

FAST RESPONSE

Quality & Industrial Performance version 3

“Going From Reactive to Proactive”



DIRECTION SUPPLIER DEVELOPMENT

Reference Doc-Info: 01601_13_00115

Global Purchasing and Supply Chain

Property of PSA GROUPE – Restricted document

Introduction

■ PURPOSE:

- Immediately address quality failures
 - External / Internal
- Defines the process to be followed
- Defines method of displaying important information as a visual management tool, supporting status at a glance.
- Applies discipline in responding to issues through a systematic approach.
- Defines method to provide fast response to operator

■ SCOPE:

- Assembly Area
- Manufacturing Operations
- Shipping / Receiving
- All Operations
- Other Support Functions

■ RESPONSIBILITY:

- Ownership
 - Operations Manager
- Contingency Plan for All Situations

Benefits

- Improves Quality metrics - reduces PPM, warranty costs, reduces PRR's and increases customer satisfaction.
- Provides a systematic approach (simple and standard) for *Problem Solving (small and large problems)* and communication of Quality issues.
- Ensures the Natural owner is assigned to each issue.
- Supports continuous improvement.
- Strengthens documented implementation of *Lessons Learned*.
- Prevents repetitive mistakes and reduces waste of resources.
- Engages all stakeholders in an organization.
- Creates a culture in which everyone is a strong problem solver promoting continuous improvement. Problems are positive opportunities.

Fast Response is a system which:

- Standardizes reaction to significant External/Internal Quality failures.
- Instills problem solving discipline through use of a standard documented format for all problems.
- Promotes communication and a sharing of knowledge through daily meetings.
- Utilizes a visual method of displaying important information to drive closure.
- Moves problem identification upstream from the customer to addressing internal issues sooner.

Fast Response Meeting, what are we searching for?

Item	Requirement	#Criteria	Criteria requirement
FR1	Daily leadership meeting held with cross-functional, multilevel attendees to address significant external and internal concerns.	FR11	<p>There is a daily Fast Response (FR) meeting with cross-functional attendees and led by manufacturing.</p> <p>Meeting takes into account and address :</p> <ul style="list-style-type: none"> - deviation between production forecast and the quantity produced. - significant external and internal issues. - safety issues. - Industrial Kpies (e.g. OEE,...)
		FR12	Fast Response Board tracks all major concerns with appropriate timing and exit criteria, follow-up of the action plans, and decision of the managers to escalate
		FR13	Exit criterias are stasured in coherence with problem solving report format. Problems are not closed until closure of last step of supplier problem solving report format.
		FR14	<p>Fast Response BOARD is being updated before the meeting in order to :</p> <ul style="list-style-type: none"> - ensure the duration of the meeting . - ensure that it will be a communication meeting (no deep discussion on the problem) focused on road block point - Ensure an escalation at the good level of Managers.
		FR15	All the exit criteria are stasured (Red, Yellow, Green), red and yellow items have a planned date to go green with next steps.

Criteria of Requirement

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Next Requirement

Problem Identification

In **preparation** for the Fast Response meeting, at the start of the day, Departments shall identify their **significant** concerns from the **past 24 hours** which include:

- External Concerns:
 - Customer concerns (PRR's, Liaison Issues, Customer Calls, Warranty)
 - Supplier concerns (Suppliers should be notified in advance when they are to report out at the meeting).
- Internal Concerns:
 - *Verification Station Findings*
 - *Layered Process Audit Systemic issues*
 - Line stops and Teardown issues
 - Other internal Quality concerns (Dock Audits, containment activity)
 - *Error Proof* device failures

All the significant quality issues are tracked on Fast Response Board.



Problem Identification

- Manufacturing Concerns:
 - Production schedule vs. quantity produced:
 - Significant deviation could affect to shipment to customer
- Health and Safety Concerns:
 - All the safety related events:
 - Accidents
 - Near miss issues

No need to track Manufacturing and H&S related items on Fast Response board, but need actions and follow up.



Structure

The meeting is a manufacturing review meeting **owned by Manufacturing** and supported by Quality, Engineering, Maintenance, and support staff.

Shall be held daily to review the significant quality concerns gathered by Departments. Some organizations may choose to hold meetings on each shift.

It is a communications meeting, not a problem solving meeting.

It should be a 10 - 20 minute stand up meeting held on the shop floor.

Each issue shall be documented on a Practical Problem Solving Report (PPSR) or equivalent. This form is reviewed at the meeting to provide structure for the report out and to keep the meeting to its allotted time frame.

- Suppliers are expected to use a standard problem solving form for their report out for the initial Containment phase, Root Cause and Corrective Action updates.



Responsibilities

The Plant Manager or designated manufacturing lead shall:

- Ensure that Fast Response process is maintained and effective.
- Designate a champion & co-champion as the facilitator.

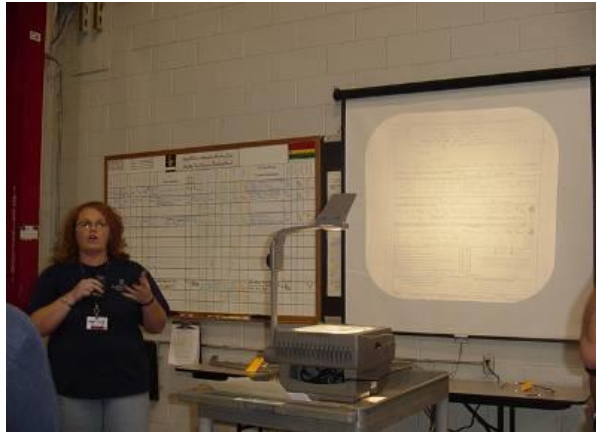
At the Fast Response meeting, site leadership shall:

- Designate a leader (natural owner) for each concern/issue if one has not been already assigned.
- Ensure proper support from all disciplines through attendance.
- Identify action required and owner for items statused as RED.
- Establish the next report out date for the issue if it is not closed.



Examples of Fast Response Meeting

(Example)



Responsibilities

New issues shall be updated on the Fast Response board prior to the meeting by the owner (lead contact in the case of supplier issues).

Owners shall be responsible for assuring all problem solving and exit criteria are met in a timely manner through:

- Cross-functional team reviews outside the Fast Response meeting.
- Update the Fast Response Board Exit Criteria and status columns.
- Distribute updates to team members or key contacts.

Owner shall report progress to the team during each of these steps:

- Problem Definition, Containment
- Root Cause Analysis (5-Why)
- Short/Long Term Corrective Action
- Validation of Corrective Action and Lessons Learned.



Problem Solving report out format

Each issue (internal, customer and supplier) shall be documented on a Practical Problem Solving Report (PPSR) or equivalent. This form is reviewed at the Fast Response Meeting to provide structure for the report out and keep the meeting to its allotted time frame.

- Suppliers are expected to use a standard problem solving form for their report out for the initial Containment phase, Root Cause and Corrective Action updates.

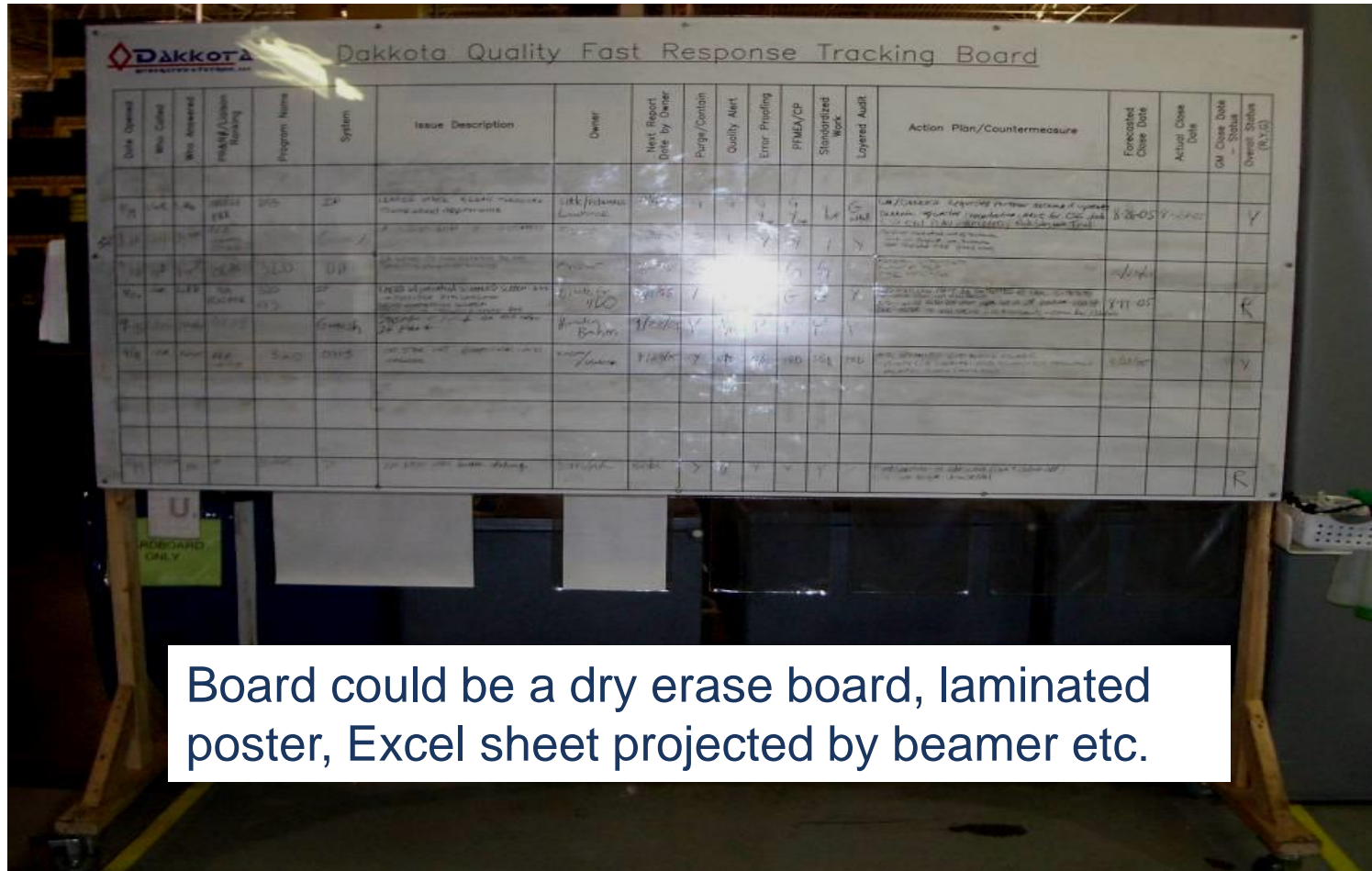
The image shows a 'Practical Problem Solving Report (PPSR)' form. It is divided into several sections:

- Section 1: Define The Problem (s1)** - Includes fields for 'Problem Description', 'Occurrence', and 'Problem Definition (Real Problem)'. It also has a 'Point of Cause' section.
- Section 2: Contain The Problem (s2)** - Includes a 'Breakdown' table with columns for 'Breakdown', 'Start Time', 'End Time', and 'Duration'. It also has a 'Protect - Internal Containment' table.
- Section 3: Identify The Cause (s3)** - Includes a 'Direct cause analysis - For Team Brainstorming' section with a fishbone diagram.
- Section 4: Identify The Root Cause 5-Why (s3)** - A '5-Why' analysis section with a vertical flow of 'Why?' questions.
- Section 5: Transfer Technical Root Cause to DRILL DEEP (System RC; 3x5 Why) (s3)** - A section for 'Transfer Technical Root Cause to DRILL DEEP (System RC; 3x5 Why)'.
- Section 6: Implement Permanent Corrective Actions (s4)** - Includes a table for 'Intermediate Action Plans (not containment)' and 'Long-Term Corrective Actions'.
- Section 7: Verify Effectiveness Of Actions (s5)** - Includes a 'Verification & Resolution Questions' section.
- Section 8: Institutionalize Throughout The Organization (s6)** - Includes a 'Lessons Learned' section.

(Example)

Example of Fast Response Tracking Board

(Example)



Board can be different but must meet INTENT



Exit Criteria, Statusing

Exit criteria shall be established for each key step in the problem solving process (Core 6 - Steps).

In addition, key items to include in identifying opportunities for validation of corrective action through *Layered Process Audits* and prevention of recurrence through *error proofing* and Lessons Learned institutionalized shall also be documented.

Typical Exit Criteria

EXIT CRITERIA								
Target Timing, Status, & Date Green								
24 H	7 D	14 D			34 D	35 D		40 D
Containment - Breakpoint	Root Cause Identified	Corrective Action Implemented	Error Proof/Detection	Layered Process Audits	Corrective Action Validated	PFMEA / CP Updated	Standard Work Operator Instructions	Lessons Learned (Institutionalized)
G 1/11	G 1/18	G 1/24	G 1/24	G 1/25	G 2/13	G 2/15	Y 2/20	Y 2/20

- Evidence of each criteria should be reviewed by the Owner at the Fast Response Meeting (Leadership approval to close/green status).



Exit Criteria, Stating

Timing for each of the exit criteria shall be established in order to properly status each item as Red, Yellow, or Green. The default when a problem is first opened is Yellow until it's timing is exceeded, RED, or Completed, GREEN.

Guideline →

		EXIT CRITERIA								
		Target Timing, Status, & Date Green								
		24 H	7 D	14 D		34 D	35 D		40 D	
Date Opened	Next Report Date By Owner	Containment - Breakpoint	Root Cause Identified	Corrective Action Implemented	Error Proof/Detection	Layered Process Audits	Corrective Action Validated	PFMEA / CP Updated	Standard Work Operator Instructions	Lessons Learned (Institutionalized)
1/21	2/22	G 1/22	G 1/26	R 2/14	R 2/14	R 2/16	R 3/6	R 3/7	N/A	R 3/7

In the example above, the date the problem was opened is 1/21.

- Containment was achieved within 24 hours.
- Root Cause was identified within 7 days.
- Corrective action was not implemented within 14 days so it is RED with the expected date to be GREEN shown as 2/14.

This Red status should show details in a action/status comment column explaining the next step.

