



**National
Transportation
Safety Board**

Signal and Train Control Issues

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Existing Signal System

- Traffic Control System
- Dispatcher sets routes at CP
- Signals display according to routes that are set
- No train stop features
- Engineer controls train speed
- Engineer must adhere to signal aspects and indications



Positive Train Control

Positive Train Control (PTC) is technology that

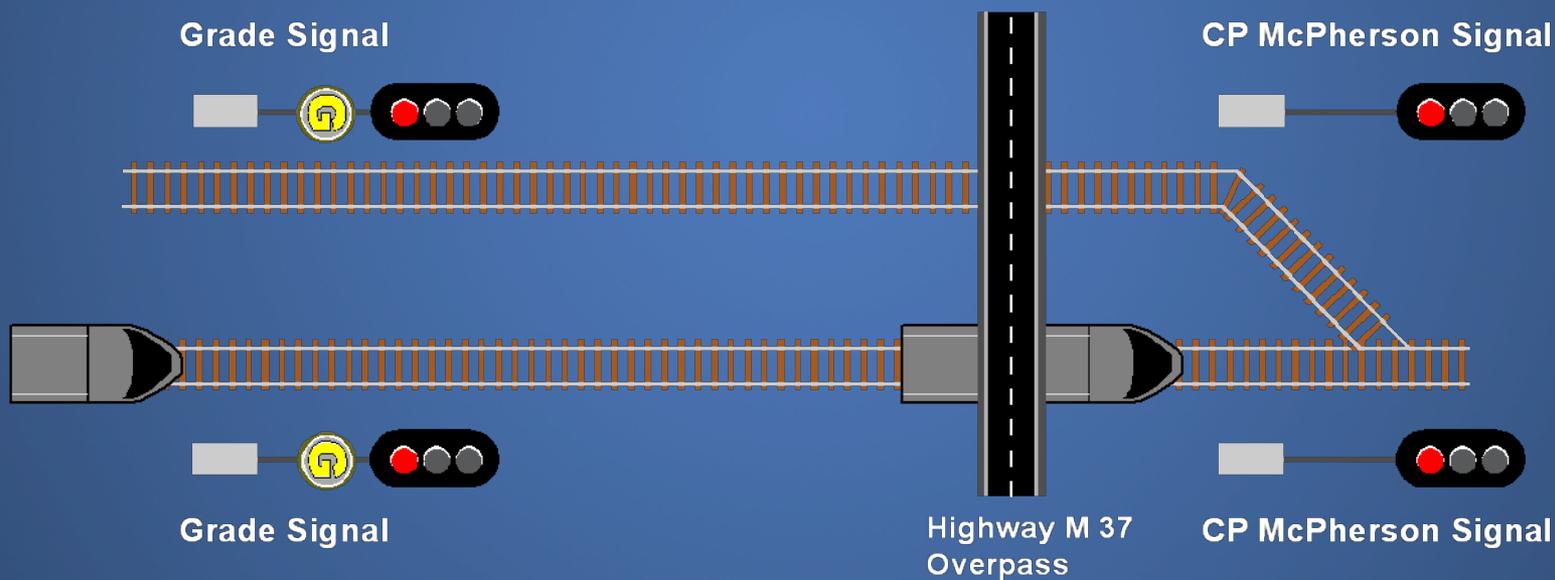
- Prevents train-to-train collisions
- Enforces speed limits
- Prevents incursions into roadway work zone limits
- Prevents movement through a switch that is improperly aligned



