

**CORRESPONDENCE.**

\* \* \* *The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.*

**PROPELLERS AND MOTORS.**

*To the Editor of FLIGHT.*

SIR,—With reference to my letter *re* propellers (January 30th), and Mr. Hollands' criticism (February 6th), the words type and proportion were not used in connection with propellers but in connection with aeroplanes of which the propeller is only a necessary component. This disposes of any "notions" which I am supposed to have formed on the subject.

What I do say is that a propeller varies in pitch, diameter, and blade-area as the aeroplane varies in size, weight, speed (which is governed by canvas-area and weight mainly), and the resistance of the particular type of aeroplane, and until an experimenter has determined which machine he may require to have fitted with a propeller and the amount of power required to drive it, the manufacturer of propellers is as "much in the dark" as the experimenter with regard to highest efficiency.

I have no wish to enter into any acrimonious discussions with regard to the merits or demerits of any particular "confection," but may I ask if Mr. Hollands has tested his own propeller against a "Voisin?" If so, what were the results? And if the results were highly favourable to the "Hollands," why are not all the present flyers fitted with a "Hollands?" Surely this should be the case, and I think if such a saving could be effected in power the aeronauts desiring to excel would "jump at the chance."

I must say that I am surprised at the acrimonious tone of some of the correspondence. It is such as one might expect from school children and not from men of brains seriously studying one of the deepest subjects in connection with modern science.

I may add that when writing I had no thought of Mr. Hollands or anyone in particular, but only of the subject of which I was writing, in which I am more highly interested than in anything or anyone, and I have no "axe to grind."

Yours very truly,  
MONTFORD KAY.

Feb. 8th.

**TERMINOLOGICAL INEXACTITUDES.**

*To the Editor of FLIGHT.*

SIR,—Believing as I do, that "ornithoptics" or the science of bird-like flight is the branch of aeronautics which will claim most attention later on, may I trespass on your valuable space once more to say that I hardly think that you have proved your point in your reply to my letter of last week under the above heading. While you admit that the word "ornithoptère" is used for a class which has bird-like wings, you disallow the word because the wings of this class of aerial vessel are not covered with feathers. But neither are they densely reticulated (membranous) wings (like the grasshopper), therefore on such a ground "orthoptère" must be vetoed also. I the name of this class of vessel were to depend on the material used for the covering of the wing there would be no end to the nomenclature. I submit with all due deference to you that as the class of aerial vessel under consideration is admittedly bird-like and *not* insect-like, the term "ornithoptère" is more appropriate than "orthoptère."

H. A. SULLIVAN,  
Major, A.V.C.

Edinburgh.

**TO THE NORTH POLE IN A FLYING MACHINE.**

*To the Editor of FLIGHT.*

SIR,—Kindly accept my profound thanks for so courteously publishing my previous communication and which encourages me to reply herewith to the striking note embodied in the letter of Mr. Sandon Perkins on the above subject. Polar exploration by dynamic aerial ship has long proved a fascination to myself, dating, in fact, with the same number of years that I have studied aviation—from my earliest memories.

Your correspondent asks for advice respecting the best route from England to the Pole and the most practicable type of machine wherewith to conquer the whirls and eddies of atmospheric space with the resultant conquest of the elusive north polar ice-cap, suggesting moreover Smith's Sound *via* Spitzbergen. To the first, the answer is by air, to the second I have no hesitation in advising, without fear of contradiction from *any man living*, the advanced mechanically-driven winged type advocated by Joubert, Rénard, Hollands, and McKee, or the advanced homogeneously designed helicoptère-winged machine believed in by such *scientists*

as Kress, Edison, Davidson, and yours respectfully. To the aeroplane fraternity attempting such a feat the result would prove abortive, useless, and suicidal, as this incomplete branch of flight is in practice simply "fair-weather" craft having no real analogue in Nature. To such partisans of these dangerous power-kites who claim that as yet no helicoptère nor wing-machine has yet flown whilst the aeroplane has been towed and driven by screws to distances approaching 100 miles, and, backed by well-known adherents, aided by superb mathematical formulæ, *velocity* is the key and solving of the problem of both longitudinal and transverse or lateral stability, I say by all means endeavour to navigate the swirls and edding currents of air, now vertical one moment, then horizontal, again quiescent, by such inadequate lines, and I wish them joy of the job.

