

Tom Edison's Airship Talk with Santos-Dumont



SANTOS-DUMONT IN HIS NEW YORK APARTMENTS—M. AIME, EX-SECRETARY OF THE AERO CLUB OF PARIS, ON THE RIGHT.

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THOMAS A. EDISON believes that mankind ought to be ashamed of itself because the problem of aerial navigation by human beings was not solved years ago. He also makes the rather remarkable statement that, while Santos-Dumont has done a great thing in steering airships about through the air, it will be a long time before any contrivance for air navigation is commercially possible, because no inventor will be able to secure any reward for his labor in this line of work under the present patent laws. To make this great possibility practical, it seems that we shall have to establish a sort of protective academy of invention which shall reward the successful inventor of the commercial airship.

"I was down in Florida recently and one day I watched a big bird—I think it was a vulture—that floated about in the air a whole hour without moving its wings perceptibly. When God made that bird He gave it a machine to fly with, but He didn't give it much else. He gave the bird a very small brain with which to direct the movements of the machine, but He gave to a man a much larger brain in proportion to that of the bird."

Mr. Edison is not the first to make such a comparison, but when he talked this way the other day to Santos-Dumont, the Brazilian aeronaut, there was a world of meaning in the words. The wizard of the laboratory was much interested in the young man who had startled Paris and the world by steering an airship over the city, not once, but several times.

"You are the only man who has done such a thing," exclaimed Mr. Edison.

"I am sure you have never worked on the problem of aerial navigation," replied Santos-Dumont, "or you would have accomplished years ago more than I have done now." The aeronaut was not trying to be complimentary; he has the highest admiration for Mr. Edison and his inventive genius.

"I don't know about that," said Edison. "I did take it up once several years ago and built a specially light motor to be operated by exploding gunpowder. I experimented a lot in lifting weights with it, but I worked with a small model and did not attempt to fly. I gave it all up because

I had a number of other things to do which were far more profitable." "I'll tell you," he went on earnestly, "if the patent office only protected the inventor sufficiently the problem of aerial navigation would have been solved thirty years ago."

Must Discard the Balloon.

Santos-Dumont looked at Edison with some surprise and turned to M. Aime, his companion, to remark that had the laws been right the thing would have been done before he was born. Mr. Edison saw the deconstruction of his guest and remarked:

"But you are all right. You are on the right track. You have made an airship and you have steered it and you have made a step toward the final solution of the problem. Keep at it. But get rid of your balloon. Make it smaller all the time."

"Have you noticed, Mr. Edison," inquired the aeronaut, "that I am making the balloon smaller every time I build a new airship?"

"Yes, and that's right," replied Edison, "but make it smaller yet. You are doing well, but it will take a long time to make the thing commercially possible. When you get your balloon part smaller and yet smaller until it is so small that you cannot see it with a microscope then you will have it. Then you will have solved the problem."

Here, in a nutshell, is Mr. Edison's solution of the problem of aerial navigation. He believes firmly that it can be solved. But he believes just as firmly that the solution must be reached by means of the flying machine and not by the airship. Only with the machine, he says, can air navigation ever be made either safe or commercially profitable. This will be clear to the reader when it is explained that in Mr. Edison's vocabulary the term "airship" applies to a contrivance that, being lighter than the air, floats in it as a ship floats on the water. The term "flying machine," on the other hand, refers, as he uses it, to a contrivance heavier than the air it is intended to navigate. At rest such an apparatus would not float at all, the power of flotation being furnished by the high speed at which it moves. In Edison's mind, then, aerial navigation is simply a question of sufficient motive power, properly applied, to overcome the lack of buoyancy necessary to

make the machine rise and to keep it in sufficient motion to hold it in position a certain number of feet above the earth. He constantly refers to the figure of the bird which anyone may see rise and fly at will.

