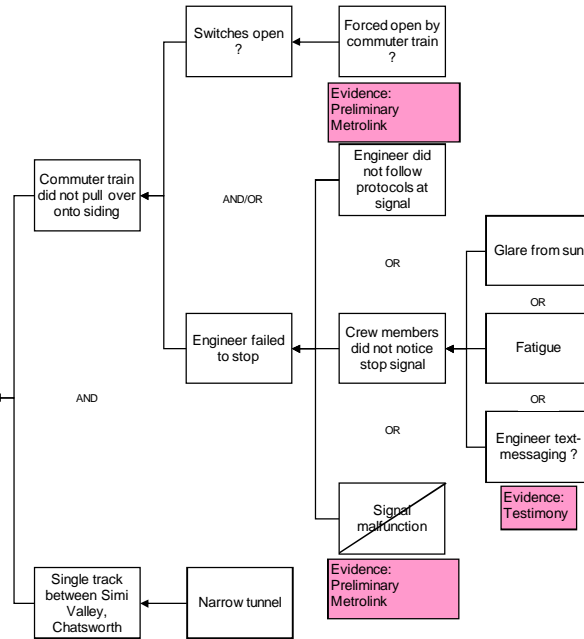
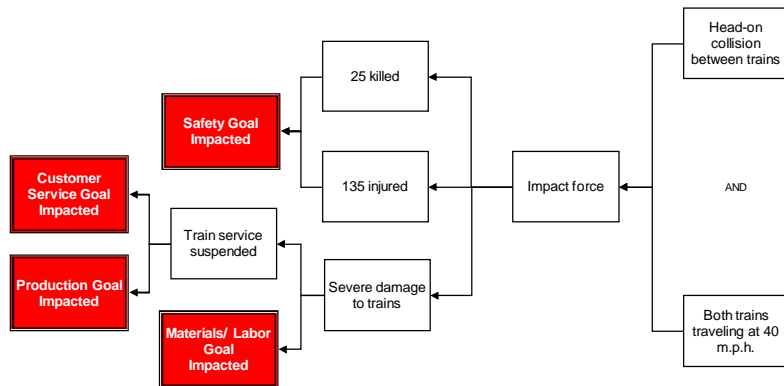


**Commuter Rail/Freight Train Collision
Chatsworth, California
September 12, 2008**

On the afternoon of September 12, 2008, a Metrolink commuter train collided head-on with a Union Pacific freight train. This tragic accident resulted in the deaths of 25, and injured 135, one of the worst train collisions in the country. The National Transportation Safety Board (NTSB) is investigating the collision, but from primary information we can make a basic cause map. A thorough root cause analysis built as a Cause Map can capture all of the causes in a simple, intuitive format that fits on one page.

We'll examine the impacts to the goals from the point of view of Metrolink, who operates the commuter rail. There was an impact to the safety goal because 25 (20 passengers, 5 crew) were killed, and 135 were injured. The customer service and production goals were both impacted because rail service has been suspended. Additionally, there was severe damage to both trains, though the total cost is not yet known.



The suspension of service is due to the damage to the trains. The deaths, injuries and damage to the trains were caused by the impact force. The impact force is a result of the head-on collision of the two trains, which were both estimated to be traveling at 40 m.p.h. (Whether or not that is a typical or accepted speed is not yet clear.) The head-on collision occurred because the two trains were sharing the same tracks. There is only a single track in this area because of a narrow tunnel, and the commuter train did not pull over onto siding (as occurs nearly almost every day so the freight train can pass). The train did not pull over because the engineer failed to stop. Whether that is because he didn't follow protocol, didn't notice the signal because of glare, fatigue, or other distractions, or if the signal malfunctioned is not yet known. (A preliminary investigation by Metrolink indicated that the signal was functioning properly.)

As the NTSB completes its investigation, we will be able to add more detail to this map and remove potential causes that have been shown by investigation to be inappropriate. As with any investigation the level of detail in the analysis is based on the impact of the incident on the organization's overall goals.

**Cause Map
Detail Level**



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