

# What It Costs in Hard Cash to Learn How to Fly

## Buying the Aeroplane Is Only a Beginning of the Long Expense Account Sure to Follow.

It is bad grammar to say, "I'd rather it was him than me." That is why we say it about aviators. They are such frisky, headstrong, self-sufficient fellows that we want something grim, homely and ungrammatical to say about them. Yet when we try out at these air men, at their dangers, the fearful deaths under them, their reckless stivings and turnings, we know all the time that they are only doing magnificently the things we are doing to do ourselves.

Before many of us have had a chance to fly, even today any citizen with a sound body and good nerves can learn to fly if he has the money and the strength of purpose. Just how much money he needs and how strong his purpose has to be to make a problem that is both interesting and instructive. Suppose, then, that a wealthy New York man decided to keep an aeroplane and fly it himself how would he do about it?

The first thing for him to do, according to all the authorities, is to "study up on" aviation.

He lightens his studies by attending all the aeroplane meets that are held within three hundred miles of New York. He must meet as many of the bird-men as possible, talk with them constantly and learn all they will tell him. He must join with the Aero Club or the Aeronautical Society and read questions industriously of all the members. He can find to answer fewer him. The ordinary study should last from eight weeks to two years. The more obvious courses are: About \$150 for literature, \$300 to \$500 for railroad fares and admission to aviation meets and \$70 to \$100 for club fees and dues.

All this while the bird-man is still in the year. Now he is ready to break the shell and balance on the edge of the best. In other words, he is almost ready to fly. The sure and correct thing to do is to make a journey to Europe and learn at one of the aviation schools in France or England. At Mr. Grahame-White's, which is one of the best, the charges are 100 guineas—or, roughly, \$1,500—for instruction in either the monoplane or the biplane, and 250 guineas—about \$3,750—for the more obvious courses are: About \$150 for literature, \$300 to \$500 for railroad fares and admission to aviation meets and \$70 to \$100 for club fees and dues.

No aeroplane school has yet been established in the United States, although several have been promised. Captain Baldwin is authority for the statement that "if a man goes up alone, without having made at least sixty flights with an experienced pilot, he's lucky if he doesn't smash \$1,500 worth of repairs out of his machine in the first five flights." However, an amateur who is cautious and willing to learn can make a very creditable start as an aviator without leaving his own country.

To fly in the United States the beginner must have an aeroplane of his own. The Curtiss and Wright biplanes, the two principal American types, are sold at \$3,000 and \$2,000 each, respectively. The Farman biplane and the Blériot monoplane, the two best known types abroad, sell at \$5,000 and \$4,000 at the factory. The duty on aeroplanes is 45 per cent and the cost of bringing a machine across the ocean is about \$300, plus the expense of the mechanic, who is required to put it together on this side. Thus the total cost of an imported aeroplane would not be far from \$3,000 for the machine, or \$3,000 for the one listed at \$2,000.

While his aeroplane is being built the amateur must find a place to house it. If he lives in New York he will probably make his headquarters the aviation field at Garden City. Here he leases a plot in the camp of the Aero Club or the Aeronautical Society, paying \$10 or \$25 a month rent, and so it he runs up his bill, "charging" a tent will do for a time, but a more substantial structure will be necessary if he expects to stay for more than a month or two. A tent that will cover a month or biplane can be bought for \$30. A shed costs from \$60 to \$1,000. One side must be so arranged that it can be completely thrown open, either by raising the leaves of a door or by dropping them on the ground outside, forming a sort of temporary front stop laid flat on the ground.

It must be equipped with a full outfit of carpenter's tools, benches and the like, and all the things the motor needs to make its toilet. An aeroplane engine is as delicate as a prima donna, and as the aeronaut's life depends on its industry while they are aloft together it is well to keep it in a good humor.

While his machine is building, too, he will engage his staff of mechanics. Unless he is something of a mechanic himself and willing to work he will need three men. At least one of them must be an all around workman of the highest class, skilled both in woodworking and in the handling and repairing of steel machinery. It is important, if possible, to obtain a man who has already had experience in the care of aeroplanes. His pay will be from \$30 to \$40 a week. His two helpers will get from \$15 to \$25 a week each. If the amateur obtains a harmonious and efficient working force for a total of \$75 a week he is fortunate.

