Creation Technologies

BEST TOTAL SOLUTIONS. LIFETIME PARTNERSHIPS.

8D Training

Date: June 30, 2020

creation TECHNOLOGIES

Structured Problem Solving
8D-Root Cause Analysis
And
Corrective Action Implementation

Creations Mission Statement:

We provide the solution of choice for customers requiring a focused and responsive design and manufacturing partner for medium-volume, complex electronic products.

Creations Expectations

We have developed the following training reference to explain our expectations for corrective actions and give guidelines to ensure corrective actions are robust.

This document is for reference only and does not supersede official communication.

Quality Rejection Process: Flow

- ✓ Nonconforming material is identified.
- ✓ Internal CAPA Corrective Action Preventive Action (CAPA) is generated and dispositioned.
- ✓ Supplier's Percent Lot Accepted Quality Metric will show reject.
- ✓ Buyer sends Supplier Corrective Action Request (SCAR) letter accompanied by parts for rework/analysis or supporting documentation such as pictures.
- ✓ Supplier to initiate an immediate containment process of all potential nonconforming product recommended within 48 hours from initial contact by Creation and a plan to meet immediate production needs.
- ✓ Supplier to submit SCAR response to buyer within 30 days from receipt (within 2 weeks if reject was found at Creations Customer).
- ✓ Supplier Corrective Action Request (SCAR) is reviewed.
- ✓ We will request to see corrective actions in use during visits and will review and discuss systemic issues quarterly.

Quality Rejection Process: Accounting

Accounting pays for accepted parts only!

Receiving Inspection rejections:

- Parts returned without payment
- Line item added to the PO for rework/replacement
- Re-invoice and payment issued after acceptance of parts

Manufacturing, Assembly & Testing rejections:

- Parts returned as Creation-owned material
- Vendor Quality purchase order for repair/rework/replacement
- No invoicing required

Quality Rejection Process: Communication

- Your Buyer is your point of contact.
- You will receive a Supplier Corrective Action Request (SCAR) from your buyer.
- Please submit your response directly to your buyer via email attachment.
- Contact your respective Quality contact or Supplier Quality Engineer (SQE), with questions or requests for additional information.
- Copy your Supply Chain contact on ALL communication!

Quality Rejection Process: CAR Form

- Our standard is the Global 8D format.
- You may use your systems format for Root Cause Analysis.
- Ensure your response addresses all sections of the Global 8D Process. Regardless of what form is used.
- You will receive an email from your buyer with our form and the Supplier Corrective Action Request (SCAR).
- All responses are to be electronically communicated

Supplier Corrective Action Request-8D Response: Example Template

Supplier Corrective Action Request / 8D-Report

Problem No	Supplier				Product Family	Product code
	Customer reference			Quantity reported	Receive date	Quantity returned
D1 Team members (initials/name)			Serial Numbers			
D2 Description of problem					Assigned to	Effective Date
				Customer notified		
D3 Interim Containment actions						
				Customer notified		
D4 Define the root cause						
				Customer notified		
D5 Choose and verify permanent corrective actions						
				Customer notified		
D6 Validate permanent corrective actions						
				Customer notified		
D7 Prevent reoccurrence of the problem						
				Customer notified		
D8 Congratulate the Team						

	Initials	Date	Update	N / Y / NA
SCAR received at Creation			FMEA	
SCAR Approved			Control plan(s)	
PPAP Required			Process Flow	
PPAP Approved			Inspection Criteria	
Concern closed at Creation			Work instruction(s)	
Concern closed internal			Procedure(s)	

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Global 8D Tutorial

- Basic problem solving and communication:
- The next few slides detail our expectations for a process/data driven problem solving approach.
- If you require assistance, please contact your respective Supply Chain, Quality or SQE at Creation Technologies

Containment

- ✓ Stop production and look.
  - – Do you see this problem in your plant?
    - Ask the employees if this problem has ever occurred?
    - Sample parts, verify your process, check your records and stock.
  - – Contain all stock.
    - Is there danger of shipping contaminated stock?
    - Sort backwards from the shipping dock to where the issue occurred.
    - Verify that all parts meet the drawing specifications.
  - – Communicate the results!
    - Let us know what you found.
    - Help us determine the magnitude of the problem.
    - Do we have to make a disclosure to our Customers?
    - Use a data driven process.

48 Hour Response Communication recomended

- Creation recommends that you have the nonconforming issue contained within 48 hours from initial notification:
  - Recognition of the issue?
  - How many parts are in transit that might be non- conforming?
  - How many non-conforming parts do you have at your facility?
  - Do we have measurement correlation?
  - How many total parts at your facility?
  - How are non-conforming parts to be identified?
  - How are conforming parts identified?
  - Discuss next steps.

