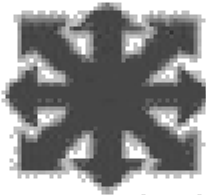


Mini-Root Cause Analysis

Version 4: Feb, 2005

Addressing Physical, Human, and Latent Causes

Let's Learn from Things that Go Wrong!

A Mini-RCA is an analysis done by one or two people on incidents whose severity does not merit the rigors of a formal team. The Mini-RCA uses the same approaches, terminologies, and has the same intent of the formal RCA — to document WHY things are going wrong, and to help CHANGE PEOPLE'S MINDS about the way they do business. This "report" was designed to be entirely filled-in by hand.

Incident Description:

Who?

What?

Where?

When?

Acknowledge 5 Items:

Statement
(who, what, where, when)

Schematic
(close-up)

Relationship
(birds-eye)

Sequence
(summary)

Oddities

Summary Sequence of Events:

-
-
-
-
-

Oddities:

-
-

WHY STATEMENT (**W**):

Signature /Date

Contents:

Evidence Summary 2

Physical and Human Causes 2

Latent Causes 3

Explanatory WHY Tree 4

Actions Taken and/or Recommendations 5

Explanations and Credits 6

Bottom-Line Learning *(the moral of the story)*: *What do you think the whole organization ought to know? Generic, One Thought. Complete this LAST.*

Evidence Summary

*Based on the **3 Ps: PEOPLE, PHYSICAL, and PAPER.***

Physical Evidence:
If possible, sketch the equipment, component, or system that failed in as much detail as possible. Show ALL items that are described in other parts of this report.

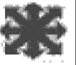
People Evidence:
"Who" said "what?"

Paper Evidence:
"What" said "what?"

Conclusions about PHYSICAL and HUMAN Causes.

Physical Causes (P): *HOW did the incident occur (the PHYSICS of the incident)? Be specific. Write in paragraph-form, and use PAST TENSE.*

Human Causes (H): *WHAT do you think the HUMAN did (or did not do) that lead to the PHYSICAL CAUSES. Make sure you specify WHO did WHAT, using FUNCTIONS (not names). Be specific. Write in Bullet-form, and use PAST TENSE.*



Development of LATENT CAUSES

Make and fill-in ONE copy of this page for each of the HUMAN Causes listed on Page 2

Human Cause:

Triggering Situation

The "point in time" when the inappropriate decision was made that lead to the HUMAN CAUSE. Describe this "point in time" in as much detail as possible, so that the reader can put himself in the person's shoes.

Thought Process

Try to imagine the THOUGHT process of the person who made the inappropriate decision — imagine the ACTUAL WORDS running through the person's mind. Log the ESSENSE of these thoughts. NUMBER the thoughts. Circle the INAPPROPRIATE THOUGHTS. Then suggest AS DESIRED thoughts.

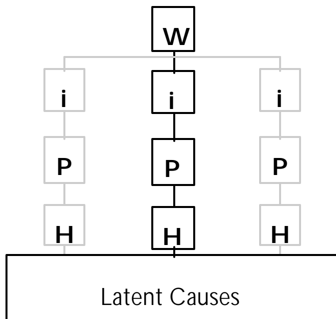
As-Is	As-Desired

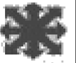
LATENT Causes (L)

"Always there, in the background, lurking within the mind of the organization," Latent Causes describe "the way things are around here," and answer the question "what about the way we do business is evident in the above THOUGHTS?" Must be GENERIC, i.e., NOT specific to ONLY this incident, and PRESENT-TENSE. Provide at least one answer for each INAPPROPRIATE THOUGHT. Preface all responses with the word "WE" or "I":

Explanatory WHY Tree

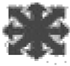
*Keep it SIMPLE. Start with the WHY Statement (**W**) from Page 1. Take small steps, showing INTERMEDIATE CAUSES (**i**), PHYSICAL CAUSES (**P**) from Page 2, and then HUMAN CAUSES (**H**) also on Page 2. Finally, finish with the LATENT CAUSES (**L**) from page 3. Add branches as needed to EXPLAIN the whole story.*





Actions Taken or Recommended

Physical Causes *Number, from Page 2.*	**Actions Taken** *What have you already done in response to the PHYSICAL causes?*	**Actions Recommended** *What else do you think ought to be done about the PHYSICAL causes (Do similar potential problem areas exist that ought to be addressed?)*
Latent Causes *Number, from Page 3*	**Actions Taken** *What have you already done in response to the LATENT causes?*	**Actions Recommended** *What else do you think ought to be done in response to the LATENT causes? **1st**, think about **local and specific** recommendations. **2nd**, think about **global and generic** recommendations.*



Let's Learn from Things that Go Wrong!

