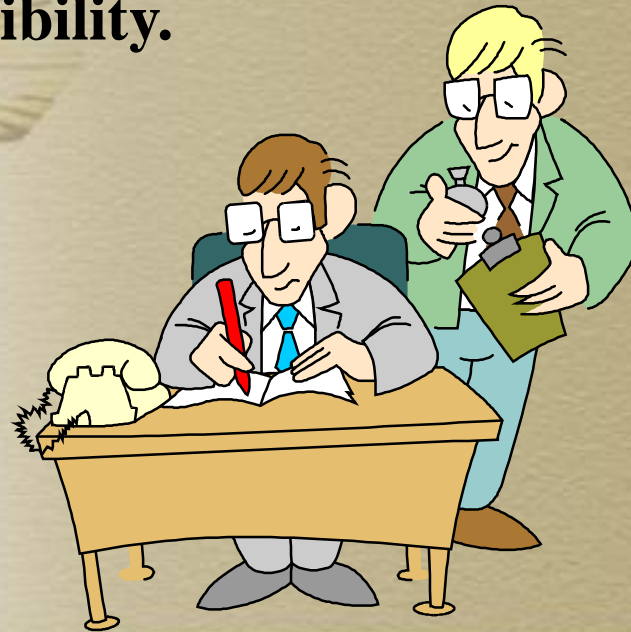# 5 Why's

Overview

QMR01-5Why Trainning-Example

Objective:

ÉTo provide guidelines on the **purpose** and **methodology** of 5 Whys technique used to identify underlying root cause(s) of problems related to the manufacturing process.
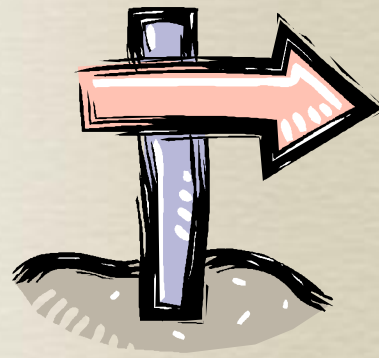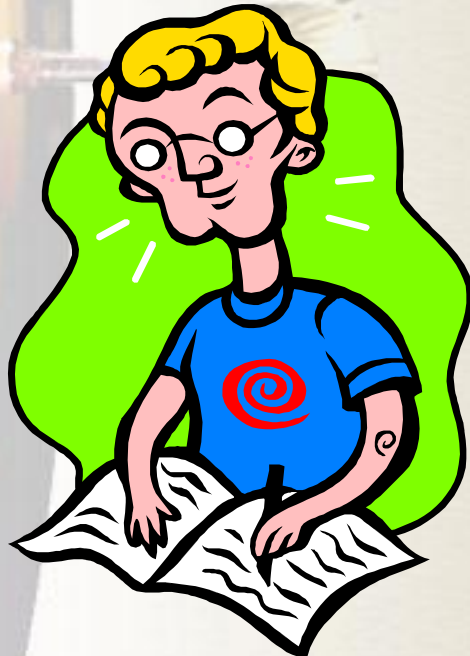
Scope:

É**All Engineering functions of Factory 1,2,3,4,HiRel & Warehouse responsible to coordinate internal and external complaints relative to their areas of responsibility.**

Course Effectiveness Assessment

At the end of the training session, we will apply an exam that will cover the Most important aspects of the 5 Whys. This exam consists of 5 open Questions to be answered within 20 minutes.

We will require at least 4 correct answers from the trainee to provide the training certificate.

