

A Metal Balloon.

BY JAMES WALTER SMITH.



It was invented by a man named Schwarz, who did not live to see his balloon successful. Scientists laughed at Schwarz for saying that a metal balloon would be able to lift itself, with its motor and car, off the ground, and the military men who carry on the balloon practice of the German Army on the Tempelhof Field, near Berlin, agreed with the scientists that the aluminium balloon was a phantasy of disordered imagination. But the inventor was not to be turned from his project. He worked on it, developed it, clung to it tenaciously until death overtook him, leaving the inventor's wife to carry on the fight against the sceptics. Had Schwarz lived he would have seen his theories win the day.

That, in brief, is the story of the aluminium balloon—the curious creature of the air which, as is shown on this page, floated high above the chimney-pots near the Tempelhof Field on the 3rd of November last. The idea of a balloon made of metal was, it must be said, no new thing, for in 1842 a madcap Frenchman named Mares-Monges constructed a balloon of thin sheets of copper. It was a fine piece of workmanship, but it would not go up in the air, and its short life on earth was ended in the scrap-heap. The failure of Mares-Monges gave strength to the belief that a metal balloon was a dream and nothing more.

With the increasing cheapness, however, of that extraordinarily light metal, aluminium,

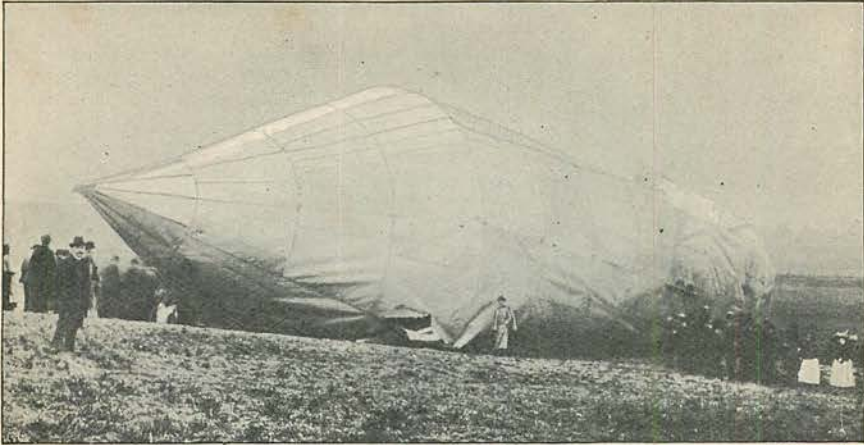
owing to the discovery of cheaper methods of production, a hope was raised in the breasts of inventors that the metal balloon was a possibility. Schwarz, of Agram, was one of these men, and having evolved, among other things, a method of filling a metal balloon with gas—which up to this time had been one of the difficulties in the way—he prepared to put his idea before the public, amid the discouragements already mentioned.

The German Government, which takes a keen interest in all aeronautic ventures and inventions, and never refuses to try an experiment, no matter how wild the project seems to be, finally lent a hand, and began to construct the balloon. The work was interrupted by the inventor's death, but the widow succeeded in obtaining permission to complete it. The Minister of War gave orders that the work should be done under military protection, and that the officers of the department should aid Mrs. Schwarz in every possible way.

This was not the first time in the history of the world that men were engaged on a job in which they had no faith. Therefore, believing as they did that the balloon would not be able to raise itself, to say nothing of the motor and passengers, from the ground, they cut away all the apparatus that to them seemed superfluous. There was, for instance, a clever device for regulating the descent of the balloon; and another for lengthening the four feet of the car in order to reduce to a minimum the shock of landing. Both of these



THE ALUMINIUM BALLOON IN THE AIR.
From a Photograph.



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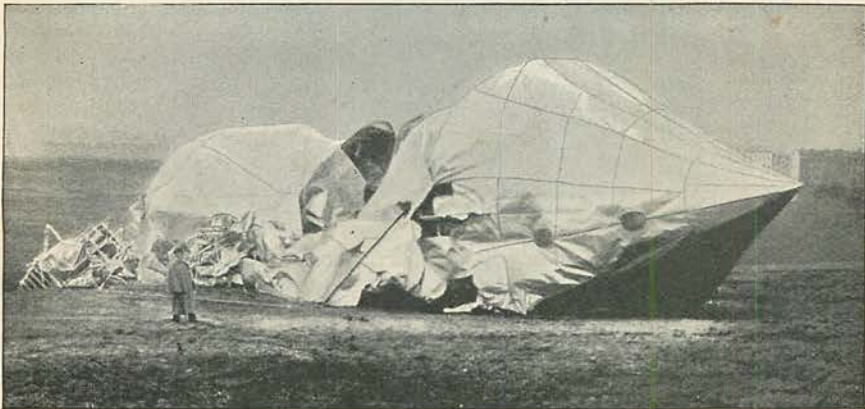
THE BALLOON AFTER THE CRASH.

