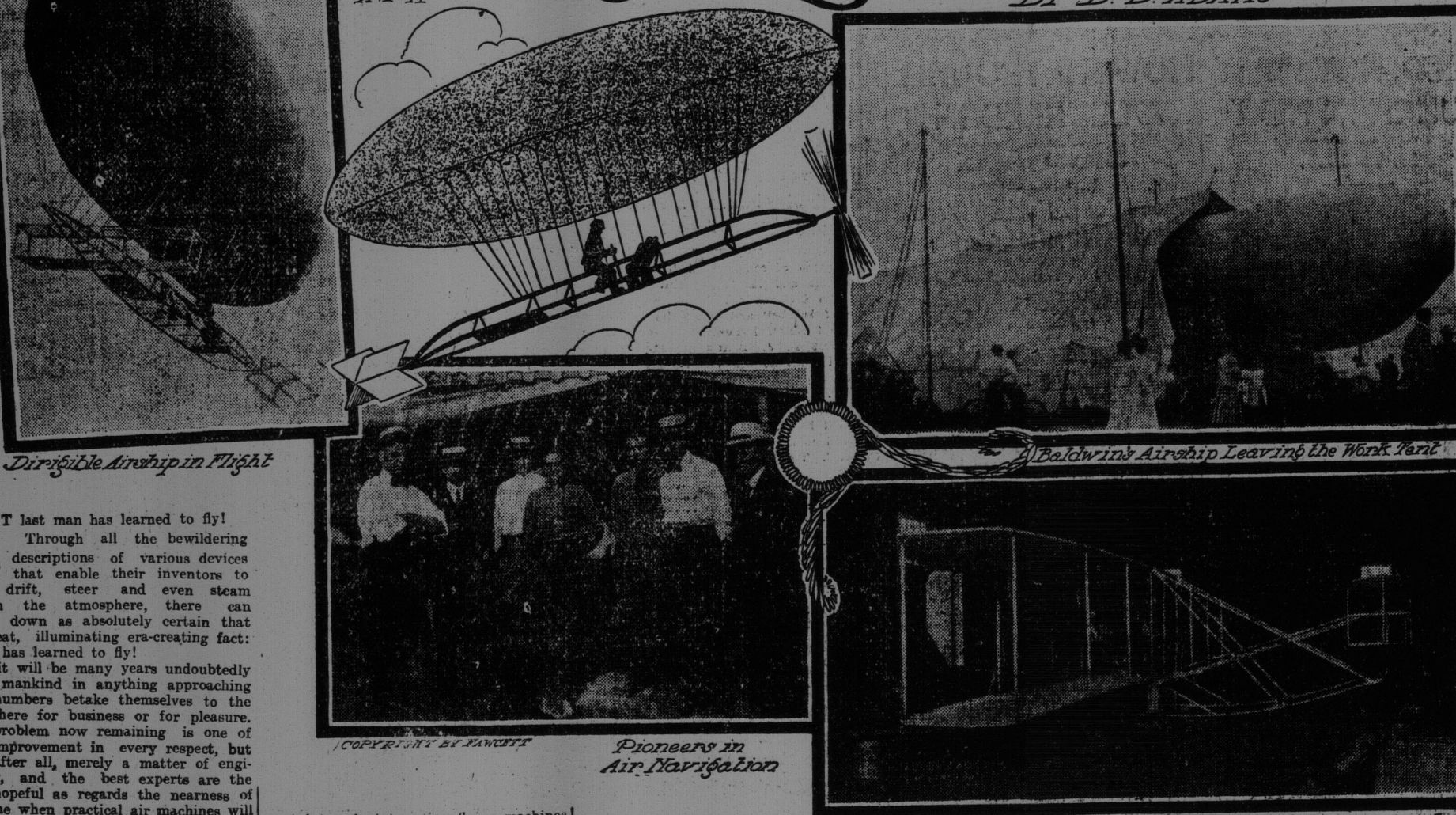


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CONQUERING THE AIR

BY D. D. ADAMS



AT last man has learned to fly! Through all the bewildering descriptions of various devices that enable their inventors to float, drift, steer and even steam through the atmosphere, there can be put down as absolutely certain that one great, illuminating era-creating fact: Man has learned to fly!