Data Driven Process

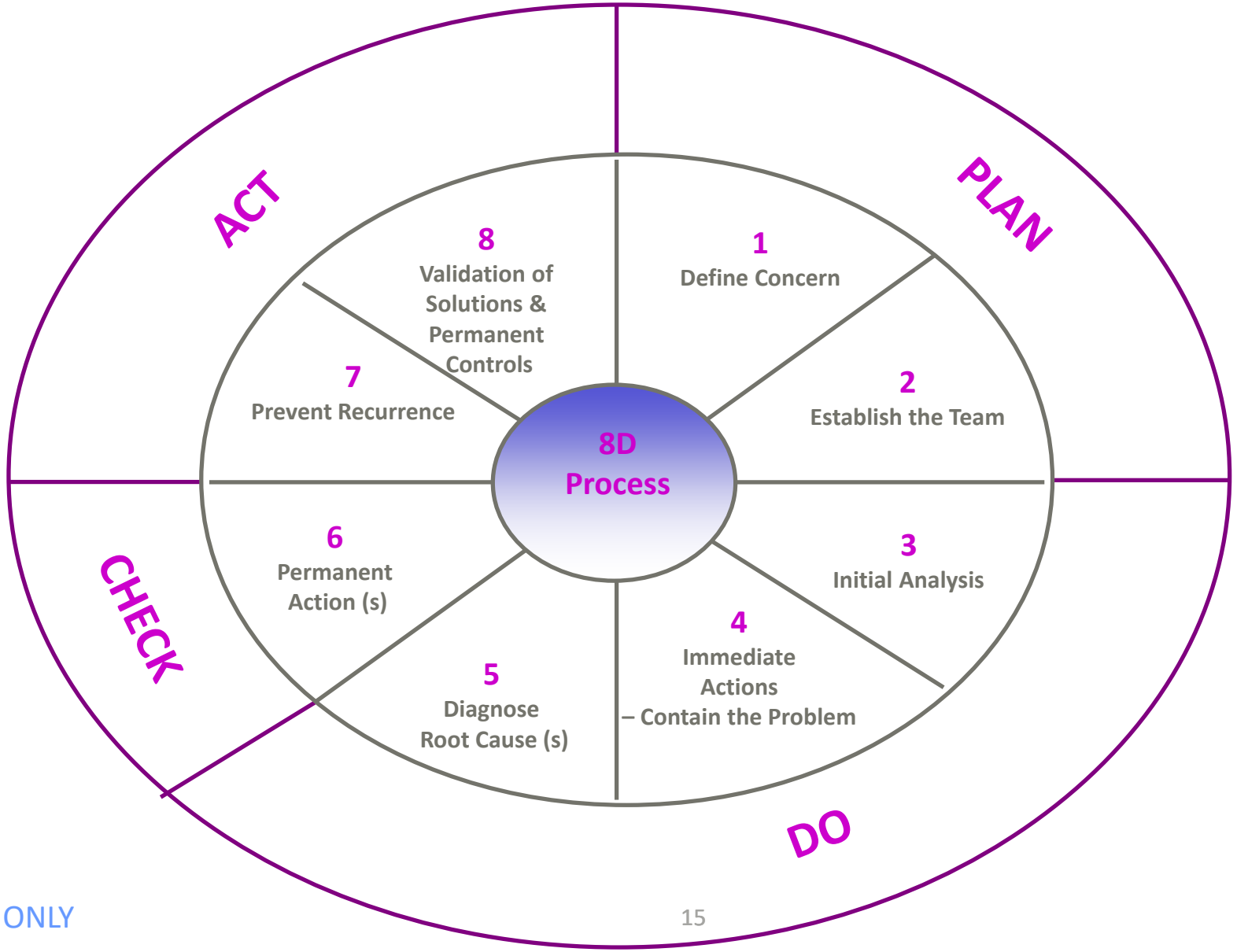
- Structured Problem Solving
  - Have you identified the real problem?
  - Did you contain it?
  - What's the root cause?
  - Did you validate it?
  - Do you have a fix?
  - Did you verify the fix?
  - Do you have a plan to monitor the fix?
  - Do any other parts run through this process?
  - Have the sub-tier or processors been notified?
- What ever process you use, it must be a formal approach

Data Driven Process

- Creation Technologies standard is the Global 8D Process.

- You can use whatever format you want to determine root cause…
  - 8D
  - 7 Step
  - 5 Why
  - PDCA (Plan, Do, Check, Act)
  - DMAIC Process (Define, Measure, Analyze, Improve, Control)

Global 8 D Process



Global 8D Process

D1 Problem Statement

– Detailed description of why the part is unacceptable.

