

Relentless Root Cause Analysis (RRCA)

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Hi-Performance Wash Systems

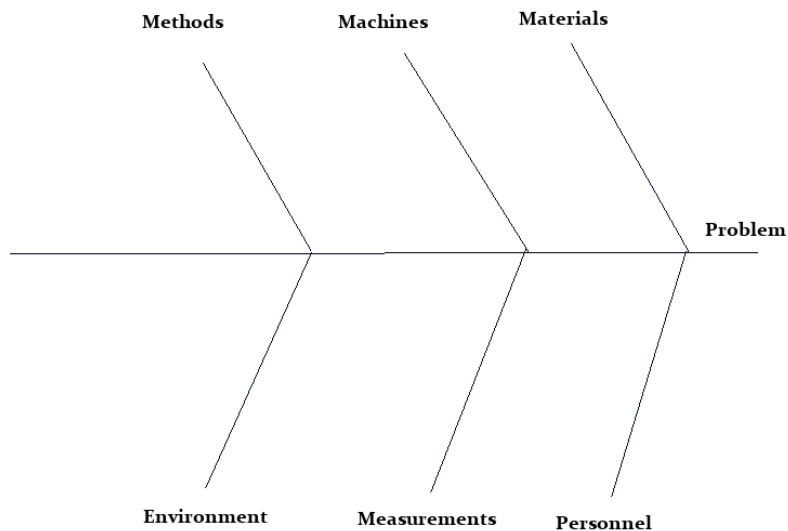
Root Cause Analysis is a method for us to dig into an issue that would otherwise only get a surface level amount of attention or band-aid the problem. This is a narrative to walk through why we must be relentless in order to remove the actual cause that may be many layers deep. Try and put yourself into the shoes of Jack Johnson as he digs deep to find the root cause of his customer complaints.

Jack Johnson, owner of a busy car wash arrived home to find 5 messages on his voicemail. The theme of these messages was similar: In only 4 hours he had received multiple wash quality complaints regarding his automatic car wash. This wasn't new or a surprise. It seemed to happen several times a month. He'd call the attendant and the problems would get fixed, for a while at least. Inevitably though, a new batch of complaint calls would come in. When he received this latest round of calls, Jack decided that it was time to implement a new tool he had learned about called RRCA or Relentless Root Cause Analysis to get to the bottom of why the same things kept failing time after time.

Jack trudged back to the wash thinking about his course on RRCA. As he recalled there were several principles.

1. Define the problem.
2. Brainstorm possible causes and problems. If you have other people familiar with your wash, it sometimes helps to get a different perspective on the problem.
3. Use a fishbone diagram (cause-effect) to help with the brainstorming.
4. Prioritize which of the possibilities from the fishbone diagram need to be investigated first.
5. Perform a Five Whys analysis on each possibility, continually seeking the fundamental causes of a problem.
6. After determining a cause, determine if there are other areas at the wash which suffer from the same root cause.

Jack arrived at the wash and started the RRCA steps. In defining the problem, he thought about the complaints. Both the paint and glass on multiple cars had film left on it. He grabbed a sheet of paper and started a high level brainstorm, using a fishbone diagram. A fishbone diagram is used to look at typical categories for failure. They often include Personnel, Methods, Machines, Materials, Measurements and Environment.



Personnel: Anyone involved in the process

Methods: How things are typically done around the car wash. Any written procedures or standard practices.

Machines: Your car wash equipment, repair and maintenance tools

Materials: Anything consumable used at the wash – chemicals, lubricants, salt, etc.

Measurements: Any measureable parameters, either direct read outs from the equipment, from test equipment, etc.

Environment: Typically factors such as temperature, time, or any external issues.

These bones of the diagram can be customized depending on the situation.

In this case, because he had a cleaning problem, Jack decided to use the 5 factors of cleaning as the ‘bones’ of his diagram. These aspects included temperature, chemical effectiveness, dwell time, friction and water quality. He ran a test wash to determine which of the possible areas to tackle first. As he watched the wash, he could tell his dwell time had not changed, pump pressures and impact were consistent and his presoak temperatures were normal. That narrowed it down to chemical effectiveness and water quality. On his chemical ‘bone’ he wrote things that could cause variability. Possible causes such as water pressure, foot valves, injectors and dilution tips were ruled out. Next on the list was water quality. Jack checked the water hardness and found it was five grains hard.

Water at five grains hardness would definitely explain a loss of wash quality. Now he entered the Five Whys stage, to determine possible reasons that the water was hard. Jack continually asked the question “Why?” until the root cause or causes were isolated. He checked the brine tank and noticed there was no salt in the tank. Why was there no salt? Sitting next to the tank were 20 bags of salt. He called his attendant and asked about the salt. The attendant replied he had always assumed he was only supposed to put 5 lbs of salt in once a week. Why did he assume that Jack asked? The attendant responded that he had read it on the internet.

Jack reflected on the standard fishbone diagram. He definitely had problems in the Personnel and Methods area of the fishbone diagram. He had no formal maintenance plan nor training program for new employees. A lack of written procedures for maintaining the water softener and a lack of training was the root cause of the customer complaints.

He then went the final step and questioned what other areas of the wash were being affected by the lack of procedures and training. A quick glance at the oil sight glass of his 3535 showed the oil was white, contaminated with water. Obviously the lack of maintenance and training was having a negative impact on the wash, but at least the root causes were now identified and could be corrected.

Summary: Being relentless is not an easy task due to time constraints and available resources but when the time necessary is taken to do a root cause analysis it will actually end up saving these very things we are short on. In addition, it will increase the customer experience and have a positive effect on our expenses as well as future sales.