



# 101 TIPS & TRICKS TO IMPROVE YOUR ROOT CAUSE ANALYSIS

**ARMS**  
RELIABILITY

# GATHERING INFORMATION

- **1** To really understand a problem, you need plenty of evidence. And you need it as soon as possible.
- 2** As soon you identify that the problem or incident requires root cause analysis, you should trigger an urgent search for more information.
- 3** Assign a person to the task of collecting as much information relating to the incident as possible.
- 4** Depending on the incident you are investigating, you should collect things like the maintenance history, reports, photos, design specs, eye witness statements and OEM recommendations.
- 5** The more information and evidence you have, the better off you'll be. There is a large capacity holding area in RealityCharting® where info can be stored.



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- 6** By acting quickly, the quality and quantity of the information you collect will be more consistent. A delay of hours – or, even worse, days – will negatively impact on the quality of the information you gather, and hence the subsequent analysis could be hindered.
- 7** Protect your information by cordoning off an area. Don't allow people to touch or interfere with important evidence.
- 8** Get statements from everyone who saw or had anything to do with the problem.
- 9** Don't delay - A delay in gathering statements allows people to think about and rationalize what they saw.
- 10** Assign one person to the job of collecting evidence.

11

Don't throw evidence away when cleaning up after an incident... **make sure you save it!**



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# ASSEMBLING THE TEAM

**12** The team may need to be available for a significant period of time – so you'll need the backing of management.

**13** Get management support to bring the people you need to the team, for as long as is needed.

**14** Without the right people, your investigation will lack the specific detail you need – resulting in a more generic report.

**15** With the right people on board, your analysis will dive sufficiently deep to arrive at a workable solution.

**16** You want people who bring experience across different – yet relevant – job roles and people who have direct knowledge of the incident.

17

Pick people with open minds who are willing to listen, to contribute and will help the investigation.



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**18** **These people should possess specific, relevant understanding of the issue - which will help you to arrive at a specific solution.**

**19** Assign a skilled and experienced facilitator who is adept at controlling a group and keeping the investigation on track – without bias.

**20** **Be wary of appointing a subject matter expert as they may steer the group in a particular direction and who is going to argue with the subject matter expert?**

**21** The number of people should reflect the complexity of the incident. As a general rule, it is difficult to facilitate groups greater than 10. If the group size becomes too large, consider splitting the group and having two sessions.

**22** **Using team members that have been trained in Apollo RCA is more efficient than working with untrained team members. Try and achieve a group with at least 50% that have been trained.**

**23**

You may need an independent expert to join the team.



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# CONDUCTING THE ROOT CAUSE ANALYSIS

**24** During the RCA, the facilitator should be inclusive, ask all the questions that need to be asked, and pursue all causal pathways to their logical conclusions.

**25** Your goal is to conduct the RCA as soon as possible after the incident or accident occurs – so that the information is still fresh in people’s minds and remains untainted.

**26** Appoint a time and place for the investigation to occur, as soon as the required group can be convened.

**27** Set basic ground rules around respecting others’ opinions and encouraging an open dialogue.

**28** The first task after information gathering is to **Define the Problem**. Use **Quick Reference Cards** and/or the **RealityCharting®** wizard to guide the investigation through the steps.

**29**

When choosing an appropriate starting point for your investigation, consider your options carefully and then assign a name that will clearly articulate the problem you intend to solve – one that also echoes the significance of the problem itself.



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**30** Don't be afraid to change your starting point at any time. Remember: You are never wrong when choosing a starting point as all causes are related. They are simply at different points in the timeline. Your choice may reflect your role or responsibility within the company.

**31** Use RealityCharting® to document the Problem Definition. Include information about when and where it happened, and clearly articulate the significance of the problem.

**32** The significance of the problem will determine the time and resources allocated to resolving it.

**33** The problem or incident's significance will also constitute your business case that you present to management for endorsement of your recommendations.



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# CONDUCTING THE ROOT CAUSE ANALYSIS

**With the help of the entire group, you will gain a clear picture of the problem at hand. At the same time, you will see what is unknown – and thus what requires further investigation.**

If you do end up with a large number of possible solutions, consider how to achieve the desired outcome with the least amount of time, effort, or money.

**Establish a set of criteria by which you can objectively judge which are the better solutions.**

Follow the RCA process. As soon as you recognize that the group is getting off track use the ‘square one loop’ to refocus or redirect the group.

**You don’t have to be the subject matter expert, so don’t profess to be one.**

Teamwork is key – value all participants’ contributions.

