



Five Essentials for Optimizing Machine Shop Productivity

A recent welding machine shop visit and process flow improvement discussions brought back a lot of memories from my days on the shop floor at Bombardier Learjet -- prompting documentation of the five essentials for optimizing Machine Shop Productivity for this friend and CEO of Sturm Welding.

1. One Directional Flow
2. Bertha in the Middle
3. Needs at Fingertip
4. Run Product Families
5. Daily Goal Celebration



One Directional Flow:

Just like a river, the flow of materials on the shop floor has to be in one direction where raw materials come in from one end and the finished products flow out of the other end.

Flows can be a straight line, U shaped or maybe even an L or 7 and largely depends upon the constraints of existing building or available space. The key thing is that raw material has to stocked and come into the shop floor from end, and finished products have to come out from other end to be stocked and ready to ship.

Bertha in the Middle.

In every shop, there is always one machine that is utilized for at least one operation on 60-80% of the products that flow through the shop. This machine “Bertha” should be located in the middle surrounded by machines that typically

have operations that happen right before, or right after the operation to be performed on “Bertha”.

Needs @ Fingertips.

One of the best practices that made a huge difference for us in the mid 90’s was placing all the perishable items and tools next to the machine itself. It was a significant departure at that time where workers did not have to walk to a centralized tool crib to get tools or walk to inventory for perishable items. Eventually you want your suppliers to keep the items filled for you directly on the shop floor.

Run Product Families.

Our experience is that 80% of the time, product will fall into families with similar operations performed on them while 10 to 20% will be stranglers. Two job families have been identified below as an example:

1. Job Family 1 = A + B + C + D
2. Job Family 2 = A + C + E + F

If we get a product as an example that has A, B, C, E or A, B, C, D, E, F then it would fit in Job Family A.

Job families are important since it will allow us to quickly group job orders into buckets, and then schedule the buckets to schedule similar jobs together for efficiency while also keeping an eye on capacity and bottlenecks.

Daily Goal Celebration.

Provide visibility on what are the jobs that need to be processed each day on a job status board where every morning starts with a team huddle to review the work that needs to be accomplished and make adjustments as needed from the previous day. A line needs to be drawn such that everyone is clear regarding what jobs need to be accomplished for that day.

At the end of each day, have a team huddle to review what was accomplished, and plan for the next day.

It has been 20 years since the last time I did hands on work for operational efficiency and these ***“Five Essentials”*** jumped out to me immediately. I would be very curious to hear feedback to see if there is anything that I missed that is simple and could be adopted by companies for productivity enhancement.

Zain Ali