**Problem**

What's the Problem?

Why did it happen?

What will be done?

**Analysis**

Step 1.

Step 2.

Step 3.

**Solutions**

The final step in the Cause Mapping process is to develop solutions that can be implemented to reduce the risk of a similar problem recurring in the future. The NTSB is investigating this issue and talk of solutions is premature at this point. Once more is known about the causes that contributed to this issue, the lessons that are learned can be used to develop solutions.

Cause Mapping is a Root Cause Analysis method that captures basic cause-and-effect relationships supported with evidence.

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**Case Study: Freight Trains Collide Head-On in Arkansas**

On August 17, 2014, two freight trains collided head-on in Arkansas, killing two and injuring two more. The accident resulted in a fire after alcohol spilled from a damaged rail car ignited, prompting evacuation of about 500 people from nearby homes. The trains were carrying toxic chemicals, but none of the cars carrying the toxic chemicals are believed to have been breached during the accident.

**Cause Map**

- **What**
  - Problem(s): Train collision, 2 killed
- **When**
  - Date: August 17, 2014
  - Time: 2:36 AM
- **Where**
  - Facility, site: Hoxie, Arkansas
  - Unit, area, equipment: Freight trains
  - Task being performed: Transporting freight
- **Impact to the Goals**
  - Safety: 2 killed, 2 injured
  - Environmental: Potential for release of toxic chemicals
  - Customer Service: 500 evacuated
  - Regulatory: 
  - Production/ Schedule: Delay in train schedules, Highways closed
  - Property/ Equipment: Significant damage to trains and freight
  - Labor/ Time: Significant response effort/ investigation required

**Solutions**

For a free copy of our Root Cause Analysis Template in Microsoft Excel, used to create this page, visit our web site.

**Freight Trains Collide Head-On in Arkansas**