**Keep asking “why” or “caused by” questions for as long as you need to.**

Don’t stop too soon with your questioning.



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# IMPLEMENTING THE SOLUTIONS

**42** Be clear about who is responsible for each corrective action. You don't want to create the opportunity for people to be able to pass the buck with "I thought Bob was going to do it".

**43** Have a mechanism in place by which the implementation of corrective actions can be tracked.

**44** Give ownership of a solution to an individual, not a group or department.

**45** Assign a due-date for each corrective action.

**46** Support people in their efforts to implement corrective actions.

**47**

**Make sure you follow up on each corrective action**  
– check back with the individual responsible, to make sure that progress is being made.



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# MEASURING THE SUCCESS OF THE CORRECTIVE ACTIONS

**By quantifying the success of your efforts, you are unequivocally demonstrating the value of RCA.**

By talking in figures – about increases in production tonnes, or a decrease in downtime, or dollars saved – you will be able to demonstrate the success of your actions.

**By substantiating the success of corrective actions, greater credibility is given to the investigation process and any future investigations will receive even more support from management teams.**

Identify which key performance indicators are being used to measure success.

Use before and after figures to measure effectiveness, such as number of incidents, cost impact of incidents, and mean time between incidents.



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# ADVERTISING YOUR SUCCESSES

**53** By demonstrating how much value you've brought to your company, it will be easier to bring the right people to the investigative team next time around.

**54** Promoting your results will engender management support for the RCA process and the process itself will gain favor and support from your colleagues.

**55** Use RealityCharting® to share charts and produce reports in pdf format for sharing. Sharing the report will also help the entire business unit to learn from the incidents or accidents that have occurred.

**56** Put the results on a poster in a prominent position.

**57** Share the full report with all relevant stakeholders.

**58** Keep reports short. RealityCharting® has a report generator to produce reports in a consistent format. Charts can be shared through RC files or produced as pdf in compact view for attaching to reports.

**59**

Quantify and display your successes in a way that is easy for others to understand.



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# TIPS FOR THE RCA FACILITATOR



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# TIPS FOR THE RCA FACILITATOR

60

**Use RealityCharting® to capture information and display to group and share. Have large white boards and lots of them. In the absence of whiteboards, use walls or windows with butchers paper. Stock up on markers and post-it notes. In other words, make sure you've got plenty of room – and the tools – to write down all ideas coming from the group.**

61

**The timeframe:** Stipulate clear timeframes for the RCA, including the start time, breaks and finish time.

62

**The rules:** Set expectations around usage of mobile phones and email. It is also important to have rules around the discussion itself – such as “no put-downs”.

63

Encourage an “open” discussion and allow all information to be brought forward.

# TIPS FOR THE RCA FACILITATOR

64

**Don't argue about ownership of information – what matters is that it was brought to light.**

65

Focus on “why”, not “who”. This reduces the emotion in the room and minimizes conflict or argument.

66

Sometimes the people directly involved in an incident or accident may be the “right” people to have in the room. But if there are other agendas or emotions at play, then leave them out.



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# TIPS FOR THE RCA FACILITATOR

67. The RCA team should be genuine seekers of effective solutions, who share a goal of preventing similar events happening again.
68. **Be wary of inviting senior managers into the group – they could hinder open and truthful dialogue. It may be better to give senior managers a separate review and opportunity to challenge so that they stay engaged in the process and buy-in to the solution.**
69. While people don't necessarily have to agree with each other, it's important to acknowledge that everyone is entitled to their opinion.
70. **Capture all input and write on sticky notes or in the holding area. The chart will determine whether the causes are relevant.**
71. If there is any confusion about a person's comment, ask them to explain it again. If there is still no agreement, then capture both sides of the story and let the evidence prove one or the other.
72. **Don't tolerate an argument or a contest of wills – let the evidence determine the merit of following a particular cause path.**
73. Use all of your non-verbal skills to assist you in controlling the group. Use direct eye contact and a hand gesture to indicate whom you wish to speak next.

74. **Be the traffic cop.** With a simple hand signal, you can control the person who is impatiently wanting to say something, by showing them an open palm that says "stop". This will let the other person finish what they were saying.



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**75** RESPECT EVERYONE'S RIGHT TO BE HEARD, AND REMEMBER THAT EVERYONE IN THE ROOM HAS A REASON FOR BEING THERE. ENSURE THEY ALL HAVE THE OPPORTUNITY TO SPEAK.