QMR01-5Why Trainning-Example

Course Effectiveness Assessment

The Questions to be asked in the exam will come from the following:

1. What is 5 Whys?

2. What are the two basic questions to ask when starting a 5 Whys?

3. How many Whys are required in a 5 Whys exercise?

4. How should the whys be asked to maintain focus on the thought process?

5. Which why is critical for the transition between the obvious and the not?

6. What is the most common type of cause at the end of a well driven 5 Whys?

7. Name one method to assess coherence of thought process at the end of the 5 Whys.

8. What is the sought outcome of a 5 Whys analysis?

9. How can you demonstrate that the root cause of a problem has been found?

10. What is the risk of running into Ílogical explanationsÎ in finding answers?

Five Why's Example:

Problem Description:
A machine designed to wrap crackers in the individual stack bags was crushing the crackers in some bags, but not all.

Why is the machine crushing crackers in some bags and not other bags?

Answer from the Operator: Because some crackers are thicker than others.

Why are some of the crackers thicker than others?

Answer from the Baker: Some batches of flour contain more moisture than others.

Why some batches of flour contain more moisture than others?

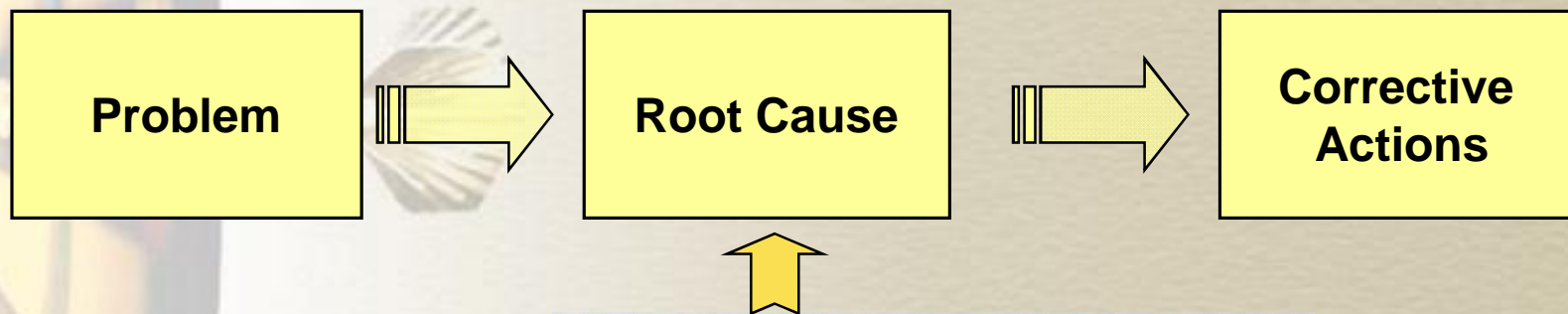**Answer from the Farmer: Because some fields of wheat get more rain than others.**

Why do you allow some fields of wheat to get more rain than others?

Answer from God: Because I am God!

Five Why's Preparation

Five why's is a Root Cause Analysis Tool. Not a problem solving technique.

The outcome of a 5 Why's analysis is one or several root causes that ultimately identify the reason why a problem was originated.

Problem	⇒	Root Cause	⇒	Corrective Actions

Root Cause analysis Tools:
➢ Ishikawa Charts / Fish Bone /Cause & Effect Diagram
➢ Design of Experiments
➢ Is / Is not Analysis
➢ **5 Why's**
➢ Statistical Data Analysis (Cpk, Paretto Charts, Anova,etc…)

QMR01-5Why Trainning-Example

Five Why's Preparation

˝ **Any 5 Why's must address two different problems at the same time.**

(Í Why made?Î)

Five Why's Preparation

″ **The second one must address the detection system that was not able to detect the defective part before it became a problem.**

″ **(Í Why not detected?Î)**

Five Why's Preparation

˝   **Even though the discipline is called 5 Why's is not always necessary to reach 5 before the root cause of a problem is fully explained; or it may take more than 5 why's to get to the bottom of it.**

