

back of the axis of rotation is inclined with its rear edge downwards. In other words it is tilted up in front. Thus so far as its action as a rudder is concerned it would tend to make the machine dive-----

Mr. Baldwin:- No, no it balances all right. They are not tending to thus turn the machine over. If the center of gravity is right under the center of pressure there is no turning tendency.

Dr. Bell:- Yes, but if the surfaces are back of the center of gravity why is there not a turning tendency, why don't they act like a rudder steering the bow down under headway.

Mr. Baldwin:- Because the part behind is not as effective.

Dr. Bell:- Well, anyway now you admit the main proposition, but don't think that the two cases are quite comparable, that there is not a single surface away out in front. As I gather your idea, the front control would be, you think, a more efficient safeguard in case of loss of headway than a rear tail.

Mr. Baldwin:- Yes.

Dr. Bell:- Now let us look at that. We lose headway and under these circumstances neither a front control nor a rear tail will operate to direct a machine.

Mr. Baldwin:- I don't think that is quite correct.

Dr. Bell:- No rudder will work without headway. Now we lose headway and the machine begins to drop under the action of gravity. Then we have "downway", not "headway", and in the interests of safety is it not advisable that the machine should