A special wagon can usually be hired to haul the machine from the railroad to the aviation field. The whole cost of transportation will probably be from \$5 to \$200, according to the location of the factory. Once arrived at the hangar, the aeroplane is put together by the amateur's mechanics and the manufacturer's working together.

From three days to two weeks are consumed in tightening wires, adjusting rudders and appliances and trying out the engine. Usually, one of the manufacturer's aviators takes out the machine for an actual trial in the air before turning it over to its new owner.

Then comes the day when the novice has an aeroplane of his own. He can take his place at last in the driver's seat and try his skill like the others.

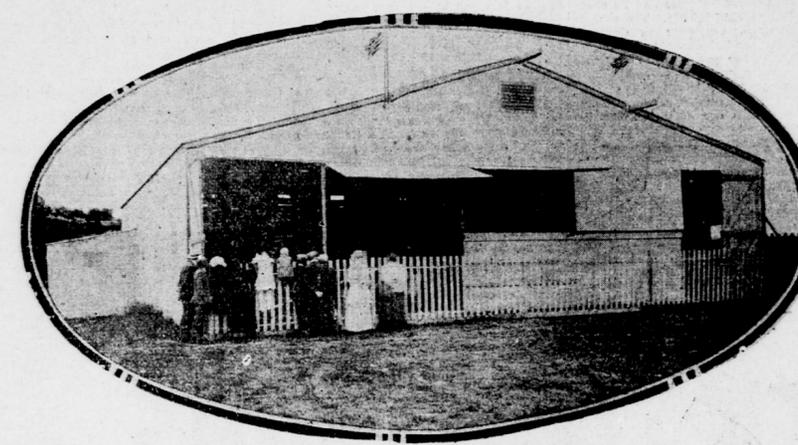
It is a very bad week indeed which the student cannot make right within a week. New wheels cost him from \$7 to \$15. Wood for repairs, which must be the very best and straightest selected spruce, costs \$10 a thousand feet. The wire for bracing and control connections is a special grade of piano wire, and sells at five cents a foot. There are five hundred feet of wire in an ordinary biplane. Turn buckles, which must be inserted in every wire to tighten it or loosen it as may be required, cost from 25 to 40 cents each, and there are from fifty to a hundred in each machine. They are very unlikely to be damaged by an accident.

One of the most expensive parts of the aeroplane is the cloth covering of the wings and rudders. This is usually of silk or linen, treated by a patented process to render it airtight. One of the best coverings sells for \$2.50 a square yard. Enough to cover a Curtiss biplane would cost about \$112.

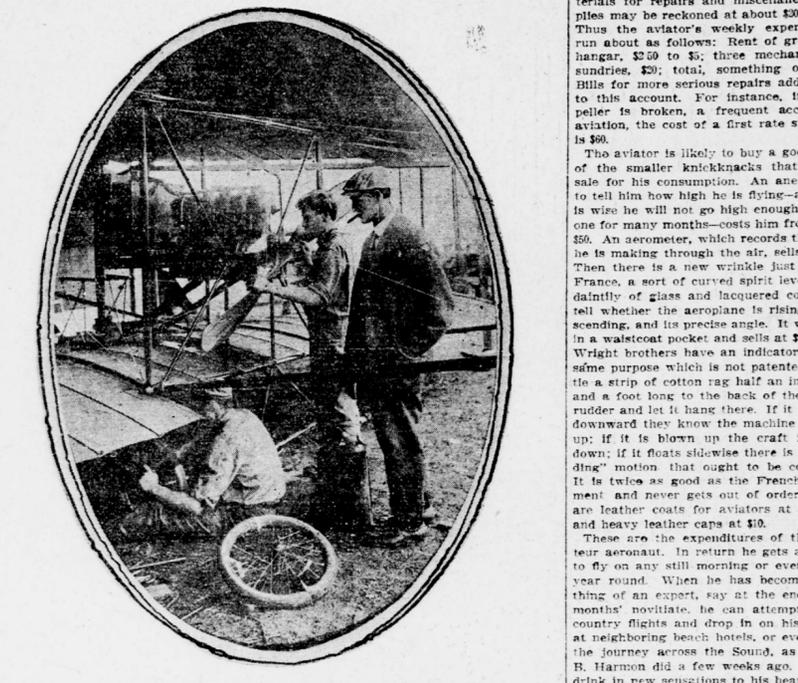
The cost of a single mile of flight, counting merely the supplies which the machine consumes in the air, varies greatly with the performance of the engine. A famous "cross-country" flight of one hundred and fifty miles was made with a consumption of fifteen gallons of gasoline and two gallons of lubricating oil. Aeroplans buy gasoline by the tank at about 12 cents a gallon, and the lubricant used in this case cost 70 cents a gallon. Thus the cost of the flight itself was \$230, or about two cents a mile.

