

Creating the Environment for Root Cause Analysis (RCA) to Succeed: The Reliability Performance Process (TRPP)

TRPP© is a training model developed by Reliability Center, Inc. (RCI). It encompasses not only the elements about specific training objectives necessary to be successful, but it also outlines the specific requirements of the Executives/Management, the Champions and the Drivers who are accountable for creating the environment for RCA to be successful.

We will be outlining specific information from TRPP that is pertinent to creating the environment for RCA to succeed.

THE ROLE OF EXECUTIVE MANAGEMENT IN RCA

Like any initiative trying to be implemented into an organization, the path of least resistance is typically from the top down, relative to the bottom up approach. The one thing we should always be cognizant of is the fact that no matter what the new initiative is, it will likely be viewed from the end-user as the "program-of-the-month". This should always be in the back of our minds in developing implementation strategies.

Our experience is that the closer we get to the field where the work is actually performed, the more skeptics we will encounter. Every year a new organizational "buzz" fad emerges and the executives hear and read about them in trade journals, magazines and business text. Eventually directives are given to implement these "fads" and by the time it reaches the field, the well-intentioned objectives of the initiatives are so diluted and saturated from miscommunication that they are viewed as non-value added work and a burden to an existing workload. This is the paradigm of the end user that must be overcome to be successful at implementing RCA.

Oftentimes when we look at instituting these types of initiatives, we look at them strictly from the shareholders view and work backwards. Do not get us wrong, we are not against new initiatives that are designed to change behavior for the betterment of the corporation. This process is necessary to progress as a society. However, the manner in which we try to attain the end is what has been typically ineffective.

We must look at linking what is different about this initiative, from the perception of the field or end user; as opposed to others we have tried and not been able to succeed. We must look at the reality of the environment of the people who will make the change happen. How can we change the behavior of a given population to reflect those behaviors that are necessary to meet our objectives?

Let's take an example. If I am a maintenance person in an organization and have been so for my entire career, I am expected to repair equipment so that we can make more products. As a matter of fact, my performance is measured by how well I can make the repair in the shortest time frame possible. I am given recognition when emergencies occur and I respond almost heroically.

Now comes along this Root Cause Analysis (RCA) initiative and they want me to participate in making sure that failures do not occur anymore. In my mind, if this objective is accomplished, I am out of a job! Rather than be perceived as NOT being a team player, I will superficially participate until the "program-of-the-month" has lived out its six-month life and then go on with business as usual. We have seen this scenario repeatedly and it is a very valid concern based on the reality of the end-user. This perception must be overcome prior to implementing an RCA initiative.

Let's face the fact that we are in a global environment today. We must compete not only domestically, but now with foreign markets. Oftentimes these markets have an edge in that their costs to produce are significantly less than here in the U.S.A. Maintenance, in its true state, is a necessary evil to a corporation. But when equipment fails, it generally holds up production, which holds up delivery, which holds up profitability. Imagine a world where the only failures that occurred were wear out failures that were predictable. This is a world that we are moving towards, as precision environments become more the expectation. As we move in this direction, there will be less need for maintenance type skills on a routine basis. What about the area of Reliability Engineering? Most organizations we deal with never have the resources to properly staff their Reliability Engineering groups. There are plenty of available roles in the field of Reliability. Think about how many reliability jobs are available; vibration analysts, failure analysts, infrared thermographers, metallurgists, designers, inspectors, nondestructive testing specialists and many more.

We are continually intrigued by the most frequently used objection to using RCA in the field from our students, "I don't have time to do RCA?" If you think hard about this statement, it really is an oxymoron. Why do people typically not have time to do RCA? They are so busy fire fighting; they do not have time to analyze why the event occurred in the first place. If this remains as a maintenance strategy, then the organization will never progress, because no level of dedication is being put towards "getting rid of the need to do the reactive work!"

So how can executives get these very same people to willingly participate in a new RCA initiative?

1. It must start with an executive putting a rubber stamp on the RCA effort and outlining specifically what his or her expectations are for the process and a time line for when he expects to see bottom-line results.
2. The approving executive(s) should be educated in the RCA process themselves, even if it is an overview version. Such demonstrations of support are worth their weight in gold because the users can be assured that the executives have learned what they are learning and agree and support the process.
3. The executive responsible for the success of the effort should designate a Champion of the RCA effort. This individual's roles will be outlined later in this chapter.

