



ASQ CRE Prep course

Lesson III. A. 4.

Common Mode Failure
Analysis

A photograph of the Space Shuttle Columbia in orbit above Earth. The shuttle is oriented vertically, with its nose pointing upwards. The orbiter is attached to the external tank and solid rocket boosters. Two large solar panel arrays are extended outwards from the sides of the orbiter. The Earth's surface, covered in white clouds, is visible in the background. The text "The eventual asteroid strike" is overlaid on the upper left portion of the image.

The eventual asteroid strike

COMMON MODE FAILURE ANALYSIS

Common mode or cause

When failure results when events in a system are not statistically independent.



Examples

**Propagated mistake
into other systems**

**Incorrect maintenance
instructions**

Common power source

**Common software on
redundant systems**



Enabling Events

**Warning system
disabled (maint. work)**
False warning override
Procedural errors
Standby not available



Probabilistic Risk Analysis



ASQ CRE Prep course

Lesson III. A. 5.

Fault Tree Analysis (FTA) &
Success Tree Analysis (STA)