

**“ATB Simulation of Hybrid III Dummy in Sled Tests,” *Society of Automotive Engineers International Congress and Exposition, Detroit, Michigan, February 1988, Paper #880646 (with R. L. Piziali and T. P. Khatua).***

**Abstract.** A study was conducted to validate the mechanical properties of the Hybrid III dummy measured by Armstrong Aerospace Medical Research Laboratory (AAMRL). The validation was performed by computing dummy response, using the Articulated Total Body (ATB)\*\* computer program and comparing the computed response with those obtained from sled tests. Two simulations were performed in this study. The first one was used to calibrate the model; it served as a basis for comparing various response components. Necessary adjustment in the input parameters were made until good agreements were achieved between the computed and the test results. The final model thus obtained was then used to predict the response of the second sled test without changing any of the model parameters; this prediction was used to check the validity of the model. The results of the study indicate the need for reevaluations of the AAMRL measured stiffnesses of the neck, torso, and knee joints. The overall correlation appears to be adequate considering the uncertainty associated with the overall mechanical properties of the dummy.