4. It should be clearly delineated how this RCA will benefit the company, but more importantly it should also delineate how it will benefit the work life of every employee.
5. Next the executive should outline how the RCA process will be implemented to accomplish the objectives and how management will support those actions.
6. A policy or procedure should be developed to institutionalize the RCA process. This is another physical demonstration of support that also provides continuity of the RCA application and perceived staying power. It gives the effort perceived staying power because even if there is a turnover in management, institutionalized processes have a greater chance of weathering the storm.
7. However, the most important action an executive can take to demonstrate support is to sign a check. We believe this is a universal sign of support.

THE ROLE OF A RCA CHAMPION

Assuming all the above actions take place, this does not automatically insure success. How many times have we all seen a well-intentioned effort from the top try to make its way to the field and fail miserably? Typically, somewhere in the middle of the organization the translation of the original message begins to deviate from its intended path. This is a common reason of why some very good efforts fail, because of the miscommunication of the original message!

If we are proactive in our thinking, and we foresee such a barrier to success, then we can plan for its occurrence and avoid it. This is where the role of the RCA Champion comes into play.

There are three major roles of a RCA Champion:

1. The champion must administer and support the RCA effort from a management standpoint. This includes ensuring that the message from the top to the floor is communicated properly and effectively. Any deviations from the plan will be the responsibility of the Champion to align or get back on track. This person is truly the "Champion" of the RCA effort.
2. The second primary role of the RCA Champion is to be a mentor to the Drivers and the Analysts. This means that the Champion must be educated in the RCA process and have a thorough understanding of what is necessary for success.
3. The third primary role of the RCA Champion is to be a protector of those that utilize the process and uncover causes that may be politically sensitive. Sometimes we refer to this role as providing "air cover" for ground troops. In order to fulfill this

responsibility, the RCA Champion must be in a position of authority in order to take a defense position and protect the person who uncovered these facts. Ideally this would be a full time position. However, in reality, we find it typically to be a part-time effort for an individual. In either situation we have seen it work, the key is that it must be made a priority to the organization. This is generally accomplished if the executive(s) perform their designed tasks set out above. Actions do speak louder than words. When new initiatives come down the pike and the workforce sees no support, then it becomes another "they are not going to walk-the-talk" issue. These are viewed as lip service programs that will pass over time. If the RCA effort is going to succeed, it must first break down the paradigms that currently exist. It must be viewed as different than the other programs. This is also the RCA Champion's role in projecting an image that this is different and will work.

The RCA Champion's additional responsibilities include insuring that the following responsibilities are carried out:

1. Selecting and training RCA Driver's who will lead RCA teams. What are the personal characteristics that are required to make this a success? What kind of training do they need to provide them the tools to do the job right?
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3. Developing management support systems such as:
 - A. RCA performance criteria - What are the expectations of financial returns that are expected from the corporation? What are the time frames? What are the landmarks?
 - B. Providing time - In an era of re-engineering and lean manufacturing, "How are we going to mandate that designated employees WILL spend 10% of their week on RCA teams?"
 - C. Process the recommendations - How are recommendations from RCA's going to be handled in the current work order system? How does improvement (proactive) work get executed in a reactive work order system?
 - D. Provide technical resources - What technical resources are going to be made available to the analysts to prove and disprove their hypotheses using the "Whatever It Takes" mentality?
 - E. Provide skill-based training - How will we educate RCA team members and ensure that they are competent enough to participate on such a team?
4. The Champion shall also be responsible for setting performance expectations. The Champion should draft a letter that will be forwarded to all students that attend the RCA training. The letter should clearly outline exactly what is expected of them and how the follow-up system will be implemented.

5. The Champion should ensure that all training classes are kicked off wither by themselves, an executive or other person of authority, giving credibility and priority to the effort.
6. The Champion should also be responsible for developing and setting up a recognition system for RCA successes. Recognition can be in the form of a letter from an executive to tickets to a ball game. Whatever the incentive is, it should be of value to the recipient.

Needless to say, the role of a Champion is very critical to the RCA process. The lack of a Champion is usually why most formal RCA efforts fail. There is no one leading the cause or carrying the RCA flag. Make no bones about it, if an organization has never had a formal RCA effort, or had one and failed, such an endeavor is an uphill battle. Without a RCA Champion, sometimes it can get to feeling like you are on an island by yourself.