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Golden Rule of the Root Cause Mentality

When something goes wrong, we must try to understand to such an extent that we're convinced we'd have done the same thing under similar circumstances. This is true for all who truly desire to understand why things go wrong, everywhere, in all walks of life.

Intended Usage

As organizations strive to understand why things go wrong, they are often confronted with a dilemma: "we know how to investigate the BIG ones, but what should we do with the smaller ones?" The Mini-Root Cause Analysis is intended to be used by one or two people to document their understanding of **PHYSICAL, HUMAN, and LATENT** causes of an incident. It can/should be used on ANY INCIDENT WHICH OUGHT NOT HAVE OCCURRED — especially if it has not met the criteria for a more formal, full-blown investigation.

One of the most frustrating findings of formal Root Cause Analyses is that many of the contributing causes of major incidents are known AHEAD OF TIME. Warning signs almost always precede major incidents. Frustrating equipment, people, and systems are usually recognized, but often ignored until they result in disaster. Most importantly, latent CULTURAL issues are known, discussed, and joked-about, but rarely deal with. The LATENT causes of small problems WILL cause big problems. A key focus of the Mini-RCA is, therefore, on LATENT causes. **The Mini-RCA attempts to tap into what the organization ALREADY KNOWS about its LATENT Causes** in an attempt to surface them while they are relatively benign.

The Mini-RCA will have a different "feel" compared to the Maxi-RCA. Whereas the Maxi-RCA often requires painful confrontation in order to resolve differences of opinion about crucial HUMAN and LATENT Causes, the Mini-RCA is intended to be totally NON-CONFRONTATIONAL. Although Mini-RCA conclusions about PHYSICAL Causes ought to be precise, and based on evidence, **HUMAN and LATENT Causes are to be suggestive —** based on what the inquirer ALREADY KNOWS about "the way you do business" at your site.

THANKS to ConocoPhillips for the phrase "Mini-RCA," and to all those who have sent me their Mini-RCA's for comment! *C. Robert Nelms*

More about Failsafe Network, Inc.

Failsafe exists to help individuals and organizations discover the TRUTH about why things go wrong, without hurting one another in the process. All of Failsafe's approaches are based on the need to SLOW DOWN — to allow EVIDENCE to guide us to the right answers. After all, "**everything we need to know about our existence is staring us right in our face, if we'd only take time to look**."

The approaches underlying this Mini-RCA are based on common-sense. They will feel natural to use because they have been fine-tuned through trial end error in a variety of settings since 1974. However, the INTENT of the Mini-RCA, as well as some of the included terminology might be foreign to the untrained reader.

To become more familiar with Failsafe's Maxi and Mini-RCA concepts, and how they can help establish a learning organization, a variety of training is available, ranging from 3 hours to 4 days. The 4-day class is called "**The Root Cause Experience**," and was designed to jump-start your site's RCA effort's. It was designed for a cross-section of an organization, since EVERYONE has a role in learning from things that go wrong. The experience will CHANGE the way the attendee thinks about failure and its causes, as well as introducing vocabulary, tools, and structure to your RCA efforts. It is strongly recommended that a CRITICAL MASS of an organization experience the 4-day class prior to sending anyone through the 3 hour class.

The 3 hour class, offered either on-site or over the web, has been designed for organizations already committed to RCA. It will expose the masses to the vocabulary and intent of an RCA effort, as well as demonstrate how EVERYONE can become involved in a practical yet decisive manner via this Mini-RCA concept.

For more information about Failsafe, or for a FREE DOWNLOAD of the most recent version of this Mini-RCA, go to www.failsafe-network.com.