



Something that takes a long time to develop is the ability to see. That is probably a strange comment without context. Have you ever been with a real expert in any area? They look at the same things that we look at, but they see, and we merely look (this applies to all senses). This ability comes with practice, understanding, and experience. It is the secret sauce of PM inspection. Without seeing, the typical visual PMs are a joke. Of course, how you write the PM has a major impact. Added 2024

Misunderstanding in PM inspection

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I decided to take a class in small engine repair. If you promise not to tell anyone I have a garage full of small engine devices that don't work. Some of them I bought broken (or were gifted to me broken) because of a possibly pathological optimism about fixing them. The truth is that when one didn't work, I took it to a repair facility, and it came back working. There was always an admonition to be sure to drain the gas at the end of the season (which I was not reliable about). Last year I paid for that when my 1-season old snowblower wouldn't start. Diagnosis: gas went bad and turned to varnish over the summer.

In the first class I learned a massive amount of good small engine trivia like (anything with a pull starter is probably not more than 6.5 compression ratio) or (low compression means you should use low octane). This is good stuff. My favorite was how to get the ethanol out of your gas (can't reveal that one).

The second class we started taking equipment apart (that I and other students brought in). When we started on the tiny carburetors, I realized the topic of this blog post.

The instructor was a long-time practitioner. So, he was saying look here, do you see the port? There looked like there were about 7 holes that could qualify. In fact, this tiny carburetor was just layers of holes, shims, gaskets in what looked like random order.

Do we have the same problem in PM? We might, if no one looks at the unit and has sufficient training and experience to know what they are looking at. The second problem is typical fleet check sheets. Check sheets don't help!

Task List Check sheet activities

- Check the belts
- Check the connection
- Check operation

These are widespread and useful tasks on a PM task list. In too many cases, they don't get the job done. Why?

A completely different but related question is how long does it take for a PM person to see all the failure modes of belts, connections, or an asset's operation? The answer is quite a while. So, we ask someone with an unknown experience to inspect for something they might or might not have seen before.

I suggest everyone review their task lists for qualifiers.

- Check belt tension
- Check belts for cracks, chewed-up edges, etc.
- Check connection for tightness by loosening the nut and retightening hand tight
- Check connection for corrosion (visually). If corroded, disassemble, remove corrosion
- Check for smooth operation, note unusual noises, vibrations, etc.

These qualifiers help with reminding the inspector of the common failure modes. You might even ask the senior techs what they look for (listen for, feel for, smell, etc.). Of course, a nearby picture book with photographs of failure modes is excellent.

We want to direct inspectors to specific, actionable things to "look" for, feel or hear.

There is another whole conversation to have. It has to do with looking at something versus seeing something. Now the dictionary will not help you. The dictionary definitions are similar enough to be useless.

SEE: to perceive with the eyes; look at.

LOOK: to ascertain using one's eyes

Where the difference is evident is in the source of the two words.

SEE: Old English *seon* "to see, look, behold; observe, perceive, understand; experience, visit, inspect."

LOOK: Old English *locian* "use the eyes for seeing, gaze, look, behold, spy," from West Germanic **lokjan* (source also of Old Saxon *lokōn* "see, look, spy,"

We want the inspector to see (observe, perceive, understand, experience, inspect) the equipment and not just look at it. To inspect requires looking, seeing, understanding, and knowing what to look for.

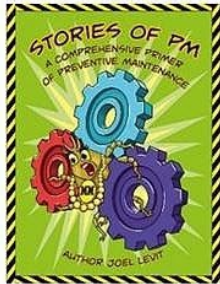
We want to teach the art of seeing. Or maybe the art of seeing with one's mind open. Asking questions like "does anything look out of place or look bad?" Will be part of the class.

Hey, good luck with this

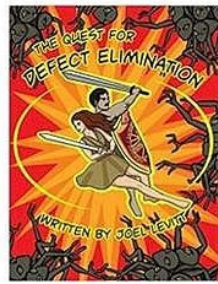
Thanks for reading. Cheers, Joel

Clever sales message follows. No, really clever, you'll enjoy it!