[Photograph.

devices were done away with, as adding to the weight of the ship. Another arrangement employed by the inventor for securing the driving belt for the wind propellor was also sacrificed—a sacrifice which, as we shall see in a moment, was most disastrous. The balloon was operated by four screws, two for horizontal movement and two for vertical movement, run by a benzine motor of 10–12 horse-power. The ship, as shown in the illustrations, was an immense cylinder with cone-shaped end. The dimensions were colossal, the body of the ship being 134ft. long, 46ft. high, and 42ft. 7in. wide. Yet, notwithstanding the size, the weight of the whole was only

ments which marked the history of the Schwarz balloon, notwithstanding the help lent by the military servants of the German Government. The completion of the air-ship, however, and the final arrangements for a trial trip, threw discouragement into the shadow, and lent a rosy tint to the hopes of the inventor's wife. She was the only one who knew that the monster air-ship, with its silvery cylinder, would do the work for which it was intended, and it may be believed that the first two days of November, while the balloon was being filled, were to her days of excitement and weary waiting for victory.

It was necessary, in filling the balloon, that



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GOING SWIFTLY TO PIECES.

[Photograph.

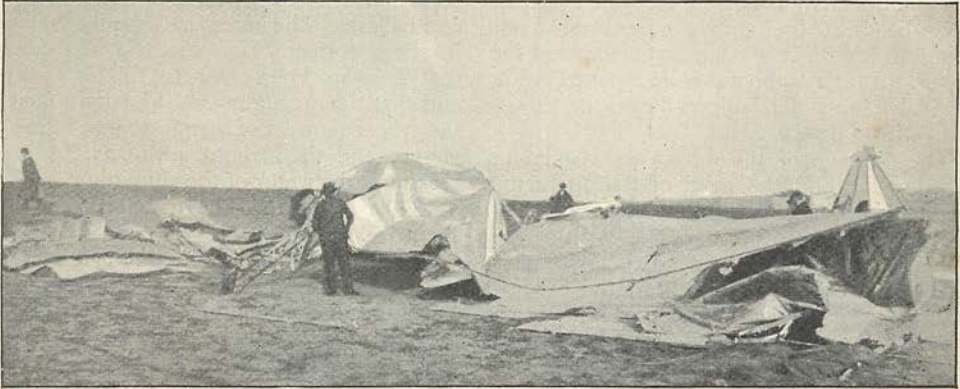
5,720lbs. With the mere exception of the driving-belt and the brass bearings, the whole ship was made of aluminium.

No one probably, except the inventor and his wife, will ever know of the discouragement

all the air should be expelled from the aluminium cylinder before the gas was injected; and this operation was completed by a peculiar arrangement of Schwarz's own. A colossal silk receptacle, the size of the

cylinder, was constructed, and this was placed inside the cylinder, the hydrogen gas being slowly pumped into the silk bag. As this bag expanded it gradually expelled the surrounding air from the cylinder, and when all the

noon was chill and drear. But, as there is an end to all things, so was there an end to all these preparations—and to the balloon. The supreme moment came when this enormous, ugly-looking, and maligned air-



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THE WIND CONTINUES ITS WORK.

[Photograph.

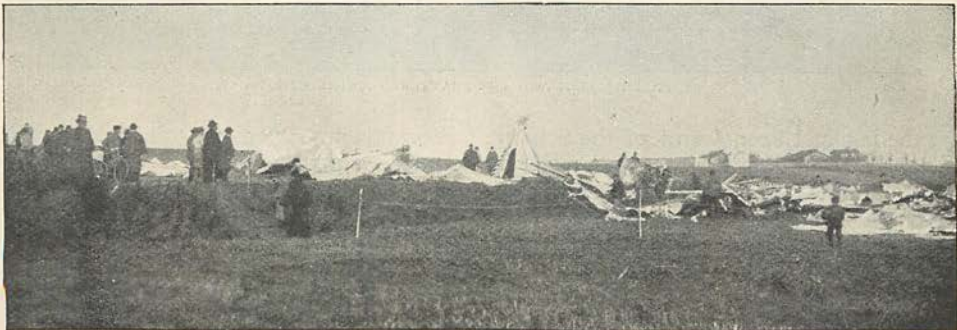
air was driven out, the gas in the silk bag was allowed to escape into the outer receptacle.

The inflation, if such it might be called, of the aluminium balloon, was one of the last stages in the preparation for ascent from the Luftschiffer Park, and as the moment approached for the trial trip the excitement was intense. Already, by its vain efforts to get free from the ropes which held it to the ground, the balloon showed that the inventor was right and his critics wrong. Herr Jagels, the engineer under whose charge the machine had been built, although not an experienced aeronaut, offered to make the ascent—a plucky offer, considering the feeling against the balloon, and the fact that more than one man was necessary to attend to the steering and propelling apparatus—and took his seat in the car. The presence of an east wind did not add to the pleasure of the occasion, and the after-

ship, which had cost two hundred thousand marks and four years' labour, was to be let loose in the heavens, with its solitary passenger, and the hopes of a dead inventor imbedded in every lamina of its glossy surface.

