LOSS OF FLIGHT 587

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?

1 Problem

What	Problem(s)	Crash of flight
When	Date	November 12, 2001
	Time	9:16 AM EST
	Different, unusual, unique	Wake turbulence/ jet wash from nearby plane
Where	Geographic Area	Belle Harbor, New York
	Unit, area, equipment	Airbus A300-65R
	Task being performed	Takeoff

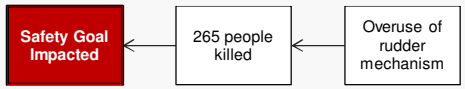
Impact to the Goals

Safety	260 people onboard (all) killed
	5 people on the ground killed
Property/ Equipment	Loss of plane
	4 homes destroyed, 6 damaged
Labor/ Time	Recovery, investigation

Frequency	Separation of a major component from an airplane structure had never happened before to a US transport aircraft

2 Analysis

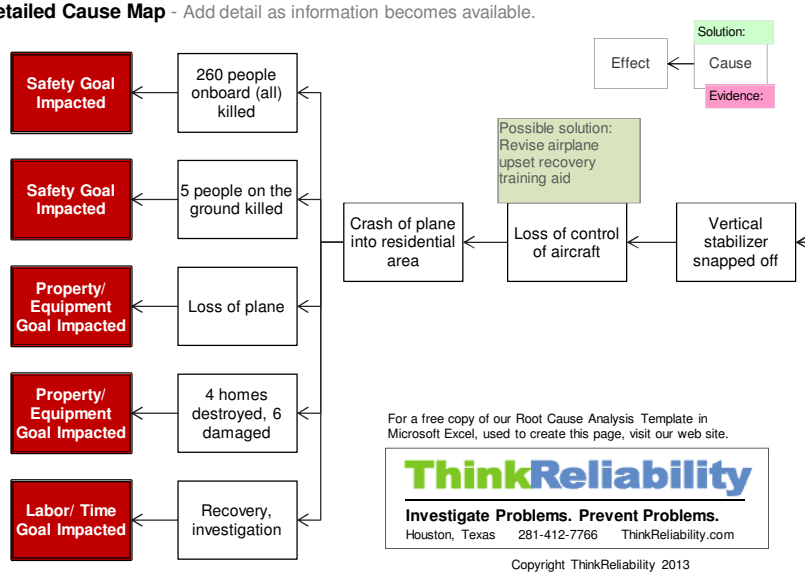
Basic Level Cause Map - Start with simple Why questions.



Basic Cause-and-Effect

All 260 people onboard Flight 587, plus 5 on the ground, were killed when the plane crashed into a residential area. According to the NTSB, the pilot's overuse of the rudder mechanism, which had been redesigned and as a result was unusually sensitive, resulted in such high stress that that vertical stabilizer separated from the body of the plane.

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.

ThinkReliability

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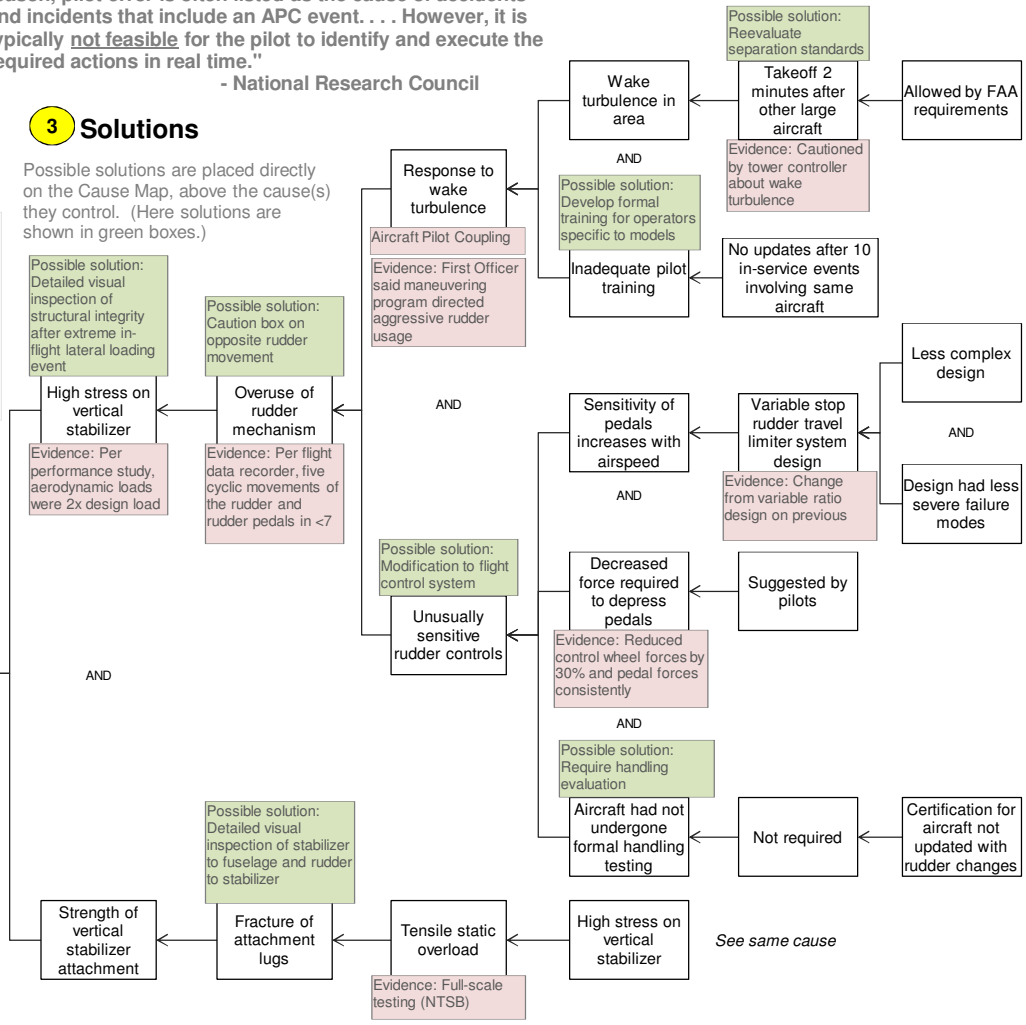
Cause Map

Pilot response to turbulence leads to crash

Flight 587 took off shortly after another large aircraft. The plane experienced turbulence and when the pilot attempted to respond with rudder motion, the vertical stabilizer separated from the plane.

"Aircraft Pilot Coupling (APC) events . . . occur only when the pilot attempts to control what the aircraft does. For this reason, pilot error is often listed as the cause of accidents and incidents that include an APC event. . . . However, it is typically <u>not feasible</u> for the pilot to identify and execute the required actions in real time."

- National Research Council

3 Solutions

Possible solutions are placed directly on the Cause Map, above the cause(s) they control. (Here solutions are shown in green boxes.)