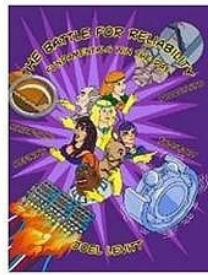
You can tell from the covers these books are different than everything else you've seen.



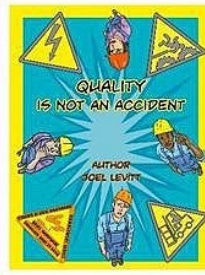
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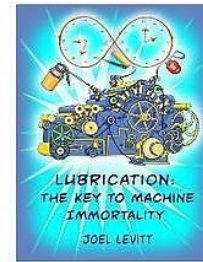
Defect Elimination



Reliability and fundamentals



Maintenance quality



Lubrication

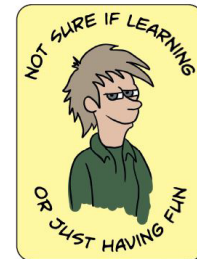


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New Series: Elements of Great Maintenance Management.

The Elements are written and illustrated (color pictures, stories, snarky comments) to appeal to maintenance folks to teach some basics and even some engineering. These books are different. I admit they are pretty colorful, funny, and weird.



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The Battle for Reliability is a graphic novel teaching the critical need for all industries to focus on maintenance fundamentals to avoid unscheduled shutdowns from breakdowns.

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More books in this series are on the way!



**What other people say
about Elements of Great
Maintenance Management**

Sanya Mathura, Author & Managing Director at Strategic Reliability Solutions Ltd

"A captivating novel of the battle that reliability faces within most industrial plants! Joel expertly maneuvers the challenges that teams struggle with daily and provides quick and cost-effective methods of implementing changes that can positively affect your equipment's reliability. Overall, a great way to foster camaraderie amongst peers and get everyone on board with reliability."

Ramesh Gulati Author, Speaker, Reliability Sherpa, ReliabilityX

"Very interesting, very easy to read with a lot of wisdom. Overall, a lot of good information was presented in a very simple language. So, the challenge is how can you make professionals read this?"

Don Fitchett, President - Maintenance, Engineering Training Co., Nevada

"Although we had heard many of those perspectives in Joel's book from the stakeholders before, it is nice to have them in one presentation to get a better sense of the big picture.

The 3D analysis lab was super cool! The real-world examples and learning process I watched (read?) play out was of great value to the story. Your book Joel is a real piece of art. You wrote it in such a way that it is relatable to everyone. It didn't hurt that I have a soft spot for superhero comics. :) Thanks for sharing."

Rolly Angeles, Consultant at RSA Reliability and Maintenance Consultancy Firm (Philippines)

Joel Levitt is one of the maintenance gurus I admire and have much respect for. I have purchased some of his books which I used for reference. There are many authors out there, which you will have a difficult time digesting the contents of the book. Joel has found a way of overcoming this by writing a book in an animated format where it is straightforward to understand.

If you are looking for a smart way to improve your plant, I highly recommend this book by Joel Levitt, which you can finish reading in one sitting. I give this book two thumbs up.

Doc Palmer MBA, Author, trainer, Managing Partner Richard Palmer & Associates, Inc.

Hey Joel, Thanks for letting me read this. You are one of my early career inspirations for helping people in maintenance. A long time ago, you sent me a cassette tape out of the blue that included "we remember Noah's flood because we just think about disasters, not the work of keeping them from happening." Many, many thanks

Daniel Daily, PE, CMRP Author, consultant and trainer

From a higher-level, I would say that I like the overall concept. I recall one of the presenters at the Las Vegas reliability convention saying that one of the biggest problems is that people are no longer readers. This approach might help solve that problem.

Alain Le Bon National Engineering and Maintenance Manager at Cheetham Salt

I am really finding the books quite useful. I think they are good base line educators and for shop floor. simple easy to understand messaging and like the light read, comic book approach which seems to work to audience. We definitely have a battle for reliability on our hands! I really want to engage the shop floor and these books are useful for that.