"Take the case of the vulture," he said. "Here is a natural flying machine which is a thousand times as heavy as the air it displaces. In a few seconds of leisurely flight it can sweep over a distance which man finds encumbered with all sorts of obstacles and there is scarcely a flutter of its wings in the operation. There is nothing there but a machine and a small brain and it is not a very remarkable machine either. Why is it that a man cannot make a flying machine as efficient as the bird? A lot of people say that it was never meant that man should fly; that if nature had intended such a thing, man would have been provided with the necessary machinery in his body, such as is now possessed by the bird. But you might just as well say that it was never intended that man should have any light aside from the sun and the moon and stars which were originally provided for him, or that he should not move about faster with the aid of wheels because no wheels were supplied to him by nature."

No Electric Flying Machine.

Someone asked Mr. Edison whether his new storage battery would be of service in solving the problem of aerial navigation.

"Oh, no, of course not," he replied. "It would be too heavy. We must get the lightest possible motive power. Thus the greatest factor of this problem is to get a very light motor which will be powerful enough to operate the flying machine properly. The best thing now in sight for this purpose is a gasoline or gunpowder motor, something that will get up power quickly and which, at the same time, weighs little. Santos-Dumont is on the right track in this regard, but he can't go much farther till he gets rid of his gas bag. You cannot control a balloon in a gale of wind. In order to make a commercial possibility of the airship it will be necessary to make its operation absolutely sure and its use safe. The flying machine is bound to come, but it will take some time at the rate we are progressing now."

It was suggested to Mr. Edison that perhaps he might take up the problem

again himself and assist in the final solution.

"No, I will not go into anything which cannot be protected from the pirates who live off the work of inventors, and I do not believe it would be possible to secure a patent on either a flying machine or an airship or any part of one that would stand the test of the courts. If someone should make a commercially successful flying machine dozens would at once copy the models and take away the fruits of the original inventor's labor. There isn't a judge in the country who would hold that there was really any invention in such an apparatus, because so much has been done and written about it that the only difference between the successful machine, which is to be, and the many failures, which have been, will be very slight. I doubt whether any new principle will be discovered on which even a claim for a patent may be made."

"The man or men who really solve the problem of flying through the air will find out nothing new. Powerful motors of wonderful compactness, will be applied to a framework of extreme lightness and that will be all there will be to it. Doubtless, this framework will be something similar to the physical structure of a bird. I do not believe it will be difficult, because we have many mechanical devices now which are superior to the devices used by nature in human beings and animals, and I do not see why we may not put together a contrivance which will be at least equal to the machine and brain of the bird."

Prof. Langley's Efforts.

Prof. S. P. Langley of the Smithsonian Institute, Washington, was one of the first men in this country to experiment with flying machines—machines heavier than the air—unless we admit the immortal Darius Green and his far-famed flying machine into our chronology of scientific experiments. Prof. Langley had a theory to prove and proved it. He did not accompany his aerodrome in its flights, but he demonstrated beyond a shadow of doubt that mechanical flight is possible. Sir Hiram Maxim showed this also with his aeroplane. As a man of pure science, who had much work to do, Langley proved all he wanted to. It is time now for others to make the flying machine commercially available. It took Prof. Langley several

years to develop his main idea as to flying, but during those years he reached many interesting conclusions which will doubtless be taken into account by the inventors who attempt to follow him and carry out the idea of Edison as to navigating the air.

In his preliminary experiments, Prof. Langley showed that, disregarding the friction, which is slight, a 200-pound plate could be moved through the air at a rate of fifty miles an hour with the expenditure of one horse power energy. That is, a ton of weight could be drawn horizontally through space and upon the air with an engine of only ten horse power. In his airship No. 7, Santos-Dumont will have engines of ninety aggregate horse power sufficient to move a flat plate weighing nine tons through the air at the rate of fifty miles an hour. As a matter of fact, the Santos-Dumont No. 7 will weigh when collapsed less than a ton and when the gas bag is filled with hydrogen the whole machine will have a lifting power of 2,500 pounds. With this equipment the young man hopes to speed through the air at the rate of forty-five miles an hour.

