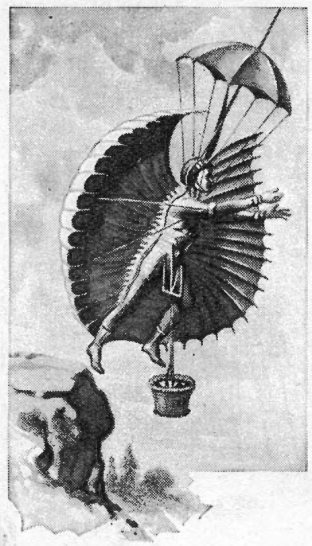
The AMAZING STORY *of the* AEROPLANE



THE EARLY "BIRDMEN" IN ONE

This is not an actual flying machine. It is the artist's way of typifying the various fantastic attempts men made at flying before they settled down to the careful scientific study of the problem and so, step by step, finally solved it with the simple but no less wonderful aeroplane of to-day.

FOR ages men looked up hopelessly into the blue sky, envying the birds. Then came balloons that floated amid the clouds. But men were not satisfied: "We want to fly as the birds fly," they said. One of these "mad dreamers" was an American scientist who, after years of work in his laboratory, said, "It can be done!" The world scoffed at him. But the Wright brothers believed and said, "It shall be done!" and they succeeded. As a result, men to-day fly faster and higher than any bird, carry huge weights on thin swift wings far above the clouds, and leap over the oceans.

AEROPLANE. Never did things change so fast as in these days. Your grandfather's father may have seen the coming of the steamboat, struggling along the river or lying with its nose against the banks. Your grandfather saw the early railway train, which came pushing proudly into the world at 20 miles an hour. Your father saw the motor-car riding the roads like a giant of power at a mile a minute when the driver let it go. But you have seen a thing that clever men and wise men hardly dreamed of years ago; you have seen a thing that wise men scoffed at even when you were born—you have seen an aeroplane riding through the clouds!

In all the history of the world there has hardly been anything equal to that. Think of it in any way you like, and it must seem to you a miracle. Throw a stone up into the air and it falls down; throw a stream of water up and it comes back to earth; throw a feather up and, although it floats a little while on the wind, it soon glides back in its graceful way to the solid earth.

Why a Stone Falls

They fall, all of them, by what we call the law of gravitation, which means that the earth pulls everything towards its centre. A pebble rolls down hill; water runs to the lowest point. It is the pull of something in the mass of the earth that draws all things towards it as a magnet draws a needle. It will pull a flint out of a chalk bank if we give it time; it will pull down an overhanging tree if it is left long enough without support. This universal power of matter to attract other matter to it, the larger mass attracting a smaller, is one of the mysteries that no man understands.

And yet an aeroplane flies past a mile above [illegible] heads, so high [illegible] it looks [illegible] so [illegible] m. [illegible] of [illegible] such times. [illegible] will lose it, but we [illegible] there.

It is not the first contrivance that has taken a man up in the clouds. There have been balloons and there are airships, but the "flying motor-car" which we call an aeroplane is far more wonderful than these. The balloon and the airship are lighter than air, and they sail in the sea of air in which we live as easily as a ship sails on the sea of water in which the fishes live. But the aeroplane is heavier than air.

Why an Aeroplane Flies

Remember that air is something very real. It is so thin that we cannot see it, so fine and colourless that we can hardly believe it is there. But it is as real as the chair you sit in, and it has weight as water has, strength as water has, power to bear things on it as water has. When you fly a kite it is sailing on air; it rests on the air beneath it.

A thing that is lighter than the bed it lies on cannot sink into its bed. Put a feather on a feather bed and the bed will remain undisturbed, but put a piece of iron there and the bed will give way to it. It is so with water. A feather is lighter than water, and will float; a piece of iron is heavier than water, and will sink. But if you take a basin and rest that on the water, the basin will float because it has much more water to rest on and is not so heavy as its bed.

And so, if you beat a mighty sheet of iron into an enormous basin, it will still float, because, as long as it is filled with air and rests on an enormous stretch of water, it is lighter than that great body of water. Even if you put heavy engines in this iron basin, and fill it with people, and thousands of tons of all sorts of things, it will float like paper on the sea, so smoothly that sometimes it will go a thousand miles and a glass of water would not slip off a table with the rocking.

So an iron ship sails, though it weighs many thousands of tons. So an airship sails with its heavy engines, with its crew of perhaps 20 or 30 men, all held up by an enormous bag of gas,