

should be nothing near them that could possibly catch, or that could possibly be drawn within reach of a rotating propeller by the powerful suction exerted by one face. The breaking of a propeller in the air may evidently become a serious matter, and we would do well therefore to make absolutely sure that our propellers are constructed of such strong and sound material that they could not possibly break under the centrifugal force generated by their rapid rotation; and that the blades are so stiff that they could not break by bending under the pressure of the air driven from them. In Laboratory experiments we have had propellers smash from all these causes, and we cannot be too careful in our inspection of propellers to be used in actual flight.

We may learn also from Orville Wright's experience that double propellers, rotating in opposite directions, although exceedingly desirable because they eliminate the disturbing effects of torque and gyroscopic action, introduce an element of danger when arranged as in the Wright machine.

It might perhaps be safer to use concentric propellers both pushing (or pulling) in the central line of the machine. Then if one is put out of commission, the other will continue pushing in the central line and not to one side of it. Some disturbance of equilibrium might still result from unbalanced torque, or gyroscopic action, but the danger would not be so great as when combined with an ex-centric push.

With concentric propellers two engines, one for each propeller, might be of advantage; for should one of the engines break down in the air both propellers would not stop.