Exit Criteria, Stating

EXIT CRITERIA									R	Target Date Missed		
Target Timing, Status, & Date Green									Y	ON TARGET		
24 H	7 D	14 D			34 D	35 D		40 D	G	Complete		
24 H	7 D	14 D	14 D	14 D	34 D	35 D	35 D	40 D	N/A	Not Applicable		
Containment - Breakpoint	Root Cause Identified	Corrective Action Implemented	Error Proof/Detection	Layered Process Audits	Corrective Action Validated	PFMEA / CP Updated	Standard Work Operator Instructions	Lessons Learned (Institutionalized)	Action Plan / Countermeasure			
G 1/22	G 1/26	R 2/14	R 2/14	R 2/16	R 3/6	R 3/7	N/A	R 3/7	Forecasted Closed date	Actual Closed Date		
PLL Program Logic for Error Prevention device to reprogrammed by 2/14. J. Busch - M.E.									2/21		Customer Closed Date	OVERALL STATUS (RYG) Open > 40 Days=R


Overall Status = R, Y, or G
Worst Condition of any single Item at the left

Forecast Closed Date should be 30 days as a target. The maximum should be 40 days.




FAST RESPONSE PROCESS KEY STEPS

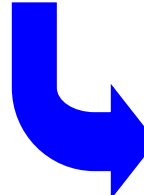
Departments gather significant issues from the past 24 hours.



Daily Fast Response Meeting assigns owner to each issue. Outside the meeting the owner utilizes the Problem Solving process to correct and prevent recurrence.



Issues are tracked on the Fast Response Tracking Board. Owners are required to give periodic updates at Fast Response meeting.



Owner responsible for completion of all exit criteria including Lessons Learned. Results of Problem Solving process communicated. Fast Response Tracking Board indicates exit criteria is green.



Auditor hints

Attend on FR meeting. Observe:

- lead by manufacturing with cross -functional attendees,
- how leader controls the FR meeting (keep timing max 10-20 minutes, focus on subject, not going to the details...),
- participants feel “comfortable”, see that is not a one time event for the audit,
- environment is suitable (everyone can hear and see the meeting),
- how issues reported out,
- Problem Solving report format is used for report out and document the status of the issue.



Auditor hints

Prior to the audit check the last customer complaints focusing to the open ones.

Prior to the FR meeting ask if there are any significant internal issues.

Check the board if it contains above described external and internal issues.

Follow an issue from FR Tracking Board through the exit criteria confirming actions are in place & all the relevant documents have been updated.

Check few statuses if they are rated well based on their timing, judge few N/A items.



Tracking of issues, what are we searching for?

Item	Requirement	#Criteria	Criteria requirement
FR2	Escalation Process with appropriate timing and exit criteria.	FR21	Escalation process is put in place with internal issues. Its defined in order to ensure that problems are quickly communicated to people who can have an action.
		FR22	Escalation process is put in place with external issues. Its defined in order to ensure that problems are quickly communicated to people who can have an action.
		FR23	Decision rules, responsibilities and actions (Who, What, When, Where) are clearly defined.
		FR24	A method of communicating problems to all Key Stake holders is defined. If information can affect the next shifts, it have to be passed across and documented. The manufacturing leadership has to review the shift book or equivalent at the start of shift, to verify proper containment or if corrective actions are done.

Criteria of Requirement

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Fast Response to operator's concerns

An Andon system or similar in place to support operators in case of any concerns in order to avoid that they try to solve the concerns by themselves creating a significant issue, such as:

- Safety issue,
- Quality decision (e.g.: judge a non-conformance as OK),
- Unauthorized rework/repair,
- Deviation from standard work, create a new failure mode, etc.

Based on complexity of the line different solutions are acceptable, important that fast communication is ensured and operator is never alone with concern identified.



Fast Response to Operator

Team Member Help Call: Assistance Requested

Unique Zone Melody Plays

Team Member Pulls Andon Cord

Help!

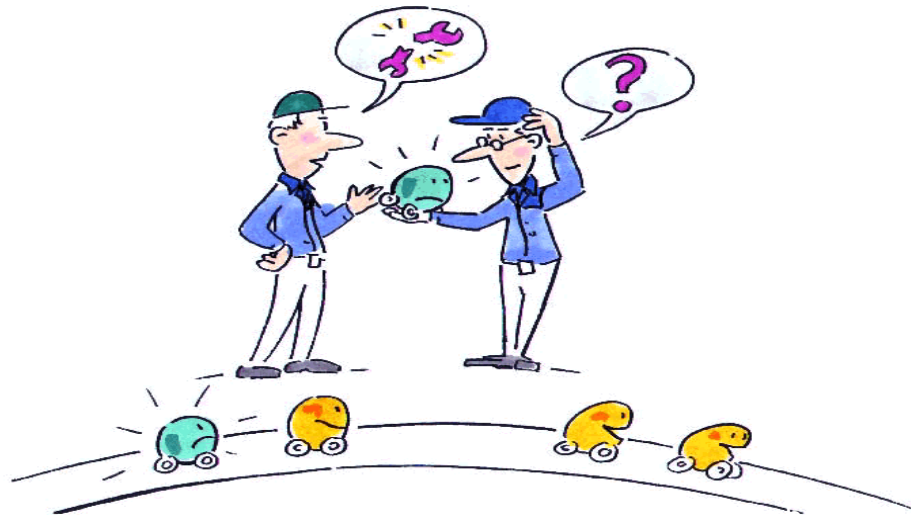
Problem

Team Leader Responding

ENT	STV	■	■	TRIM	3	■	■	BLK	EXT
--	1	2	3	4	5				
FA	1	2	3	4	5				C
RS	Q##							VS	CON
GOAL	ACTUAL	TREND	QUALITY	D.TIME	EXT				
200	131	+2	100%	2	5				

Fast Response to Operator: Purpose

- To empower operations to prevent the occurrence or passing of defects to the next process and call for assistance when behind in work sequence or experiencing problems;
- prioritize and initiate the problem solving process;
- drive management and support groups to go and see the problems on the floor and take action and communicate operational information.



Fast Response to Operator: Roles and Responsibilities

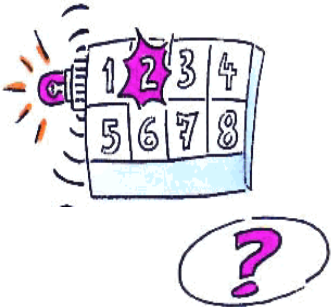


Role of the Team Member

- Follow Standardized Work.
- Actively watch for out-of-standard situations.
- If an abnormality or defect is discovered that cannot be immediately corrected, pull the Andon cord (or call for support using other resource like radio, flag, etc), and continue with the rest of the cycle until support arrives.
- Support Team Leader with problem solving and repair as required.

Fast Response to Operator: Roles and Responsibilities

Role of Team Leader



- Attend the call from team member (ex.: hears the andon melody and looks at the Andon board for more information).
- Goes immediately to the area of the call to investigate and support.
- Hears a description of the problem and takes responsibility for the problem
- Begins immediate correction of the problem.
- Begins problem solving with the support of the Team Member (and resets the andon system by pulling the cord when he has determined a correction can be made).
- Calls the Group Leader for support if the problem cannot be solved quickly.

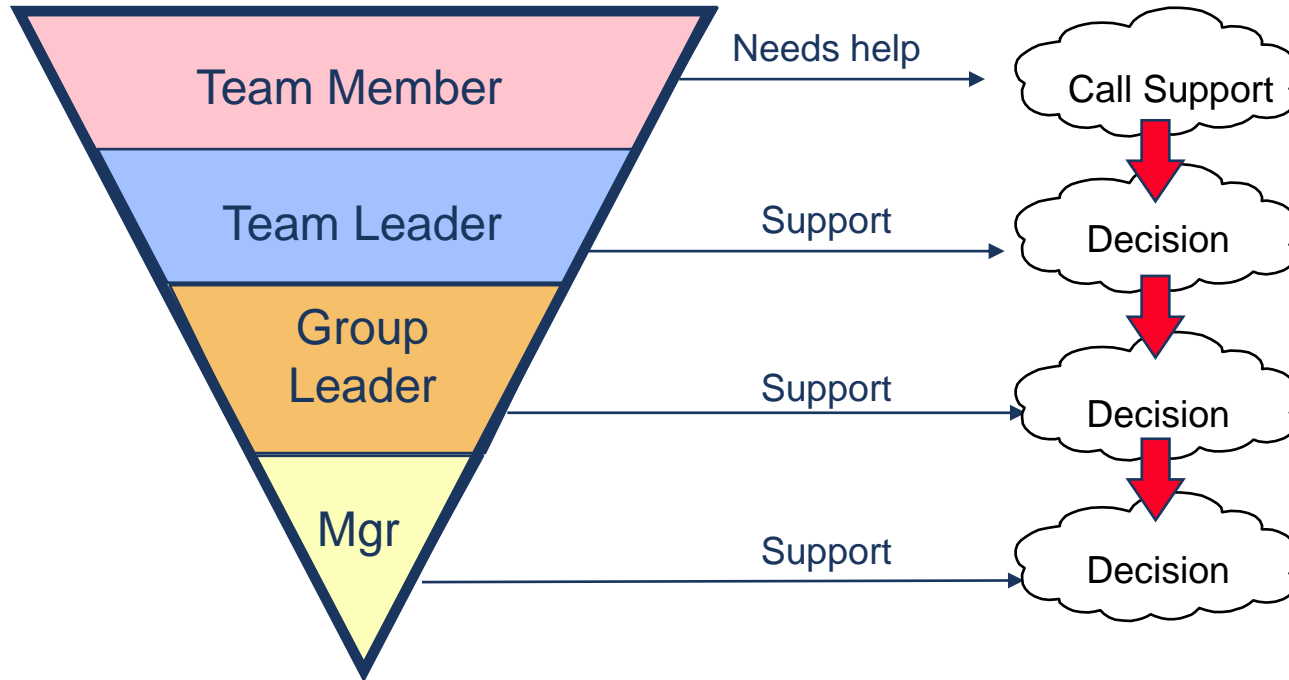
Fast Response to Operator: Roles and Responsibilities

Role of Group Leader



- Support the Team Leader if he is not able to correct the problem, and get the line running as soon as possible.
- Call for additional support as needed (e.g. maintenance, quality, manufacturing engineering, etc.)
- Work with the Team Leader to make sure the root cause is identified and countermeasures implemented.
- Monitor downtime, identify problem areas and work with all available resources to eliminate problems.

Fast Response to Operator: Roles and Responsibilities



The diagram shows the span of support within the organization. The significance of the inverted triangle is that the Team Member is at the top, supported by the entire organization underneath. When the Team Member needs help, he calls for support, and support comes from the Team Leader. For complicated problems, the Team Leader calls for support from the Group Leader, and so on down the span of support.



CONTROL OF NONCONFORMING PRODUCT

Communication

WHEN DO YOU CALL THE CUSTOMER?

A potential external issue exists when you are not confident all product is contained as evidenced by:

- The containment worksheet shows that the potential quantity exceeds the quantity found.
- The oldest material in-house contains product which exhibits the non-conformance.
- Intermittent problem with no clear starting point.

If Yes to any statement above...CALL!

Who to Contact :

- Assembly Plants
- Service Parts (SPO)
- Tiered Suppliers as required

CONTROL OF NONCONFORMING PRODUCT

Communication

Contact External Customer

Needs to be a “live” conversation – no voice or email.
 A phone list for contacts is established.
 Establish conference calls when required by customer.

- » A supplier executive acts as lead and single point for communication.
- » All stakeholders including Tier suppliers participate in calls.

(Example)

GM Contacts

Initial contact must be made with at least one person at each affected facility.

GM SQ Mgmt Team	Name	Responsibility	E-mail	Phone

GM EngineerTeam	Name	Responsibility	E-mail	Phone

GMT 560 (Flint)				
Department	Name	Responsibility & shift	E-mail	PHONE

CONTROL OF NONCONFORMING PRODUCT

Communication

Initiate at customer locations with appropriate sort instructions.

A Customer should be informed of the following items:

- Certification method.
- Description and picture(s) of the marked parts.
- Description and picture(s) of any marked or added labels.

Develop & implement containment and certification plans

Begin shipping certified stock

Identify parts/labels.
Begin to ship certified stock.
Notify customer of breakpoints.

CERTIFIED STOCK SHIPMENTS (Example)

Assembly Plant	Ship		Arrival		Carrier	Tracking number	Quantity
	Date	Time	Date	Time			
Arlington							
Flint 880							
Pontiac							

Assembly Plant	Ship		Arrival		Carrier	Tracking number	Quantity
	Date	Time	Date	Time			
Silao							
Toluca							
Mishawaka							



Tasks - Escalation Process	Production Team Member	Production Team Leader	Production Group Leader	Maintenance Team Member	Quality Team Member	Manufacturing Engineering
Follow Standardized Work	■	■	■	■	■	
Actively watch out-of-standard situations	■	■	■	■	■	■
If an abnormality or defect is discovered that cannot be immediately corrected, call for support, and continue with the rest of the cycle until support arrives	■				■	
Support Team Leader (TL) with problem solving	■		■	■	■	■
TL hears description of problem and takes responsibility for the problem		■				
TL begins immediate correction of the problem		■				
TL releases the andon when he has determined a correction can be made. TL begins problem solving with support of TM		■				
TL calls for support to Group Leader if problem cannot be solved quickly		■				
Support TL if he is not able to countermeasure the problem, and get the line running as soon as possible			■	■	■	■
Call additional support as needed (i.e. maintenance, quality, engineering,...)			■			
Work with TL to make sure root cause is identified and countermeasures implemented			■	■	■	■
Monitor downtime, identify problem areas and work with all available resources to eliminate problems		■	■			■



CONTROL OF NONCONFORMING PRODUCT

Communication

- The organization's containment process shall include a Quality Alert notification system to communicate the problem. Quality Alerts shall:
 - Be posted and promptly communicated to all stakeholders.
 - ✓ Internal Departments, Operators
 - ✓ Tiered suppliers or vendors
 - ✓ Customers
 - Be used for internal or external issues (at least for FR items).
- The Quality organization is responsible to issue, post and remove the quality alert.
- Andon systems should be used on shop floor to alert organization when error occur.

NOTE: The Quality Alert should only be removed after corrective action has been validated and the work instructions have been updated if appropriate.




