

Location Numbering – design and implement
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Yesterday I visited a small facility and was reminded that many warehouse operations do not identify storage and pick locations with a standard numbering system. In that warehouse, several of the staff were out sick that day and the remaining staff were spending a lot of time searching for the merchandise to fill orders. Relying on people's memory of where merchandise is located can work well only as long as the quantity of locations is small and the people that know where the merchandise is located come to work every day. The interesting part of this situation for me was that once we began to discuss location numbering I discovered again how difficult it can be to develop a numbering system and get it installed.

There are many different location numbering systems, perhaps as many as the range of reasons and logic patterns that our creative minds can develop. And, while each of these systems can work, if you do not have a location numbering system in your warehouse, I recommend you take the initiative to begin the process of creating and installing one. This column will provide you with a set of proven design guidelines/logic that we have used for location numbering in many facilities, and suggests some first steps to consider as you begin to change your processes to use the location numbers in your picking, stocking, and inventory management.

First, and most importantly, the numbering system you implement must be consistent with the capability of the computer system you use for your warehouse. The ability of your system to sort and sequence the order lines in a picking document is key to the use of the numbering system, to use it to guide the efficient performance of order picking.

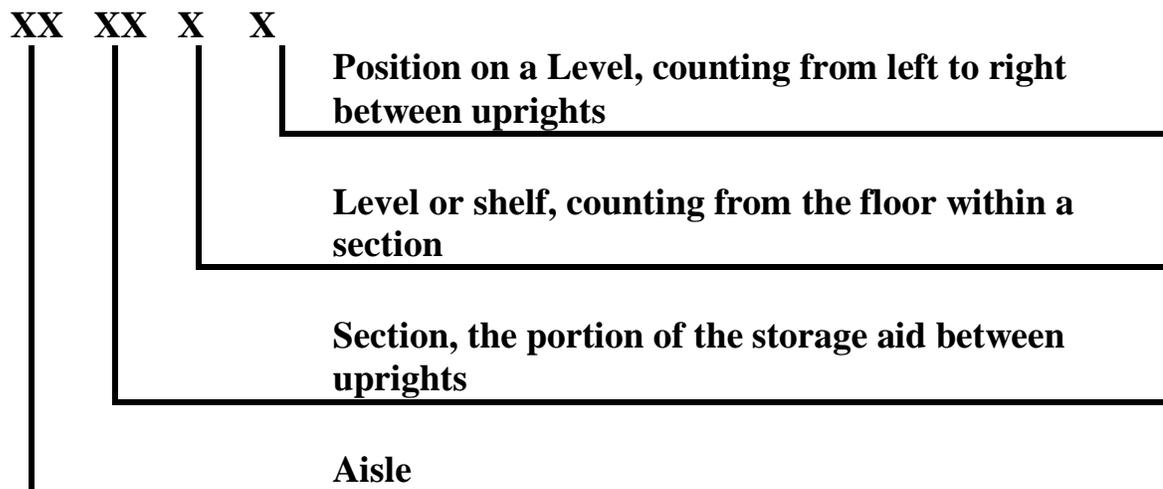
Second, you should base your location numbering on simple and consistent logic, that can make it easy for a new warehouse employee to learn and for the seasoned employees to use when rushed or in a hurry. I recommend that your storage location numbering system mirror the system that city planners use outside the warehouse to identify the street and house addresses in a typical city, with even numbers on one side of a street (aisle) and odd numbers on the other side, etc.

I believe the location numbering system should not include alphabetic characters. Some people like to see location addresses include ABC's instead

of 123's, and perhaps using the first part of the alphabet can work, but probably not beyond E, F or G. So, if you feel strongly about using alphabetic characters, I suggest that they be used for elements of the location with no more than 5-6 letters, for example the levels in rack or shelving, and not the aisles.

Operationally I recommend that you never place more than one SKU in a location at one time to minimize the time and improve the quality of the order picking activity.