Yet it will be many years undoubtedly before mankind in anything approaching large numbers betake themselves to the atmosphere for business or for pleasure. The problem now remaining is one of vast improvement in every respect, but it is, after all, merely a matter of engineering, and the best experts are the most hopeful as regards the nearness of the time when practical air machines will be open for public service.

WRIGHT BREAKS ALL RECORDS.

When the epoch-making flights by Orville Wright at Fort Myer are considered, it must be evident to the man in the street, that the heavier-than-air machine is an accomplished fact. When Wright sailed in the atmosphere for over an hour, not once, but many times, and at a rate exceeding forty miles an hour, the most skeptical were convinced that man had actually conquered the air and had learned to fly.

So practical is this certainty now, that already the army authorities have prepared a bill which calls for doubling the signal corps of the United States Army, and this is demanded solely because they must have men to learn how to operate flying machines as well as to fight them. Wright and his aeroplane are historic, just like Stephenson and the first steam locomotive, Fulton and his steamboat, and Morse with Alexander Bell on the telegraph and telephone inventions.

For the future flying machine—big in size, certain in its ability to keep aloft and to reach indefinite destinations—mankind must wait. The present offers only

most intensely interesting flying machines which are small in size and by no means perfected in their machinery or details.

For 10 years Germany, France and England have been publicly and as governments interested in the construction of primitive flying machines and machinery. This government, however, has only with in the present year stepped into the arena and given its aid to the private inventors who were struggling with the problem of aerial navigation.

Two men and two widely divergent types of air machines have attracted the national government. Both the men and the machinery have been able to astonish the government experts and to fulfill the promises they made to the army engineers.

UNITED STATES BUYS AN AIRSHIP.

Orville Wright and Capt. Thomas P. Baldwin are the two men to whom the United States government said: "Build us a practical flying machine that will do such and such work, go at such and such a speed and stay in the air for so long a time." The terms were made just as practical as the government is accustomed to in providing for a torpedo boat destroyer.

And both Orville Wright and Captain

Baldwin have made good. As a result the United States government has at last gone into the airship business and owns an airship. Just what this may mean, only the next great war will show. But one thing is absolutely certain.

If the next big war broke out tomorrow airships of some sort or other would play vastly important parts in that terrible struggle. Added to the horrors of frightful explosives of unheard of destructiveness, to artillery so deadly and long ranged that a hand-to-hand battle would seem to be an impossibility for mere human flesh and blood, the next war will be fought, not only on the ground and under ground, but in the air as well.

From the atmosphere will resound the thunder of explosives and airships of some design or other will threaten the antique armies of men down on the earth's surface with unavailing, unseen and yet certain death.

The group photograph shows, reading from left to right, Captain Baldwin, Orville Wright and his chief assistant, Lieutenant Fuis, and Lieutenant Selbridge, of the United States Signal Corps, Augustus Post, of New York, secretary of the Aero Club of America, and

Lincoln Beachey. The photograph was taken in the government balloon tent at Fort Myer.

Now for the still disputed question among the great masses of the population: Can airships fly? They can.

BALDWIN'S DIRIGIBLE SUCCESSFUL.

Baldwin's dirigible balloon and the Wright Brothers' aeroplane form the two diverging lines along which up to date the flight problem has been attacked. Baldwin's machine, like that exhibited by the Beachey Brothers, is merely a cigar-shaped bag of gas to which is attached a wire framework, a marvelously light and extremely powerful gasoline motor and a framework with a small platform on which Captain Baldwin or the other operators can sit and handle the machinery.

The photographs of Captain Baldwin's airship show that it is an enormous affair. The gas bag is made of some specially prepared material which Baldwin claims is superior in its gas-holding qualities to any other ever produced. It showed up well in the trials made in August and in September.