CONTROL OF NONCONFORMING PRODUCT

Communication

(Example)

Quality Alert

- A quality alert shall:
 - Establish the tasks, time line and communications necessary to ensure customer requirements are met.
 - Define the problem, the standard, and the deviation to the standard
- Should include pictures or samples explaining the deviation
- Should document operator review and understanding by signing the document.
- Should inform when remove the posting (removal date)

ABC Chassis Company, INC	
QUALITY ALERT	
Report Date: 6/23/2008	
Issue Title: Seal Contamination	
PART INFO	Part Number(s): various Part Name: Axle Pinion Seal Part Description: Seal between the Pinion and axle shaft
PROBLEM	Problem on Vehicle: Seal leaks Problem on Part: Premature seal wear Part Specification: No Leakage during vehicle life Deviation from Spec: Visible oil leak starting below 3000 miles Root Cause if Known: Contamination in grease Corrective Action(s) if Determined: TBD
PHOTOS	 <p>Contamination on seal Particle contamination has been found in new seal service parts within the grease</p> <p>New seal lip no wear</p> <p>High seal wear leaks at 3400 miles</p>
Tiered Suppliers	Part supplied by OEM as part of Assembly: All Axle Assemblies Part supplied by Tier 1 Supplier: Spacely Sprockets and Gears Part supplied by Tier 2 Supplier: Rubber Seals R Us, Inc Start Date: 6-25-2008 Break Point at GM Assembly Plant: 6-29-2008 for known issue
CUSTOMERS	Vehicle/Platform(s) Affected: Axle assemblies using Rubber Seals Other GM Facilities Impacted: Janesville, Arlington Other OEMs supplying to GM: NA SPO, CKD, Overseas Destinations: Service Parts
OTHER	Customer Contact Single Point: Jerry Jones Phone: 586-555-5555 Issued by: Ben Jones, Quality Engineer
Review / Removal date: 8/15/08	

CONTROL OF NONCONFORMING PRODUCT

Communication

Andon System



- Andon System may be used to Communication when error is produced/identified in the station

Phone Calls



- Cell Phone may be used for communication .

Quality Alert



- Use Quality Alert document to communicate the issue till solve the problem and update all documentation (SOS & JES, C.P, PFMEA).
- Quality Alert should be simple and clear

Information flow between shifts

- Assure an open communication channel between all shifts;
- Avoid potential miscommunication between shifts related to issues faced by other shifts;
- Drive management and support groups in problem solving activities.



Information flow between shift

All the significant issues which happened during the shift are documented in shift book or similar. Issues such as:

- Error Proof verification failure,
- Line stop,
- Containment initiated,
- By-pass process, etc.

If there is more than one shift, all the information which can be affected to next shift is passed over via face to face discussion of shift leaders.

Shift book is used for root cause analysis:

- Reactive: to check 'what went wrong' in the process when NOK pieces were produced, helps to define break point.
- Proactive: on daily base manufacturing leadership has to verify actions implemented related to issues, if needed initiate further escalation.



Auditor hints

Ask operators how they can escalate their issues.

Andon system or similar in place, if applicable.

Test andon's function and response to request (Light Boards, lamps, or audio signals work, support arrives soon).

Participate at shift change, check shift book and information shared.

Review FR board and check if open issues has quality alert posted

Check Quality Alert is clear , understood by team , and posted in stations needed (Operation , Quality)

Customer and tier supplier contact list are available



Fast Response in Production, what are we searching for?

Item	Requirement	#Criteria	Criteria requirement
FR3	A defined process for Problem Solving is in place. It includes a standard for documenting the tools used for root cause identification.	FR31	Standard process used across the plant for internal (at the workstation, maintenance, logistics), customers and suppliers issues. Actions are defined and recorded with responsibility and target closing date. Exit criteria represent the core 6 Steps of problem solving (1. Define 2. Contain 3. Root cause 4. Correct 5. Validate 6. Institutionalize).
		FR32	Tools for identifying root causes (non-detection and occurrence) are systematically applied (5 why to correct systemic issues, Fishbone Diagram etc.).
		FR33	In case of reoccurrence and critical issues, analysis is performed to understand why PFMEA did not predict the failure. A PFMEA review is required again.
		FR34	Standard form or database is used to document Lessons Learned. A process is defined to deal with the lessons learned.
		FR35	Some analysis forms posted close the lines in the workshop exist (e.g. : QRQC line, 5 why analysis with paper board report...).

Criteria of Requirement

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Prev. Requirement

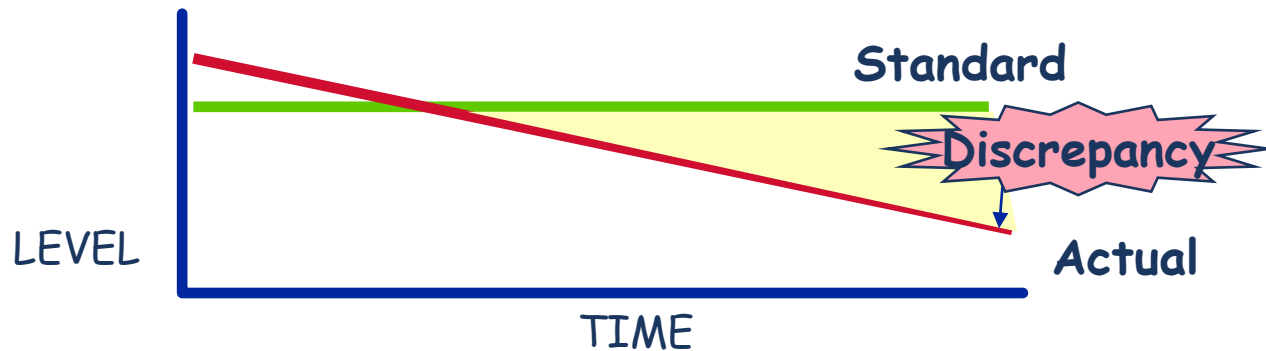
Next Requirement

Problem Solving

Organizations shall have a defined process for Problem Solving including a standard for documenting tools used for root cause identification and elimination.

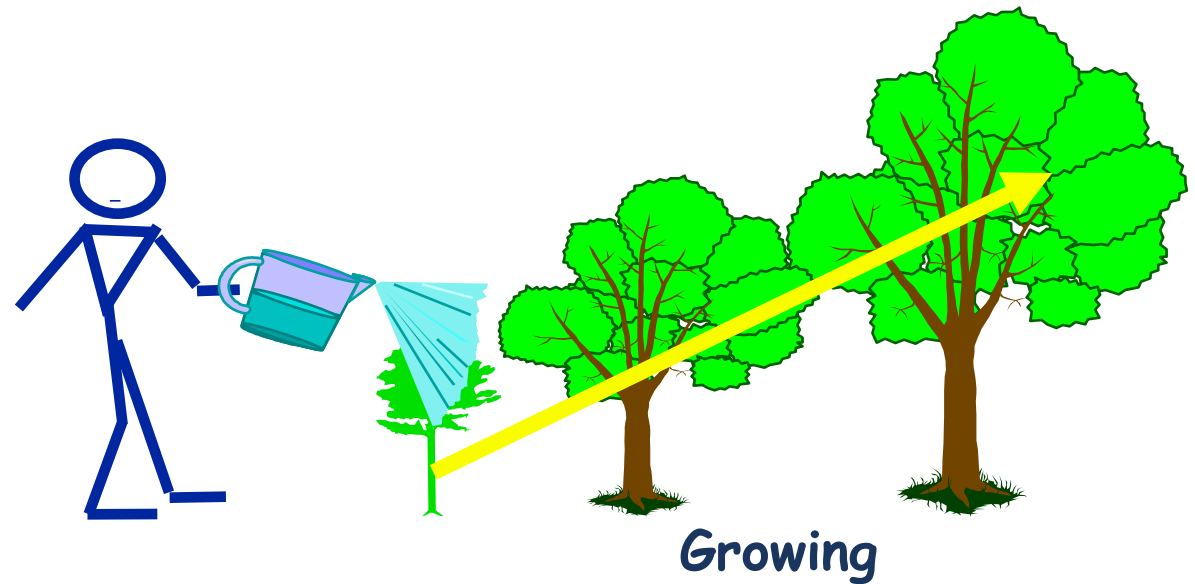
WHAT IS A PROBLEM?

- It is the **GAP** between the current situation and customer satisfaction.
- Defined As a Discrepancy Between an Existing Standard or Expectation and the Actual Situation.



Problem Solving

- Problems Are the Seeds for Improvement!
- Problems Are Positive Opportunities!
- If There Are No Problems Then Something Is Wrong!



FUNDAMENTAL PRINCIPLES OF PROBLEM SOLVING

Problem Solving

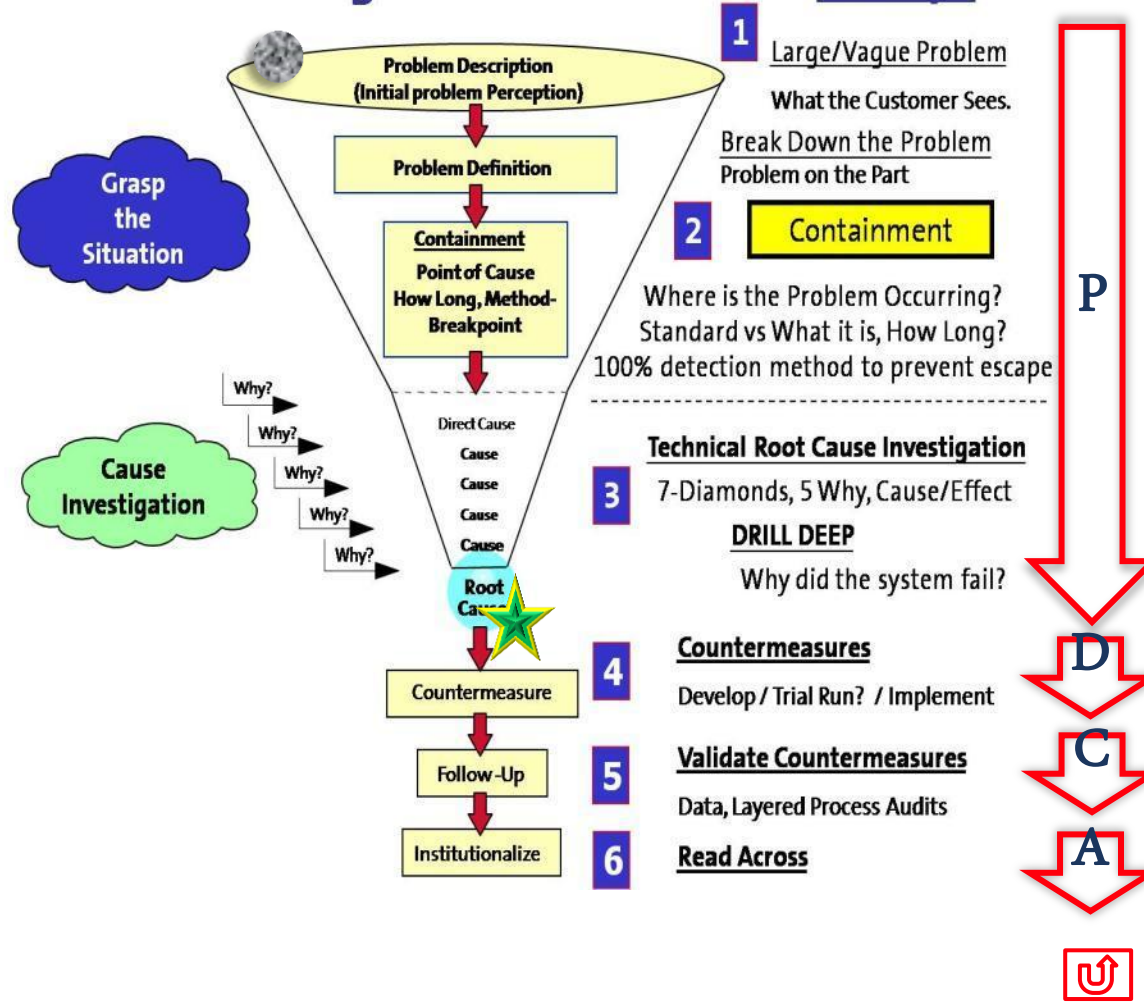
- **Set aside pre-conceived ideas.**
- **Don't respond to problems without data.**
- **Break the problem down.**
- **See abnormal occurrence and Point of Cause first hand.**
- **Delay cause analysis until you have a thorough grasp of what is actually happening.**
- **What is the standard? What is happening compared to what should be happening?**
- **Establish Cause/Effect relationships.**
- **Continue asking "Why"? until you can prevent reoccurrence of the problem by addressing its root cause.**

Problem Solving

Definition:

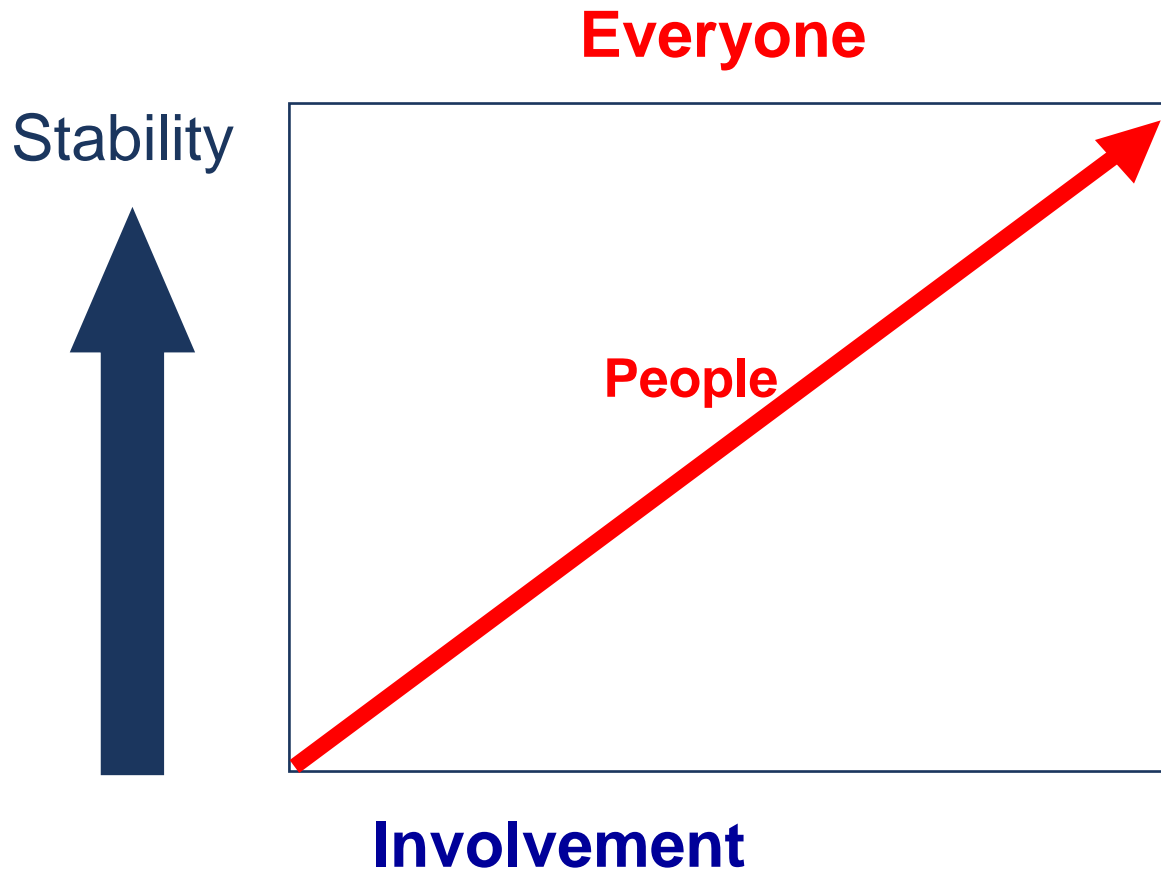
- A structured process that identifies, analyzes, and eliminates the discrepancy between the current situation and an existing standard or expectation, and prevents recurrence of the root cause.
- Cross-functional team approach is applied.