Five Why's Preparation

˝ **In any case, 5 has been determined, as a rule of thumb, as the number at which most root causes are clearly identified.**
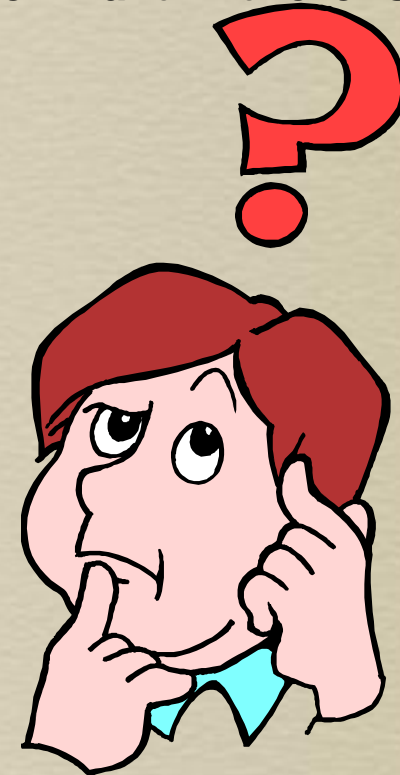
For all the Five Why's:

Ask the full question including the problem or cause behind it. If there is a problem with labeling ask:

˝ Í Why the parts were labeled incorrectly?Î

If the answer is <u>unreliable database</u> ask:

˝ Í Why is the database unreliable?Î

If we do not follow this approach answers to the why's tend to lose focus on the third or fourth why.

Five Why's Preparation

˝ **It is said that a well defined problem is a half resolved problem; hence it is important to state the problem as clearly as possible.**
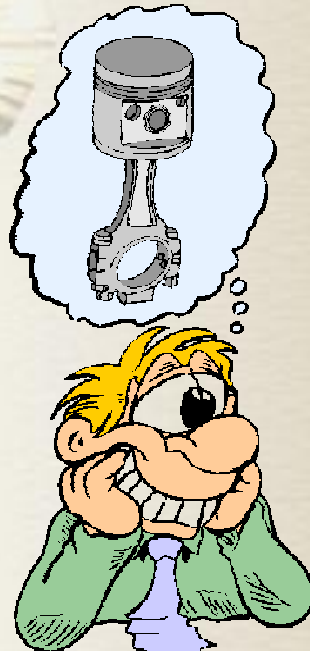
Five Why's – The First Why

˝**Clear statement of the reason for the defect or failure to occur, understood even by people that is not familiar with the operation where the problem took place.**
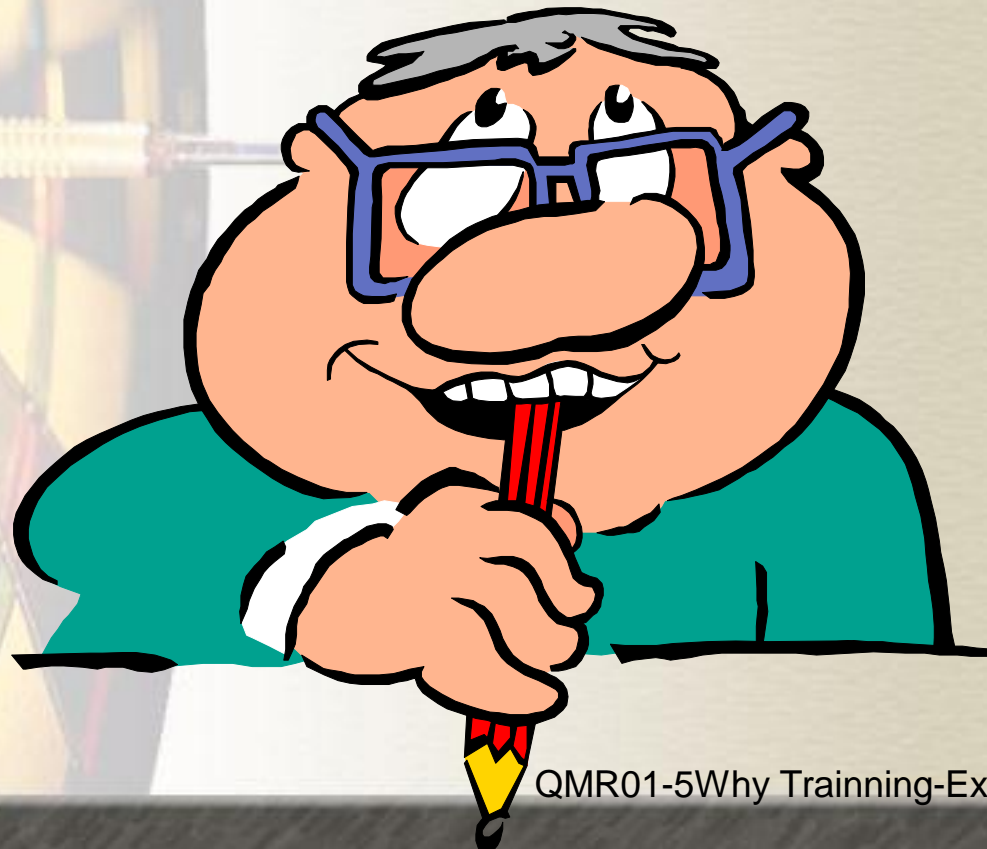
˝

