Maintenance Catch 22:  
The Aging Workforce Meets the Skills Shortage

Abstract

Maintenance and reliability careers, like many manufacturing positions, suffer from an “image” problem and fail to attract Generation Y workers. These and other factors are creating a rapidly expanding maintenance skills shortage. This, combined with the paradox of older, wiser, and experienced workers being encouraged to leave companies just as those same companies face a skills shortage, is ironic.

According to the Maintenance and Reliability Workforce study conducted by Reliabilityweb.com, many companies have no plans to capture current workforce knowledge nor do they have current procedures documented. The stars have all aligned in a very unique worker centric fashion and it is a good time to be a “baby boomer” maintenance and reliability professional.

Introduction

A baby boomer is defined as someone born in the USA after World War II (1946-1964) and now in 2006, the first of these boomers turn 60 and set their sights toward voluntary retirement. If I were 25 years old and writing this article, 60 would surely seem a long way off and “really old.” As I approach my 50th birthday — those 60-year olds seem way too young to cease meaningful work.

The paradox of older, wiser, and experienced workers being encouraged to leave companies just as those same companies face a skills shortage seems like an unnecessary paradox.

Joseph Heller’s famous book Catch-22 states, “a man is considered insane if he willingly continues to fly dangerous combat missions, but if he formally requests to be relieved proves that he is sane and cannot be relieved.”

The Maintenance Catch 22 states, “a company is considered sane if it removes older workers from its ranks. It saves on pension and healthcare costs. It brings in a younger workforce that is faster on its feet and more tech savvy than the generation of workers it is replacing, but the ageing worker carries a great deal of unrecollected knowledge, skill, and experience that the younger replacements do not possess.”

According to over 800 organizations that participated in the Maintenance Workforce Study conducted at Reliabilityweb.com, only nine percent of companies have 100 percent of their maintenance procedures documented. Twenty percent had a completed or budgeted plan to capture workforce knowledge. Twenty-one percent were considering a plan to capture maintenance workforce knowledge and a whopping 56 percent had no plan at all!

Figure 1 — Indicated Best Description Related to Procedure Based Maintenance

Figure 2 — Indicate Best Description of Knowledge Capture Within Your Maintenance Workforce
Skilled maintenance and reliability professionals are knowledge workers. If you can implement and manage a computerized maintenance management system (CMMS/EAM), if you are a predictive maintenance specialist (vibration analyst, infrared thermographer, etc...), you can facilitate reliability centered maintenance analysis (RCM) or can organize a company's spares/repair parts strategy, if you are an effective maintenance planner, you are a valuable knowledge worker and can work just about anywhere you wish in today's job environment. There is no need for you to sit tight at a company that does not value what you can contribute in terms of physical asset management. Opportunities abound for maintenance and reliability professional knowledge workers.

That's right — now companies can add skilled workforce retention to the already long list of reasons to achieve best in class maintenance and reliability. The departure of maintenance and reliability professional knowledge workers will accelerate at companies that are content with the subpar “maintenance business as usual” methodologies. Companies that do not value these workers at the same pace as leading edge, best-practice competitors and hungry maintenance service companies will find themselves staring into the abyss of a real maintenance crisis.

During the past economic downturns, companies have been able to ask workers to perform at herculean levels of productivity, while keeping pay and benefits in check with little fear of losing the workers — because everyone was in the same boat. Ever since the dot com meltdown followed by 9/11, bosses have enjoyed the bulk of the power in that relationship. Employees have been subject to workforce reductions, re-engineering, and quality revolutions to name just a few.

At this particular moment in history — the pendulum has swung and the power now lies with the maintenance and reliability professional knowledge worker unlike anytime in the past.

Maintenance does not manufacture or process a product, but it does create capacity. With China buying natural resources, minerals, steel, chemicals, shipping, and all elements required for new factories combined with higher than ever energy prices, the pressure is on for those fortunate high demand suppliers to sell while the demand and prices are up. For those companies on the consumption side of that equation, pressure is on to be as effective and efficient as possible.

Reliability is no longer a desired state that seems more like a distant dream. It is a business requirement that supports operational excellence. Companies that effectively manage physical assets to take advantage of high demand cycles as well as companies that operate with efficiency, even in times of higher energy or material cost, are the ones that will satisfy shareholders and customers. The ones that don't are tomorrow’s bankruptcies or takeover targets.

Reliability in asset intensive industries is a dynamic state. Achieving and maintaining reliability requires knowledge workers. That is why the current paradox of retiring a core workforce of ageing yet experienced and knowledgeable workers without having the replacement workforce seems counterintuitive.

It is a very good time to be a “50 to 60 something” maintenance and reliability knowledge worker.

The day of missing your kid's soccer game or birthday party because the plant is down is over. If your company will not move to a proactive, best practices program for maintenance and reliability, there are a few outcomes that are likely to emerge:

1. Your plant will be the high cost producer and will be shut down or purchased by a lower cost producer.
2. The maintenance and reliability professional knowledge workers around you will depart for better opportunities.
3. Your company will eventually outsource maintenance and reliability.