Having, Sir, already promised future communications for the assistance of other aeronautical students embodying concisely natural laws in addition to physiological and morphological data, I will content with replying to Mr. Perkin's request. The most feasible and *practical* method of reaching the Polar regions by fields etherean is by a machine designed on the principles of Nature *by man's methods*. Speaking for my own line of research, I would construct an helicoptère of 60 ft. length with ten suspensory helices 10 ft. in diameter, each spinning in inverse directions, the hull of the vessel formed mainly on the lines of the fast flying birds of the swift, albatross frigate-bird, or tern species. These ascensional screws as employed by myself are combined *propellers and elevators*, the axis of same being perfectly vertical, and would lend themselves to engines of 200-b.h.p., *not* petrol, which are as yet unreliable. Automatic parachutes would be added to prevent collapse *if* one of the suspensory helices should break. I would furthermore advise taking two independent engines, one for working, the other for emergency. Now taking approximately the distance from London to the Pole as the crow flies as 1,500 miles, our "Clipper of the Clouds" would require a normal speed of 50 miles per hour to fly for 30 hours this distance, not by any means an hypothetical voyage.

And now for the technical and practical question of lift, drift, and power. The Wrights' aeroplane we know has lifted 84 lbs. per horse-power. Can the lifting screw accomplish this in practice? Yes. The finest, advanced, and most scientific helicopteral experimenter of modern times, Mr. G. L. O. Davidson, has actually built and tested a large machine with twin screws 27 ft. in diameter each, which lifted a weight of 3 tons with only 80 h.p., placing far in the shade Maxim's lift of 8,000 lbs. with 363 h.p. Herein, therefore, lies the undisputable fact, the superiority of a *scientific* machine over the monstrous, incomplete, and dangerous aeroplane. Surely it requires no additional words of mine to enhance the questions of the impossibility of our machine with its ten combined suspensory and propulsive helices irresistibly forging a path through the fluctuations of aerial currents, overturning whether navigating such at either low heights or soaring to the limits of respirable air! Allowing only 50 lbs. thrust per horse-power, we secure a lift of 10,000 lbs. in round numbers, a sum far in excess needed to construct machine, two operators, stores, fuel, &c. I shall be happy to advise Mr. Sandon Perkins further, and will assist all I can to foster and advance the movement, although financially my aid would prove a nonentity.

In conclusion may I enquire of Mr. Hollands (in no unfriendly spirit, as personalities will never help on the problem) why he condemns and considers the helicoptère as impracticable.

I am, Sir, yours sincerely,

Pimlico.

EDGAR E. WILSON.

**ENGINES FOR MODELS.**

*To the Editor of FLIGHT.*

SIR,—If "Bi-plane" will give the width and depth of planes so that the area may be obtained, I shall be pleased to give what advice I can without knowing many necessary details which conduce to perfect flight.

If the machine is under 10 sq. ft., I should advise "Bi-plane" to make a larger, say 15 sq. ft.

Yours very truly,  
MONTFORD KAY.

*To the Editor of FLIGHT.*

SIR.—*Re* Mr. Kay's letter in answer to mine of the 26th ult., I leave it to your readers to judge whether storage batteries of any description are suitable for aeroplane work. Mr. Kay states that the weight of the accumulator used by him was 2½ lbs. This would allow for a capacity of about 10 ampère hours continuous; and, if discharged at 10 ampères, at 4 volts (which would certainly no be good for the accumulator) 40 watts would be expended upon the