Location numbering should be as specific as possible, identifying each of the elements of each logical storage location, e.g., aisle, section or bay (between uprights in rack or shelving), shelf or level (starting at the floor level and ascending), and position on the level from left to right (on pallet rack that could be two or three pallet positions). One format for this numbering appears below:



Aisle -- Each aisle should have an aisle number. Consider using a separate sequence of aisle numbers for each logical work area in the warehouse, e.g., repack, pallet rack, floor stack, etc. In racked areas, assigning numbers to aisles instead of rack or shelving rows supports cross-aisle picking. This numbering makes it easier to support cross-aisle picking, which will increase productivity by reducing the total travel distance by directing the picker to select all of the materials required in that aisle as a part of a single trip through the aisle. Where there is a conveyor installed down the center of the

aisle in an aisle, we can assign addresses to rack rows instead of aisles, if your computer programmer finds it difficult to sequence picking documents using the odd-even section location number elements described, below.

I suggest that we assign numbers to aisles ascending from 01, beginning at one side of the building and continuing toward the other. This method also supports the spatial orientation, so it is easy to remember that the higher numbers are toward one end of the building and the lower aisle numbers are toward the other end. For example, 01-XX-X-X

Section -- A section is the area between the uprights. Some use the term “bay” to describe the same space. Select the conventional entry end of the aisles (typically this nearest to the receiving dock side of the building, and assign numbers to rack sections beginning with the number 01 to “n” with numbers ascending, odd numbered sections on the left side of the aisle and even numbered sections on the right side. For example, 01-01-X-X

Level – Assign an address from 1 to “n” to each level within each rack or shelving section, ascending from the floor as 1. This is where letters can best work, because the quantity of levels is limited. Each level would be a shelf or pair of beams. For example, 01-01-1-X.

Position -- Within each shelving or rack-section-level, assign numbers to each position, ascending from 1 to “n”, from left to right as you face the section. Often each location is separated from the next with a divider, bin box, or a painted or tape line on the shelf deck and lip to help keep materials in their assigned location. In pallet rack, typically there usually are positions on each level, numbered 1 and 2. For example 01-01-1-1.

Special Use Locations -- In rack used for the hand stack of small amounts of cases, the location numbers on a shelf usually range up to 9. In repack shelving or carton flow rack, location numbers usually do not exceed 9. To accommodate small items in drawers, we have used 2 digits to describe the locations using a 9X9 grid locator, e.g., row and column. In floor storage locations, we assign one Section Number to each pallet row facing the aisle, odd numbers on the left and even numbers on the right.

Once you create set of guidelines that make sense, the next step is to use a plan drawing of your layout to verify that it works. I actually write the numbers on the layout and use it to explain it to others. Usually I include the staff,

order pickers and stock people who typically enter the storage area from the Receiving Dock and want to find a particular location easily. If the workers can understand your numbering system and imagine that they can find their way around the warehouse with those numbers, you are well on your way to an effective location numbering system.

The next step is to find and prepare label stock to put the addresses on the aisles, beams, shelves, etc. Several companies specialize in location labeling solutions. Some will even print the numbers on the stock for you. I recommend that you consider using Yellow rather than White stock for your labels. I have found that Black characters on Yellow paper seem to read more clearly in medium light areas at the end of the day. You could also ask your IT person to help with this. Perhaps you buy the stock and get him/her to print the labels for you. In this way that person becomes more familiar with what you are doing, your objectives, etc.

The last and critical step is to get the location numbers assigned to locations in your computer system that can support operations with location sequenced picking documents, tracking and directing the movement of material through the warehouse, for example First-in-First out. Having worked with your IT staff to help with the labeling, when you reach out to ask that the numbers be integrated into the computer system so that you can get a location sequenced pick document, etc., they will be more prepared to understand and help.

In any case, once the numbers are there, there will be a growing interest in using them, from many different areas in the company. So check back in a few weeks and I will discuss some ways you can use the location numbers to improve your productivity and quality performance.

If you run into challenges in this project, please call or write to me at coach@warehousecoach.com. I am sure we can work out a solution that will work well for you and your company.