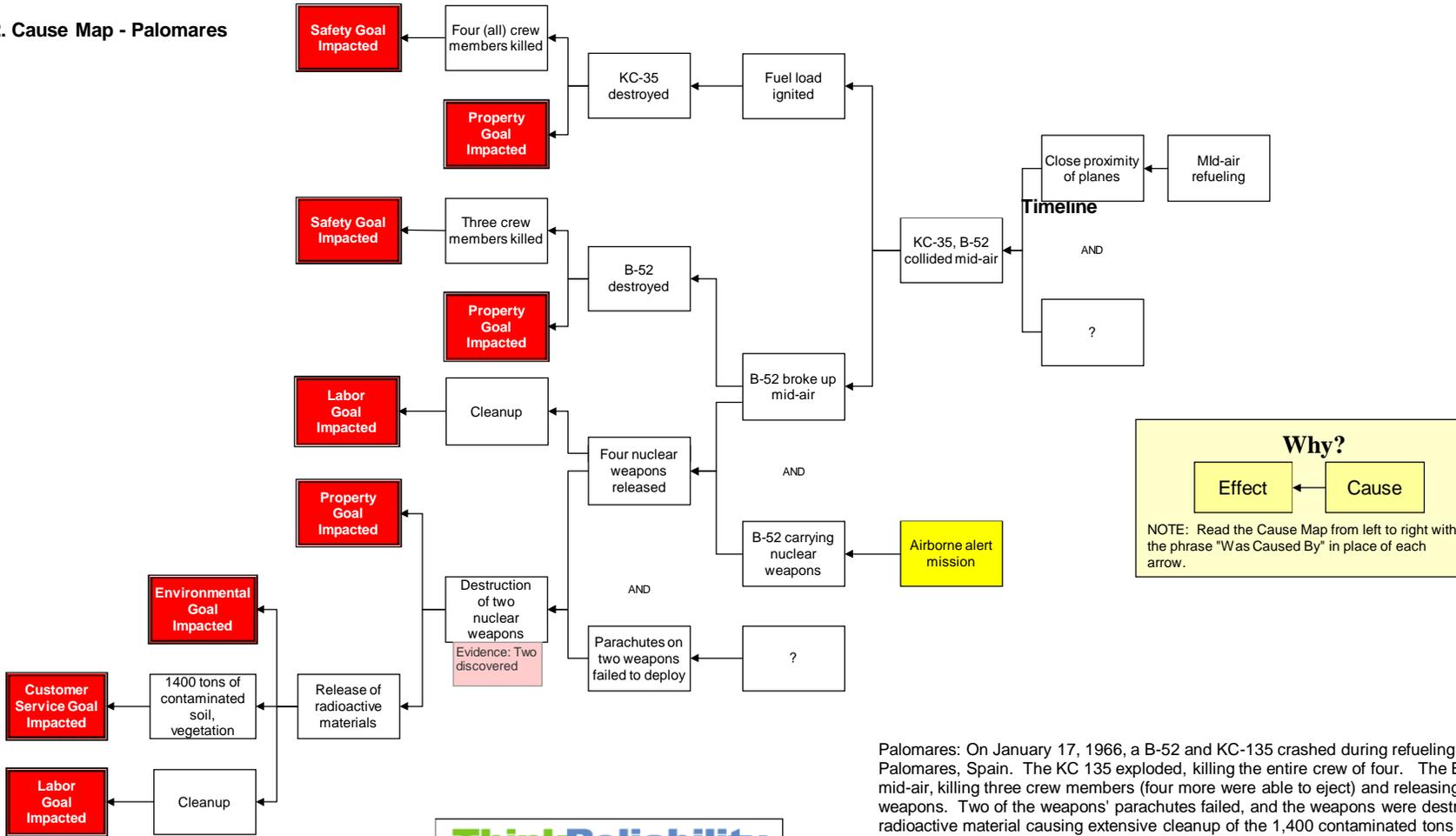




Step 2. Cause Map - Palomares



**Why?**

Effect ← Cause

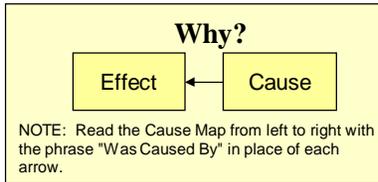
NOTE: Read the Cause Map from left to right with the phrase "Was Caused By" in place of each arrow.



Copyright ThinkReliability 2012

Palomares: On January 17, 1966, a B-52 and KC-135 crashed during refueling above Palomares, Spain. The KC 135 exploded, killing the entire crew of four. The B-52 broke up mid-air, killing three crew members (four more were able to eject) and releasing four nuclear weapons. Two of the weapons' parachutes failed, and the weapons were destroyed, releasing radioactive material causing extensive cleanup of the 1,400 contaminated tons of soil and debris. (Additionally, one of the intact bombs fell into the ocean and was not recovered for three months.) This was the third refuel of the mission and it's unclear what exactly went wrong, though due to the close proximity required, mid-air refueling is extremely risky.

## Step 2. Cause Map - Thule Air Base



Thule: A fire began in a B-52 when flammable cushions were stuffed under a seat, covering the heat duct. Hot air from the engine manifold was redirected into the cabin in an attempt to warm it up, which ignited the cushions. The crew of the B-52 was unable to extinguish the fire and the pilot lost instrument visibility. The generators failed (for reasons that aren't clear), cutting all engine power. The crew bailed, the plane crashed, and the two weapons were destroyed along with the plane, again releasing radioactive material that led to a four-month cleanup mission.

