
HOW TO IMPROVE PRODUCTIVITY IN MANUAL PICKING

If you haven't examined your warehouse in the last several years, chances are excellent that you could improve productivity substantially and perhaps even without the outlay of capital funds. Our experience indicates that a 10% reduction in costs is easy and that 20% to 30% is not unusual.

Depending on the type of warehouse, 30% to 40% of the labor cost can be in the picking operation. We will examine this area below and suggest where improvements could be made.

First of all, we do not think that going from an inefficient manual system to a sophisticated automated system is necessarily the answer. If you want to justify switching from an ineffective operation to a sophisticated one, it can sometimes be done. However, you should first consider in-between operations that don't cost much money and are easy to install and control.

Several years ago, we studied an operation that had three warehouses. The company decided that it wanted one warehouse for its 60,000 items. The three operations had 32 pickers in total.

We designed one efficient warehouse which required six pickers and used a manual system of picking.

Using stacker cranes in this warehouse would have required four people. However, these stacker cranes would have cost \$3.6 million and taken two years to implement. This sophisticated system would have saved 28 people. Instead, the traditional warehouse with shelving, racks and picking equipment cost \$495,000. This was easy to justify

with a reduction of 26 people. The manual system took much less time to install, and provided flexibility the stacker crane could not match.

For a warehouse picking operation to be efficient, the office must prepare helpful picking lists. Getting an order from a customer and rushing it to the warehouse for picking may give the impression that something is happening fast, but in the long run, this approach usually wastes time and, in fact, slows up the handling process.

The office should go through a number of steps in processing paperwork as outlined below. We omit consideration of credit checking, bills of lading and labels in this article.

STEPS FOR THE OFFICE

The first step in helping the warehouse is to deduct each item from inventory. If an item is not deducted from inventory, the picker may spend time looking for it. Our experience indicates that an out-of-stock item may take up to 30% more time to look for than one that is in stock. Not only does the picker spend his own time searching, but he may ask other pickers or a supervisor for help or information.

The second step provided by the office should be to prepare a legible picking list with an exact location for each item. Third, each item on the picking list should be printed in the same sequence as it is located in the warehouse. If there is split picking for broken lots, full cases and full pallet items, the sequence should be broken out separately for each area.

The standard time to pick each order

should show on each picking list. In this way the supervisor will be able to schedule the pickers, and the pickers will know the predetermined standards which they should meet or exceed.

When the picking list is prepared, all out-of-stock items should be deleted. This will keep the picker from reading extraneous material and will save time.

There is no one right way to pick. Every situation has to be examined for its peculiarities and special requirements. In a warehouse there are many variables which have an impact on picking. These effects may be good or they can slow up the operation.

ELEMENTS OF PICKING

A number of elements must be considered for effective picking. Generally the first element is to pick up the order. The second element is to read it. The third element is for the picker to go to the first item to be picked. This may be riding on equipment or walking. The picker then picks that item. The next element might be to make a notation on the pick list. Then, he reads the next item, walks to that location, picks the item, makes a notation on the pick list and repeats this sequence for the balance of the items. After they have been picked, the items are brought back to a central point, laid down and the order form might be signed or initialed by the picker.

In most manual picking operations, 80% to 85% of the time is spent either walking or riding. The balance of the time is spent studying the order, making notations and doing

the actual picking. If we eliminate a good part of the walking or riding we can reduce overall picking time.

ITEM LOCATION AND PLACEMENT

Travel (walking or riding) time is dependent upon distance. One way to reduce distance is to locate the fastest moving items near the shipping point. If we follow Pareto's Law or the 80-20 rule, and we put 20% of the items close to the shipping point, they may account for 80% of picking.

Item placement is also an important factor. If a picker has to reach over six feet or below one foot, the work becomes more difficult. Items in deep bins or racks require reaching and perhaps climbing. These motions take time. Items that are wedged in or difficult to pull out also require time. For example, if two pallets are next to each other and they have material overhanging and touching, a fork truck driver trying to remove one pallet will have unnecessary difficulty, take more time and perhaps damage merchandise.

STANDARD PACKS

Standard packs have an impact on time required to pick. If items have to be weighed or counted by the picker, additional picking time is needed. It is desirable to have pre-packaged, standard packs which need not be broken for picking. (This is a marketing decision which can help the warehouse.)

