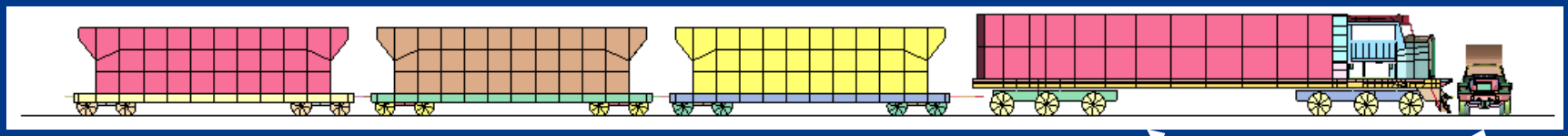
Locomotive Collision Test #3

Grade Crossing Collision of a Freight Locomotive with a Steel Coil on a Flat Bed Truck

Test #3: Set-Up

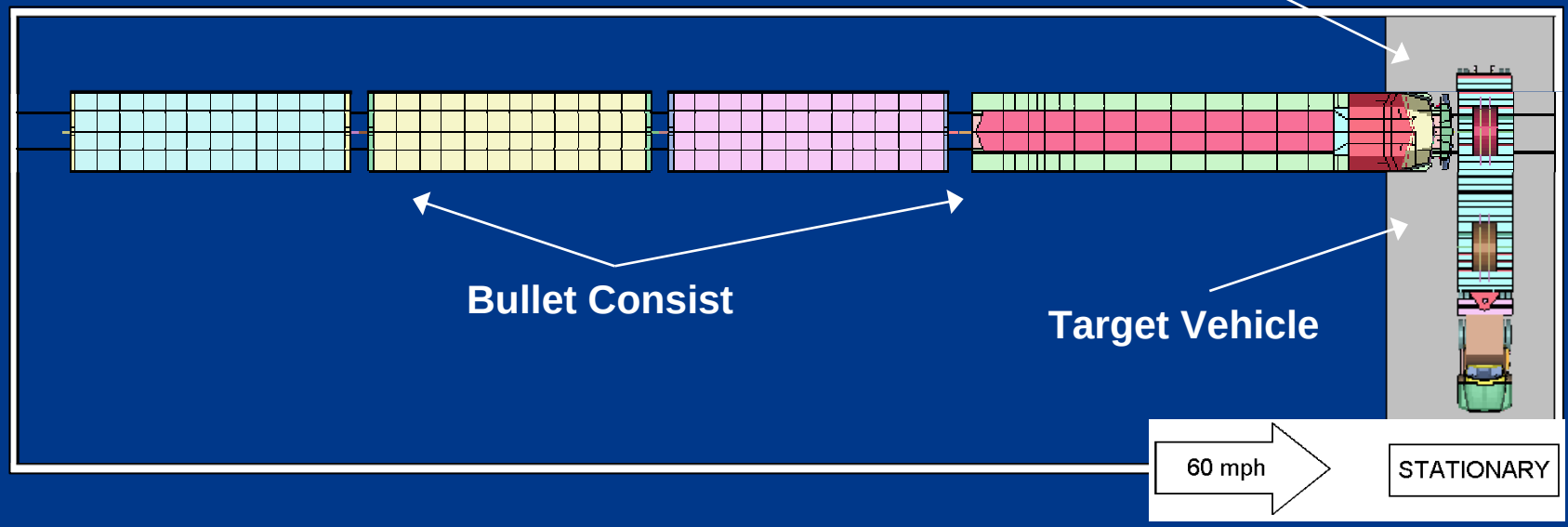


3 Loaded Hopper cars

Test Locomotive (SD-45, front end converted to SD-70)

Heavy Highway Vehicle and Flat Bed Trailer Loaded with Steel Coils

Collision Speed - 60 mph



Test #3: Pre-Test Pictures

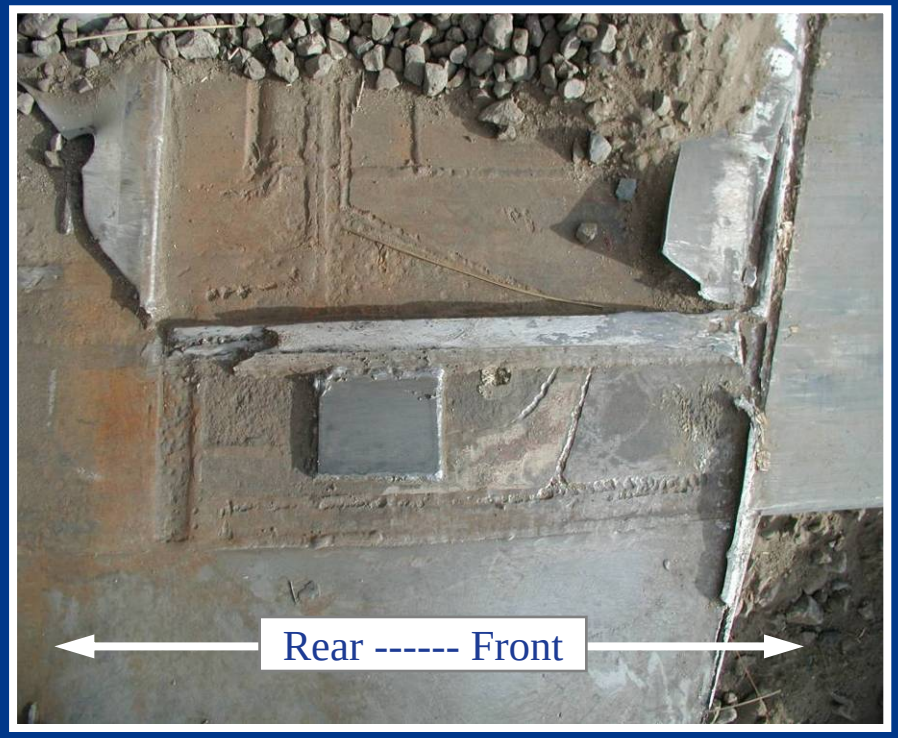
Steel coil aligned with engineer's side collision post

Steel coil trailer alignment with locomotive

Test #3: Post-Test Damage Photos

- Locomotive cabin experienced significant damage
- Anticlimber and endplate not significantly damaged

Test #3: Damage to Collision Post



Front end of post

Rear end of post

- Remainder of collision post including post base and weld bead

Test #3: Outcome

- What did we learn from this test?
  - The alignment of a steel coil at the moment of impact can place a significant load on a single collision post
  - The collision post struck by the massive coil was sheared off just above its weld to the underframe
  - The elevation of the coil just prior to locomotive impact was just above the anticlimber and underframe structure
  - A substantial portion of the hood and cabin was also damaged
  - Crew safety would be affected in this type of collision