

soared up to 400 feet. The direct pecuniary result was the winning of the £40 prize offered by the Sarthe Aero Club for the highest flight.

The official distance was only sixty-two miles, that being the shortest distance between points. But the machine flew far outside the track, the officials of the club estimating the distance as 95 miles as aforesaid. The long round is a disadvantage, perhaps, showing the need for a very wide turning space for the Wright aeroplanes. But the fact remains that the distance has been covered of 95 miles. During the trial there was a wind of twenty-one miles an hour. The speed was throughout swift and the going regular.

As he completed the forty-fifth round Mr. Wright's petrol feed tap closed accidentally, and he decided to come down. On landing he told an interviewer, "But for this little accident I should not have come down, for I had set out to remain three hours in the air, and to cover 120 miles."

After lunch Mr. Wright carefully overhauled his machine, and at 3.48 p.m. rose again to compete for the Sarthe Club height prize. The wind had increased in violence since the morning, and as Mr. Wright shot



CARICATURE OF MR W WRIGHT

up into the air it was blowing with almost hurricane force, so much so that on attaining a height of 100ft. the aeroplane swayed about in an apparently highly dangerous manner. But Mr. Wright managed the machine as though he were driving some mettlesome horse, and shot up higher and higher towards the line of small captive balloons which marked the height of 300ft., and which were tossed about by the high wind.

Presently the aeroplane came to the level of the balloons, but Mr. Wright did not stop. He went higher and higher, until he soared a full 100ft. above the balloons, and seemed like some huge bird. Then, with a splendid circular swoop, he came lower, and after going once round the camp alighted at 4.10 just outside his shed, amid a roar of applause from the crowd that had witnessed this marvellous feat.

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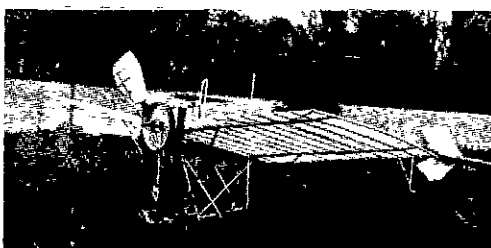
Lieut. Thomas E. Selfridge, the promising young army officer who fell to his death with Orville Wright in the latter's aeroplane on September 17, was buried with military honours in the Arlington National Cemetery, which adjoins Fort Meyer,

on the 25th ultimo. The loss of this brilliant officer will be keenly felt, particularly in aeronautic circles, for he was thoroughly informed in the new science, and, as the secretary of the Aerial Experiment Association, he had had much to do with the development of aeronautics in America. The various aeroplanes built by this association, all of which flew successfully, were designed by him, and the third of these, the "June Bug," on July 4 last won for the first time the *Scientific American* Trophy. Lieut. Selfridge is the first martyr to flight by a self-propelled heavier-than-air flying machine, and it seems but fitting that a suitable monument should be erected on the spot where he fell.

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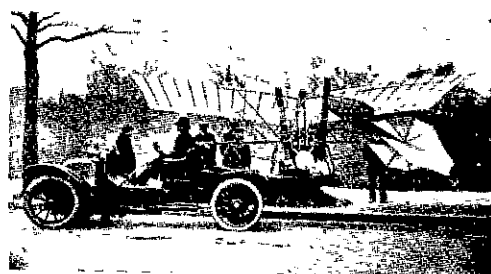
SANTOS DUMONT TO THE FRONT ONCE MORE.

After the long absence of this pioneer from the field he was the first to make his own in public at all events, it is a genuine



THE "DEMOISELLE," SANTOS DUMONT'S LATEST AEROPLANE

pleasure to read that he is once more to the front with a machine of his own design. His new machine is a monoplane driven by a 24 h.p. 8 cylinder Antoinette motor arranged on a three wheel running gear. The propellor is mounted on a hollow steel shaft running on ball bearings, and is placed on the front edge in the centre. It is six feet in diameter, with a 6½ foot pitch; it is capable of a speed of 1300 revolutions, and weighs 127.6lbs. Lateral stability is secured by two wings arranged at dihedral angle with the seat between placed three feet below; this is a position that makes for stability. The spread of the wings is five metres (16.4 feet) and the entire weight is but 297lbs. The dimensions of the wings are 2.5 by 2.1 metres. The total supporting surface is only 10.5 square metres, and with the aviator in his place the total weight



Santos Dumont transporting the "Demoiselle" on his Motor Car from Paris to St. Cyr.

to be lifted is about 411lbs., which gives a loading of the single surface of four pounds per square foot, which is the highest ratio of weight to surface that has ever been employed. Before mounting from the ground the machine must get up a speed of 36 miles an hour. On the 12th of December the inventor made several short flights without any particular difficulty. In one of these there was a rather sudden ending, the machine descending heavily on one of the wheels, which was buckled in conse-

quence. The "Demoiselle," as M. Dumont has named his machine, is the lightest of all the aeroplanes. It was made by the Voisin factory, and the owner is in the habit of carting it about in his motor-car from Paris to the exercise ground, or anywhere else he may find convenient.

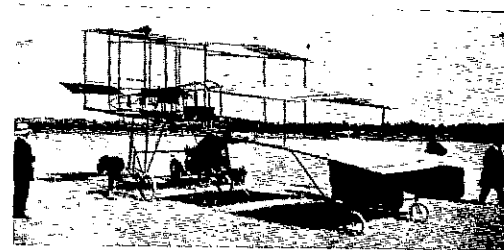
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THE VOISIN FACTORY.

Of many factories the most famous is that of the Voisin Brothers, who have followed the fortunes of aviation from the first.

Of this factory, the Paris correspondent of the *Times* says:—

Messrs. Voisin Freres rank among the earliest of the pioneers of aviation in France. Captivated by the exploits of Lilienthal, which were then being made widely known by Captain Ferber, and the reports of the experiments of the Brothers Wright in America, they began a series of patient trials of apparatus, without motors of any kind, resembling that used by the Wrights. The difficulties and the dangers they encountered in the course of their experiments ultimately led them to abandon the models they had made, and to produce an entirely new type of machine of their own design. Out of these labours arose the bi-plane flying apparatus, which is now so well known, and one of which, under the guidance of Farman, has just completed the journey from Chalons to Rheims, the first direct aerial voyage in a machine of this kind accomplished by human agency.



THE DUTILLEUL AEROPLANE. Three-quarter view, with planes arranged in steps, a horizontal rudder in front, and twin vertical rudders at the rear.

Messrs. Voisin have just occupied entirely new works, which are situated at Billancourt, on the outskirts of Paris, close to Issy les Moulineaux, where so many experiments in aviation are carried out. They comprise a very extensive erecting shop, where at the present moment four aeroplanes are in course of construction and are approaching completion, a machine shop, where the fitting up and adjustment of the mechanical portion of the apparatus is undertaken, and an experimental workshop.

In the experimental shop there is an interesting piece of apparatus intended for the trial of the bearing or supporting planes. It is actually a kind of balance. It consists of an elongated box, square in section, with sides of about 1.50 metre, and it is open at both ends. At the bottom an electric fan renders it possible to produce a current of air at any required velocity in front of the opening. The surface or the combination of surfaces it is desired to test is then placed in front of it in order to ascertain its sustaining power. The surfaces in question are supported by arms projecting from two frames, arranged on either side of the box, and these frames rest on floats which are plunged into cylindrical vessels filled with water, constituting a scale beam. In carrying out the experiment, the surfaces to be tested being