Five Why's – The Second Why

˝A more concise explanation to support the first statement.

˝Get into the technical arena, the explanation can branch out to several different root causes here. It is OK to follow each of them continuing with their own set of remaining 3 why и and so forth.

QMR01-5Why Trainning-Example

Five Why's – The Third Why

˝Do not jump to conclusions yet, follow the regular thought process even though some underlying root causes may start surfacing already.

QMR01-5Why Trainning-Example

Five Why's – The Third Why

˝**This 3ʳᵈ why is critical for a successful transition between the obvious and the not so obvious. The first two why˝s have prepared you to focus on the area where the problem could have been originated; the last three why˝s will take you to a deeper comprehension of the problem.**

QMR01-5Why Trainning-Example

Five Why's – The Fourth Why

˝Clear your mind from preconceived explanations and start the fourth why with a candid approach. You may have two or more different avenues to explore now, explore them all.

QMR01-5Why Trainning-Example
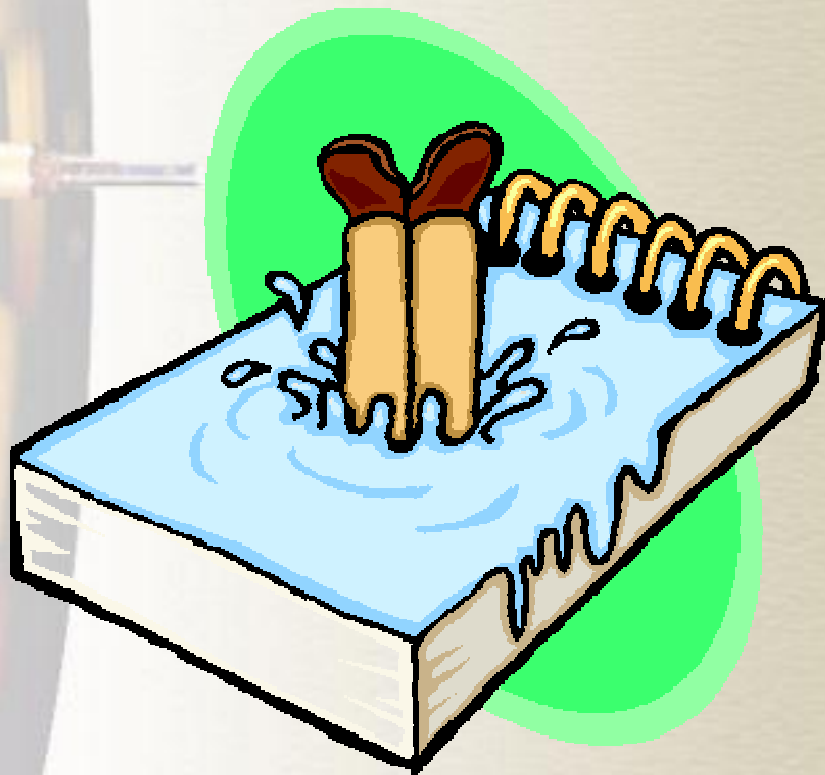
Five Why's – The Fifth Why

˝When you finally get to the fifth why, it is likely that you have found a systemic cause. Most of the problems in the process can be traced to them.

