

Fig. 10.—U.S.A. Signal Corps' "Dirigible No. 1," showing details of front manoeuvring planes, and Fig. 11, showing details of car.

UNITED STATES.

Signal Corps' "Dirigible No. 1." (Figs. 8, 9, 10, 11 and 12.)

Due to lack of funds, the United States Government has not been able to undertake the construction of an airship sufficiently large and powerful to compete with those of European nations. However, specifications were sent out last January for an airship not over 120 ft. long, and capable of making 20 m.p.h. Contract was awarded to Captain Thomas S. Baldwin, who delivered an airship last August to the Signal Corps, the description of which follows:—

Gas-Bag.—The gas-bag is spindle-shaped, 96 ft. long, maximum diameter 19 ft. 6 ins., with a volume of 20,000 cub. ft. A ballonette for air is provided inside the gas-bag, and has a volume of 2,800 cub. ft. The material for the gas-bag is made of two layers of Japanese silk, with a layer of vulcanised rubber between.

Car.—The car is made of spruce, and is 66 ft. long, 2½ ft. wide, and 2½ ft. high.

Motor.—The motor is a 20-h.p. water-cooled Curtiss make.

Propeller.—The propeller is at the front end of the car, and is connected to the engine by a steel shaft. It is built up of spruce, has a diameter of 10 ft. 8 ins. with a pitch of 11 ft., and turns at the rate of 450 r.p.m. A fixed vertical surface is provided at the rear end of the car to minimise veering, and a horizontal surface attached to the vertical rudder at the rear ends to minimise pitching. A

double horizontal surface controlled by a lever and attached to the car in front of the engine, serves to control the vertical motion and also to minimise pitching.

The position of the car very near to the gas-bag, is one of the features of the Government dirigible. This reduces the length and consequently the resistance of the suspension, and places the propeller thrust near the centre of resistance.

The total lifting power of this airship is 1,350 lbs., of which 500 lbs. are available for passengers, ballast, fuel, &c. At its official trials a speed of 19.61 m.p.h. was attained over a measured course, and an endurance run lasted two hours, during which 70 per cent. of the maximum speed was maintained.

"Dirigible No. 1," as this airship has been named, has already served a very important purpose in initiating officers of the Signal Corps in the construction and operation of a dirigible balloon. With the experience now acquired, the United States Government is in a position to proceed with the construction and operation of an airship worthy of comparison with any now in existence, but any efforts in this direction must await the action of Congress in providing the necessary funds.

Balloon Plant at Fort Omaha, Nebraska. (Fig. 13).

In anticipation of taking up the subject of aeronautics on a scale commensurate with its importance, a complete plant has been constructed at the Signal Corps post at Fort Omaha, Nebraska. This plant comprises a steel balloon-house 200 ft. long, 84 ft. wide, and 75 ft. high; that is, large enough to house a dirigible balloon of the size of the new French military airship, "Le Republique." For furnishing hydrogen gas, an electrolytic plant has been installed, capable of furnishing 3,000 cub. ft. of gas per hour. A gasometer or 50,000 cub. ft. capacity has been provided, to store a sufficient supply of gas for emergencies.

(To be continued.)

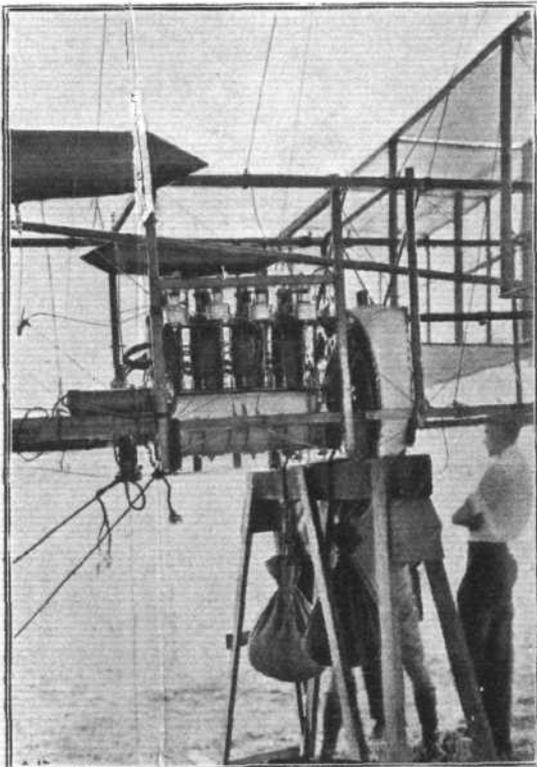


Fig. 12.—Signal Corps' (U.S.A.) "Dirigible No. 1," showing details of engine.

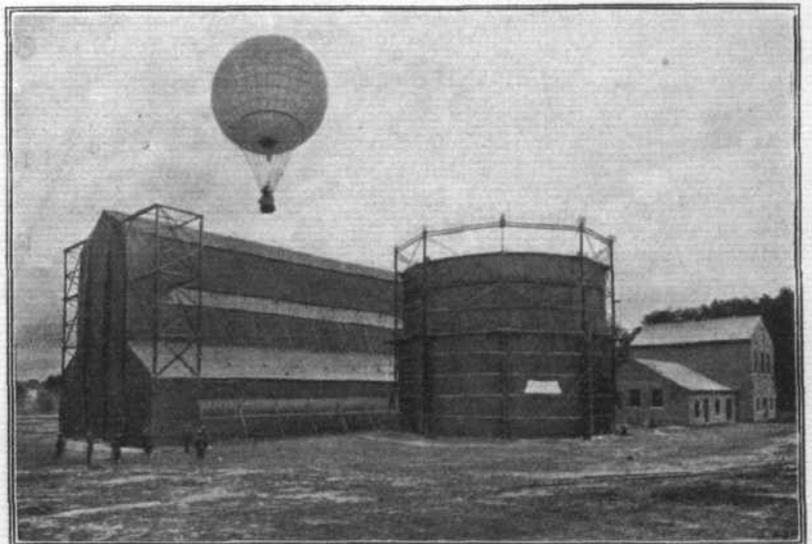


Fig. 13.—Steel Balloon House, Gasometer and Hydrogen Generating Plant, U.S.A. Signal Corps Post, Fort Omaha Nebraska.