

**THE BEEDLE AIRSHIP.**

BY THE ENGLISH CORRESPONDENT OF THE SCIENTIFIC AMERICAN.

The accompanying illustrations show the frame, propellers, and motor of an English airship having one particularly novel feature. The frame of the ship, as is well shown in the photograph, is built of steel bicycle tubing. The three main tubes extend the whole length, and are brought to a point at each end. The frame is arranged so as to form a triangle, within which is placed the motor and the aeronaut's basket. The total length of the framework is 50 feet. The three longitudinal tubes are connected at intervals of about 4 feet by horizontal cross tubes between the bottom members of the frame, and by inclined tubes between the two bottom members and the top tube. The whole frame is also stiffened and braced by steel wire.

The motor is contained in a central frame, the weight of which complete, with the motor mounted, is 417 pounds. The weight of the entire frame of the airship is about 860 pounds.

The motor is a standard four-cylinder, 12 to 15 horsepower, Blake gasoline engine. To keep down the weight, aluminium has been utilized as much as possible in its construction. The arrangement of the motor, with its flywheel and disconnecting clutch at one end, and with its other disconnecting clutch at the other end, is well shown in our illustrations. Four inlet pipes lead from the carbureter to the inlet valves of four cylinders. The cylinders are cast in pairs, with a common water jacket for each pair.

The great feature of the Beetle airship is the steering propeller, which is mounted at the front end of the framework. The propeller is carried on a cross shaft at the

front end of a trussed U-shaped frame. This frame can be revolved on a sort of vertical turntable or fifth wheel, and it is readily turned by means of a crank. The shaft carrying the propeller is driven through bevel gears by a driving shaft running along one side of this frame, and which is in turn driven by a spur gear and pinion from a central shaft turned by the motor. When it is desired to direct the airship upward, the propeller-carrying frame is placed in a vertical position (as shown in the lower photograph), thus placing the propeller in a horizontal position and causing it to employ its thrust in aiding the airship to rise. As soon as the desired height has been attained, the propeller is turned to a vertical position, and it then can be used to steer either to the right or left, according to the direction in which its thrust is aimed.

Should it be necessary to use the propeller for bringing the airship to earth, if it is placed in the horizontal position with its thrust directed upward, it will tend to lower the airship. The diameter of the steering propeller is 8 feet, while that of the propeller proper at the rear of the airship is 12 feet. The latter propeller is driven continuously, while the steering propeller is used only intermittently, as needed. The long, longitudinal driving shafts, running fore and aft from the motor, are arranged to run in special self-aligning ball bearings, and there is a considerable speed reduction from these two driving shafts to the propeller shafts, as can be seen in the illustration. The airship is controlled by four levers, placed within easy reach of the aeronaut. Two of these levers

**The Second Annual Test of Commercial Automobiles.**

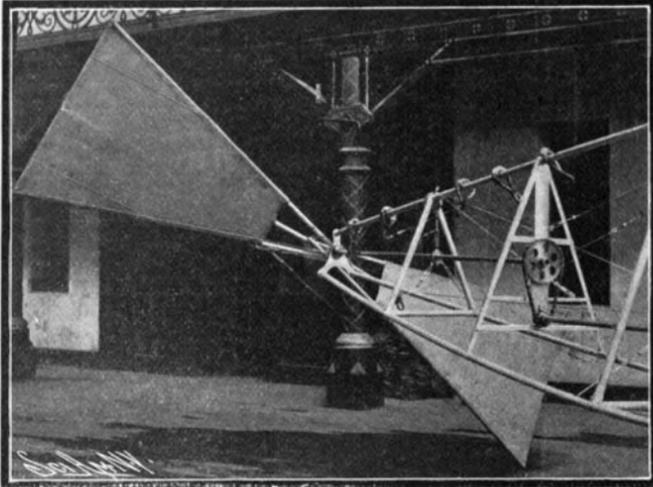
The annual test of commercial automobiles, conducted by the Automobile Club of America, was held last week in this city. Instead of a mere parade of the contesting machines, with stops, interspersed somewhat as in actual use, the trucks and delivery wagons were this year placed at the disposal of two express companies and were thus engaged in making deliveries and collections under actual conditions of service.