Even a malfunctioning machine can sometimes be caused by an incorrectly followed Preventive Maintenance or Incorrect machine parameters setup.
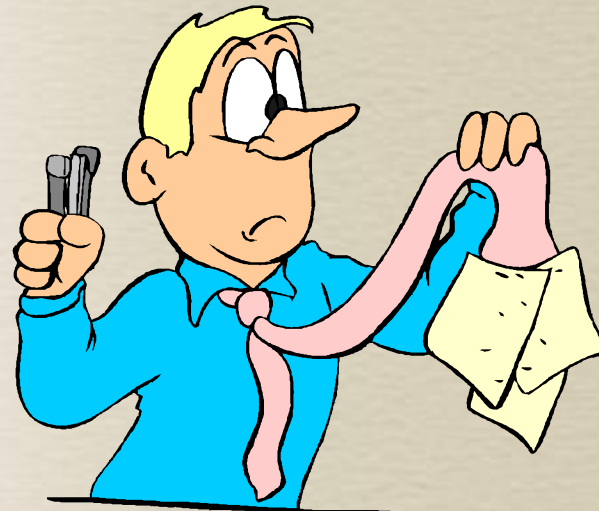
QMR01-5Why Trainning-Example

Five Why's – The Fifth Why

˝ **If you have reached the fifth why and you are still dealing with process related cause(s), you may still need one or two more why℟ to deep dive into the systemic cause.**

QMR01-5Why Trainning-Example

Five Why's – Conclusion

˝A good way to identify if the 5 Why's was done properly is to try to organize the collected data in one sentence and define it in an understandable manner.

Five Why's – Conclusion

˝**Something like:**

%Problem Description+occurred due to %Fifth Why+ This was caused by %Fourth why+mainly because %Third Why+was allowed by %Second why+, and this led to %First Why+.

Five Why's – Conclusion

˝Do not forget that the sought outcome of a 5 Why exercise is a root cause of a the defined problem, not the resolution of the problem itself; that will come later. 5 Why͂s is not a standalone Problem Solving technique but more of a tool to aid in this process.

Five Why's – Conclusion

˝ **Do not worry about Action plans and effectiveness verification yet as that will be addressed in the 8D; but focus more on identifying the reason that allowed the problem to happen and escape.**

QMR01-5Why Trainning-Example

Five Why's – Conclusion

˝**One final point to ponder:**

> **A PROBLEM THAT CANNOT BE REPRODUCED IS A PROBLEM THAT HAS NOT BEEN RESOLVED YET.**

˝**Challenge the root cause(s) that resulted from the 5 Why's exercise to try to reproduce the defect.**

Five Why's – Exercise

Problem Description:
Washington monument is deteriorating

Why is the Washington monument deteriorating?

Chemicals being used to clean is too harsh?.

Why is a harsh chemical being used to clean the Washington monument?

Harsh chemicals must be used to remove heavy droppings from birds

Why are there a lot of droppings from birds?

There are a lot of birds.

Why are there a lot of birds?

There are a lot of spiders. Birds eat spiders.

Why are there a lot of spiders?

There are a lot of gnats. Spiders eat gnats

Why are there a lot of gnats?

They are atracted to light during dusk time.

QMR01-5Why Trainning-Example

Five Why's – Exercise

Problem Description:
Washington monument is deteriorating

Solution:
Turn on the lights half an hour later.