**76** USE YOUR BODY AS A MEANS OF DIRECTING THE FLOW OF TRAFFIC. TURN YOUR BODY TO FACE SOMEONE IN THE GROUP WHOM YOU WISH TO SPEAK.

**77** THE BETTER YOU CAN CONTROL THE GROUP, THE MORE EFFECTIVE YOUR INVESTIGATION WILL BE.

**78** IF THE FOCUS STRAYS, THEN IT'S A GOOD IDEA TO GO BACK THROUGH THE CHART – STARTING AT THE BEGINNING – TO GET EVERYONE BACK ON TRACK IT'S CALLED THE 'SQUARE ONE LOOP' AND IT'S THE BIGGEST TOOL IN YOUR CONTROL BOX.

**79** THE FACILITATOR SHOULD BE THE PRIME-MOVER DURING THE RCA, CONSTANTLY ASKING QUESTIONS – ALONG THE "CAUSED BY" OR "WHY" LINES – TO MAINTAIN FOCUS.

**80** USE CAUSAL ELEMENTS VIEW OF RC TO NARROW FOCUS WHEN USING REALITYCHARTING®. THESE QUESTIONS DEMAND RESPONSES AND KEEP EVERYONE ENGAGED, INVOLVED AND ON-TASK.

**81** YOUR QUESTIONS WILL ALSO PREVENT THE GROUP GOING OFF ON TANGENTS, WHICH CAN LEAD TO ALMOST ANYTHING BEING ADDED TO YOUR CAUSE AND EFFECT CHART.

**82** IF SOMEONE IS HAVING A SIDE CONVERSATION, THEN POSE THE NEXT QUESTION TO THEM. PUT THEM IN THE HOT-SEAT. IF YOU DO THIS CONSISTENTLY, YOU WILL DEMAND THEIR ATTENTION AND ALSO THE GROUP'S ATTENTION.

**83** BEING ANIMATED OR DYNAMIC WHEN YOU FACILITATE IS ALSO A GREAT WAY TO MAINTAIN FOCUS.



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84 Modulate your voice to keep people's attention.

85 Avoid a boring monotone.

86 Remember, if the facilitator is quiet then it follows that the group is also quiet. This is not what you want.

87 Schedule regular breaks – a few minutes on the hour and 10 -15 minutes after 2 hours. This will help to ensure that the energy levels in the room remain high and also allow people to check emails and phone messages. This is important in maintaining the focus of the group.

88 Facilitating an investigation doesn't have to be stressful and difficult. You can actually say, "I don't know why this happened. You're all here to work out what happened. I'm just the facilitator!"

89 In many ways, having an independent, unbiased facilitator can lead to a more balanced investigation.

90 As the facilitator, all you really need to know is the process. This process is your safety zone. If you feel like you are struggling or losing control, go back to the process. Go back to the start, run through the chart and refocus everyone's attention on a particular section of the chart and ask "why did this happen?"

91

If a member of your group is a "**storyteller**", then listen carefully to what he or she is saying and, the first time you hear the answer to your "why" question, write it down and immediately ask why this 'cause' happened. This takes you right back into the process and stops the storyteller from consuming so much time.



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92 At some point, you as the facilitator will decide the stop point – but be wary that one of the most frequent errors made by new facilitators is to stop asking “why” too soon.

93 Record in RealityCharting® and use Rules Check to improve quality. Once the information has been recorded get the group to help you organize the information and then challenge the logic of the way that information is linked together. Your cause and effect chart needs to make sense or it risks being challenged and disregarded by those who look at it.

94 Don't let the investigation get bogged down in detail too soon. Get the first pass of the chart out and then refine it.

95 A timeline is often a good place to start – ordering key events according to “when” they happened. Such a timeline does not address the question of “why”, but it could certainly initiate a more comprehensive search for causes.

96 Your ears should be like radar, picking up on all signals. Don't miss a response while recording another.

97. Being a good listener means keeping an open mind, suspending judgment, and maintaining a positive bias.
98. **Have someone use RealityCharting® in parallel so the chart is built as you go. Delegating the recording of information could be useful if it will help you to listen more effectively.**
99. Remember...you don't hold all the answers. A good facilitator plays dumb whilst still directing traffic and working the cause and effect paths to a reasonable stop point.

100

**It's a great idea to debrief the process, and your role in the process, with some of the people involved. They will no doubt provide valuable feedback that will help you improve.**



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**101**

Finally, have faith in the RCA process, and learn from each experience to build on your skills as a facilitator.



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