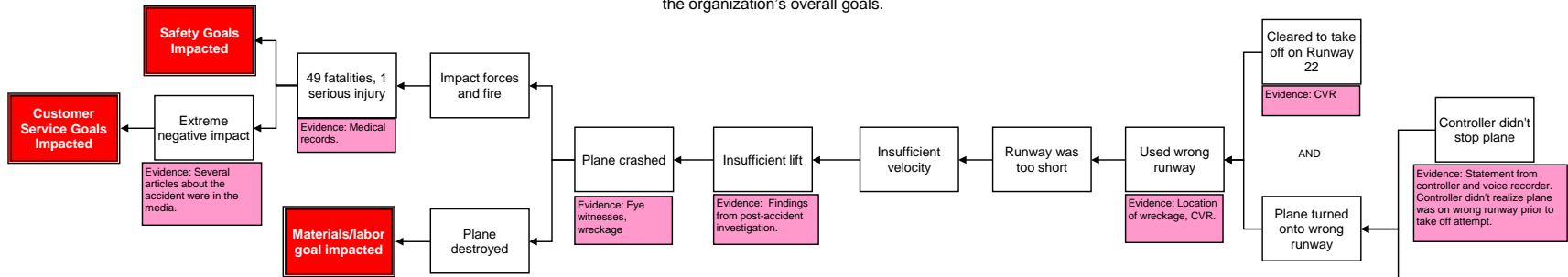


Lexington Plane Crash
August 23, 2006
Lexington, Kentucky

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. Even more detail can be added to this Cause Map as the analysis continues. 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.



On the morning of August 23, 2006, a Comair flight scheduled to travel to Atlanta International Airport from Blue Grass Airport in Lexington, Kentucky attempted to take off from the wrong runway. The runway used was too short and the flight crashed near the end of the runway. There were 49 people killed and the single survivor was seriously injured. The plane was destroyed by impact forces and fire.

A previous blog discussed this accident and included a very high level 5-box Cause Map. An intermediate level Cause Map is available for download that contains more information.

A root cause analysis shows that there are a number of causes for this accident. When reviewing the Cause Map, the most obvious causes are that the pilots believed they were on the correct runway and that the air traffic controller didn't stop the plane prior to the take off attempt on the wrong runway.

The investigation determined that the pilots had all the correct information during the taxi and take off attempt. They knew the correct runway, had the correct magnetic headings and all markings on the taxi route met standards. It isn't exactly clear where the runway confusion occurred.

One piece of data that is available is that the pilot and copilot were having a personal discussion during the taxi, which is against regulations. This isn't necessarily the only reason for the runway confusion, but it most likely contributed to the accident.

Even with the runway mistake if the controller had realized that the plane was positioned on the runway prior to take off, the accident would have been prevented. There are a number of reasons that the controller didn't realize the runway mistake. The first is the layout of the runways. To get to the correct runway, you had to pass the hold position for the incorrect runway. If the controller only quickly glanced out the window, the plane would appear to be on route to the correct destination when in fact it was lined up to take off from the wrong runway.

There was also only one controller on duty at the time of the accident. He had to split his attention between tower tasks and radio duty. There was no chance for watch team back up with only one controller in the tower.

The controller also didn't believe it was necessary to watch the plane the entire taxi and take off. There was no history of take off attempts on the wrong runway, multiple planes had already safety departed that morning and there was no other traffic on the runway.

As with any accident, a root cause analysis shows that there are many causes that contributed to the outcome. Even in a situation like this one where it is difficult create a solution that addresses every cause, the Cause Map shows that there are still ways to mitigate the risk. Changing the way the controller monitors planes could help prevent similar future problems, even if the initial runway mistake occurred again.

Cause Map
Intermediate Level



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