A related problem is that units or pallets may not have the same count for similar items. If this is so and the picker is aware of it, it takes more time to pick. If the picker is not aware of this situation, there will be picking errors.

PICKING METHODOLOGY

Picking methods can be different for different operations. For instance, one picker can make one pass to pick one order. This method makes

sense when there are a few line items per order and the picking path distance is short.

Several pickers may be used for a zone pick with each picker picking in a finite area. Zone picking is suitable for orders with many lines to reduce travel time.

Batch picking may be used when many orders have the same items. In this situation, orders are totaled or batched, and the product picked as a batch. It is then brought to an assembly point for individual pieces to be separated for each order.

Split picking is when different kinds of picking equipment are required to pick an order. For instance, in one area a cart might be used, in another area a fork truck, and in a third area the pick may be made to conveyor. Line items for an order are merged before or during shipping.

PICK LIST

The pick list has a decided effect on the time needed to pick. The list should be designed to be easy to read. It should have a location, an item number and a description of each item. In some instances a batch number or lot number is required. Printing these lot or batch numbers on the pick list will save the picker's time.

Item size also has an impact on picking. It generally takes less time to pick small items than to pick large items that are bulky or hard to handle. Using the correct equipment helps to improve this situation.

MARKING AND LABELING

Proper marking or labeling makes a difference in picking. If an item is not marked at all or marked incorrectly, it takes time to determine if it is the right item. If there are several markings or labels on the item, confusion occurs and time is wasted determining the correct nomenclature.

EQUIPMENT

Equipment has an important impact on picking. This is a major subject by itself. For example, pushing a cart is not as quick as using an electric pallet jack.

Equipment attachments also have an important effect on picking. A fork truck with a side shifter can maneuver quicker than one without.

WORKER ABILITY

- What about the worker's ability?
- Can the worker read well enough?
- If the worker uses a fork truck in an operation, has he or she been instructed in its proper use and been authorized to drive it in accordance with OSHA regulations?
- Is the worker capable of doing what he or she is supposed to do, and is the worker properly motivated to do an effective job?

LAYOUT

Warehouse layout has an effect on picking. If the aisles are not properly laid out, considerable walking may be required to go from one item to the next. There are substantial differences in the time needed to pick from shelving, the floor, flow racks, pallet racks or drive-in racks.

- If there is a forward picking area, replenishment is an important factor in the picking sequence. If the forward picking slots are not replenished adequately and the pickers are required to pick the complete orders, must they go to other areas to complete their orders?

EQUIPMENT MAINTENANCE

Proper equipment maintenance has a tremendous bearing on picking, as breakdowns must be avoided. The impact of a conveyor which stops, with 20 or 30 people working it, can be disastrous.

UNIT LOAD INTEGRITY

Load integrity has an impact on picking. Moving a pallet load of full cartons or bags of chemicals that are unstable or slide off can be disconcerting and time consuming.

- What would happen if these items were stretch or shrink wrapped, glued or contained in some kind of unit load?

HOUSEKEEPING

Another time consumer is poor housekeeping.

- How fast can you move when there is merchandise or trash on the floor or in the aisles which slow down a picker from moving
 - with or without equipment?

Just trying to move a pallet jack over small pieces of debris in the aisle can slow up an operation.

TRAFFIC CONGESTION

- How about traffic congestion?
- What effect is there on a picking operation when too many pickers

are in the same area or an aisle is too small for one picker to go past another?

TRAINING

- What effect does training have on picking?
- Do pickers know the location system?
- Do they know how to use their equipment?
- Do they know, or are they trained to put items into containers with the markings up so that the checkers don't have to re-handle them?
- Do pickers know how to check and sign their picking lists?

MEASUREMENT

- How about a system of measurement?
- Are there predetermined standards which tell you what you are measuring?
- Should you be measuring weight, lines, orders, pieces or dollars per hour?

- If you have a measurement, is it analyzed to determine productivity for the total operation and for each picker?
- Does this analysis tell you where to look for ways to improve picking?

SUPERVISION

Supervision is probably the most important element in a picking operation.

- Is the warehouse laid out so that the supervisor can see the pickers?
- Are there standards which can be used to measure the pickers?
- Does the supervisor watch to see what they are doing and if they are doing it correctly?

As we've noted, many factors influence the picking function, which is itself only one of many elements to be considered in productive warehouse management.