Another well known machine, however, which uses a castor oil lubricant, consumes half a gallon of it for every gallon of gasoline. Castor oil sells by the barrel at 90 cents a gallon. An hour's flight, which for the machine is about forty miles, requires four gallons of gasoline and two of lubricant, costing in all \$340, or 51-1/2 cents a mile. And the smell of that aeroplane when the castor oil is running freely over the hot engine is enough to make ten aviators faint.

The cost of gasoline, lubricant, ma-



THE BIRD-MAN FEATHERS HIS NEST—AT A COST. A "hangar," or aeroplane shed, at the Garden City aviation field. This building cost about \$800. It is a machine shop, a carpenter shop, a garage and something of a museum.



"FLY AT SIX: REPAIR ALL DAY." So say even the cautious aviators. An aeroplane takes all the attention of two skilled mechanics and a helper. All its hundred-odd wires and its scores of delicate joints must be tested and adjusted every day. The discarded wheel shown in the picture cost \$9.50. The propeller, which replaced one broken the previous week, cost \$55.

## Repairs, New Parts, Skilled Mechanics, Rent of Hangar, Instruments and Clothes Run Up a Pretty Bill.

can hardly give him. And the risk of aeroplaning, the anxiety of friends and family, the long apprenticeship that is needed to master its simplest secrets will keep it for a long time to come the sport of the wealthy, leisurely and hardy few.

J. E. Jr.

## Good Stories Told by "Sunny Jim" Sherman

"Sunny Jim" Sherman, Vice-President of the United States, had a good time in Oklahoma during his recent speaking tour of the state, and he made every person who heard him happy. He told stories that illustrated his political points in a manner that made his statements all the more convincing, and he devoted them into his specialties until his large audiences in that state were delighted. He witnessed a baseball game in Oklahoma City, visited Fort Reno while at El Reno, participated in a Roman candle automobile parade in Guthrie, and at Enid—which heretofore has been considered the stronghold of "insurgency" in Oklahoma—he put all Republicans in the same bag and left them all determined to win a victory.

During his Guthrie speech Mr. Sherman grew poetical in alluding to the many mistakes made by the Democratic party, which he declared had never been able to see ahead for an instant. "I cannot account for it," he said, "unless the following lines are applicable:

"The lightning bug is brilliant,  
But it hasn't any mind,  
It blunders through existence,  
With its headlight on behind."

In all of his addresses in Oklahoma, as elsewhere, Vice-President Sherman contended that the Republican party kept its promises and never did things contrary to expectations, as the Democrats did. To illustrate this, he told his Oklahoma City audience a recruit from Italy who came to America expecting to find the same employment at top wages. The Italian had an exciting time dodging trolley cars prior to his departure from New York City to the West, where he was to be employed in railroad section work, but, thanks to the motorman's bell, he soon learned to avoid getting run over.

After reaching the boundless West the Italian was told by his road boss that the country was infested with rattlesnakes, and that the only redeeming feature was the fact that the snakes never struck without giving warning. With this well settled in his mind he went to work, but while sitting on a log eating his noonday "snack" he was surprised to see a big rattlesnake coiled between his feet and ready to strike. The Italian quickly rolled backward over the log, the snake slinking its fangs deep into the wood. Peering at the reptile from a safe distance, the Italian rebuked him thus: "You son of a gun; you no ring-a-da-bell."

