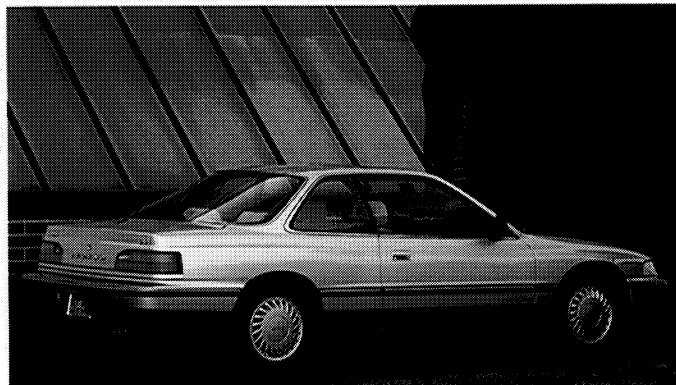


The accompanying photos show exterior and interior views of the 1987 Honda Acura Legend Coupe, which was designed with the aid of the NASA-developed NASTRAN® computer program. The Legend is among the latest cars designed by Honda R&D Company, Ltd., Japan, a longtime user of the NASTRAN program.

The program is an offshoot of the computer design technique that originated in aircraft/spacecraft development. Engineers create a mathematical model of the vehicle and “fly” it on the ground by computer simulation. This allows study of the performance and structural behavior of a number of different designs before settling on a final configuration.

From that base of experience, Goddard Space Flight Center developed the NASA Structural Analysis Program (NASTRAN), a general purpose predictive tool applicable to structural analysis of automotive vehicles, railroad cars, ships, nuclear power reactors, steam turbines, bridges, office buildings—and that’s just the beginning of a lengthy list.



The NASTRAN program takes an electronic look at a computerized design and predicts how the structure will react under a great many different conditions. Quick and inexpensive, it minimizes trial-and-error in the design process and makes possible better, lighter, safer structures while affording significant savings in development time. One of the most widely used of all aerospace spinoff technologies, the NASTRAN program is available through NASA’s Computer Software Management and Information Center (COSMIC)® at The University of Georgia (see page 140).

Virtually all U.S. auto-makers now employ the aerospace-derived computer design technique and most employ the NASTRAN program or other NASA-developed programs in the design process. Honda R&D Computer Ltd. has been using NASTRAN for more than a



decade for structural analysis of auto bodies, motorcycles and such components as tires, wheels, engine blocks, pistons, connecting rods and crankshafts. All of the Honda auto products designed in the 1980s have been analyzed by the NASTRAN program. ▲

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