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PRO DEM Advice

Methods Do Make a Difference

Good manufacturing methods can help ensure productivity, efficiency and profitability.



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ethods really do make a difference. It can make the difference between wasting money on overtime, making a shipment on time, or even whether or not you will make a profit.

In this article, methods will be discussed in the context of manufacturing. What do I mean when I say methods? Dictionary.com defines a method as "a procedure, technique, or way of doing something." That is exactly what we are going to be talking about here as it applies to the work that your employees do and their efficiency at doing it.

As a productivity consultant, I am often asked to assess a manufacturer's in-shop processes for operational improvement and any cost-reduction opportunities. This usually involves talking to managers and supervisors, but more importantly it comes from observing the activities on the shop floor, understanding the facility layout and the

flow of the product through it. Many times the observed issues lead back to problems in scheduling, purchasing, supervision, maintenance or other areas.

Good & Bad Methods

In manufacturing, there is what can be described as good methods and bad methods. Bad methods by definition are inefficient, but they also can be found to be unsafe, they almost always provide inconsistent results, they usually adversely affect quality, many times they promote worker discontent and fatigue, and they are always caused by a failure of management. Some examples I have seen of workers using bad methods include:

- An operator must borrow a tool to complete his job each time and then return it.
- A worker has to walk several steps to get some needed materials.



Good manufacturing methods have no waiting, no waste or lost time, and no searching for tools or materials. Good methods are an efficient use of time, following a written procedure, within a designed layout.

- A worker must walk several steps to set aside his finished part.
- An assembler has to wait for an item to arrive so he can continue work.
- An operator has to reach too far to get a part or tool.
- A worker must wait on materials to be delivered by others.
- An operator must wait for a machine to stop running to continue work.
- Using hand tools when an air or electrical tool would work.
- A work surface that is too low or too high.
- An employee continuing to perform obsolete inspection steps.

Poorly managed or poorly designed manufacturing support activities also can cause or contribute to bad methods. This could be a poorly managed purchasing department that is buying too much material and filling up the racks, floors and aisles. It could be an inadequate amount of racking or storage units. It could be a poor plant layout design or one that has evolved over time to the point where it is very impractical or inefficient. Here are some examples of bad methods that could be caused by support personnel:

- Material handlers having to drive too far to retrieve or deliver materials.
- Storage locations too full or aisles clogged with goods so that items must be moved out of the way in order to access the items needed.
- Material handlers or others having to search for the items needed in a sea of excess inventory or due to poor storage practices.

Many companies just don't do the basics with regard to managing their workforce. These are a different form of bad methods that many companies fall into. Some examples include:

- Allowing personal cell phone use during work time.
- Failure to enforce start and stop times for breaks and lunch.
- Allowing workers to wander around the shop or visit in other areas without cause.
- Having no written methods, work instructions or procedures for each job.
- Having no workplace layout drawings or marked floor areas for containers at each work area.
- Having no or unclear quality standards.
- Having no cross-training plan.

Most bad methods can and do occur naturally without management interference. Workers left to their own devices will innocently do what they think is best, but many times the process they choose is very inefficient, counterproductive and sometimes risky.

A common method that workers frequently come up with is working in batches – that is, laying out a group of items and the doing the same thing to each one before gathering them up and setting them aside. Besides going against every principle of Lean manufacturing, there is the potential problem with this is that if they get distracted or go to break they may forget to do the work on an item and then it gets passed along or shipped in the incomplete form.

The Fruits of Good Methods

On the other hand, good methods generally only occur when good managers direct engineers and supervisors to intercede by establishing procedures, measuring performance and holding people accountable. All of those issues listed above have a cost associated with them that most companies cannot afford.

Just think how efficient things would

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Characteristics of good production methods include having tools and materials close at hand for line workers and one-piece flow with no batching.

be if you eliminated all the stupid stuff and put some organization in place. You're likely to find that you can do the same work with less.

Also, when you start improving the methods and doing the right things you will see other improvements that seem to just appear. For example, you may find that you no longer need that outside warehouse or those storage trailers and the support folks you had to have to manage them. You may find that you have less damaged product and raw materials. You may need fewer fork trucks and the like. Doing the right things has that kind of positive ripple effect.

So, what do good methods look like? Good methods have no waiting, no waste or lost time, and no searching for tools or materials. Good methods are an efficient use of time, following a written procedure within a designed layout. Here are some characteristics that are representative of good methods:

- Tools and materials are close at hand for your workers.
- Reaches should be short and steps should be few or totally eliminated.
- There should be defined and written process steps for each job.
- Ideally, there would be a time standard or production rate established so that the expectations are known and fair.
- There should be a one-piece flow with no batching.
- There should be a workplace layout

- drawing showing where the materials and tools should be located, including marking the floor where containers are to be placed each time.
- There should be no downtime waiting for machines to stop, material handlers to show up, or for other operators to finish.
- Each operator should be trained in the process steps and they must be made to follow those steps.
- There should be a qualified supervisor patrolling his areas, maintaining oversight and process control.

Back to the Basics Recommendations

What do we do now? I strongly suggest that you get back to the basics. Steps should include:

- 1. Evaluate each of your supervisors as to their supervisory skills and actual effectiveness in doing that job. Make sure you and they understand what a supervisor is supposed to do. Re-train or replace each of them, as required. This may be the single most important step in the improvement process.
- 2. Do an as-is layout of your facility. Make several copies of it and mark the route that your product takes from receiving to shipping for each of your highest volume items, using the copies with one product or family per copy. When you find a nonlinear flow through the plant, develop new layout options

to correct the flow and then make those changes in the shop. Try to place the next operation as close to the previous one as it makes sense to do so. Try to move toward point-of-use storage of the materials.

3. Observe your workers doing each of your production operations from start to finish, one at a time. Note how far they reach and or walk to get tools and materials. Sketch each workplace layout labeling the tools and material locations.

See what items can be moved closer to the worker and determine if the whole operation should be moved closer to the next or previous operation. Should a cell be designed? Do they have enough tools? Are they the right tools? Should they be hung or mounted for more convenient use?

- 4. Identify your bottlenecks and take the necessary steps to remove them. Sometimes this means adding workers, duplicating workstations or adding equipment. Always remember what Henry Ford said: "If you need a machine and don't buy it, you pay for it without having it."
- 5. Develop accurate production goals for each operation. It does no good if the rates are too high and unachievable or too low and not challenging. These should be rechecked periodically and adjusted as required to maintain accuracy.
- 6. Establish and maintain meaningful performance metrics (overtime, efficiency, pieces per hour, downtime, etc.) and refer to them often and use them as a management tool. They should be located in a place where all workers can review them.

Of course, before making any significant layout or process changes, it is always wise to review the plans with your team to make sure nothing is being overlooked and that the changes make sense.

Improving methods and getting back to the basics may be the most important steps that you take to improve your profitability and competitiveness. It will be worth it if you make the time to do it.

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