Eighteen machines were entered in the test, and all but one started. Two dropped out after one day's work. One of these was a new gasoline delivery wagon that had been completed only the day before and that had received no proper testing. The other was a large

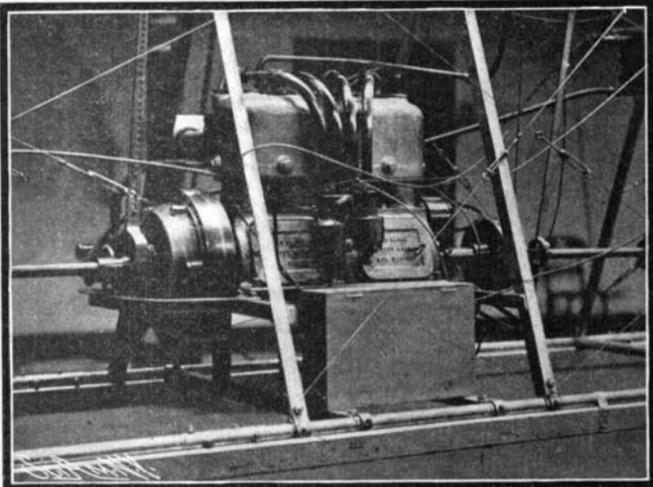
7-ton steam truck, intended to carry a load of 5 tons. This machine made a trip to Yonkers the first day, and did not reach home again till 1.55 P. M. the following day, when it dropped out on account of the boiler not working well. The only other large truck was the Fisher gasoline-electric. This also was intended to carry 5 tons. On the fourth day of the test it carried 10,200 pounds of beer to Yonkers and returned with 4,200 pounds of empty barrels in exactly 9 hours. The total distance was 32 miles. On the same day a Pope-Waverley electric light delivery wagon made 35 1/2 miles on a charge. A load of 1,000 pounds was carried and 100 stops were made in 10 hours, 55 minutes. The average distance covered by the gasoline delivery wagons was about 35 miles, and that made by the electric about 28. There were five gasoline wagons intended for a load of 2,000 to 2,500 pounds; one gasoline truck for a 4,000 pound load; three electric wagons capable

of carrying 2,000 pounds; one electric truck intended for a load of 5,000 pounds; two light electric delivery wagons of 1,000 and 1,100 pounds load respectively; two light gasoline delivery wagons for loads of 500 pounds; one for 700, and one for 1,100. When the various data of the test have been compiled, they will doubtless show some interesting figures as to the improved service given by the autos, and the cost of operating the same.

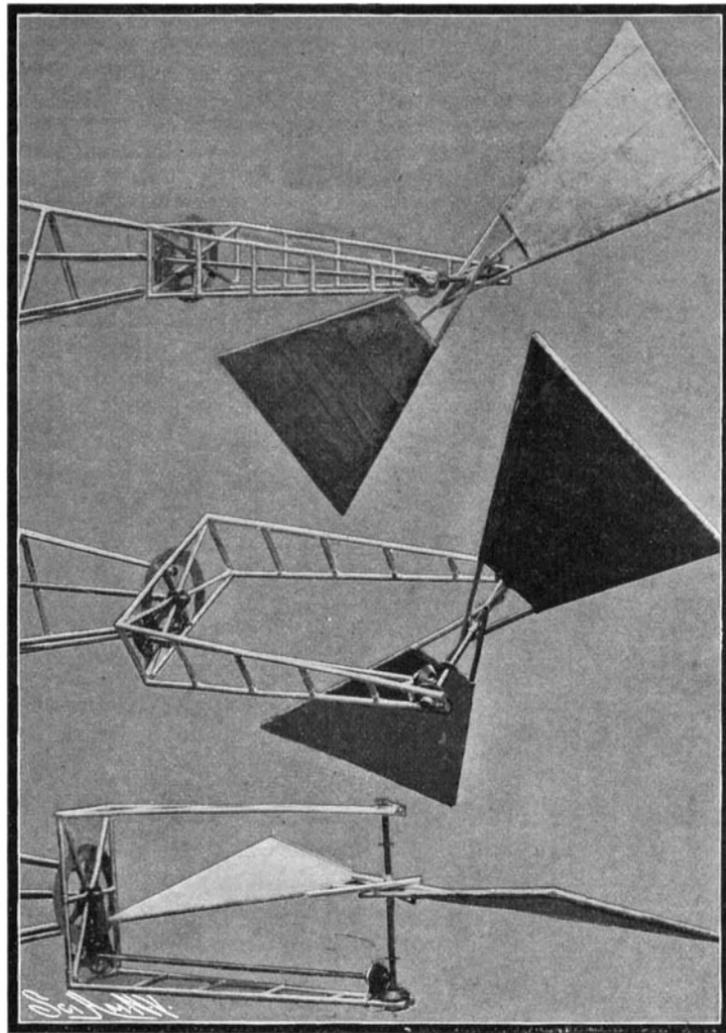
The Japanese government is being pressed by the industrial and commercial community of Japan as to the necessity for extending the internal railways, but the money originally set apart for the purpose not being now available, the government proposes to invite foreign capital for the necessary works.