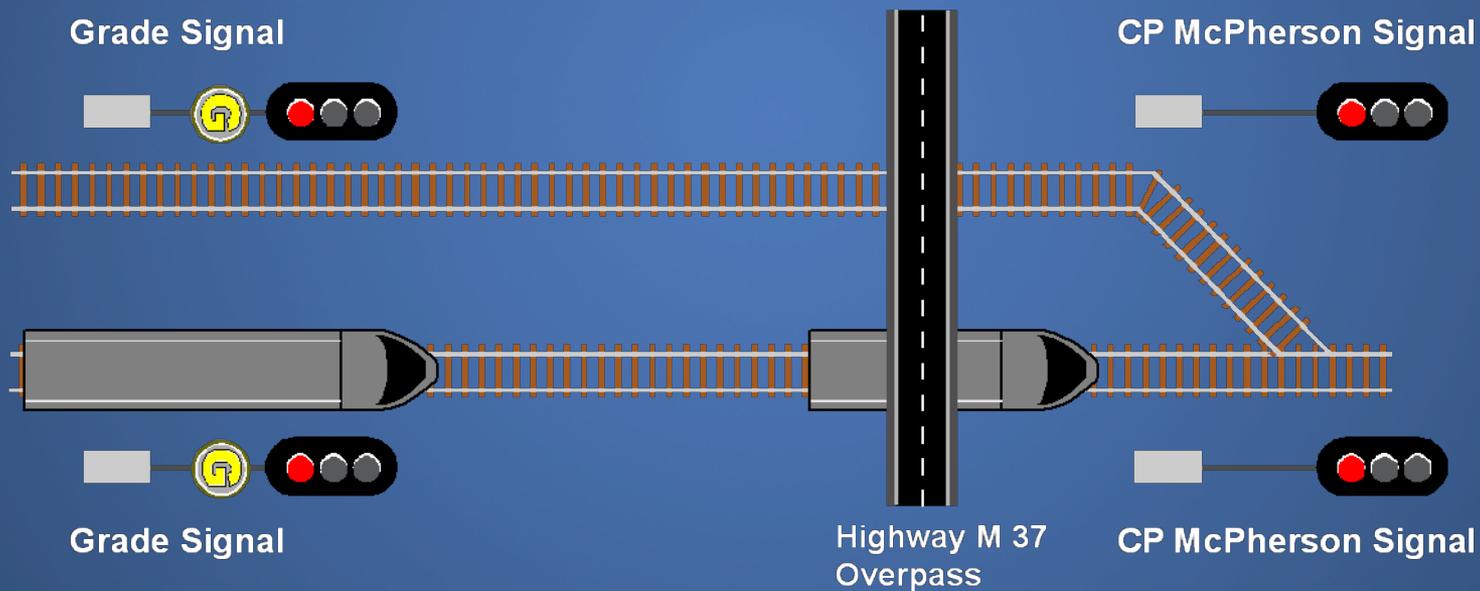
PTC Functionality

- BNSF uses a PTC system called Electronic Train Management System (ETMS)
- At the time of this accident ETMS was not installed at the accident site
- BNSF is currently working on the implementation of ETMS at the accident site because both passenger and freight trains operate on the tracks

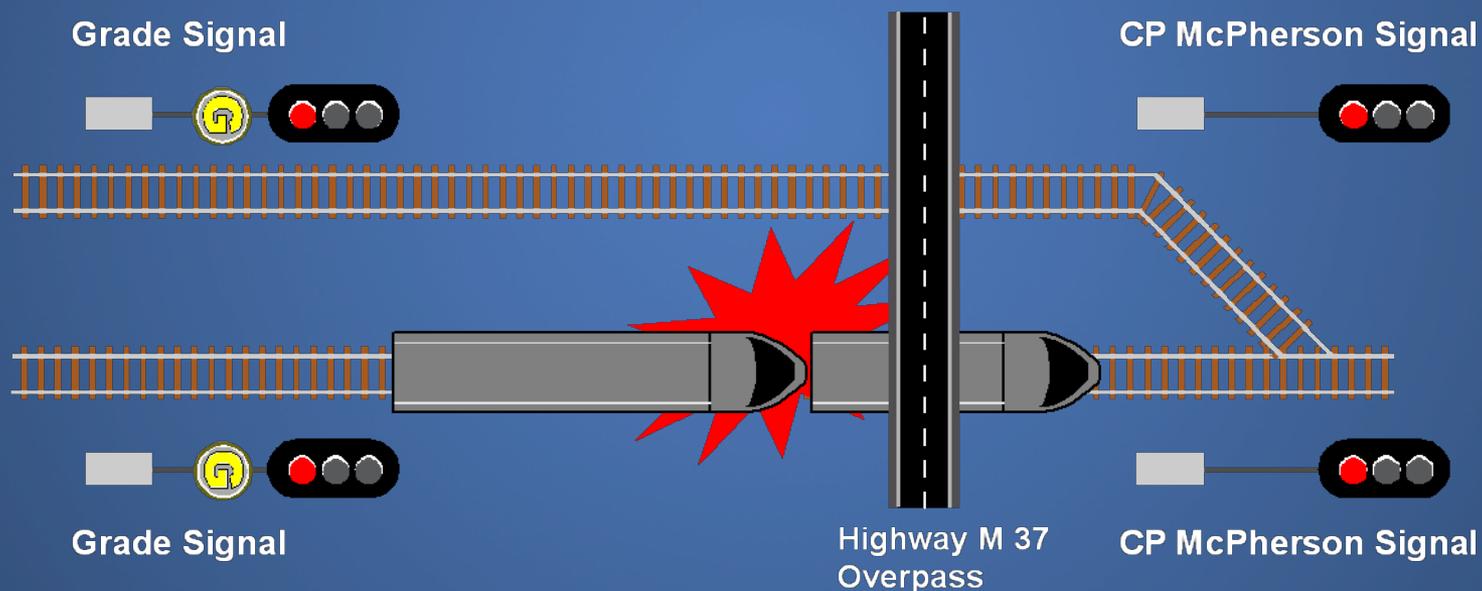
MOW Train Stopped at CP Coal Train Approaches G Signal



MOW Train Stopped at CP Coal Train at Restricted Speed



MOW Train Stopped at CP Coal Train Strikes MOW Train



Staff Conclusions

- Existing BNSF signal system was operating as designed and BNSF train-dispatching activities were appropriate
- ETMS, as designed, would most likely not have prevented this accident
- However, a PTC system with rear-end train identification would have prevented this accident



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