

Productivity: If you are trying to go somewhere it helps to know where you are

By Joel Levitt

Many years ago I was giving 3-day training on fleet maintenance to an audience of shop managers (from all over the county) and support staff at a large municipal garage. The training room was located in a mezzanine that overlooked the repair and PM bays. There were glass windows where you could see the shop covered by curtains. I was at the point where I was discussing the level of productivity of the mechanics. This is a good launching point for a discussion about how on earth do you really measure your mechanics' productivity?

Think about it. What do mechanics do in addition to PM and repair? If you could be a fly on the wall and watch them from clock-in to clock-out what are they doing, and why are they doing it? Some things you would certainly find:

Directly related to job at hand

- Working or direct troubleshooting, inspection, road testing
- Filling out paperwork, work orders
- Getting jobs (discussions with service writer or supervisor)
- Walking around shop transporting parts, tools, looking for things
- Waiting for spare parts, looking up the spares needed, waiting for someone to finish using a tool
- Waiting for a helper, waiting for the truck to be driven in, waiting for a delivery

Maybe related to job at hand

- Idle time

Probably not related to job at hand

- Breaks and lunch (if paid)
- Late starts (it takes a while to get going in the morning), early quits (early quit at end of day)
- Excess personal time (after breaks and lunch)
- Social time (time spent visiting not covered elsewhere)

The reason I say why they are doing what they are doing is important. If a mechanic is waiting a long time for the parts guy to get off the phone with accounting or a vendor the reason is one thing. If the mechanic is shooting the breeze with his buddy on the way to the parts room it is another. It would be a third case if the mechanic is shooting the breeze with his buddy while waiting for the parts clerk.

- One is system imposed time
- Two is personal time
- Three is system imposed time for the guy waiting at the window.

The best method is called Work Sampling. It is an old method developed in the 1940s. Based on random snap-shot observations over a period of time it can accurately and confidently model the reality of your shop. It takes a small fraction of the time and effort work study or any other observation technique takes.

Simply described, you (anyone) walk around the shop and instantly note what everyone is doing. Each time you walk around is called a tour. The tours are initiated at random times throughout the work day. Amazingly in a moderate number of tours (depending on how many people you observe and a few other factors) you can accurately model your shop.

Let's return to the municipal garage. I said to the class that we could start a study of productivity right here and now by (randomly) opening the curtain and seeing what all the people were doing. Everyone was excited and the manager of that shop boasted it would be better than 70%.

The first time we opened the curtain there was no one working in any bay we could see. We could see 10 bays. The maintenance manager of that garage jumped up and said he would fix that problem. I told him to sit tight because right now we are not solving the problems because we don't yet know what the actual problems are or even how bad they are.

Over the 3-day training the most people we ever found working in their bays were 2 people. We couldn't see the other areas (fuelling, wash bay, body shop, yard and road testing) so we could not do a formal study from that vantage point alone. If we were doing a formal study we'd have to tour the other areas to see as many people as we could. It is useful if someone other than the area supervisor does the study so that the results are not tainted.

The important question to answer is if they are not working what are they doing? The answer to this question will supply detailed information about things you can do that will immediately and permanently improve productivity.

Studies have shown that supervision helps productivity about 15%. They have that effect from motivation, and also from helping the mechanic solve problems with materials, tools and spares. So setting loose the shop manager would have an effect. But beyond that there is a natural level of productivity of a shop that is regulated by the business system and management decisions.

Productivity can be impacted by many things. A few include:

- The location, configuration and integrity of the stock room
- Physical layout of the shop
- Lighting
- Age, condition, and quality of the machines bought
- Quality of the machine operators and drivers

- Whether management spent money on adequate larger tools
- Efficiency of the job handout process
- The speed of the computer network (if the mechanics enter their own work orders)

The work sampling study first and foremost tells you where you are today on this productivity issue. Low productivity levels are generally the result of management decision and systems (usually 85% of the barriers to productive work). If you decide to look deeper into the data work sampling tells you where your problems are and where excessive time is being spent.

In next column I will look at some specifics of work sampling findings and how to use the data. Good luck Joel.

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