



U.S. Department
of Transportation
**Federal Highway
Administration**

Research, Development,
and Technology

Turner-Fairbank Highway
Research Center
6300 Georgetown Pike
McLean, Virginia 22101-2296

ROADSIDE SAFETY LIBRARY (RSL)

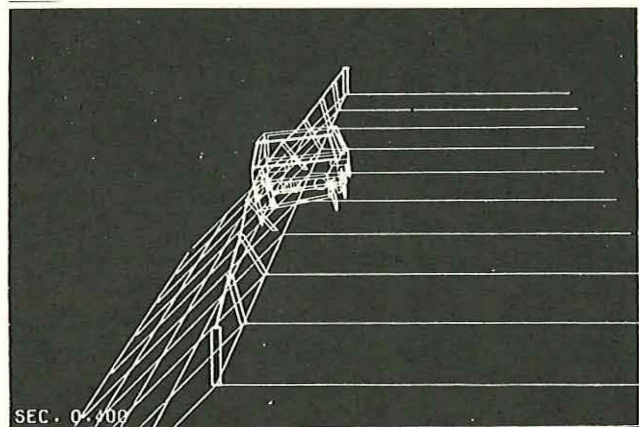
What is RSL? - It is a library of analytical tools and computer simulation models specifically designed for the investigation of vehicles impacting roadside hardware.

Why do we need it? - Computer simulation of vehicle/barrier crashes is an essential element in the process of designing roadside hardware. The cost of computer simulation is considerably less than the alternate full-scale crash tests.

What has been accomplished so far? The library has been established and is divided in two main parts: the Crash Analysis Information System (CAIS) and the Crash Test Information System (CTIS). The general operational elements of each system are:

CRASH ANALYSIS INFORMATION SYSTEM

SIMULATION MODELS
RETRIEVAL SYSTEM (LIRS)
PRE-PROCESSOR (RSIP)
POST-PROCESSOR (PREP)
POST-PROCESSOR (GRAFIX)
PROGRAM DOCUMENTATION
VALIDATION ACTIVITY



CRASH TEST INFORMATION SYSTEM

CRASH TEST DATABASE
TEST QUERY SYSTEM
TEST REPORTS
16MM TEST FILMS
VIDEO TAPES
35MM SLIDES FILES
PICTURE FILES



INTRODUCTION

The RSL is located at the Federal Highway Administration's (FHWA) Turner-Fairbank Highway Research Center in McLean, Virginia. The RSL contains the only national up-to-date inventory of crash test films and computer simulation programs of vehicles impacting into roadside safety hardware, such as guardrails, bridge rails, median barriers, and luminaire supports.

OBJECTIVE

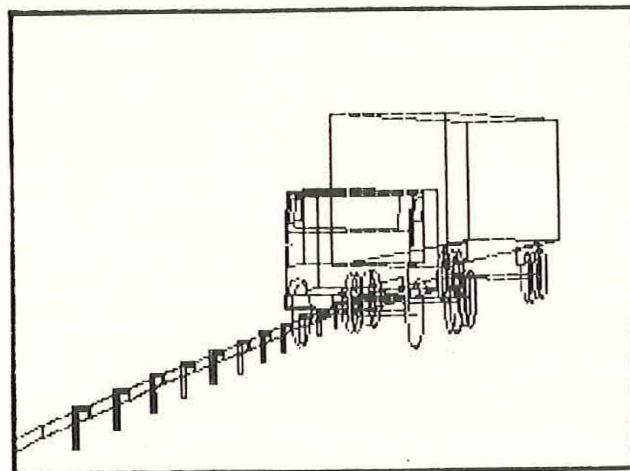
To provide researchers with validated analytical tools to accurately simulate roadside hardware impacts.

RECENT RESEARCH PROGRAMS

- Developed the FHWA validation procedure.
- Completed the feasibility study on combining HVOSM & BARRIER VII.
- Improved and validated GUARD and the Numerical Analysis of Roadside Design (NARD).
- Conducted a study to "Improve Speed and Efficiency of Vehicle/Barrier Simulations."

FUTURE PLANS

Development of the next generation of roadside hardware simulation programs. These programs will be capable of accurately representing, in detail, the dynamic characteristics of roadside hardware. The programs will be faster and less expensive to operate than current models and will allow greater use of analytical techniques for design purposes.



**Tractor-Trailer
Computer Simulation**

For further information, contact:
Mr. Jerry A. Reagan
Chief, Safety Design Division
Federal Highway Administration
(703)285-2057

Mr. Leonard Meczowski
RSL Manager
Federal Highway Administration
(703)285-2415