Problem Solving Process – The Core ‘6 Steps’



Who Does the Problem Solving?

Problem Solving



As more people are involved, more problems are solved which creates a more stable environment. As the environment becomes more stable, more people can be involved in problem solving.

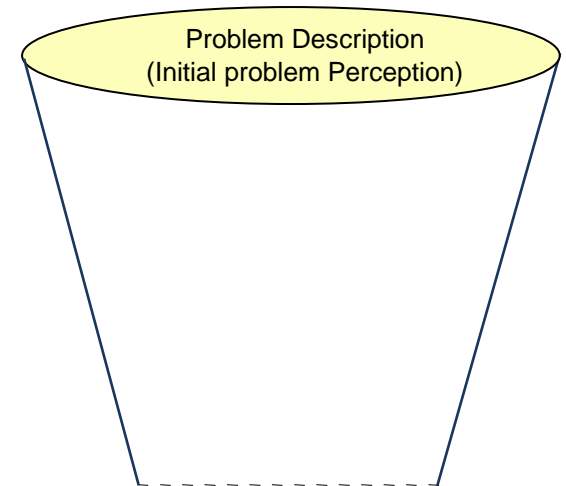
Problem Solving

Step 1- THE PROBLEM

■ Problem Description (Initial Problem Perception)

- State the Problem That Is Occurring

A large, vague description of what you think the problem is.

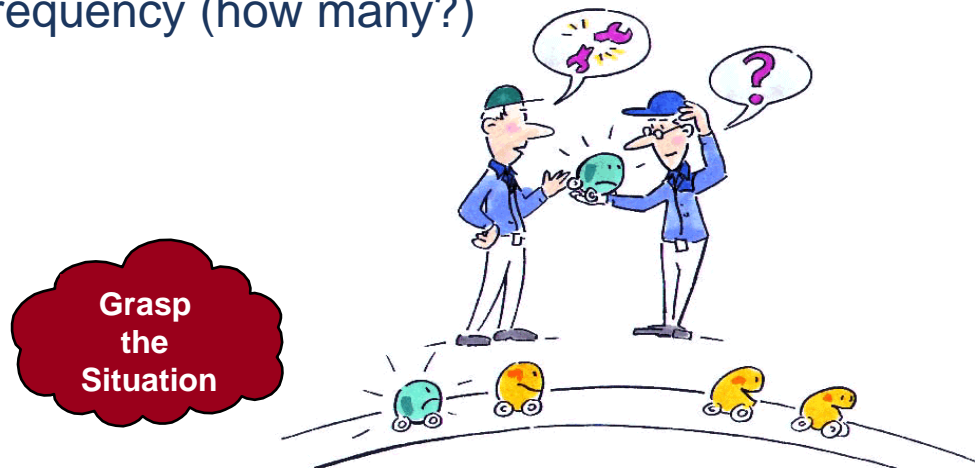
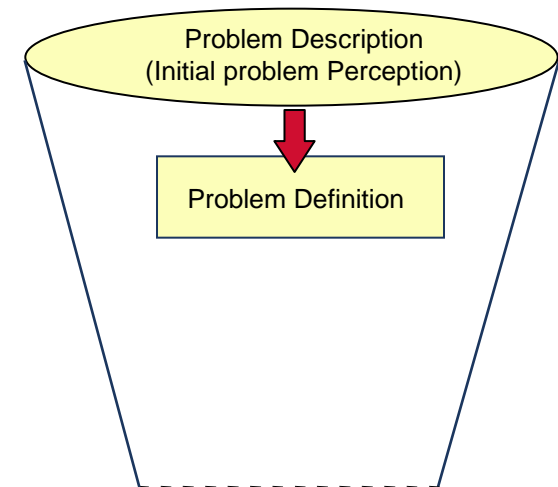


Problem Solving

Step 1- THE PROBLEM

Problem Definition - Specifically Define the Situation (break down the problem)

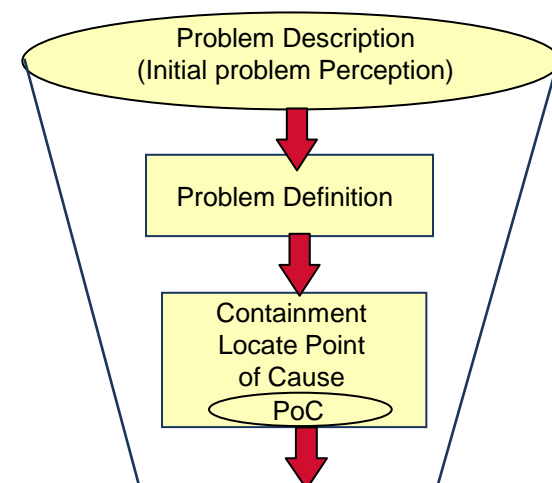
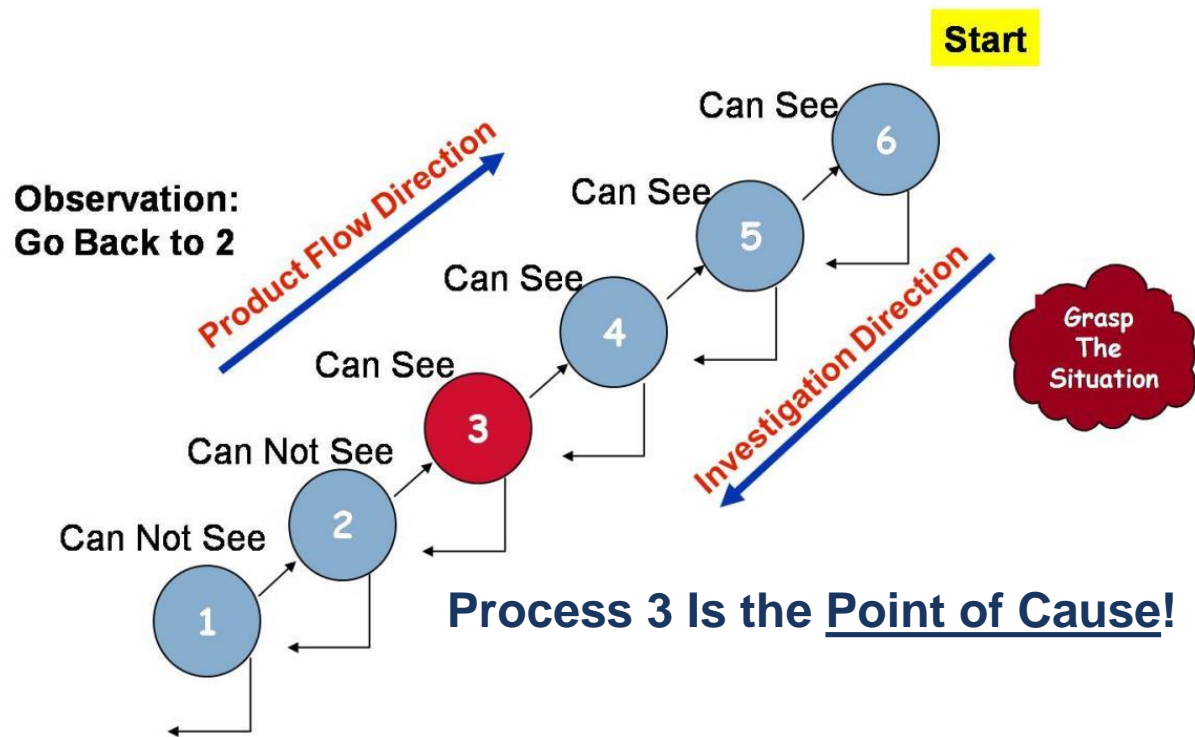
- The Standard (what should be happening?)
- The Deviation (what is happening?)
- The Time (how long?)
- The Frequency (how many?)



Problem Solving

Step 2-CONTAIN THE PROBLEM

- Go-See; Point of Cause.
- Where Is the problem happening?



Problem Solving

Step 2-CONTAIN THE PROBLEM

Once the Point of Cause is determined, the team needs to apply the non-conforming procedure to determine:

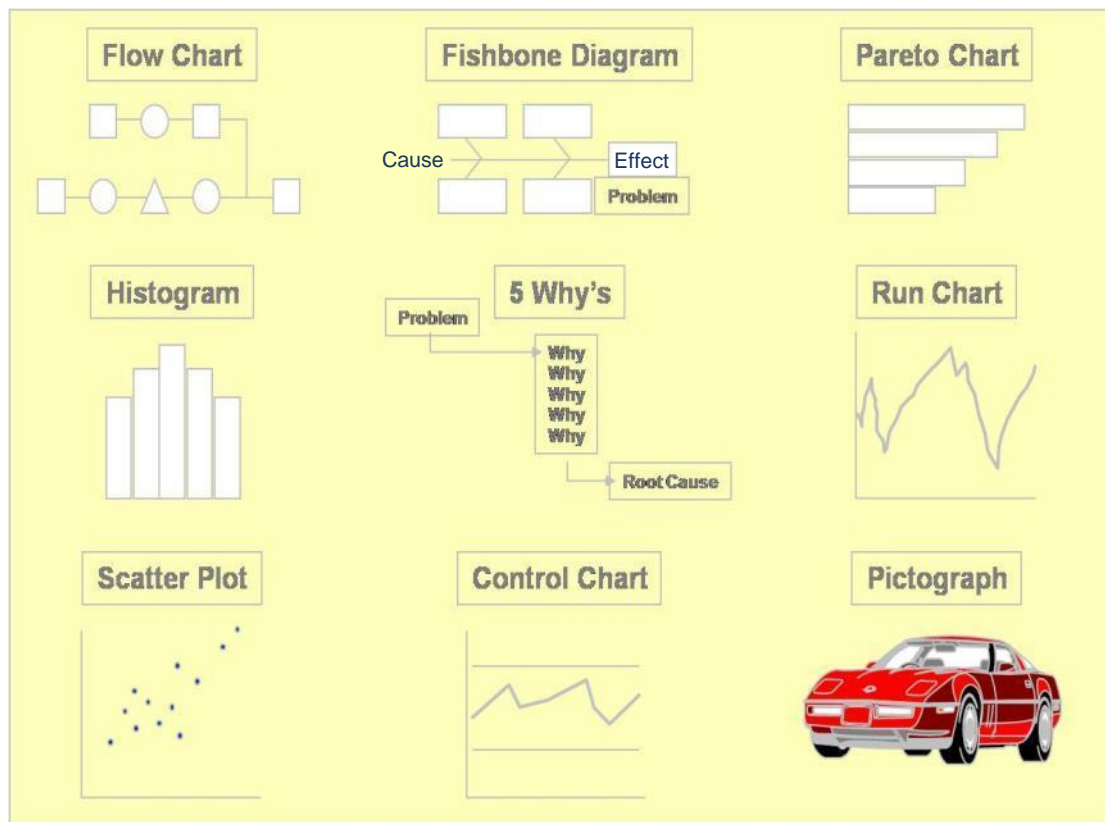
- The best method to contain the defect.
- How long has this been happening?
 - Review data for last known good part for the specific characteristic in question.
 - Engage operators regarding changes or abnormal conditions and timing.
 - Initiate a containment work sheet and establish a potential quantity to verify all material in question is captured for that time frame.
- Determine whether other areas or customers are impacted by the problem and to what extent.

Problem Solving

Step 3 – IDENTIFY THE ROOT CAUSE

There are several tools available to problem solve and get to the root cause. Their use is dependent upon the complexity of the process, the type of failure mode, Fit, Function, or Finish, and the system used to measure the specific characteristic that failed which will be attribute or variable data.

(Example)

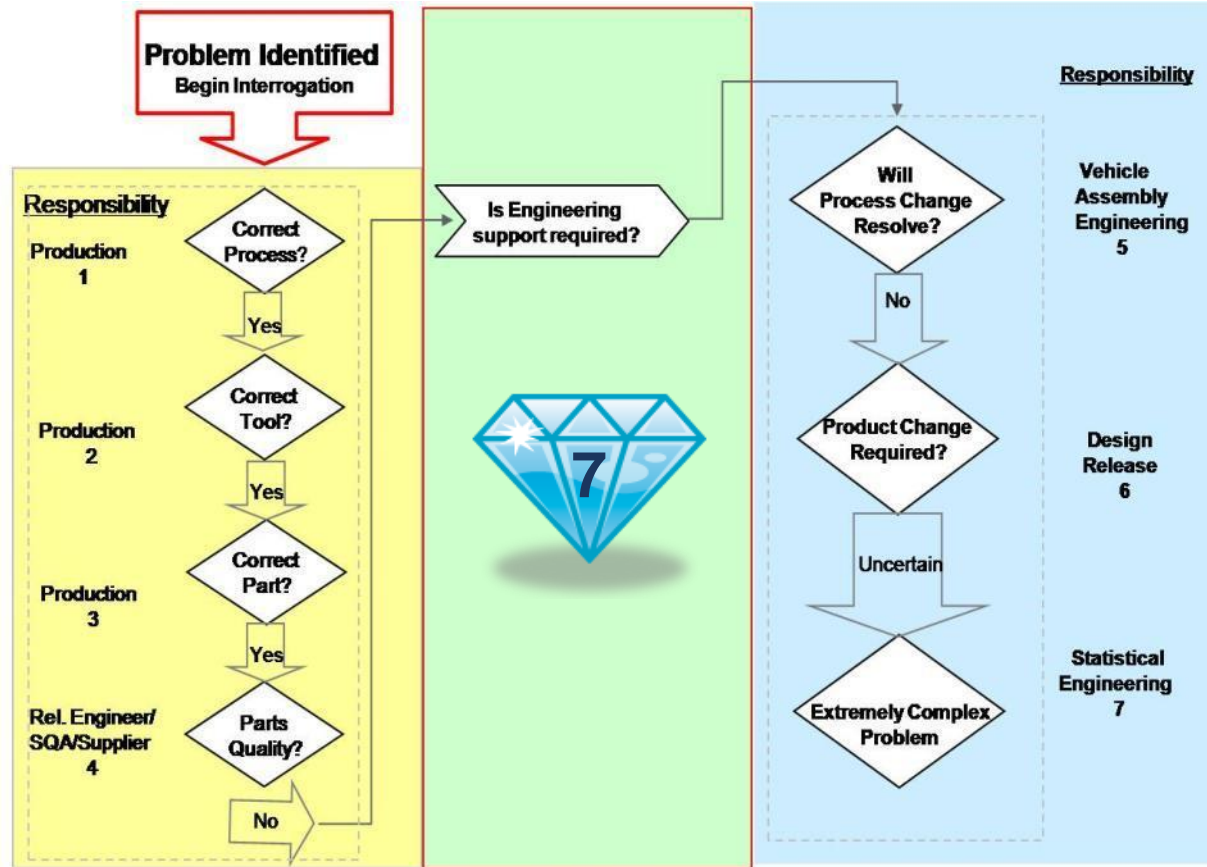


Problem Solving

Step 3 – IDENTIFY THE ROOT CAUSE

As an initial root cause step, the 7 diamond process can be used as an immediate reaction to internal Quality issues. The first 4 steps are used to quickly determine if an out of standard condition (special cause) exists. This will prevent excessive use of the statistical problem solving techniques.

