Passenger Rail Equipment Collision Safety; Structural Crashworthiness

Program Description:

- Define the collision scenarios of concern
- Assess crashworthiness of existing designs
- Develop alternative designs
- Evaluate crashworthiness of alternative designs
- Compare crashworthiness of existing and alternative designs

Scope of Problem Addressed:

- On average, one severe passenger train accident occurs every six months
- There are approximately 20 passenger fatalities per year

Planned Milestones/Deliverables:

- Single-car impact test of multi-level equipment
- Severe-deformation tests of cab car end frames

Lessons Learned:

- Crush-zones for cab and coach cars
- Optimized cab car end frames

Strategic Goals and Benefits:

- Provides Technical Basis for Development of Regulations, Standards, and Specifications
  - Amtrak High-speed train specifications
  - 49CFR238
  - APTA Manual of Standards and Recommended Practices
  - Metrolink CEM Specification