

## ***Seat with Bottom Cushion Airbag for Vertical Emergency Load Attenuation***

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We have developed a concept of a seat with bottom cushion airbag in order to attenuate vertical loads in emergency landings especially for small aircraft. We conducted basic research that a part of the cushion is substituted by an airbag with initial internal pressure, to keep the passenger at the seating position. Next, in near future, we will develop the seat whose bottom cushion is wrapped up by airbag. In the next version of the seat, the airbag will work only at emergency landing and the bottom cushion will work as cushion in usual flight. So far, we have conducted sled tests of the basic seat without inflation of the bottom cushion airbag and vertical drop test of the basic seats with inflation of the bottom cushion airbag. In the presentation, we show the results of those tests and discuss the effects of the bottom cushion airbag to vertical load attenuation and behavior of ATDs.