(Example)



Problem Solving

Step 3 – IDENTIFY THE ROOT CAUSE

Diamonds 1 – 4 are **Used to determine if production is running manufacturing process to design intent.**

- Diamonds 1-4 evaluate the stability of the process.
- Once a problem has been identified, the automatic response should be to immediately perform diamonds 1-4.
- Initial investigation is done where the defect was found.
- If investigation determines the cause of the problem is upstream, then investigation should be conducted at the upstream source as well.
- Statistical Engineering occurs when the manufacturing process does meet design intent and the problem still exists.

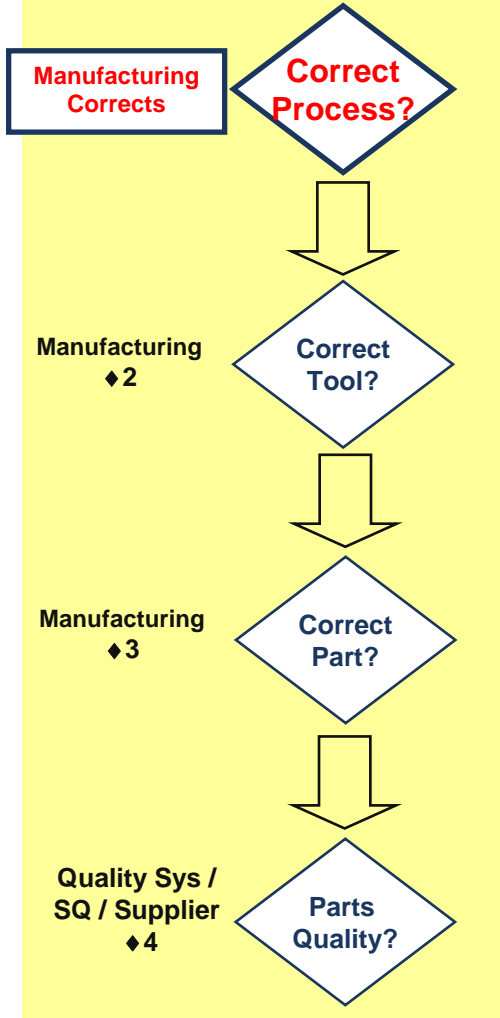
Problem Solving



Correct Process

(Example)

Can any of these cause the problem?



- Is the correct *Standardized Work* posted?
- Is *Standardized Work* being followed?
- Are build documents being adhered to (if applicable)?
- Are gaging requirements / frequencies being adhered to?
- Is the job being done the same on all shifts?
- Does the operator understand what the product standards are?
- Is it the regular operator? Has there been a lot of turnover on the job?
- Has the operator been properly trained?
- Are the visual aids current?
- Does the operator understand the quality outcomes of her/his job?
- Does the operator know how to communicate when he/she has a problem?

Problem Solving

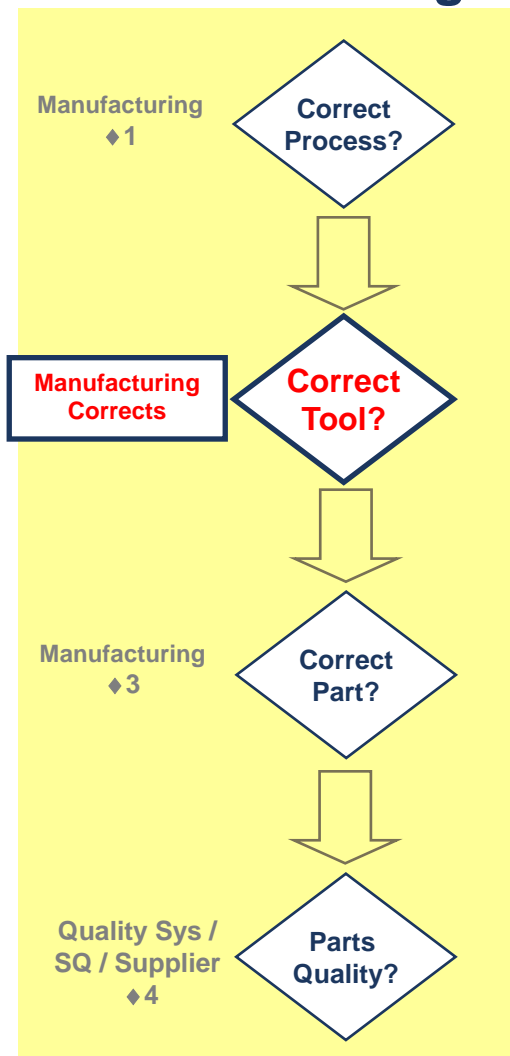


2 Correct Tool

(Example)

Can any of these cause the problem?

- Are the correct tools & fixtures being used? (all shifts)
- Are the tools set to the specified requirements?
- Are they properly calibrated?
- Are both shifts using the same tool?
- Are the tools worn?
- Do the tools & fixtures have mutilation protection?
- Has the workstation been error proofed?
- Have the tools or *error proofing* been bypassed?
- Does the workstation layout allow the operator to work effectively?
- Has the Preventive Maintenance been done? (check log)
- Are tools functioning correctly?



Problem Solving

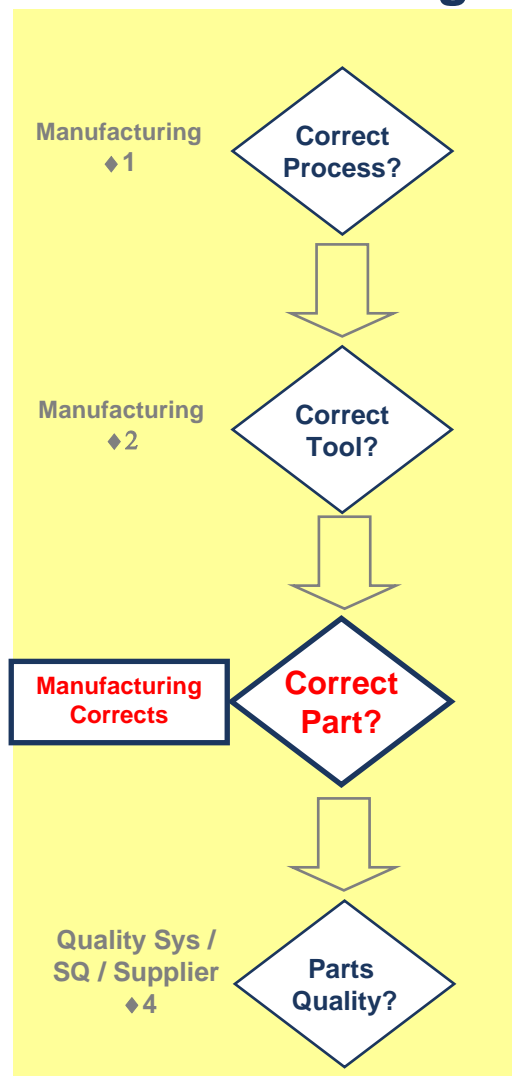


3 Correct Part

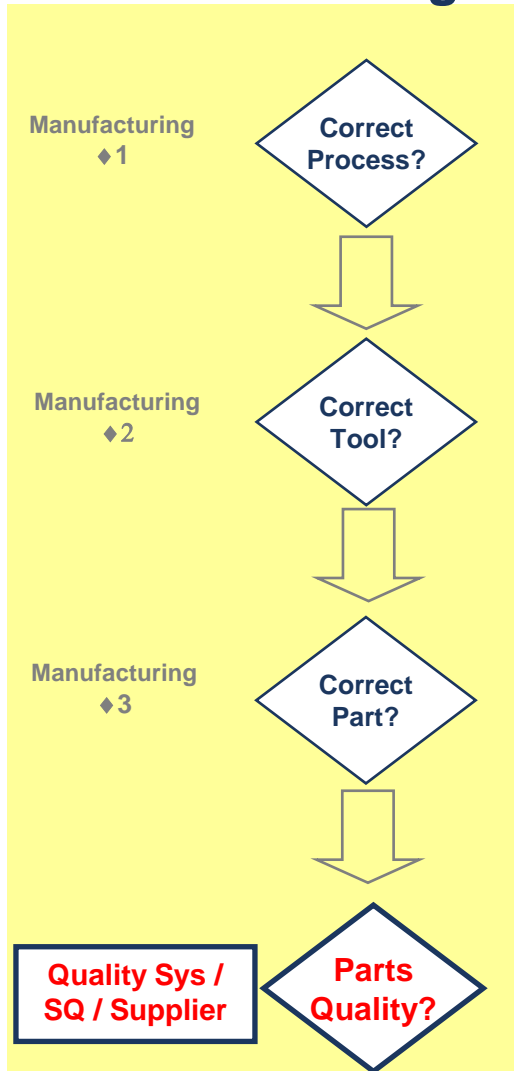
(Example)

Can any of these cause the problem?

- Is the part's routing current?
- Are the correct parts being used?
- Are parts stocked in the correct location?
- Do the part numbers on the boxes agree with their location?
- Is *error proofing* needed?
- Is existing *error proofing* device working correctly?



Problem Solving



4 Part Quality

(Example)

Quality Systems is responsible for determining if parts have changed and overall part quality:

- Supplier Data
- CMM Checks
- Fixture Checks
- Visual Part to Part
- Visual Lot to Lot

If part's quality (out of specification) is determined to be the problem's root cause, then Quality Systems will notify manufacturing and/or the supplier that there is a problem and work with manufacturing and/or the supplier to validate the corrections.

Problem Solving

Step 3 – IDENTIFY THE ROOT CAUSE

For each NO response in Diamonds 1-4, a 5-Why analysis is performed.

When a cause is found, ask why until you find the **real root cause** (5 Why's)

Problem Solving

Step 3 – IDENTIFY THE ROOT CAUSE

- Why did the robot stop?
 - **A fuse in the robot has blown**
- Why is the fuse blown?
 - **Circuits overloaded**
- Why did the circuit overload?
 - **The bearings have damaged one another and locked up**
- Why have the bearings damaged one another?
 - **There was insufficient lubrication in the bearings**
- Why was there insufficient lubrication in the bearings?
 - **The oil pump on the robot is not circulating sufficient oil.**
- Why is the pump not circulating sufficient oil?
 - **Pump intake is clogged with metal shavings.**
- Why is the intake clogged with metal shavings?
 - **No filter on the pump intake.**
- Why was there no filter on the pump intake?

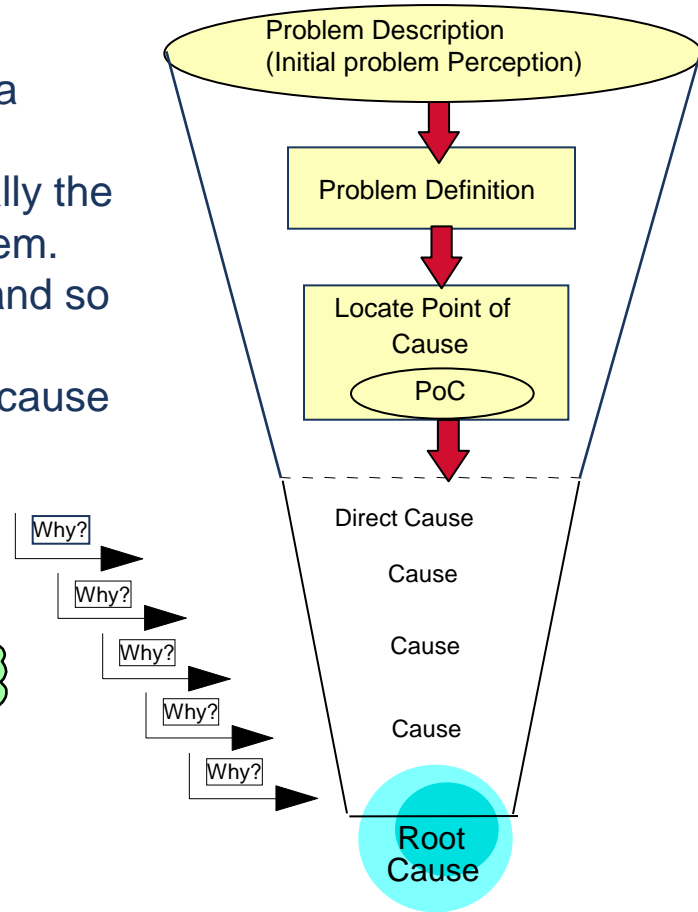
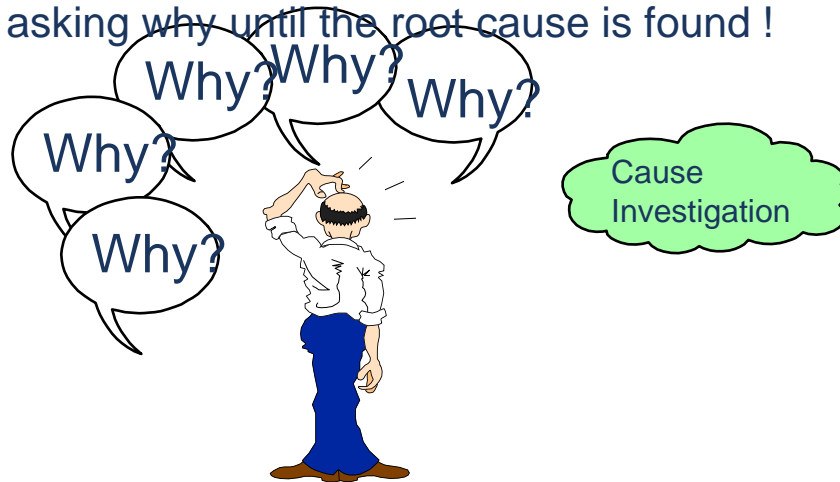
The pump was not designed with a filter.