The 12-foot Rear Propeller

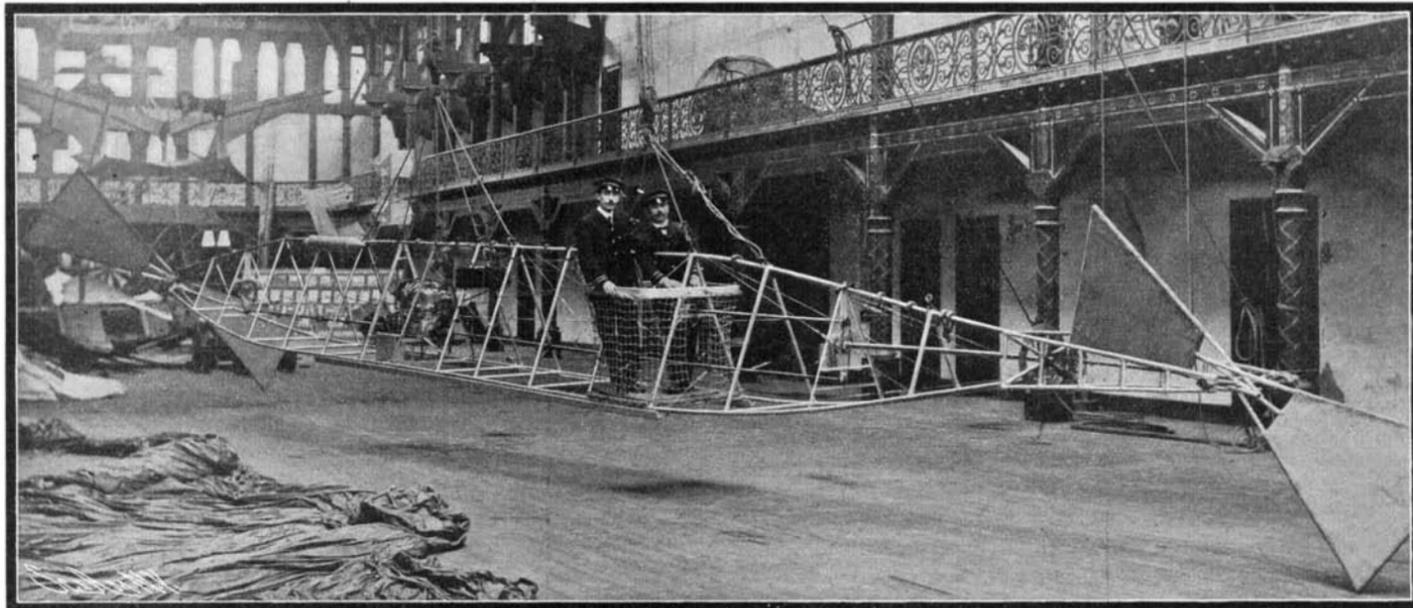


The 15-H.P. Motor of the Airship, Showing Flywheel and Internal Cone Clutch.



Three Views of the Steering Propeller.

(1) Vertical position for steering; (2) Inclined position; (3) Horizontal position for moving up or down.



THE FRAME OF THE BEEDLE AIRSHIP, SHOWING ARRANGEMENT OF MOTOR, PROPELLERS, AND AERONAUT'S BASKET.

The inventor is the right-hand figure.

operate the clutches, and the other two regulate the throttle and ignition of the motor. A compass is also placed above the steering wheel.

The balloon, which is cigar-shaped, is 93 feet in length and has a capacity of 26,000 cubic feet of gas. No ballonette is used within the balloon proper, and the latter has only sufficient buoyancy to just lift the frame, machinery, and aeronaut, as Mr. Beedle depends upon his propeller steering device to raise or lower the ship. This device makes it unnecessary to liberate gas in order to descend. The Beetle airship is a possible competitor at the St. Louis Exposition contest.

Ninety thousand gallons of water will pour over the three cascades at the World's Fair every minute.