The motor used by Captain Baldwin worked fairly well, but it is considered possible by army engineers to improve over the present decidedly crude airship engine. Now, however, that the United States has taken the matter seriously in hand and actually paid Captain Baldwin for a practical airship, it should not be long before the government itself can turn out far better specimens of dirigibles than the first one the government has ever owned.

The marvelous flights of Count Zeppelin appear to show that as far as dirigibles are concerned Germany now holds the record. It is, therefore, to Orville Wright, the inventor and bold and successful operator of the Wright Brothers' aeroplane, that the United States must look for its ability to lead the world in the conquest of the air.

Orville Wright's aeroplane is a heavier-than-air flying machine. It has nothing whatever to do with balloons or balloons. It introduces an entirely new method of navigating the atmosphere, and it is considered fairly certain that the new ideas contained in its construction and operation are the real clues to certain and practical domination of the air by

man.

The splendid photographs shown of this marvelous machine gives an exact idea of how it appeared in the construction tent at Fort Myer, across the Potomac River from Washington, the day the inventor announced that it was completed and he himself was ready to fly through the air.

The dirigible balloon merely floats in the air just as a ship floats on the ocean because of its lighter specific gravity as compared with the amount of air it displaces. It floats and is driven through the atmosphere by light and strong engines which work propellers of huge size, but acting on the same principles as the screw attached to an ordinary steam vessel.

But Orville Wright claims, and has proven by actual trials, that his aeroplane can do more than float—it can actually fly. And its motions more closely resembled those of some gigantic flying fish than in inanimate object. The real secret of success in Wright's aeroplane lies in his manipulation of the planes, which, by special machinery, he contracts or expands so that the action of the air as the engine forces the airship through the atmosphere guides the machine up or down, while the rudder answers for the airship's lateral motions to the right or left.

These planes are held together by very strong but light piano wire—the same that is used in pianos to produce the various notes of the musical scale. The steel frame work of the machine is hollow and extremely light.

WRIGHT'S MACHINE.

WORKS MIRACLES.

The engine (which after all, counted for much in Wright's struggle to obtain a practical working ship) is built along the same lines as the finest four-cylinder motors to be found in the highest priced automobiles. Wright's engine is built of especially light and strong materials, and can develop enormous horsepower.

It revolves the propellers at such an enormous rate of speed that a practical vacuum is created ahead of the aeroplane, while behind it is a hurricane of such violence that men have been knocked flat just from the air waves created by the machine.

Wright stands on the little platform, and from this point he can direct the engine and also manipulate the planes and so control the direction of the machine. A speed of 40 miles an hour has been made by the aeroplane. When this is compared with the 12-mile-an-hour gait obtained from motor-driven dirigible balloons it is seen that the aeroplane offers the greater hopes of an air machine such as the United States government really desires.

While Orville Wright was displaying the aeroplane to the government experts at Fort Myer his brother was doing the same in Europe to a concourse of government officials and enthusiasts from the many aero clubs of the different European countries. He, too, created a profoundly striking impression, and the aeroplane is believed to be the real solution for aerial navigation.

Captain Baldwin's dirigible balloon, as shown in the photograph as it was leaving its working tent just as it was starting on a 17-mile flight. Its size, as compared with the average man, is strikingly displayed. The slender rail work in which the operator sits is well shown.

AEROPLANE CONSTRUCTION SIMPLE.

Wright's aeroplane is seen just as it stood when completed. Its planes are clearly visible, as is also the platform and its hostile propeller, to which is attached the powerful four-cylinder motor. The various parts of machinery, which reverse the motor, elevate or depress the planes, etc., are set close at the hand of the operator. Wright has his machine so under control and so delicately balanced that he was enabled to change its direction and level merely by shifting his own weight.

So while the dirigible balloon promises to be more immediately useful, especially in case of a war in the near future, it is to the aeroplane that inventors are looking for air machines for business and for pleasure on a large scale.

It requires only an expert can hope to enjoy the sensation of flying, just as the automobile was for several seasons largely an experiment, both dangerous, costly and uncertain.

But man can fly—for a number have done so and are doing so every day.