The Vice-President had the pure brogue, the proper slurring of the r's and a rolling of the vowels when he told of the Irish woman on her deathbed, with her husband sitting by. Instead of the departing one making reference to "that home beyond the river" she paraphrased it to "in our shack over the crick." She told Pat that he and her mother had never got on well, to which he assented, with an explanation that it had not been his fault.

"Oh, he was dyin' request to make, Pat," she told him.

"Oh! do it," responded Pat, choking down a sob.

"The people have been so very prosperous with our interventions and our pensions of development," said Mr. Sherman, "and they have accumulated so much wealth from increased values in realty holdings, that they have acquired extravagant habits. The man who lives now has more to eat, wear and read, and a better home to live in than the prince a few decades ago. This rapid accumulation of wealth has caused the more successful to set a pace which the middle class has followed. The inventor has frequently when he could not afford it, when he must depend upon good fortune to help him defray the debt incurred.

"For instance," continued Mr. Sherman, "you and I are neighbors. You are the more prosperous. One day you bring home a automobile that cost you \$500, or perhaps a music from your instrument or wireless you taking your family out for a spin on a hot night, while my wife and family remain at home. I naturally want my family to fare as well as yours, and a mortgage my homestead to buy the automobile and machine. This takes the sand and hundreds of thousands of dollars out of the community, and sets me and my friends to paying interest, to say nothing of the countless other expenses that follow the ownership of these luxuries."

### INSURANCE.

"That horse of yours looks terribly mean," replied Uncle St. Simlin.

"Well, do you keep him?"

"Well, it's a kind of a comfort to have him around. As long as I've got him I feel that there ain't much danger of my being started in a hees trade."—Washington Star.

# Hairbreadth Escapes That Occur Behind the Scenes

## Disasters That Would Surely Follow a Moment's Carelessness by Stage Hands.

In these days when marvels in scenic effects are the usual thing at the Hippodrome we are accustomed to feeling that, although wonderful indeed in their realization and their display of real materials, the stage settings are so sure in their mechanical workings that there is practically no danger of a hitch.

It seldom occurs to us that there might be a slip-up at any minute any night whereby a thrillingly beautiful or a perfectly executed scene would by a stage hand's error, the breaking of some controlling motor or the failure of the director's signal, turn into laughable farce before the surprised onlookers or into a matter of extreme danger for the actors.

Yet on this immense stage, where the mechanism of each display is so complicated, the possibilities of accidents during the presentation of every scene are almost countless in number and variety. Besides the mechanism there are one hundred stage hands, eighty property men, fifty-five electricians and forty engineers, upon all of whom, working as one man, the success of each effect depends.

"One glass of beer," said Arthur Voegtlin, who invents and produces the scenic displays, "might cause a second's delay in a man's hand on the electric switchboard which controls the lights and motors, and even such a delay would in many scenes be disastrous."

When success depends upon a thing so small as the presence or absence of one beer there is no wonder that both grave and gorgeous mistakes are already on record at the Hippodrome.

One night last year the huge Atlantic liner which sailed grandly from its pier out into the river went steaming off in two pieces, to the horror of the management and the heartless delight of the audience. This year already, as is natural when the production is new and all hands are still fresh at the work, many strange things have happened.

There is, for instance, an earthquake scene wherein a little South American city is shaken to the ground and a lake emerges from the earth. On dress rehearsal that night everything in the little city shook down admirably except the three heavy stone cornices of the largest building in sight; and these, defiant of the laws of gravitation and unaware, apparently, that the building to which they rigidly belonged was lying prostrate on the ground, fell beneath their own weight, and, falling on the air, frightened citizens who were fleeing from the ruined city retained presence of mind enough to avoid passing beneath the weird cornices as they swung aloft. Finally, with sudden determination, all three slid peacefully to earth and lay at jaunty angles on the ground, as if they had never been there.

"Just think," cried Mr. Voegtlin in despairing tones, "but planning and working out a scene for six months only to have some fellow standing at a switchboard



THE SCENE IN THIS YEAR'S HIPPODROME SHOW THAT CAUSES MOST ANXIETY TO THE DIRECTORS. While a set of colored lights is played on the ballet, a running light is pointed on Niagara Falls behind. A variation of a sixteenth of an inch in either of the lighting instruments would ruin the effect.

with the cues he is to listen for. The men who manage the lights are more dependent on their "plots" than the rest, for the changing of the lights in amount and color and the combining of different shades to produce a blend are so constant that the men could never remember what to do unless they had one eye on the switch and the other on the "plot." If they should lose the trusty paper—well, that is another awful possibility.

