

Step 1. Outline the Problem

What	Problem(s)	Helicopter/airplane collision
When	Date	August 8, 2009
	Time	~12:00 p.m. (noon)
Where	Physical Location	Mid-air, over Hudson River
	Unit/Process/Equipment	Piper PA-32R-300, Eurocopter AS 350
	Work Being Done	Plane: in transit Teterboro to Ocean City; Helicopter: 12-minute sightseeing

Impact to the Goals

Safety	9 people killed
Material, Labor Cost	Airplane, helicopter lost

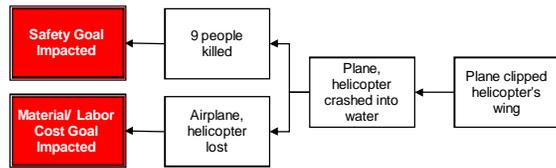
Frequency: Last aircraft collision in city was in 1983

**Midair Aircraft/Helicopter Collision
Hudson River
August 8, 2009**

On August 8, 2009, a small airplane clipped the wing of a sightseeing helicopter and both aircraft crashed into the Hudson River, killing all nine people. The crowded corridor above the Hudson River was also the site of the successful crash landing of U.S. Airways Flight 1549 in January, 2009

To begin, we define the problem in an outline. So far, we know the date and approximate time of the collision. (We may be able to refine the time of the accident as more information is released.) We know the location of the collision based on eyewitness accounts and the discovery of wreckage. We also know the type of plane and helicopter involved, and what they were doing.

Next we define the problem with respect to the impact to the goals. The safety goal was impacted because nine people were killed. Both the airplane and helicopter were lost (or at the very least, severely damaged), which is an impact to the material goal. Lastly, if we have the information, we can record the frequency of this type of incidents. The last helicopter/airplane collision in the New York City area was in 1983. Once we've completed the outline, we can move on to the Cause Map.



We begin with the impacts to the goals and fill in the Cause Map by asking "Why" questions. Both goals were impacted because the plane and helicopter crashed into the water. We continue to ask "Why" questions. Both aircraft fell into the water because the plane clipped the helicopter's wing. The pilot clipped the helicopter's wing because the plane and the helicopter were in the same airspace. And, it's surmised that the pilot could not see the helicopter.

The plane and the helicopter were in the same airspace because the area is crowded with sightseeing helicopters and small planes which are prohibited from flying above buildings or over 1,100 feet. Around New York City, that pretty much leaves the river. Pilots who are flying below 1,100 feet are free to choose their own route, and are not under the control of air traffic controllers. Instead, they use the "see and avoid" method.

Unfortunately that method isn't successful when a pilot can't see an incoming helicopter. Although small planes are not controlled by air traffic controllers, they are in communication with them. However, the pilot of the plane had never contacted the Newark controllers. The helicopter was ascending at the time of the crash, so it's likely that it came from below the plane (where the pilot would be unable to see it). The helicopter may have been unaware of the plane because it's not required (though it is recommended) for pilots to announce their position.

As the NTSB investigation continues, more detail can be added to this Cause Map. 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.

