

THE "FLAPPER"

NOVEL AEROSTATIC EXPERIMENTS

AN ATTEMPT TO IMITATE BIRD FLIGHT

BASED ON THE DIVERSE PRINCIPLES OF
MOBILITY AND INERTIA.

"I am 64 years of age now, and I expect to be on deck 25 years hence, when I shall have attained to the fine old age of 89. Before that time arrives, I confidently anticipate that my mechanical ideas with regard to the propulsion of aeroplanes and other sky-soaring devices will be in universal use all over the globe."

The speaker was Mr. Lawrence Hargrave, of Woollahra Point, and the subject of discussion the relative importance of certain improvements in aeroplanes on which Mr. Hargrave has been engaged for several years past.

Mr. Hargrave is entitled to the distinction of being one of the first citizens in the State to engage in practical experiments relating to aerostatics and aero-dynamics, or aviation, to use the term now in common use.

"I interested myself in the subject over 25 years ago," mused Mr. Hargrave. "Within that period there have been some wonderful developments. But there will be still more startling conceptions reduced to mathematical certainties within the ensuing 20 or 25 years."

"We are surely progressing."

"What dare-devil fellows these French aviators are, aren't they? They are superb in their absolute disregard of danger. They excite my most sincere admiration. This Monsieur Maurice Guillaux, who loops the loop, and performs side slips and tail slips, climbs the spiral descent and soars to earth on a vertical route—don't you admire a man like that? He reminds me of the Chevalier de Bayard, and his daring feats in the Middle Ages."

AN AERIAL "FLAPPER."

Mr. Hargrave's particular invention is a new type of engine which, instead of driving the propeller in the front or rear of the machine, will supply the motive-power direct to a pair of flapping wings—"flappers"—very much on the same principle as that of a bird of the air.

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"I am now engaged in improving the engine," added Mr. Hargrave. "There are certain mechanical difficulties to overcome. But I am certain to succeed in time. My engine will have a separate entity from the machine, as it were. Each section will be independently automatic. Yes, that's the term I want."

A TECHNICAL EXPLANATION.

"Let me explain my idea clearly. There are certain types of aeroplanes with absolutely no extension fore and aft for maintaining automatic stability both longitudinally and transversely under most trying conditions. All flying machines practically embody a scaffold-like structure on their afterward extremity, to hold moveable structures requiring constant attention. This fact indicates that, in this respect at least, there has not been much material improvement in the art.

"Don't forget that the atmosphere is traversed by gusts, gales, and tremors of wind of a rapid and confusing character, and that the weight of a body that has to move through these disturbed strata and preserve its stability must possess a minimum inertia, so that it can readily adapt itself to ever-changing conditions.

"Common sense steps in here and says: 'Separate the parts you want to be mobile from the parts you desire should be inert.'

"This is the very heart, the kernel, the quintessence of the experiments upon which I am now engaged. Some people may scoff and laugh at my ideas, and say I am proceeding on wrong lines. Well, let them do so. I think the wing—the 'flapper,' if you like to so describe it—will win through, because it is based on the structural formations of bird-life, and is as close to Nature as we can ever hope to get."

GERMANY'S 400 WARPLANES.

Mr. Hargrave remarked that great strides in aviation were being made in Germany, which was well ahead of France and Britain in this respect, and could put 400 warplanes into active service at an hour's notice.

Reliability and endurance are the objective of the German aviators. Speed is only a secondary consideration.

"With very few exceptions, the German and Austrian aeroplanes," Mr. Hargrave continued, "have their wings swept right back. In other words, seen in a plane view, they present the shape of a wedge. This characteristic has earned for them the title of 'Arrow' biplanes and 'Dove' monoplanes. Further, the wing-types are usually uptilted—a feature which, in conjunction with the wedge shape, produces some degree of automatic stability, while leaving full control to the pilot. The intention is simply to relieve the pilot from the continuous strain imposed upon him in long, cross-country flights."

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That the design is successful in this regard has been proved again and again recently by the marvellous long-distance flights made by various German pilots, of which the wonderful performance of Stoeffler, who covered 1200 miles in 24 hours, serves as an example. Except for the manoeuvres of steering, the pilot of such a machine has little need to bother about controlling his machine, with the result that the physical and mental strain to which he is subjected (and only they who have flown continuously for several hours at a stretch can possibly realise its intensity) is practically eliminated. A further advantage is that he is thereby free to devote himself entirely to other duties, such as observation, etc.

THE RACE FOR SUPREMACY.

"Yes. Germany is making vast improvements in aerial navigation," added Mr. Hargrave, "principally in the construction of military flying machines. Curious, is it not, that when any great mechanical idea is evolved, nearly everyone starts scheming and experimenting with a view to turning it to the destruction of their fellow-beings? Are there any grounds for the pleasant philosophical merits we are attributing to ourselves to-day? Are things what they seem? Or are our professions merely a cloak of hypocrisy to cover up some ulterior designs? It is a profound problem which offers no feasible solution at this stage. It will be found in the future. In the interim, I shall continue my experiments, in the belief that, 25 years hence, all other forms of aerial machines will be superseded by the simple, self-contained 'flapper' which, in my belief, is the closest thing to bird-flight to which we can ever hope to attain."