

I shall be glad to furnish more minute descriptions to those who may want to repeat these experiments, or to apply the principles to machines of their own. The stability of an apparatus is the very first thing to work out before it is attempted to apply an artificial motor. This cannot be too strongly insisted upon, and the best way of accomplishing this pre-requisite is to experiment with a full-sized gliding machine carrying a man. This utilizes the ever reliable force of gravity until such time as the automatic equilibrium is fully attained. Then, and not till then, it becomes safe to apply a motor.

When artificial power comes to be applied, it is probable that the best motor to use at the beginning will be found to be a compressed air engine, supplied from a reservoir upon the apparatus. This ^{is} not a prime mover, but it is reliable and easily applied. It will probably afford a flight for but a few seconds, but this will enable the aviator to study the effects of the motor and propeller on the equilibrium of his machine. When this is thoroughly ascertained another motor may be substituted, such as a steam or a gasoline engine, which will produce longer flights, but this will require long and costly experimenting to obtain a light and reliable engine.

Another most important requisite is that the first apparatus with a motor shall be of the smallest dimensions which it is possible to design, and shall therefore carry only one man. This is requisite for four reasons: 1st. in order to keep down the relative weight which increases as the cube