STOCKHOLM the capital of Sweden, is known the world over for its wonderfully beautiful situation on the islands and the shores of Lake Malar, just where this body of water finds its exit into the Baltic. Approaching the town in the evening during the summer when it is still daylight it seems like a fairy city, especially with its masses of light reflected on the dark surface of the surrounding waters. But it is equally lovely to catch a first glimpse of its buildings when the fleecy mists of morning are being scattered and the early sunshine falls upon the rows of houses and palaces. This very charm of position has presented many difficulties in making Stockholm an attractive city.

The roads were often steep and crooked and they had to be levelled and straightened. Great rocks were blasted to make room for the houses as is shown by the buildings which often stick out on the sides. Beautiful as is the lake, which divides the city into a number of islands, it has necessitated that these be joined to the mainland. The bridges are made of handsome granite and some of them are decorated with fine carvings. Hundreds of old buildings and residences had to be destroyed to give way to modern structures.

Some of the old streets are so narrow and steep, it was found impossible to make them over; where it could be done and when new streets were planned they were laid out as broad boulevards. The streets are well kept and this is especially difficult on the lake front where most of the loading of cargoes is done. Though the houses are often humble, rarely pretensions, they suggest little of the poverty on the one hand and extravagance on the other, which is so characteristic of some of the large cities of Europe and America. Most of the families live in apartments, usually occupying a floor by themselves. The privilege of an entire house is restricted to families of great wealth, though many have small attractive summer houses on the lake.

The government buildings are spacious, many exceedingly beautiful. The most noteworthy, but one of the simplest of the public buildings, is the Royal Palace, built in the seventeenth century and little remodelled since then. It is a beautiful structure situated at the head of the lake and its chief approach is from the Lyons Hill, opposite the North Bridge. The exterior is simple, almost homely; it is made of sandstone and is painted yellow. The Crown Prince and Princess occupy one portion of the palace, the King and Queen the rest. The apartments of the Crown Prince and Princess are simple, the most attractive room being her workroom, which is filled with books, pictures and casts she herself has modelled. The most valuable of the furnishings is a collection they brought from the Orient. Above stairs is a large billiard room of the Crown Prince, filled with trophies of the hunt. There are hundreds of deer heads, bears, moose and crocodiles.

The private rooms of the King and Queen are interesting, because they contain rare silver given their majesties when they celebrated their silver wedding. Though the state apartments are spacious and well furnished, they are without show and ostentation. On the west side of Helgeandsholmen are two

handsome new buildings of granite, admired for their size and splendid architecture. One is the National Diet and the other the National Bank. These buildings show the wonderful strides Swedish architecture has made during the last two decades. It has developed both in the artistic conception of the buildings and in the costliness and solidity of the materials used. T. G. Clason and F. Bohner are two of the foremost Swedish architects and have won rivals in Europe. Both in this monumental building and in the Bunsenwita, the Adelwardska and the Hallwylska, Clason's work is unusually individual and artistic.

Bohner tries to find new and unusual forms to make them serviceable and still beautiful. The immense Nordiska Bank, his original and beautiful central post office, and the building called the Electric Works represent new ambitions and a modern school of architecture. Of course, there are more or less unattractive public buildings in the capital, as in all the large European cities, but these help to contrast and to emphasize the charms and loveliness of the more modern structures.

On the other side of the lake is the National Museum, one of the handsomest and most interesting buildings in Stockholm. This splendid building was designed by a well-known German architect. It is in the Renaissance style, and is adorned with six medallion reliefs of famous Swedish scholars and artists, including Ehrenstrahl, the painter; Nicholas Tessin, the architect; and Linnaeus, the botanist. The vestibule is adorned with two bronzes representing industrial art. The first floor is given over to a complete historical collection of primitive tools, pottery, jewelry and coins. Above stairs is a large collection of paintings. The most interesting are those of the early Dutch and modern Swedish masters. The most popular of the Dutch school is Rembrandt's gigantic and unfinished canvas, "Claudius Civilis Inciting the Batavians to Combat Against the Romans." It was painted in the sixteenth century, but was not brought to Stockholm until two centuries later. "Lisbet the Little Cook" is one of the finest pictures in the collection. It shows a sweet-looking girl with her arm resting on her head.

