

## **Crash Simulation of YS-11 Transport Fuselage Sections**

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### **Abstract:**

Japan Aerospace Exploration Agency (JAXA) is now working on a project to establish a simulation method to evaluate the crashworthiness characteristics of aircraft fuselage structure.

Two vertical drop tests of fuselage sections cut from a NAMC YS-11 commuter class transport aircraft were conducted in 2000 and 2002 as a collaborative activity of NAL (one of the predecessors of JAXA) and Kawasaki Heavy industries, Ltd. The forward section with a subfloor cargo compartment was dropped at the impact velocity of 25 ft/s while the aft section without the cargo compartment was dropped at the impact velocity of 20ft/s

Simulation models of those two fuselage sections were developed, and the crash simulation to simulate the vertical drop tests was conducted using LS-DYNA. Simulation results were compared with drop test data in order to verify the simulation method. In addition, the effect of the subfloor structural configuration on the fuselage crashworthiness characteristics was investigated by comparing the results of two simulation model.

Summary of the simulation models and their results will be reported in this presentation.

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