One man who stands in the subcellar of the Hippodrome with his hand on a lever waiting for his electric signal has a heavier responsibility than most people would like to shoulder, especially in connection with a dramatic entertainment, for on his alertness nearly a dozen lives depend. It is he who controls the fate of the full-blooded mermaids that rise from the lake in the last moment of the last act. If he should fail to swing his lever across on the instant the cue sounded, all the girls who bravely take part in that astonishing scene would drown.

"Do the girls know this?" was asked of the scene director.

"Yes; they are a brave lot," he said. "They are willing to do or risk anything to make the show a success." C. I. D.

### The Birth of Stars

"Making stars over night is generally believed to be essentially an American theatrical custom. An actor makes a popular success in a leading role, and his manager immediately sees in him a prospective commercial proposition. This is very good for the actor, but it is very bad for art. Once a young actor, whose training has not fitted him for anything above the ordinary, takes the step into stardom he seldom rises above mediocrity, unless he has great natural gifts—genius, perhaps—and in that case nothing could keep him from rising," said J. E. Dodson, a leading actor of character parts, who is starring in "The House Next Door."

"This is a subject," Mr. Dodson went on,

## One Man Could Drown a Flock of Hippodrome Tank Girls Any Night.

popularity, it was not a demand for little stars. It was in a great measure owing to new conditions of doing business between theatrical theatres and London, the theatrical centre. It was brought about by the quick and certain facilities offered for the transaction of business by mail and telegraph and expeditious traveling by railroad, which made competition keener and started a mania which became later a bore and made trouble for the provincial managers, when the public awoke to the fact that misrepresentation had abused their confidence. Like many other things in life, stardom soon found its own level and only the best stars survived; the others, of course, returned to their original place in obscurity.

Before this mania possessed theatre proprietors there were those, as there were later, who had rare histrionic genius and who had achieved metropolitan celebrity. They continued to receive encouragement from provincial managers to take starring engagements, and public patronage went their way as usual.

"And have not the telegraph, wonderful mail facilities and rapid railroading done a great deal for the theatrical business in this country? They brought us into the circumference of the theatrical world competition and more theatres, and forced managers to make stars of little people, whether there was a demand for them or not. The American public has accepted the habit, however, if the play pleases it, and it is the play after all the counts.

"There are among us actors whose names head companies, some of whom are highly talented, many barely above and some even below mediocrity. Art evidently does not go hand in hand with advertising, judging by many names seen posted in large and gorgeous looking letters on prominent thoroughfares over this vast country."

### PUNCTURELESS AUTO TIRES

#### An English Invention of a Protective Inner Lining Promises Good Results.

What seems to be a punctureless automobile tire, says Consul Benjamin F. Chase, of Leeds, is the invention of an Englishman. He describes it as follows:

"It is composed of an inextensible heavy canvas lining, the crown being packed with puncture proof material and placed between the outer cover and the inner air tube on the tread and to more nearly equalize the pressure on the inner air tube. The lining is thickest at the crown and tapers toward the sides, and is so constructed that its appearance is like the ordinary tire. The inventor has given it drastic tests. He made several holes in the tread with the cover of a tire through to the patent lining, and these have given his car five hundred miles without a puncture. The same was done with other tires, but had the usual difficulties. Other tests on

### BASEBALL PARKS DE LUXE

Over \$2,000,000 has been invested in baseball parks within a season or so by three cities—Pittsburg, Philadelphia and Chicago. Pittsburg, "Barney" Dreyfus has opened his million-dollar ball park, called a triple deck, steel and concrete structure, comfortably fitted with a view, not of the field, but of the city. The park is a beautiful stretch of country, with the public parks and the Carnegie library in the background. In the case of Philadelphia, the American League parks in New York, Philadelphia and Chicago are being built on the same scale as those of Pittsburgh.