The young girl has a charming expression, and the colors are wonderfully beautiful. There are some excellent examples of Frans Hals, Adrian Ostade and Jan van Goyen. Rubens is represented by the Bacchante and Van Dyck by a beautiful painting of Jerome. The modern Swedish school is fine, and includes the work of Gustav Odenstam and Karol Manallater, known for his beautiful colors. Zorn is represented by some charming present scenes, with other brilliant hues. The most attractive are the "Swedish Dances" and "Washing by the Stream." The gallery has a large collection of how this artist rented a costly studio in London without the money to pay for it, and in less than a month had painted enough portraits to pay his rent.

Bruno Liljorfs studies of bird life are equally interesting and worthy.

Carl Larsson's six frescoes on the great staircase reproduce with freshness and great decorative effect scenes from the history of Swedish art. These frescoes belong to the most remarkable amongst

wall paintings in European museums. The series of water colors by the same painter show scenes from the artist's home in Dalarna.

But the art in Stockholm is not limited to the galleries and museums. Many of the public schools have, through private munificence, been adorned with handsome paintings. In the Northern Classical School are frescoes by Bruno Liljorfs, Prince Eugen and Carl Larsson. The Southern Classical School has a fresco by George Pauli, and the Modern School a painting by Oscar Bjork.

Nowhere is more care and money expended in making schools beautiful and sanitary. The grammar schools and high schools are well built and great attention given to the subject of light and air. The Swedish schools have a reputation the world over for the splendid work done in carpentry, wood carving and metal work and their advanced methods in gymnastics.

Nature appeals to these people even more than art, as is seen in their parks and woods. The handsomest of these gardens is the Kungsträdgården, or King's Garden. It is laid out with large hardy trees and flower beds that bloom nearly all year round. In June and July the air is redolent with the perfume of roses. A beautiful fountain adorns the front of the grounds, representing the daughters of the sea god Anger listening to the harping of the Nixies. In the centre of the park is a large, fine statue of Charles XIII.

The Humlegården is one of the oldest parks in Stockholm, founded in the seventeenth century. It has been remodelled, however, during the last few years. The city gardener of Stockholm has made it a beautiful pleasure ground with flower beds and tropical plants. But these parks are small compared with the Djurgården and Svanen, two parks of which the city is justly proud. The Djurgården covers an area of nearly two miles and is covered with large oak woods and lovely walks. It is joined with the mainland by a stone bridge decorated with figures from Norse mythology and was used originally as a deer park. In the western part of the garden is Svanen, a large open-air museum, covered with lakes and rocky hills. It is designed to represent the flora and fauna of the country with Lapps, their camps, reindeer and sledge dogs. At one end is a large Maypole, where the maypole dance is given in May.

Not far from Stockholm begin the woodlands of Sweden, which add so much to the wealth and picturesque quality of the country. Nearly 50 per cent. of the country is woodland. There are 600 acres of forest for nearly every hundred inhabitants. The forests are very beautiful; pine, spruce and alder mingle with birch and aspen.

Although Stockholm is a wonderfully attractive city and beautifully kept, it has accomplished this through hard struggle and great effort. For years the war with Germany took money which the government would like to have spent in beautifying the city.

JOHNNY EXPLAINS

"Johnny," said the teacher, "will you explain to the class what sort of a government we are living under?"

"Yee'm. We are living under a republic."

"Does that differ from the government of England?"

"It does, ma'am."

"In what respects?"

"In England the king never gets tired of his job, but hangs right on to it. In America the president serves for eight years and then gets so mad and tired out that he says to the people:

"Say, now, Foraker and Hale and the rest of you fellows; you can take hold and run the old shebang to suit yourself—I'm going to quit."

"In England, Johnnie, the king is beloved by his subjects. How is it with the president in America?"

"He is also beloved, ma'am—that is, by all the fellows he can find office for."

"What is the difference in the treatment of the people at large between the two countries?"

"Why, in America, if a man is rich as is called a thief, and in England if a man is poor the police don't wait until the next day to club him."

JOE KERR.

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