Problem Solving

Step 3 – IDENTIFY THE ROOT CAUSE

- 5 Whys is a very good tool to get to the root cause of a problem.
- Our first conclusion when we tackle a problem is usually the direct cause, what is directly responsible for the problem.
- The direct cause can be the result of another cause, and so on.
- If we understand this chain, then we can find the root cause and eliminate the problem.
- Continue asking why until the root cause is found !



Practical Problem Solving Form (Step1-3)

(Example)

Practical Problem Solving Report (PPSR)

Author: _____ Phone No: _____ Date: _____

Problem found by:
 Verification Station: _____ Maintenance: _____ Production: _____
 Other: _____
 Customer: _____

Shift: _____ # of Items Checked: _____ # Items Found: _____

Mark Sections or Questions that do not apply "N/A"

(1) Problem Description: **General** **Select** (3) Sketch: (Actual Part / Process Flow)

(2) Problem Definition (Real Problem): _____

(4) Point Of Cause: (Walk the PROCESS back to where problem is first occurs)

(7) For Quality Problems answer the following questions:

	Y	N
1) Standardized work posted?		
2) Standardized work Followed? (Seq., What How, Why)		
3) Operator understands the standards?		
4) Operator understands quality outcomes?		
5) Job done on all shifts the same?		
6) Regular operator?		
7) Operator properly trained?		
8) Correct Parts?		
9) Parts stocked in the correct location ?		
10) Parts in spec. ?		
11) Parts have not changed recently		
12) Correct Tools / Fixtures Used?		
13) Has Preventative Maintenance been performed.		
14) Are tools functioning properly?		
15) Error Proofing function properly?		
16) No abnormal events?(e.g. Power outage etc.)		

(8) If Yes for all 16 questions, If answers to questions 1-4 are "NO", then a 5-Why path is required.

(9) Direct cause analysis

MAN _____

METHOD _____

MATERIAL _____

PROBLEM

Test each possible direct cause and circle most likely causes. Cross out "HOT" causes of the problem.

s1 Define The Problem

10) Root Cause Analysis: In the first Why write down the Most Probable Cause from the front (use additional sheets if more than one probable cause)

Why? _____

Why? _____

Why? _____

Root Cause: _____

11) PREDICT: Was this failure mode predicted? (Contact the Engineer for this information.)

12) Proposed Solution: Brainstorm possible solutions

s3 Identify The Root Cause 5-Why

s3 Transfer Technical Root Cause to DRILL DEEP (System RC; 3x5 Why)



s3 Identify The Cause

Each NO response to D1-4 Questions Requires a 5-Why path

Describe abnormal event: _____

Date:		Sequence #s			
Who	Due Date	Break Point	Status		
			<input type="radio"/>		
			<input type="radio"/>		
			<input type="radio"/>		
			<input type="radio"/>		
			<input type="radio"/>		
			<input type="radio"/>		

Legend: 1 - Identified 2 - Implemented 3 - Feedback 4 - Closed

Countermeasure Tracking (Production Days with/without repeat)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Highlight cells above to Mark Green or Red using the corresponding buttons.

Have Prints, Check Sheets or other forms been updated? _____

Have the PFMEA and Control Plans been updated? _____

The results/changes were communicated to all affected Team Members? _____

Issue Resolved satisfactorily? Yes No Date Closed: _____ No. assigned to: _____ Tracking#: _____

17) Lessons Learned: (what was learned that can be shared)
 Could the communication of this problem and its fixes possibly prevent other departments or plants from incurring the same problem?
 Yes: _____ No: _____

Signatures:

Shift	Team Members Involved	Author (required for closure)	Team Leader / Group Leader	Area Manager / Quality / Engineering

APPROVALS

Drill Deep Analysis/Worksheet

(Example)

Revision Date: _____ Name and Title: _____ Phone: _____ RPN Original Final

Supplier Team Lead: _____ Provide a complete member list with contact information on Contact List Worksheet RPN Severity Occurrence Detection

GM SOE: _____ Supplier Duns: _____ Supplier Name and Location: _____ Supplier is Tier 1 to GM

Issue Category: PRR PRTS CDP Other - Specify: _____ Issue Number: _____

Failure Mode: _____

Effects of Failure Mode: _____

Cause of Failure Mode: _____ Point of Manufacture: Tier 1

	Drill Deep	Corrective Action	Verification	Owner	Due Date
Why did the Manufacturing System not prevent this Failure Mode Prevent Manufacturing System - Error Proofing & Standardized Work	M1	Cause of Failure Mode			
	M2				
	M3				
	M4				
	M5				
	M-RC				
Why did the Quality System not Protect GM from this Failure Mode Protect Quality System - Error Detection & Containment	Q1				
	Q2				
	Q3				
	Q4				
	Q5				
	Q-RC				
Why did the Planning System not Predict this Failure Mode Predict Planning System - Informational content in all documentation	P1				
	P2				
	P3				
	P4				
	P5				
	P-RC				
What are the key findings based on this quality issue?	A				
	B				
	C				

5 Whys – After the technical root cause is found, determine **WHY the System failed**. Ask “WHY” until actual root cause for each is determined.

Prevent – Why did the manufacturing process not prevent the defect?

Protect – Why did the Quality process not protect the customer (GM) from the defect?

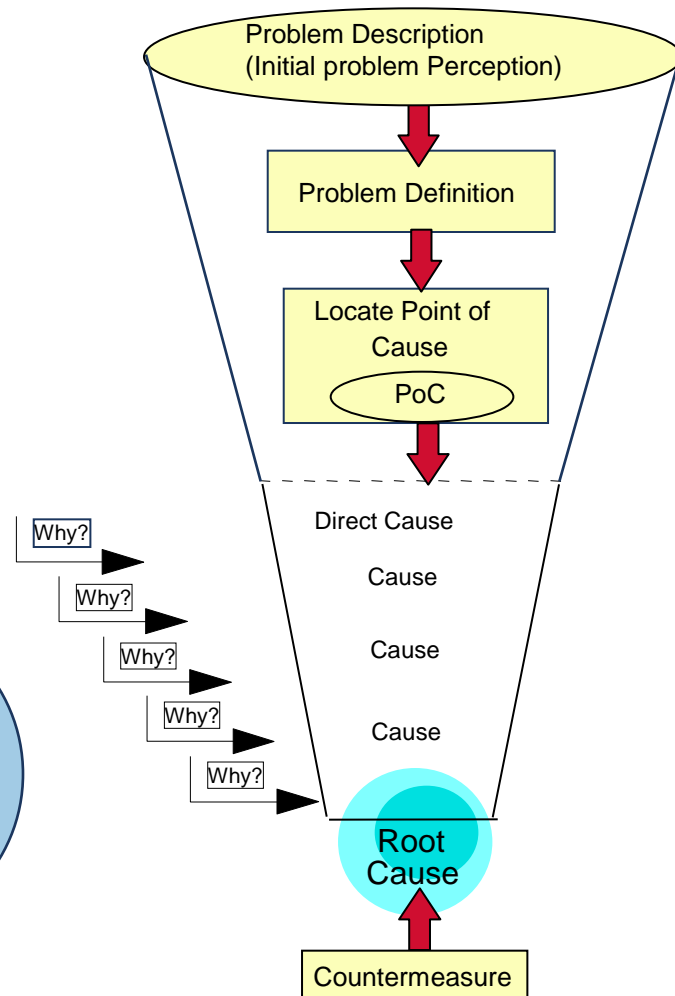
Predict – Why did the planning process not predict the failure?



Problem Solving

Step 4 – IMPLEMENT CORRECTIVE ACTION

- Brainstorm possible solutions and select the most effective, efficient and cost effective solution.
- Determine if a trial run is needed to confirm and test the proposed solution to verify it is effective and has no other adverse effects.
- Determine the steps and actions needed to implement and timing.
- Identify the breakpoint of implementing to all key stake holders.



Problem Solving

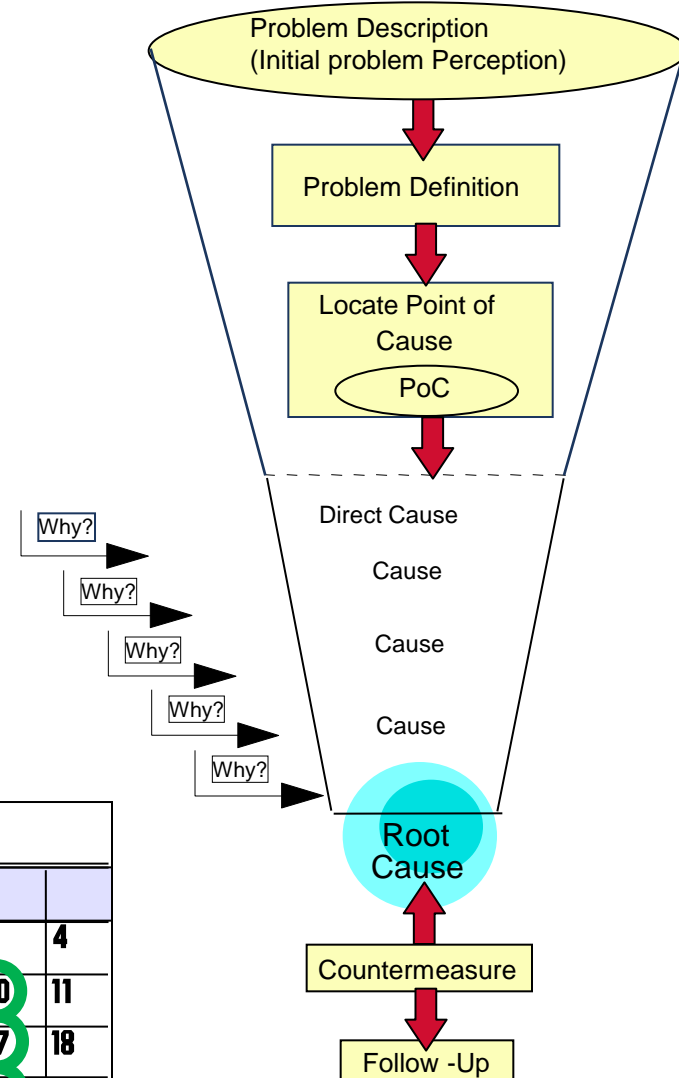
Step 5 – VERIFY EFFECTIVENESS OF ACTIONS

Follow Up and Check

- Implement *Layered Process Audits* to verify that changes to the system are being performed consistently and working as intended.
- Verify effectiveness through measurement and data.
- Establish a verification period (duration/date).
- Determine who will follow up.
- Create a standardized process or method.
- Remove excess work from containment.

(Example)

MARCH						
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	



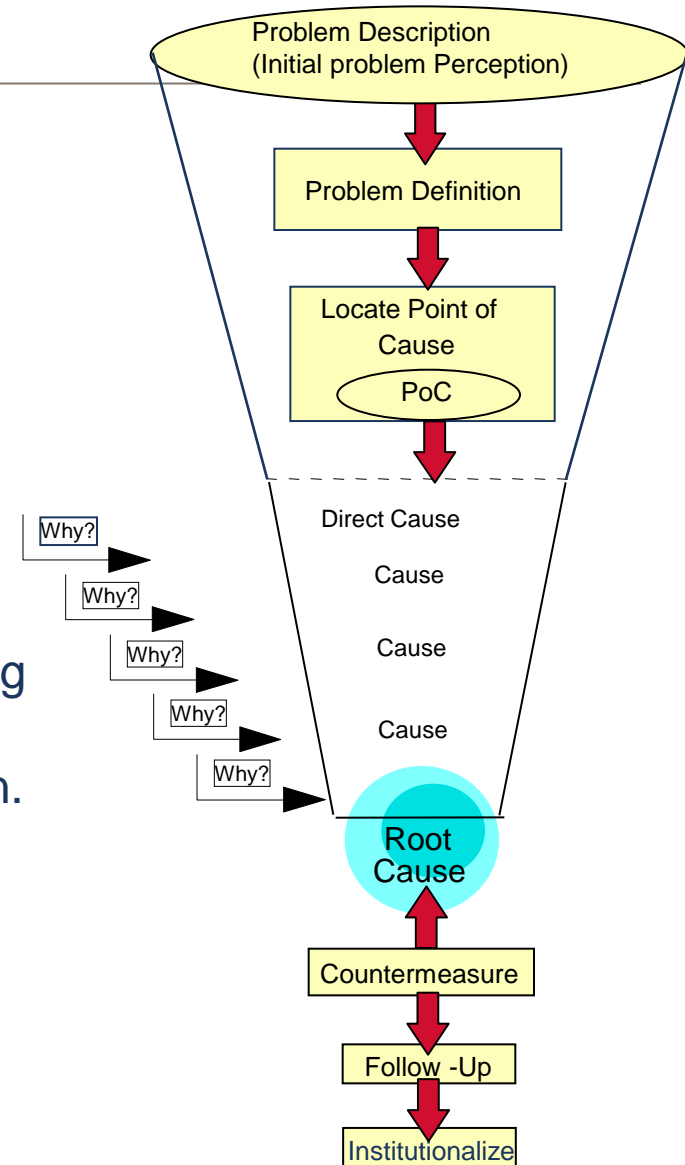
Problem Solving

Step 6 - INSTITUTIONALIZE

- Identify similar products and processes which potentially have or may produce the same failure mode.
- Add failure mode and corrective action to Lessons Learned database.

Send a copy of this Problem Solving Report to other Departments/Plants with the potential of experiencing this problem.