– If the problem description differs from the customer or supplier definition, both shall be recorded and identified accordingly.

– What is the print specification?

– Did we have a print violation? PCN?

– Boundary samples? (for visual, sensory defects) – Reference to customer/ industry standard?

– Have you answered: What? Where? When? How Much/Many?

Global 8D Process

D2 Form a Cross-Functional Team

– Not a team of one!

– A cross functional team.

– Team members should be appropriate to the problem you want to solve.

– A Team Leader is “assigned to” each corrective action.

Global 8D Process

D3 Containment/Interim Corrective Action

– Use your Containment Tools from slide 10.

– Use 48 hour Response Tool Questions from slide 11.

– Don’t keep shipping suspect stock unless special authorizations are made to accept stock in the nonconforming condition via the PCN or ECN process.

– No verbal confirmation, this communication must be in writing as a P.O. amendment.

– Can parts be reworked at Creation or at your facility, or do they need to be replaced?

– Develop a plan to meet immediate production needs.

Global 8D Process

D4 Root Cause: Why Made and How Escaped?

– There are at least three root cause levels:

- The specific root cause(s) that resulted in the problem. Why Made?
- The systemic root cause - the design or manufacturing system that allowed the specific root cause(s) to occur. Why Made?
- The root cause that allowed defect(s) to escape. How Escaped?

– What has changed? (machine, material, method, personnel, supplier, instructions, shift, print, gages etc.).

– Can you turn the problem on and off? Can you create the condition and remove the condition by adjusting the defined root cause(s)?

– Have you verified the root cause(s) with data?

– Did you use a data driven process such as 5 Whys & 5 How's?

Root Cause: Operator Error

Creation Technologies does not accept “Operator Error” as a root cause.

– 5 categories to focus on when you think “Operator Error” is the root cause:

- Work Station Layout / Visual
- Ergonomics
- Documentation and Training
- Tools and Machine/Equipment Assist
- Cognitive and Attention or Perception

Global 8D Process

D5 Permanent Corrective Action

– Did we fix the problem?

– Do we have resources to correct the issue?

– Did we contain parts until the issue was resolved?

– Did we test the fix?

– Does our customer agree with the solution?

– What are short term and long-term changes to permanently fix the issue.

– Updated documentation should include:

- Part Travelers
- Prints, drawings, or sketches
- Inspection data

Global 8D Process

D6 Validate if your Corrective Action Works

– Did you test or validate your fix?

– Did you run trial parts through the system?

– Have you used data to test your fix?

– Prove that you have identified the correct root cause(s) and that the permanent corrective action taken will fix the problem forever.

– Define the validation plan (error proofing, capability study, statistical analysis, sorting activity, and/or experimentation).

– Establish a clean point by lot number, serial number, date code and date.

Global 8D Process

D7 Verify and Monitor Ongoing Corrective Action Effectiveness

– Use your tools. LPA (Layered Process Audit) or internal audits. Is the fix still in place?

– What have you done to ensure your fix will be used on future production runs?

– Are procedures being followed?

– Does the system really work, or did we do a great job of window dressing?

– Include a read across to similar parts and processes.

– Standardize the “fix.”

– Creation may audit a SCAR and may do an onsite audit.

Global 8D Process

D8 Congratulate the Team

– We appreciate your team's proactive response and communication on this important issue.

– Thank your team, encourage prevention, and learn from this process.

– Establish a "Lessons Learned" database and close the loop with design engineering, quality, operations, manufacturing, and supplier management also include other departments and locations.

Quality Rejection Process: Creations role

- We write a Supplier Corrective Action Request (SCAR) and assign supplier responsibility with the information available at the time.
- We may change responsibility due to new information.
- We want to work with you on root cause analysis and irreversible corrective action.
- Our goal is to prevent future problems, waste and cost of defective product while limiting all our exposure to the end customers.

All SCAR Counts

- We do not distinguish between major and minor SCARs. Any issue will hold up customer deliveries, including packaging and paperwork rejects.
- We do categorize SCARs to help identify systemic issues.
- A “Use as Is” disposition does not mean that the issue is not important or ok to ship again.
- When possible, we will return parts to you. If we cannot, we will do our best to send digital pictures or other supporting information.

No Repeat Issues

- The true metrics of successful corrective actions are no repeat issues and prevention of similar issues.

- Corrective actions will be assessed on their ability to help us avoid future problems.

- Corrective actions will be verified by a Creation Quality member or SQE / designated representative upon next visit / audit at your facility.

Structured Problem Solving

8D-Root Cause Analysis and Corrective Action Implementation

Training Complete

Thank You

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