It must be clearly understood, however, that the Santos-Dumont type of airship cannot be operated in a stiff breeze or in changeable winds; indeed, the aeronaut does not make any claim that he can navigate the air in all kinds of weather. Given fair weather Santos-Dumont will not hesitate to launch his craft and fly away over cities and seas; the sensation of fear seems to be entirely absent from his make-up.

"I always have a good deal to do when I am in my ship," he explains, "and I do not have time to think about being afraid. I don't know what it is to be afraid of falling."

Interesting Experiments.

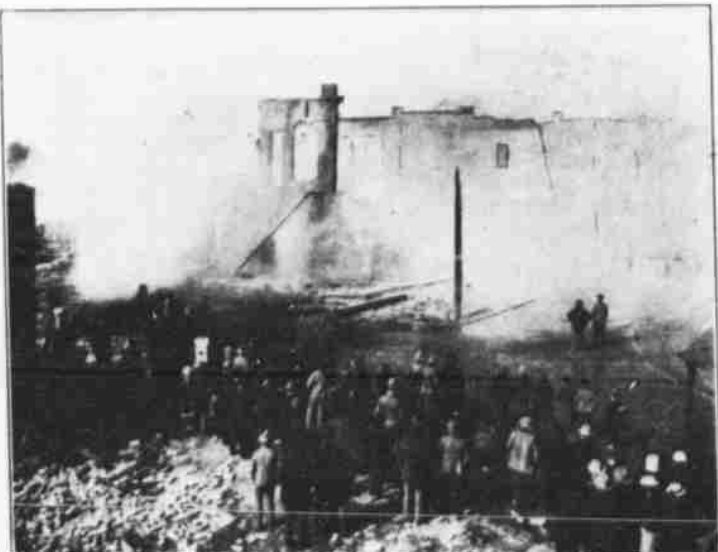
It seems an almost universal belief that the air itself offers tremendous resistance to the passage of any body through it. As a matter of fact, it doesn't. The bird in its flight has been both a constant wonder to man and an unending promoter of hope that some day he may equal its aerial movements, but if the air resisted flight, according to the computations of

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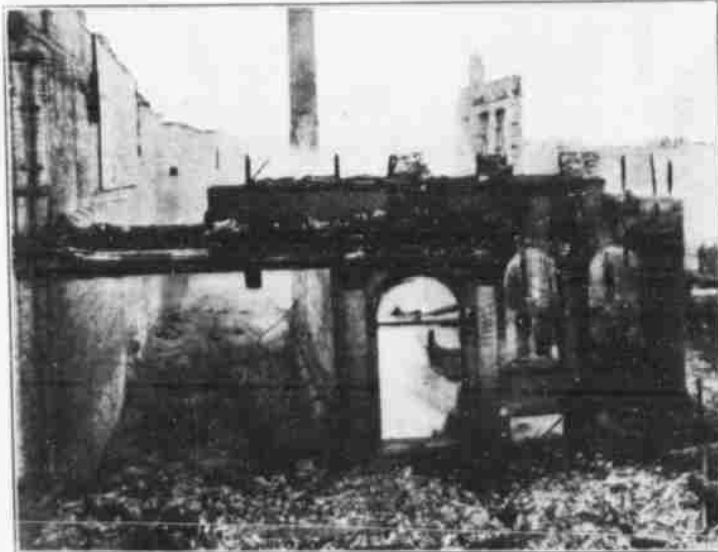


THOMAS A. EDISON IN HIS LABORATORY.

Scenes at the Red Oak Conflagration—From Photographs Taken at the Time



SOUTHWEST FROM SOUTHEAST CORNER OF THE SQUARE.



ANOTHER VIEW OF BURNED DISTRICT.



H. C. HOUGHTON BANK, SOUTHEAST CORNER OF THE SQUARE.