- Implement the solution across the organization.
- Update remaining necessary documentation:
 - PFMEA
 - Control Plan
 - *Error Proofing Verification*
 - *Standardized Work*
 - *Operator Instructions*



Drill Wide Analysis/Worksheet

(Example)



DRILL WIDE MATRIX (Ref. GM 1927-69, Drill Deep Matrix)

SUPPLIER:

Name:	
Location:	
Duns:	
Contact Name:	
Contact Phone:	
E-mail:	

SYMBOL & STATUS KEY:

O	Original location
X	Location with similar process
NA	Not Applicable
Blue	Completed & 3rd Party/GM verified
Green	Completed & Supplier verified only
Red	Not Completed
P	Pass Through

Part Name & Number	GM Plant	FAILURE MODE	EFFECT OF FAILURE MODE	NIC or CPV	CS Status	DDW Completion & Verification	1	PRR Number / Issue	Champion	Symbols													
										A.P.Q.P.	Duns / Location						Tiered Supplier						
							Corrective Action			Duns 1	Duns 2	Duns 3	Duns 4	Duns 5	Duns 6	Tier 2	Tier 3	Tier 4					

Drill Wide - analysis of opportunities of system deficiencies and corrective actions that encompass all parts, manufacturing processes, and other plant locations.

Practical Problem Solving Form (Step 4-6)

(Example)

Practical Problem Solving Report (PPSR)

Author: _____ Phone No: _____ Date: _____

Problem found by: Verification Station: _____ Maintenance: _____ Production: _____
 Other: _____
 Customer: _____

Shift: _____ # of Items Checked: _____ # Items Found: _____

Mark Sections or Questions that do not apply "N/A"

(1) Problem Description: **General** **Select** (3) Sketch: (Actual Part / Process Flow)

(2) Problem Definition (Real Problem): **More specific**

(4) Point Of Cause: (Walk the PROCESS back to where problem is first occurs)

(5) Quality Standard: PPH: _____ Breakdown Start Time: _____ End Time: _____ Duration: _____ Other Areas or Customers Impacted: _____

(6) Protect - Internal Containment:	Contain	External req.?	Y	I	N	Who	Date	Status	Break Point
								<input type="radio"/>	Start:
								<input type="radio"/>	Finish:
								<input type="radio"/>	Start:
								<input type="radio"/>	Finish:

(7) For Quality Problems answer the following questions:

Y	N	Y	N
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(8) If Yes for all 16 questions proceed to Direct Cause Analysis with a Team (Step 9):
 If answers to questions 1-16 are a No, complete 5 Why Analysis on next page for each "NO" response. **Correct**

(9) Direct cause analysis - For Team Brainstorming

MAN MACHINE PROBLEM

METHOD MATERIAL

Test each possible direct cause and circle most likely causes. Cross out "101" causes of the problem.

10) Root Cause Analysis: In the first Why write down the Most Probable Cause from the front (use additional sheets if more than one probable cause)

Why? _____
 Why? _____
 Why? _____
 Why? _____
 Root Cause: _____

11) PREDICT: Was this failure mode included in the PFMEA?
 (Contact the Engineer for this Information) YES NO If "Yes", What was the RPN #: _____

12) Proposed Solution: Brainstorm possible solutions. Select the most effective, efficient, and cost effective solution.

13) Trial Run: Confirmation **s4**

14) Intermediate Action Plan

15) Long-Term Corrective Actions **s5**

16) Verification & Resolution Questions:

Y	N	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1- Identified 2- Implemented 3- Feedback 4- Closed

Countermeasure Tracking (Production Days with/without repeat)

1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Issue Resolved satisfactorily? Yes No Date Closed: _____ No. assigned to: _____ Tracking#: _____

17) Lessons Learned: (what was learned that can be shared)
 Could the communication of this problem and its fixes possibly prevent other departments or plants from incurring the same problem?
 Yes: _____ No: _____

s6 Institutionalize Throughout The Organization

Problem Solving

Summary:

- ✓ **No problem solving means no improvement.**
- ✓ **Encourage problems and solutions.**
- ✓ **Provide the necessary training and resources.**
- ✓ **Have patience.**
- ✓ **Develop problem solvers.**
- ✓ **Managers should have the questions, not the answers.**
- ✓ **Make decisions based on fact, not opinion (Emotion).**
- ✓ **Use teamwork to solve problems.**



Lessons Learned

A Lessons Learned system:

- Establishes a process for capturing information that will support continual improvement to all operations/processes.
- Prevents repeated mistakes allowing an organization to capitalize on its successes.
- Applies to all functions and responsibilities, therefore, everyone in the organization should participate.

All documentation that will support continuous improvement should be entered into a Lessons Learned system. (e.g. Master PFMEA, *Problem Solving*, Read Across)



Lessons Learned

Lessons Learned may be identified by anyone.

Examples of activities to Identify Lessons Learned:

- APQP Process
- *Layered Process Audits*
- *Error Proofing* Verification Failures
- Problem Solving activity for Internal or external Issues
- *Verification Station* Findings
- Continuous Improvement Teams
- *Risk Reduction*-Reverse PFMEA Team Activity
- Suggestion Programs
- Company Business/Quality Operating System Management Reviews

A disciplined approach to problem prevention using Lessons Learned shall be established. Activities within an organization to prevent future problems or improve performance that build Lessons Learned may include.

- Drill Wide-Read Across communication and follow up
- APQP Program reviews of Lessons Learned

Lessons Learned

Lessons Learned shall be documented. Documentation may include:

- Lessons Learned Form
- APQP Checklist
- Master PFMEA
- Computer Form or Website, etc.

Lessons Learned shall be communicated and kept available to all current and potential users. Communication can be performed by:

- Posting the lessons learned form
- Including on a lessons learned website
- Utilizing a company newspaper or closed circuit TV
- Distribution of pocket cards, etc.



Leadership shall review the Lessons Learned process to assure Implementation.

Lessons Learned

(Example)

Major Issue - Supplier Read Across

Review the attached information and determine if your manufacturing processes are susceptible to the same Major Issue. Complete and return this form as indicated below. **Also complete and return attached GM1927-16a Welding PCPA.**

<p>Description of Major Issue (Failure Mode)</p>	<p>Noise found during vehicle running test caused by broken RR LH bush on the lower control arm. Welding bead position variation due to the loosing of Welding Rotation Jig.</p>	<p>ARM ASM-RR SUSP LWR CONT</p> 
<p>Lessons Learned</p>	<p>1) Welding Device such as welding Jig should be verified daily. If required, welding jig should be changed the fixing type of welding jig to prevent loosing of weld jig 2) Robot TCP (Tool Center Point) should be verified and maintained to prevent welding bead position variation. 3) CO2 welding depth should be followed GMW requirements.</p>	

RESPONDING SUPPLIER				GM SQE			
Company Name:				Name:			
Manufacturing Duns:				Phone:			
Contact Name:				GM email:			
Contact Title:				Date Sent:			
Contact Phone:							
				<u>Return By Date:</u>			
Is your facility " at risk " of shipping product with this Major Issue?							
<input type="checkbox"/> YES <input type="checkbox"/> NO							
If Yes, complete items below.							
If No, explain why your process is not at risk of the same failure mode in the " Other Actions Taken " section below.							



FR35 : TO BE PROVIDED



Auditor hints

Prior to the audit check last customer complaints focusing to the issues where root cause found and corrective action implemented.

Verify that problem solving used efficiently, all the core "6 steps" applied, specially that real main root cause found and action implemented against the root cause.

If no customer complaint issued verify via an internal or sub-supplier issue.

Check a Drill Deep (5 whys), main systematic root causes found.

Ask people for examples how they are using Lessons Learned system.

Check 6th step of problem solving (Institutionalize) via examples of point FR4.
Check Drill Wide Matrix or 7&8th step of 8D of last customer complaints.



Problem Solving, what are we searching for?

Item	Requirement	#Criteria	Criteria requirement
FR4	<p>Voice of the customer is part of the strategy of the plant.</p> <p>Customer IT systems are regularly checked in order to provide escalation processes</p>	FR41	AMADEUS system: Follow-up and escalation are in place and managed in accordance with FR24 criteria.
		FR42	Neologicistic and "MLP" are knowned by the supplier.
		FR43	Use of PSA system "SPOT" --> updating of QSB+ annual self-assessment, updating of MMOG/LE. Updating of certification ISO/TS in IATF systems.
		FR44	MADIG system : Follow-up and escalation are in place and managed

Criteria of Requirement

[1 – pages 74](#)

[2 – page 74](#)

[3 – page 74](#)

[4 – page 74](#)

[Auditor Hints – page 74](#)

Prev. Requirement

Next Requirement

FR4 : TO BE PROVIDED



Fast Response effectiveness, what are we searching for ?

Item	Requirement	#Criteria	Criteria requirement
FRE	Targets are defined and followed to ensure effectiveness of fast reaction for external and internal issues.	FRE1	Measurement of efficiency of action plan (Non nominal issues, escalation, tracking of closure date of action plan) is tracked with FR track board.
		FRE2	Tracking of customer complaints by causes is managed.
		FRE3	Follow-up of respect of response deadlines in AMADEUS systems (QAN and QEC) is ensured
		FRE4	In case of situation "Red Bidlist", a specific road map is defined and established, with the support of Supplier Corporate if necessary.
		FRE5	Costs of poor quality (including indirect costs: sorts,...) are followed.

Criteria of Requirement (to be updated)

[1 – page 76-83](#)

[2 – page 76-83](#)

[3 – page 76-83](#)

[4 – page 76-83](#)

[5 – page 76-83](#)

[Auditor Hints –page 84](#)

Prev. Requirement

What goes wrong

Performance Metrics

(Example)



- No lost workday cases
- Lost workday cases occurred



Performance Metrics

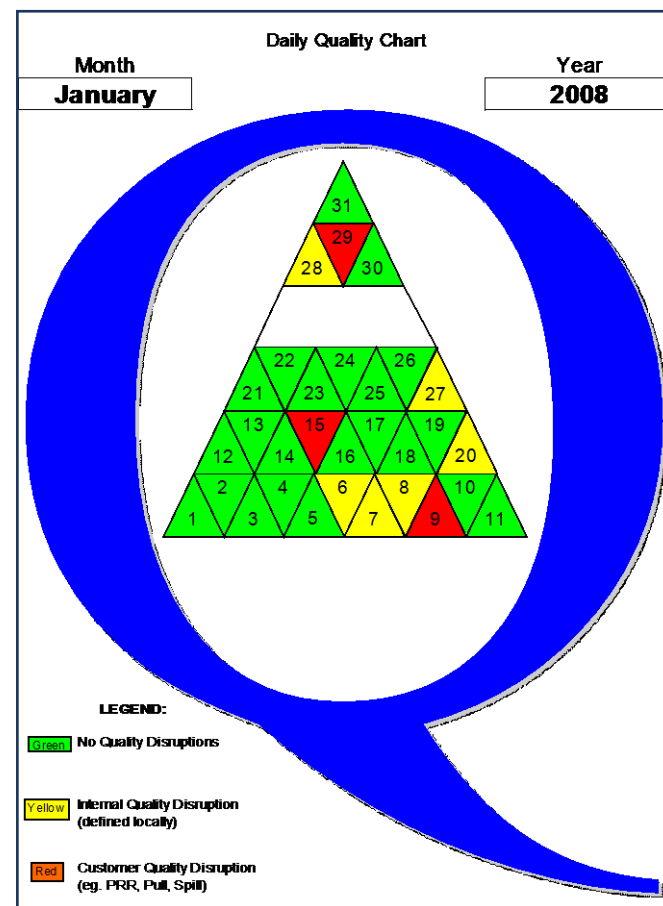
(Example)

Leadership shall ensure that Fast Response process is effective and quality status is displayed.

How do you know the Fast Response process is working?

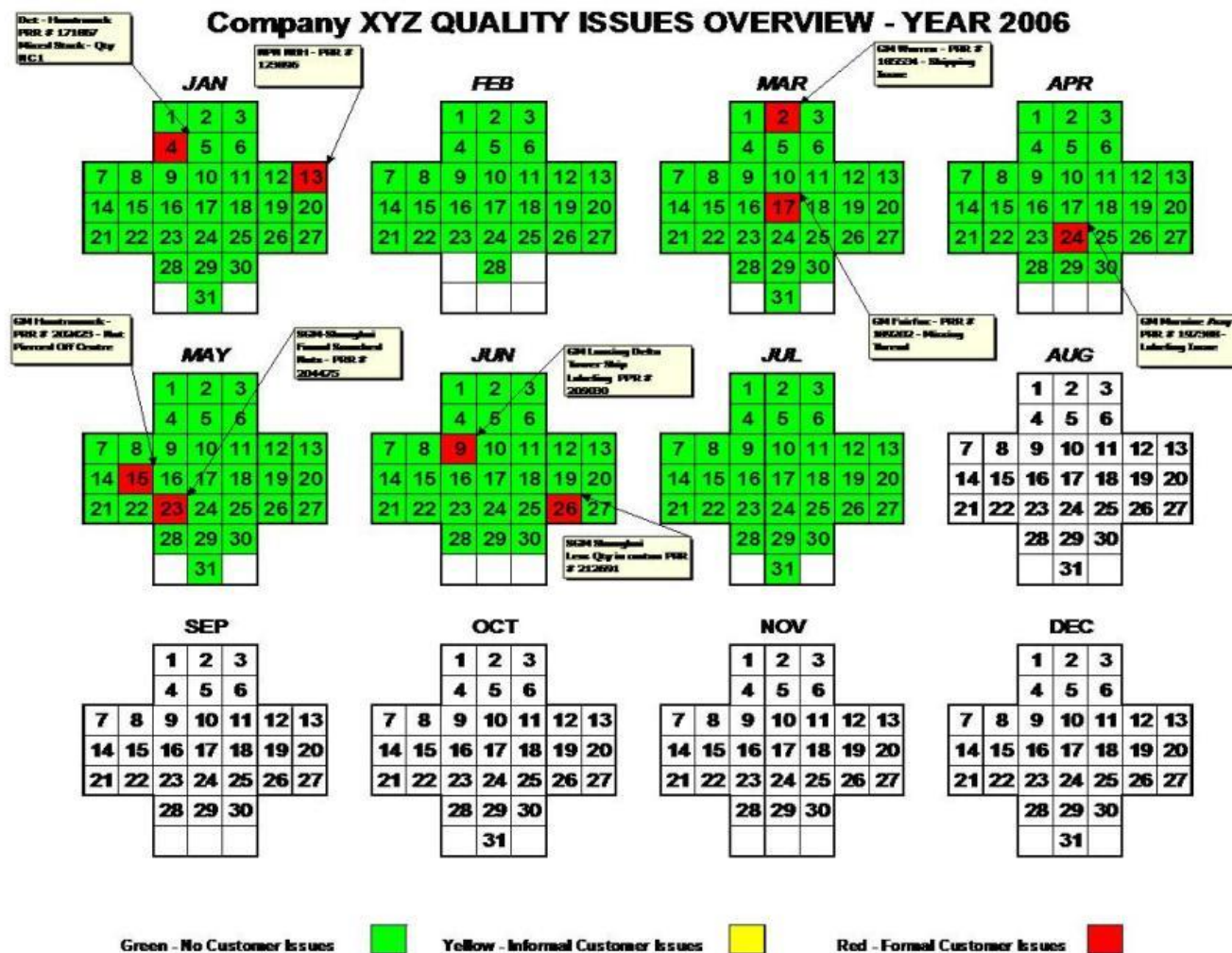
Any type of visual management can be used such as a calendar, trend charts which represent at minimum monthly data:

