

-9-

you like beyond the bob, and attach to its extreme end a resisting surface which may be as large as you choose. Now hold the pendulum out horizontally as before with the resisting surface also horizontal and let go. The pendulum will swing more slowly than before on account of the resistance of the front control; but the point I would enforce is this, that the resisting surface however large and however far removed from the axis of rotation, will not prevent the turning movement from continuing steadily to the very end, when the center of gravity comes directly beneath the center of support.

The same is true of an aereodrome which is head-heavy in the slightest degree. The front control will not prevent it from turning completely over, head down, if it has no headway: Only headway can save it.

Now it is noteworthy that an aereodrome with its center of gravity at the center of surface does not have this tendency to continue turning over, even though it should be tipped one way or the other.

Suppose it should be tipped slightly down in front. It would begin to slide down an inclined plane; but gravity has no tendency to make the dive become steeper, as would be the case were it head-heavy, stern-heavy, or side-heavy. On the contrary, from the very first gravity exerts a corrective influence. As the center of gravity tends to assume the lowest possible position its action is to lower the elevated side of the aereodrome, instead of depressing the lower side still more thus causing the surfaces of the aereodrome to return to the horizontal position.