Such a work as this should have had a long life. But it was not to be. Amid the silence of the crowd it was let loose, and, in spite of the enormous surface which it presented to the wind, it rose with great speed. The motor was working at half speed, yet in less time than it takes to tell it, the balloon was at the height of 820ft., fighting against a strong wind, and ready to start forward on its trip above Berlin. Below, the spectators wondered how far the balloon would go, and the military men wondered why they had thought it wouldn't go at all.

Then came the end. Instead of going forward the balloon began to fall. The ship had become unmanageable. A belt had



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THE END OF THE BALLOON.

[Photograph.

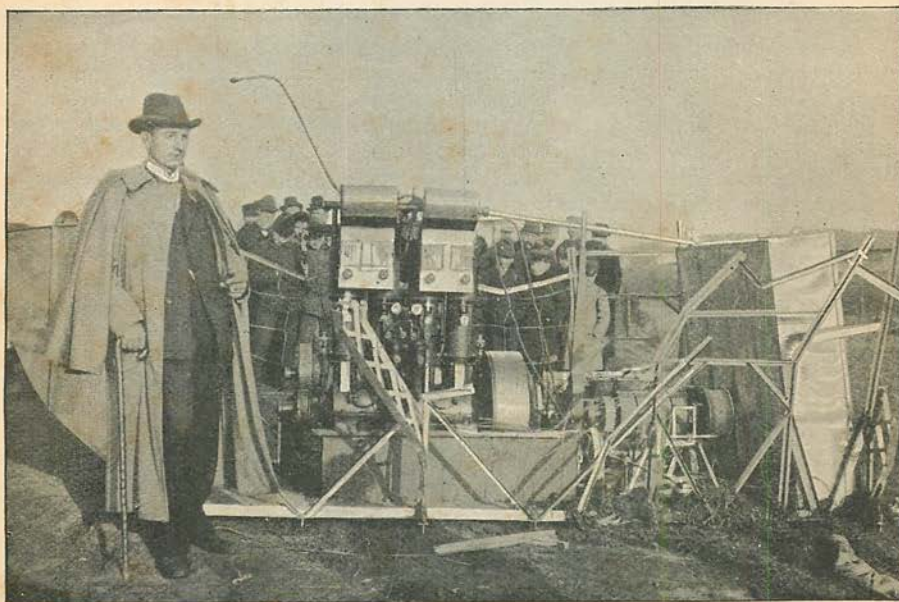
slipped—the driving-belt which Schwarz had planned to secure to the wind propellor—and the inexperienced aeronaut in charge lost his head. Had he operated the end screw alone he would have been able to sail along with the wind, as in an ordinary balloon; but the multiplicity of apparatus, which should have been in the charge of several men, confused him. It was an awful moment for Jagels. In that moment he opened wide the valve, and the balloon began its downward trip to destruction.

The absence of the device for regulating the descent, and the need of the apparatus for breaking the force of the fall, were among the causes of the disaster. The crash of the ship upon the ground was great, and Jagels saved his life by jumping out of the car just as it reached the earth, getting little more than a shaking-up. He had been six minutes in the sky, and at the end of his brief trip stood alive amidst the wreck of £10,000.

The newspapers, of course, were full of accounts of the disaster, and people thought

calculation proved, in a few days, that Schwarz was greater than those who laughed at him. It was demonstrated that the balloon was not only fully able to carry its own car and motor, but was also able to carry all the parts which the engineers had considered superfluous, as well as three or four passengers and ballast. The inventor's calculations were, in short, correct. The trial trip also proved that Schwarz knew how to fill his balloon, and that the apparatus could be controlled by the proper number of men. It was, indeed, a victory, and the inventor's wife, as she stood looking at the wreck of the aluminium balloon, must have felt that the triumph was worth the price.

The wreck lay some time in the field where it fell, as we may see in the illustrations, slowly crumbling into bits, which the curiosity-seekers were not loth to take away. And while the winds were playing with their victim, the German Government were making arrangements for the immediate construction of another Schwarz balloon. The trial had



From a]

HERR JAGELS AND THE SHATTERED MACHINERY.

[Photograph.

that the last had been heard of the Schwarz balloon. They jumped at the conclusion that such a disaster meant the wreck of Schwarz's theories. But in this they were mistaken. Careful and expert thought and

shown them that a metal balloon was possible, and the experts now think that the aluminium balloon is the military air-ship of the future. To this a certain happy woman in Berlin says "Aye."