Overview

• Define relentless root cause analysis
• Understanding the “WHY” questions
• Creating corrective actions
• Documenting corrective actions
• Validating corrective actions
• Reviewing an actual incident
Relentless Root Cause

• Is a method that determines the actual cause(s) of an unacceptable:
  – Incident
  – Condition
  – Problem
  – Process
  – Product

Relentless Root Cause

• What happened
• When did it happen
• How did it happen
• Why did it happen
• Proposed corrective action
Relentless Root Cause

• When performing the analysis, always:
  – Ask **why, why, why** (as many times as practical) before finalizing the real root cause(s).
  – Unless we know the real root cause(s), we will never arrive at the appropriate corrective actions.

Relentless Root Cause

• Keep an open mind – if you have an opinion before you start the process, you will most likely not get to the bottom of the issue
• Involve **EVERYONE** – you will be surprised who has pertinent information
• Listen/review everything – from the time you open for business until the end of the day
Relentless Root Cause

• Write the issue quantitatively and not in general terms:
  – Be specific – “We rear ended someone”, does not explicitly define what happened
  – The more time taken at this step will increase your chance of successfully getting to the root cause.
  – Different employees will have different input – use it all

Relentless Root Cause

• Clearly define the problem(s) or incident(s):
  – Keep it simple
  – Keep it precise
  – This is not the place for opinions
Relentless Root Cause

• Define where and how the problem(s) or incident(s) occurred
  – Maybe more than one problem
  – Maybe more than one issue
  – Maybe more than one person/department

Relentless Root Cause

Defining the problem or incident
• Bus was hit by train. (incomplete definition)
Relentless Root Cause

Defining the problem or incident

• Bus was hit by train. (incomplete definition)
• Articulated bus was partially on railroad tracks and hit by train. (better but still not there)

• Articulated bus was partially on railroad tracks, (10ft) and struck by train. The impact of the collision was just behind the accordion and bus was bent. (well written & complete)
Relentless Root Cause

• Real root cause(s) are those that once fixed will eliminate the unacceptable condition(s) forever
• Lack of adequate documentation and training are known to be the real culprits in most root causes

Relentless Root Cause

• Driver did not realize bus was on railroad tracks (not a root cause) keep asking WHY
• Driver was not physically trained on articulated bus (getting better) keep asking WHY
• Driver was not physically trained on articulated bus due to lack of funding and sufficient number of articulated buses available for training (bingo, well defined)
Corrective Actions

• Corrective actions should be appropriate to the real root cause(s) outlined
• Corrective action plans should be precise, who will do what and by when?
• Attach objective evidences of corrective actions already completed. As an example:
  – Old form & new form

Corrective Actions

• Train drivers on articulated buses on the road (not good, lack of funding and buses)
• Train drivers on articulated bus issues and concerns using:
  – Videos
  – Drawings and pictures
  – Simulator if available
  – Updated procedures or work instructions
  – Training
  (well written corrective actions)
Corrective Actions

• Once the corrective actions are fully implemented, the same unacceptable condition(s) should not recur in the future.
  – If same condition exists after being corrected, the real root cause was not determined.
• Design corrective actions to prevent the error/problem from occurring at the source.

Corrective Actions

• Corrective actions should be such that they will mistake proof the process that generated the unacceptable condition.
• Remember, employees want to perform their jobs correctly
  – Problems are usually caused by
    • Poor documentation
    • Inadequate training
• Validate the plan
Corrective Actions

Validation:
• Root cause(s) identified
• Revised process(s) generated
• Corrective actions defined
• Procedure(s), documentation, and/or training if applicable has been identified, revised, and conducted
• Corrective actions implemented and completed

Actual Incident

Articulated bus was partially on railroad tracks (10ft) and struck by a train. The impact of the collision was just behind the accordion and bus was bent.
• Operator stopped at a service stop to pick up passengers
  – Did not realize part of bus still on train track
  – Did not pull up to or past the bust stop sign
  – Stopped where passengers congregated
Issues Identified

- Placement of bus stop sign
- Operator was a new CDL holder
- Never drove a bus prior to coming to agency
- Stopped where passengers congregated
- Minimal training on an articulated bus
- Training group does not have access to new buses for training
- Operator unfamiliar with actual articulated bus he was driving
Issues Identified

- Operator unfamiliar with route.
- Operator distracted by a passenger talking with him
- Other passengers were rowdy and distracting
- Inexperienced driver selected for extra board
- Operator was working his second piece
  – Previous bus was a 40 ft bus
- Articulated buses recently added to route due to high service demand.

How should the agency conduct root cause analysis, for this incident?

Issues:

- How are bus stop sign locations selected?
  – What was missed?
  – Why, Why, Why

- How are bus drivers selected?
  – Why was no CDL missed?
How should the agency conduct root cause analysis, for this incident?

**Issues:**
- Never drove bus prior to being hired by agency
- Stopped where passengers congregated
- Minimal training on articulated bus
- Operator unfamiliar with route
- Training group does not have access to new buses for training

How should the agency conduct root cause analysis, for this incident?

**Issues:**
- Operator distracted by passenger talking with him
- Other passengers were rowdy and distracting
- Operator was working his second piece
  - Previous bus was a 40 ft bus
- Articulated buses recently added to route due to high service demand.
- Articulated bus removal from accident scene
Summary

- We defined relentless root cause analysis
- Explained the importance of the “WHY” questions
- Identified how corrective actions are written and documented
- We reviewed the validation process
- Utilized an actual incident

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