

The Imagined **Becomes a Reality ...**

MOVIE.BYU

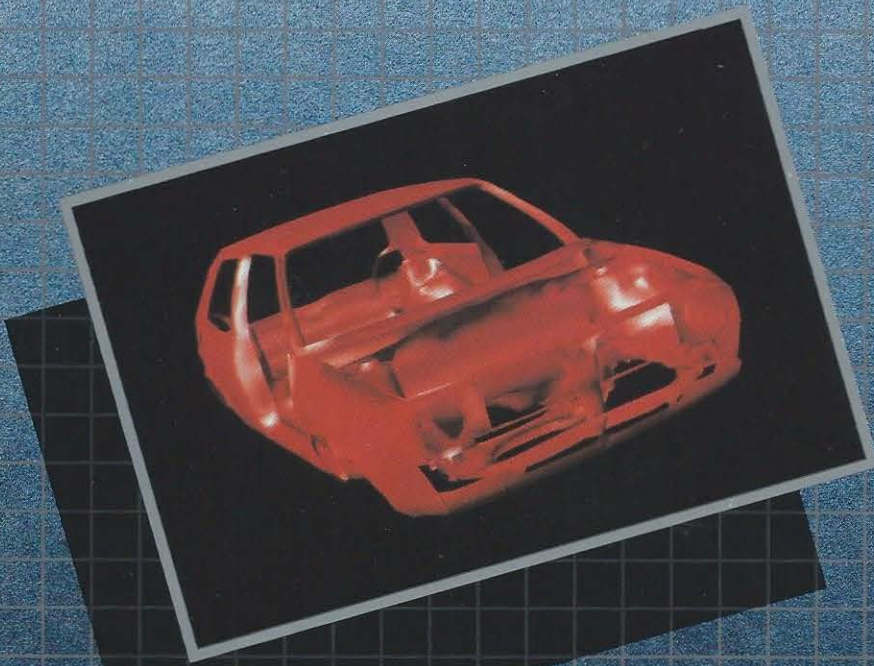
These images illustrate the capabilities of an enhanced version of MOVIE.BYU. Cray Research, in its continuing effort to meet the software needs of its users, has enhanced the standard version 5.2 of MOVIE.BYU to take advantage of the Cray computer architecture. The enhanced product now allows users to run models which were previously impossible to run. The new version takes advantage of Cray's 64-bit word length, allowing users to process more than four thousand parts simultaneously and display up to a million polygons. The new version also provides a flexible but efficient interface which pipes output to a number of display devices on front-end computers without exiting the program. The new version offers all of the standard features with tremendous performance increases over standard mainframes.

The Volkswagen Golf demonstrates the power of the CRAY/MOVIE system for scientific and engineering analysis. The geometric model was constructed from standard NASTRAN data. The NASTRAN data included only one half of the car body. The symmetry option was used to mirror the other half of the body. The increased size of the geometric model resulted in a model which could not be displayed using the standard version of MOVIE. The CRAY version of MOVIE not only processes large model sizes, but it does it very efficiently. This image only takes seventeen seconds to generate and display.

The Golden Gate Bridge image illustrates the haze, transparency, and special function capabilities of the MOVIE system to create realistic images of natural phenomenon. The clouds were modeled as a "color coded" surface inside a "haze volume". The image was then generated using the DISPLAY module of MOVIE using a CRAY X-MP/48. This image takes approximately a minute and a half wall clock time to generate and display as compared to more than one and one half hours on a VAX 11/750.

Figures:

Top - The Volkswagen Golf comes from Volkswagen Germany with enhancements made by Michael G. Long of Cray Research. Bottom - The Golden Gate Bridge was created by Scott R. Parry, a research assistant to Hank Christiansen and a Ph.D. student at Brigham Young University.



Making the Imagined a Reality ...

Making the imagined a reality has become commonplace using CRAY computers. Previously insoluble problems in the aerospace, petroleum and automotive industries, in science, engineering, and graphics are being solved today using the power and flexibility of CRAY computer systems. In each of these disciplines, the CRAY is used to simulate a real-world process with a computational model in less time and at less cost.

To support these applications, a wide range of graphic software systems is offered for CRAY computers. Device-independent line drawing systems like DI-3000 from Precision Visuals, Inc., TEMPLATE from Megatek, Inc., and DISSPLA from ISSCO, Inc., are being used now on many CRAY computers.

Systems for CAD/CAM and pre- and post-processing like PATRAN from PDA Engineering and MOVIE.BYU from Brigham Young University support a variety of engineering design activities. In those cases where photographic quality scene generation is the objective, the designers, artists, scientists, and movie-makers are turning to CRAY systems to do what could not otherwise be done.

If your application or graphics task requires extraordinary computer power . . . if the problems you *can* do are much smaller than the problems you *would like* to do . . . if you need a general purpose powerhouse to run a variety of simulation, engineering or scientific codes . . . you need a CRAY!



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