

1 Problem

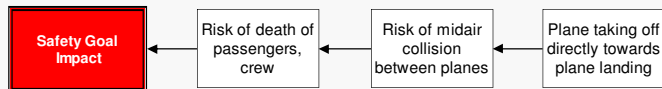
What	Problem(s)	Near miss of midair collision
When	Date	July 31, 2012
	Time	~2:00 p.m.
	Different, unusual, unique	Approaching storm caused sudden wind shift
Where	State, city	Washington, DC
	Facility, site	Reagan National Airport
	Task being performed	Launching and landing planes

Impact to the Goals	Safety	Risk of death of passengers & crew
	Environmental	?
	Customer Service	Delay in landing of inbound plane
	Production-Schedule	
	Property, Equip, Mtls	Risk of destruction of planes
	Labor, Time	Delay in landing of inbound plane

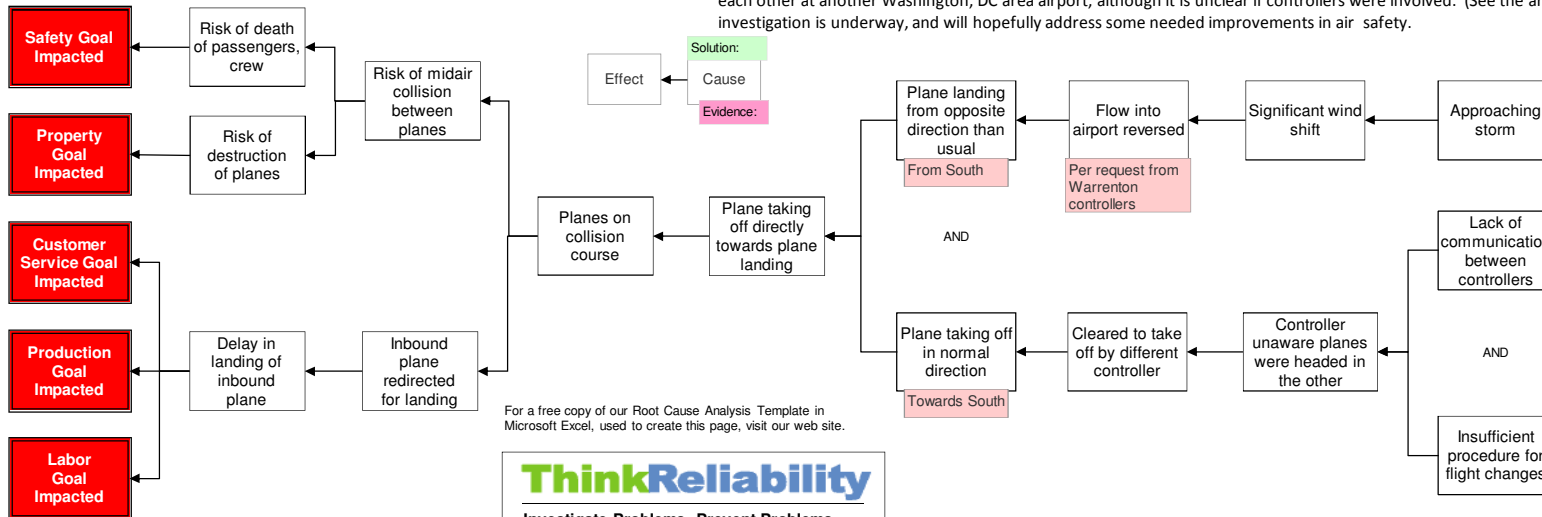
Frequency	Thousands of recorded errors by air traffic controllers every year
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2 Analysis

Basic Level Cause Map - Start with simple Why questions.



More Detailed Cause Map - Add detail as information becomes available.



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

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NEAR MISS Cause Map

Planes nearly collide over DC

Two planes came within seconds of a collision when both were directed to the same airspace by controllers. Although no incident occurred, such near misses should be investigated thoroughly to prevent incidents in the future.

"Such near misses and any operational errors are calls to action." - Rep. John L. Mica, chairman of the House Transportation and Infrastructure Committee

More Detailed Cause-and-Effect

We can perform a root cause analysis of this incident in visual Cause Mapping form. We begin with the impacts to the goals. In the case of a near-miss like this one, some of the impacts to the goals will be hypothetical, based on the potential of the incident actually occurring. For example, the safety goal is impacted because of the potential of death or injury to the passengers and crew on the planes. The property goal is also impacted due to the potential of damage to the planes. Even though this incident was considered a near-miss, there were some actual impacts to the goals, such as the delay in landing of the inbound plane, which can be considered an impact to the customer service, schedule, and labor goal.

Once we have determined the impacts to the goals, we can begin the analysis by asking "why" questions. In this case, the safety and property goals were impacted due to the potential collision of two planes. These planes could have collided because they were on a collision course. One plane was taking off directly towards another plane that was trying to land. The landing plane was landing in the opposite direction as usual (from the South instead of from the North) in order to avoid high winds from an incoming storm. The plane taking off was cleared to take off towards the incoming plane (towards the South) by a different controller who was unaware that incoming planes were coming in from a different direction. Communication of the change in incoming flights was not made to all controllers in the area and, although no details are available, it appears that the procedure used by the controllers when changing the flow towards the airport was inadequate.

There are thousands of recorded errors by air traffic controllers every year, and Reagan National (where this incident occurred) has had some particularly high-profile incidents, such as when a controller fell asleep (see previous blog), involving air traffic controllers. On August 10, 2012, two aircraft clipped each other at another Washington, DC area airport, although it is unclear if controllers were involved. (See the article here.) A congressional and FAA investigation is underway, and will hopefully address some needed improvements in air safety.

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

CAUSE MAPPING
 Problem Solving • Incident Investigation • Root Cause Analysis

Step 1 Problem - What's the Problem?

Step 2 Analysis - Why did it happen?

Step 3 Solutions - What will be done?