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STOCKKEEPING WITH LEAN

by Bill Belt

One of the paradoxes of Lean is the increased importance of stockkeeping. If Lean really meant "zero inventory", then there wouldn't be any problem. But it means rather less inventory, smaller stocks, much more difficult to keep accurate especially if the product flow is accelerated.

Traditional stockkeeping methods, still valid, are nevertheless transformed under Lean. First, **the responsibility of the stockroom, and that of the stockroom manager, are greater under Lean**. The main stockroom, smaller now and with less inventory to hold, still represents the « bank vault » of the company. But Lean creates many small stockrooms, or open stocking areas, throughout the factory, at components' point-of-use. Decentralizing the stockroom means also decentralizing the responsibility for stockkeeping. It is transferred to the cell, to the operator who is closest to the stocks. The main stockroom manager therefore becomes a teacher and consultant.

A U.S. manufacturer of electronics, a long-time Lean user, does a complete physical inventory of its 6000 components stocked in cells on the shop floor every Friday afternoon. It takes 10 to 15 minutes to count the parts, and another 15 minutes to assemble and check the information. It can be done quickly because (1) there are 150 operator-stockkeepers in the cells; (2) the items are stocked in well-identified Kanban squares in clearly labelled boxes, each box with the same standard quantity; and (3) only the last carton is open and requires manual counting.

Managed by backflushing to accelerate flows and minimize transactions, items having discrepancies between the physical inventory and the computer inventory are immediately moved back into the stockroom. Now if the cell needs the component, somebody has to the stockroom to get it. This penalizes the productivity of the group working in the cell. Once the cause of the discrepancy has been determined and eradicated, the component is put back into the cell and managed once again by backflushing.

In the principal stockroom the traditional methods of cycle counting still apply : random counting (complete but slow) ; control groups (intentionally incomplete but very fast in detecting the causes of errors) ; ABC or Pareto (good in particular for financial control) ; and by location (very fast but possibly incomplete for a given item). The last is the method used in Lean cells.

What is the main objective of cycle counting? To have correct stock balances, to avoid the annual physical inventory, to avoid shortages…all those reasons are good ones, but the main objective is **to find the cause of errors**. We have the whole arsenal of Total Quality tools to do this.

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What in your opinion is the cause of errors most frequently mentioned?

TYPICAL CAUSES OF ERRORS

1. **Uncontrolled access to the stockroom**
2. **Physical mouvements unaccompanied by information movements**
3. **Insufficient storage space**
4. **Too broad authorization for adjusting balances**
5. **Insufficient education for counting parts**
6. **Too weak interest from Top Management in record accuracy**
7. **Data collection errors**
8. **Bill-of-material errors**

If you guessed no. 2, you're right. With Lean, the document can be electronic and automatic (bar-code readers on production lines, for example), but formally documenting the physical movement is obligatory. A pre-Lean environment depends on physical barriers, on signatures, and on rechecking to guarantee discipline. Lean depends more on the confidence among the members of the team to keep stocks accurate. It's more difficult to create, but much stronger, faster and cheaper in the long run

Inventory at a distance in a supply chain is always harder to keep accurate. Often all of the elements mentioned above are missing; responsibility, method and confidence. One could add: IT systems which communicate poorly, but often this problem is another manifestation of the other three although it is often complicated by distance and by computer logic which is too complex.

Chow can stockkeeping which has fallen into inaccuracy and negligence be improved? We recommend including in the Lean education program, 4 sessions of 1.5 to 2 hours on stockkeeping. The teacher should be someone from the company, who presents the subject during the first 45 minutes and leads a discussion during the last 45 minutes.

Topics of the sessions could be:

(1) Record accuracy and cycle counting: why are they important?
(2) Methods of cycle counting
(3) Performance measurements and root-cause analysis of errors
(4) IT transactions and backflushing

It's not what management expects, it's what management inspects: the simple fact of focusing on inventory record accuracy will improve it and often will lead to some lowering of inventory. More drastic stock reductions will come from applying Lean: working to takt time, solving non-Quality problems, and doing things right the first time…which in turn will facilitate and encourage correct stockkeeping for inventory and for work