THE ROLE OF THE RCA DRIVER

The RCA driver can be synonymous with the RCA Team Leaders. These are the people who organize all the details and are closest to the work. Drivers carry the burden of producing bottom-line results for the RCA effort. Their teams will meet, analyze, hypothesize, verify and draw factual conclusions as to why undesirable outcomes occur. Then they will develop recommendations or countermeasures to eliminate the risk of recurrence of the event.

All the executive, manager and Champions efforts to support RCA are directed at supporting the Drivers role to ensure success. The Driver is in a unique position in that he/she deals directly with the field experts, the people that will comprise the core team. The personality traits that are most effective in this role as well as a core team member role will be discussed at length in Chapter 6.

From a functional standpoint the RCA Drivers roles are:

1. Making arrangements for RCA training for team leaders and team members - This includes setting up meeting times, approving training objectives and providing adequate training rooms.
2. Reiterating expectations to students - Clarify to students what is expected of them, when it is expected and how it will be obtained. The Driver should occasionally set and hold RCA class reunions. This reunion should be announced at the initial training so as to set an expectation of demonstrable performance by that time.
3. Ensure that RCA support systems are working - Notify RCA Champion of any deficiencies in support systems and see that they are corrected.

4. Facilitate RCA teams - The Driver shall lead the RCA teams and be responsible and accountable for the team's performance. The Driver will be responsible for properly documenting every phase of the analysis.
5. Document performance - The Driver will be responsible for developing the appropriate metrics to measure performance against. This performance shall always be converted from units to dollars when demonstrating savings, hence success.
6. Communicate performance - The Driver shall be the chief spokesperson for the team. They will present management updates as well as other individuals on-site and at other similar operations that could benefit from the information. The Driver shall develop proper information distribution routes so that the RCA results get to others in the organization that may have, or have had, similar occurrences.

The Driver is the last of the support mechanisms that should be in place to support such an RCA effort. Most RCA efforts that we have encountered are put together at the last minute as a result of an "incident" that just occurred. We discussed this topic earlier regarding using RCA as only a reactive tool.

A structured RCA effort should be properly placed in an organizational chart. Because RCA is intended to be a proactive task, it should reside under the control of a structured Reliability Department. In the absence of such a department, it should report to a staff position such as a VP of Operations or VP of Engineering. Whatever the case may be, ensure that an RCA effort is never placed under the control of a Maintenance Department. By its nature, a Maintenance Department is a reactive entity. Their role is to respond to the day-to-day activities in the field. The role of a true Reliability Department is to look at tomorrow, not today. Any proactive task assigned to a Maintenance Department is typically doomed from the start.

This is the reason that when "Reliability" became the buzzword of the mid 90's that many Maintenance Engineering Departments were renamed as Reliability Departments. The same people resided in the department and they were performing the same jobs, however their title was changed, and not their function. If you are an individual who is charged with the responsibility of responding to daily problems and also seizing future opportunities, you are likely to never get to realize those opportunities. Reaction wins every time in this scenario.

Now lets assume that at this point we have developed all the necessary systems and personnel to support a RCA effort. How do we know what opportunities to work on first? Working on the wrong events can be counterproductive and yield poor results. In the next chapter we will discuss a technique to use to sell why you should work on one event versus another.

About the Authors

Robert J. Latino is Senior Vice-president of Strategic Development and a Senior Consultant for Reliability Center, Inc. Mr. Latino is a practitioner of root cause analysis in the field with his clientele as well as an educator. Mr. Latino is an author of RCI's Root Cause Analysis Methods© training and co-author of Problem Solving Methods© training. Mr. Latino has been published in numerous trade magazines on the topic of root cause analysis as well as a frequent speaker on the topic at trade shows and conferences. His most recent publication is titled "Root Cause Analysis - Improving Performance for Bottom Line Results" He can be contacted at 804/458-0645 or blatino@reliability.com.

Kenneth C. Latino is a senior reliability consultant at Meridium, Inc., 10 S. Jefferson St., Ste. 1100, Roanoke, VA 24015; (540) 344-9205

Reliability Center, Inc. Contact Information

804-458-0645

804-452-2119 [fax]

info@reliability.com

<http://www.reliability.com>