- The number of days Red or Yellow
- Number of issues Closed
- Average days open for closed issues



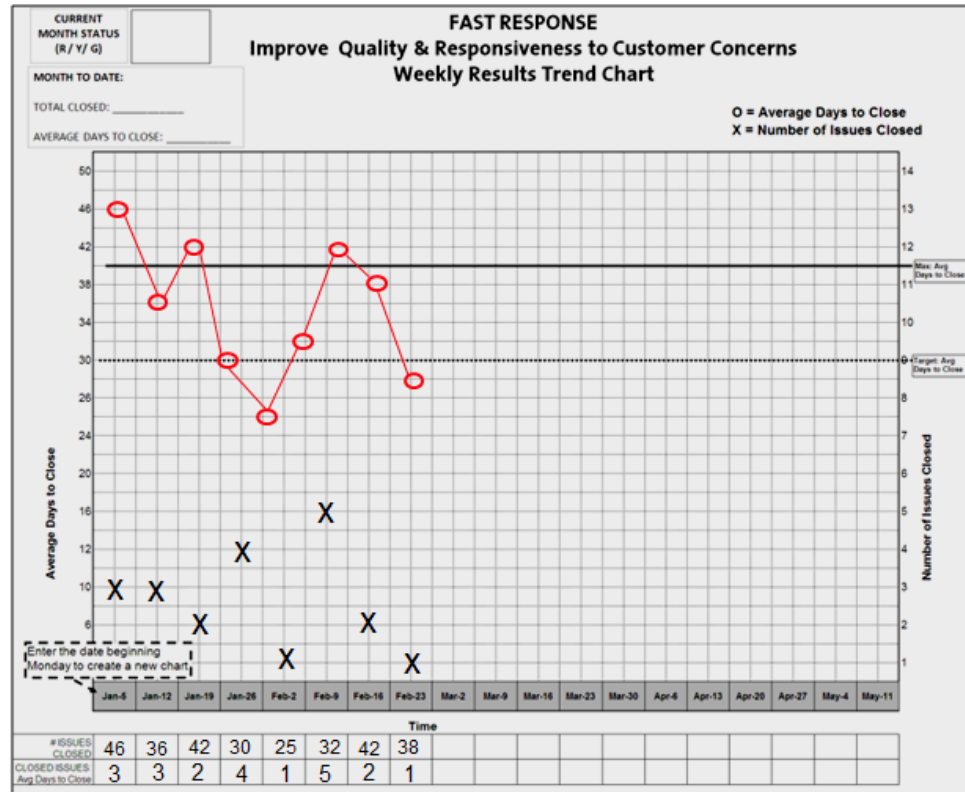
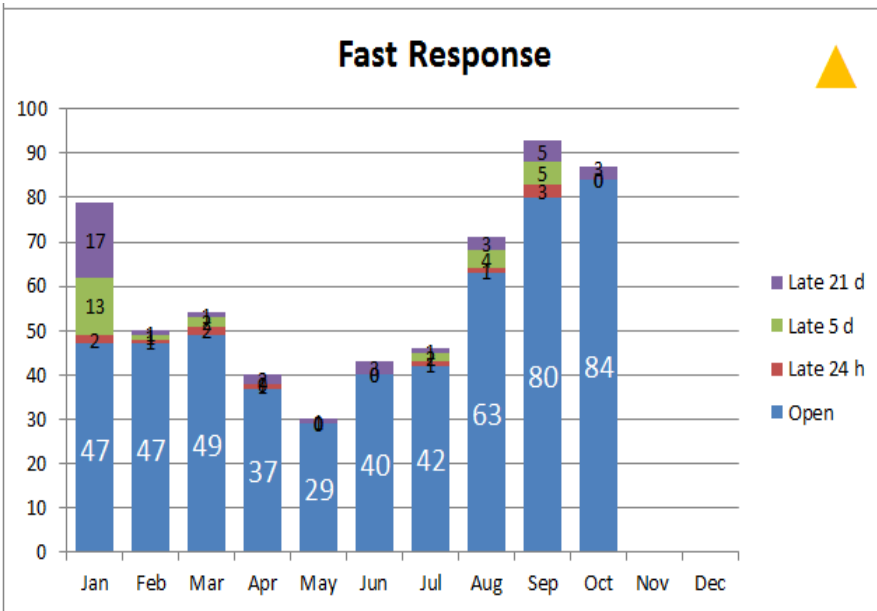
Performance Metrics

(Example)



Fast Response Performance

How do you know the Fast Response process is working effectively?



Repetitive Issue

ABC Company - Quality Fast Response Tracking Board

EXIT CRITERIA STATUS KEY	
R	1) Required but not initiated 2) Target Date Missed
Y	Initiated but not complete
G	Complete
N/A	Not Applicable

Forecasted Closed date	Actual Closed Date	Time to close	OVERALL STATUS (R/Y/G) <small>Open > 30 Days=R</small>
25-May	25-Jun	70	G

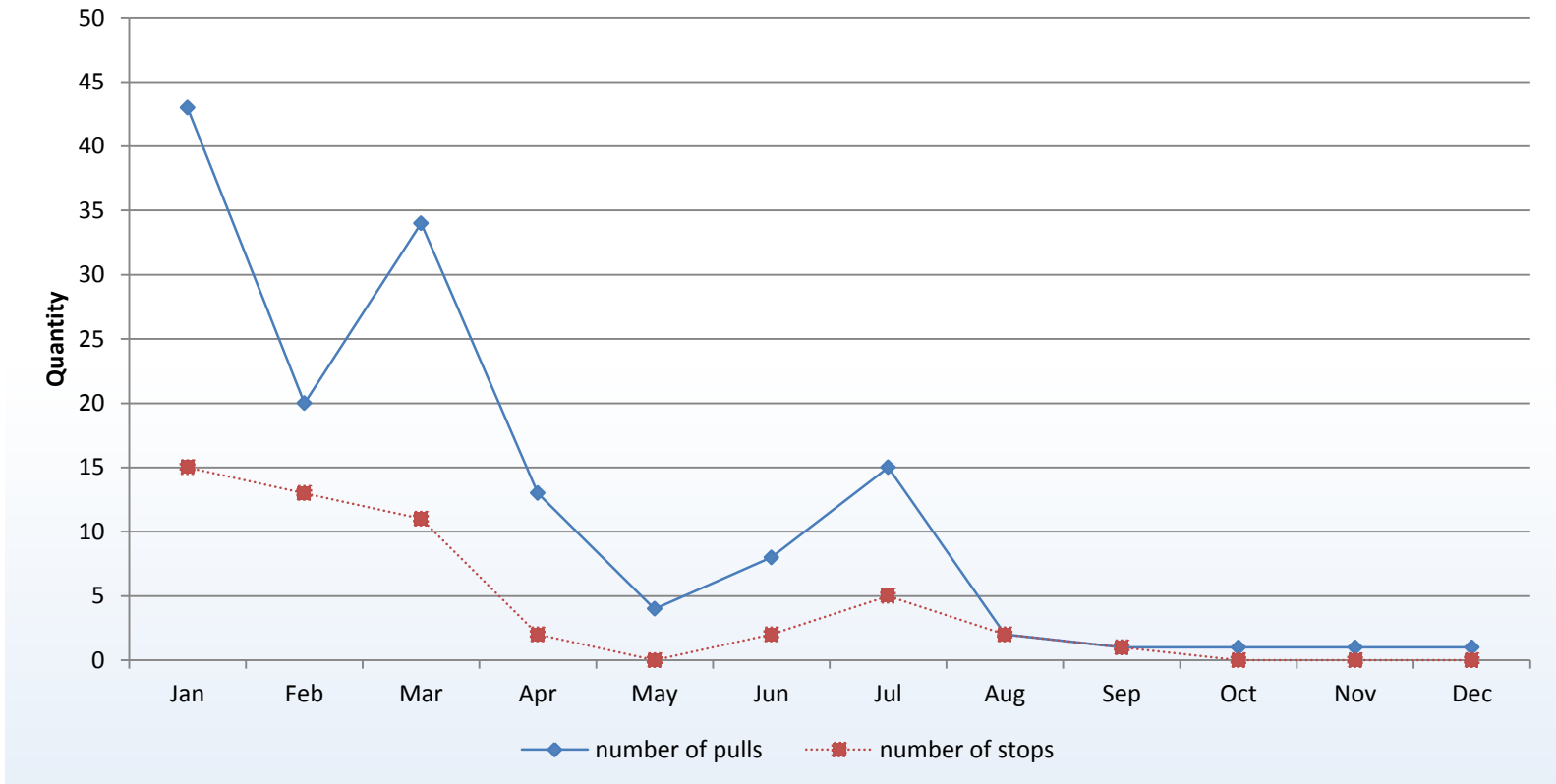
ITEM #	Date Opened	Part & Part Number	Program Name	Customer	Issue Description	Repetitive Issue?	Owner	Next Report Date By Owner	Status & Date Green								Action Plan / Countermeasure	Forecasted Closed date	Actual Closed Date	Time to close	OVERALL STATUS (R/Y/G) <small>Open > 30 Days=R</small>	
									24hs	7d	14d	34d	35d		40d							
1	4/15/13	Bracket 93345678	Cruze	GM	Lack of nut	Yes	Carlos	16/04 22/04 23/04 29/04 29/05 19/06 20/06 25/06	G	G	G	G	G	G	G	G	G	1 - Delay in the root cause identification Item in CSL 2 - Lead time to import a sensor from Japan - 30 days Keep item in CSL	25-May	25-Jun	70	G



Column indicating if the issue is repetitive or new.

Performance Metrics

Andon - Report



PRR reduction activities

Location with a high level of customer complaints (>24 complaints in last 12 months) shall have a special team created to work on complaints.

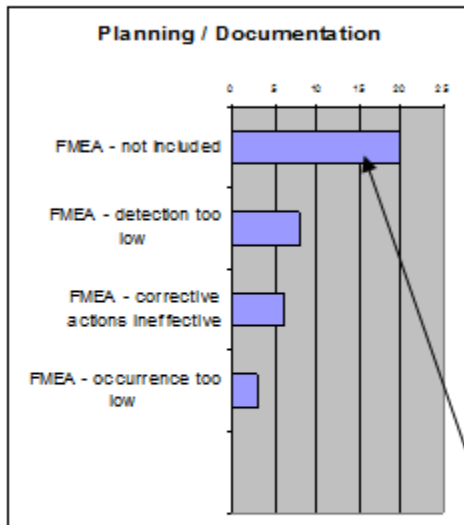
Expectation against PRR reduction team:

- cross functional team
- identify systematic root causes of issues
- define action plan and regular follow up
- assign champion from the team for each new customer complaint
- implement verification station(s) for all the customer issues and high risk failure modes

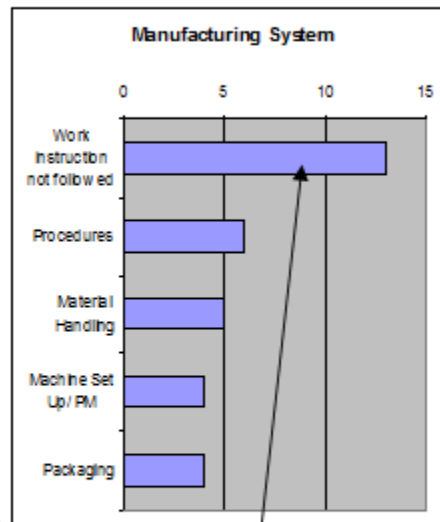
PRR reduction activities

Example of identify systematic root causes of issues

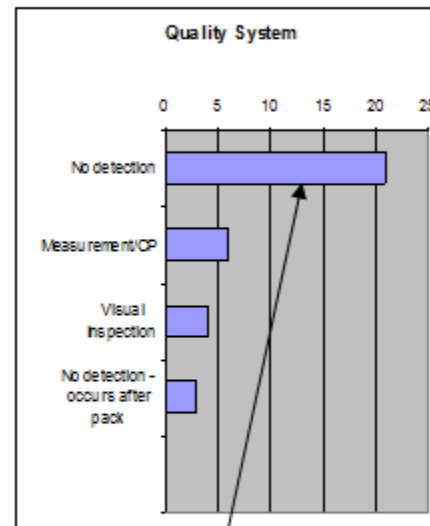
Predict



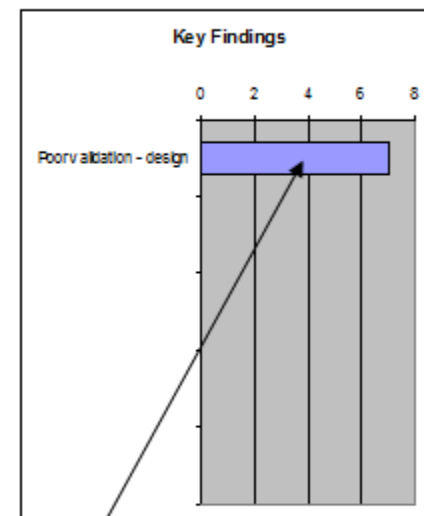
Prevent



Protect



Key Findings



The TOP Bar of each Pareto represents the Systemic Issues which will require actions



Auditor hints

Prior to audit check number of last 12 month PRRs. If higher than 24 (do not count line accumulation ones) or trend is significantly negative, special PRR reduction team has to be established.

Check last customer complaints whether due dates kept. If not reasons for delay, actions need to be addressed.

Check red items percentage, evaluate actions addressed to eliminate roadblocks.

Evidence of periodical review of average closing time for each exit criteria and set action plan for any deviation.



What goes wrong ?

- Fast Response Meeting was started but stopped, because:
 - It became a problem solving meeting (too long)
 - No daily issues reported (-> weekly -> wind up)
 - Issues remained open too long because of no regular feedback
- Practical Problem Solving Form or equivalent is not used
- No clear definition of what is a „significant issue”
- Problem solving in office not at Point of Cause
- Missing whys (Drill Deep) to find main root cause
- Read across (Drill Wide) is not completed
- Lessons Learned database available, but not in use