Unemployment for knowledge workers is lower than it has been for years. Employers have squeezed all the extra productivity out of current workers that they are likely to get. Those gains are now starting to decline and are projected to continue to decline for the next decade. Increasingly overworked and under appreciated employees are sensing a turn in the maintenance and reliability job market and seeking new opportunities. These knowledge workers are finding plenty of new job openings as the need for maintenance and reliability professionals increases.

Earth to Mr. Manager — you have five years at best before your current workforce begins to retire. You have even less time if you start to loose your best and brightest early to other employment opportunities. Companies will have to move at a breakneck pace to capture maintenance workforce knowledge in a meaningful and accessible fashion over the next five years, and that is the good news!

Is Training the Answer?

I have read several maintenance crisis papers that place lack of training at the center of the current problem, and, of course, these same articles suggest training as the answer to the skills shortage. I am also a firm believer in training of all types including computer-based, live, in-plant, and out-of-plant workshops and conferences, but I do not advocate training as a solution to the current maintenance and reliability professional shortage.

How long do you think it takes to develop the skills required to be a maintenance and reliability professional?
The Society for Maintenance and Reliability Professionals Certifying Organization (SMRPCO) recognizes that maintenance and reliability leaders gain their capabilities through a mix of work experience, education, and mentoring. Education, if effective, can provide less than a third of the required elements.

Reengineering Déjà vu

During the reengineering boom, we often heard stories of companies that downsized so far that they lost critical capabilities. We also heard that the brightest workers “sold” themselves back to those same companies as consultants or service providers at much higher prices.

A major study by the National Association of Manufacturers showed that 80 percent of manufacturers had a moderate to serious shortage of production workers, machinists, and craftworkers. The group predicts that manufacturers will need as many as 10 million new skilled workers by 2020, in part to replace the aging boomers who make up a large part of the 14 million manufacturing jobs today.

Want to make a good bet? Go to work for a maintenance service company or if you plan to stay in your current job — buy stock in maintenance service companies.

Wake up call — these service companies are not performing rocket science — they are simply doing two things most manufacturing and process companies are not.

1) They value the maintenance and reliability professional.
2) They know how to make a business case that supports maintenance and reliability.
3) They know the journey from poor maintenance practice to good or best maintenance practice is a multiyear journey and they have a longer view than most plant managers have assignments. In other words — they can outlast the plant manager.

Companies that use cost to drive maintenance decisions rather than best practices will lose knowledge workers and will see costs skyrocket.

Companies that attract knowledge workers and implement best practices will see increased profits through higher availability and increased output, lower scrap rates, higher quality product, and finally lower maintenance and labor and material costs.

Companies that hire and retain the right maintenance and reliability workforce create an environment that empowers the knowledge worker, and leverage available technologies will reap the rewards.

The companies that wait to read about the maintenance and reliability workforce shortage on the front pages of national and international news media will be too late.

The argument is no longer about the economics of reactive versus proactive maintenance — it is about the ability to retain and recruit the most talented people who will be required to manage assets and run a profitable company.

The Maintenance and Reliability Service Company Factor

The good news — if your company falls really short in the area of maintenance and reliability, there are all types of service companies that range from small one-man specialty services to full blown body shops that can staff your entire maintenance department. The bad news — where do you think they will find the staff they need to deliver the services they will sell you?

These service companies can offer higher salaries and better perks than your company can. They offer knowledge workers an environment where their talents are utilized to the fullest on a daily basis. Their employees are vital. They are needed, and they are valued by both their employer and the client. Even if your company could match the salary and perks — can you keep the knowledge workers challenged and engaged to this extent?

Many of these service companies are recruiting “interns and apprentices” at the high school and trade school level. They recruit by letting potential employees know that a maintenance career at a service company is not the same dead end that it is at most manufacturing and process companies.

According to the same survey at Reliabilityweb.com, 44 percent of the manufacturers will increase outsourced maintenance in the next five years.

Figure 3 — Use of Outsourced Maintenance Contractors to Increase Over Next Five Years
What Can Companies Do?
Key Recommendations

- Place a senior executive in charge of maintenance and reliability.
- Use proactive maintenance methods such as predictive maintenance and reliability centered maintenance.
- Keep your maintenance knowledge in house (The cost of replacing an existing employee is generally between 70 percent and 200 percent of the person's salary.)
- Maintenance is a core competence if your operation is asset intensive.
- The occupations which employers have expressed having the greatest difficulty filling are maintenance and maintenance related positions. — Strategic Skills Initiative Skills Shortage Report by Indiana Workforce Development Council
- Stop viewing maintenance as a cost center. Maintenance supplies capacity.
- Ensure someone in company management understands life cycle and total cost of ownership concepts.
- Provide business and financial training and support for maintenance leaders.
- If you use contractors — you must develop a competency detection program and standards. (Contractors will experience the same maintenance and reliability professional shortage. How long does it take for your company to discover a poor quality contractor employee?)
- Let fun happen at your workplace.
- Do not make workers check their brains at the door to the plant.
- Hire and retain the best maintenance and reliability talent you can find.
- Tie their rewards to their results.

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