposed that the power of the engine would be enough to start the machine or even to maintain a sufficient speed to support it in flight, but it was proposed to determine, by observation of the difference between the towing force required to keep the machine suspended with and without the engine, how much power would be required in free flight.

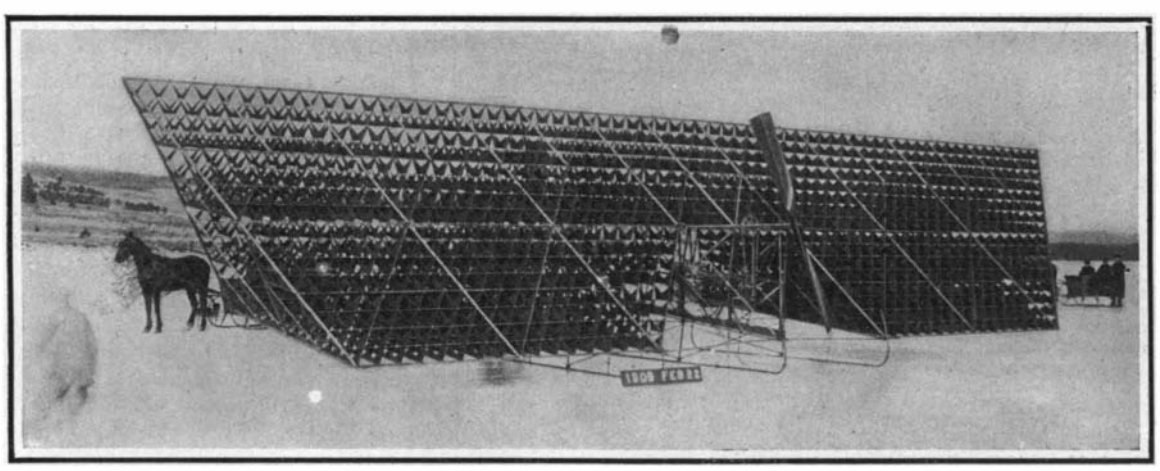
Unfortunately, however, the propeller shaft sheared off early in the trials and no positive data were obtained. That the fault was not with the engine was sufficiently proved by the later success of the latter in the aeroplane "Silver Dart" to which it was transferred.

After having previously made over a dozen practice flights at Hammondsport, N. Y., Mr. J. A. D. McCurdy flew completely around Lake Bras d'Or, a distance of about 4½ miles, at a speed of about 40 miles an hour and at an elevation of about 30 feet, on February 24th. A trial flight of half a mile made the day before was the first to be made by any motor-driven aeroplane in Canada. Mr. McCurdy is anxious to compete for the SCIENTIFIC AMERICAN Trophy, and he may attempt to make the 25-kilometer flight required before he returns.



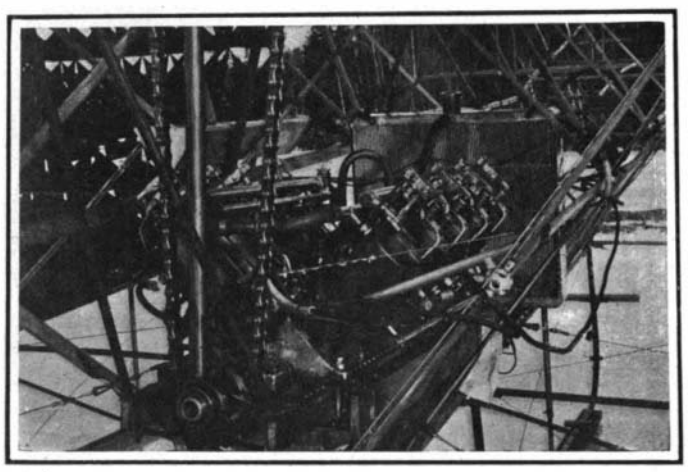
The aviator and power plant of the "Cygnet II."

Much of the framework is constructed of bamboo. The aviator sits at the front end of a triangular body frame while the motor and radiator are located at the rear of this frame.



Rear view of the aeroplane, showing its shape and the arrangement of the tetrahedral cells.

The large wooden propeller is chain-driven from the 8-cylinder engine placed below.



The 50-horse-power, 8-cylinder water-cooled Curtiss motor.

The valves are of the concentric type, mechanically operated. Copper water jackets are used.

FIRST TEST OF THE BELL TETRAHEDRAL-CELL AEROPLANE "CYGNET II" IN NOVA SCOTIA.