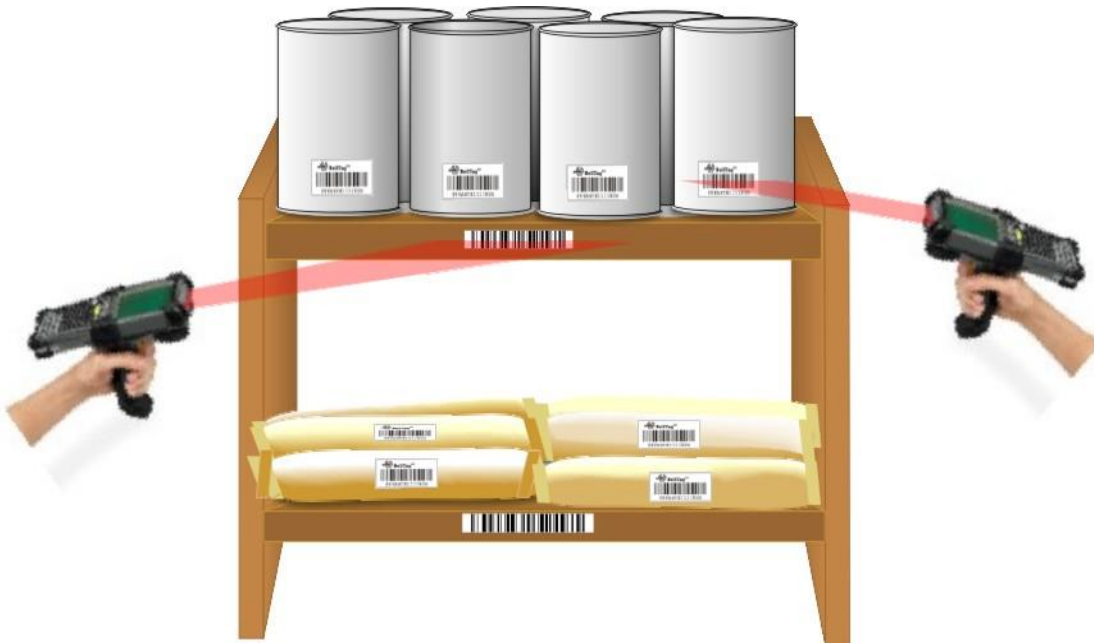




How BellHawk Tracks Inventory, Assets, Containers and other Materials

Data Sheet

Introduction



BellHawk can track the quantity of materials at a specific location, by lot number if required. It typically does this tracking by using unique location tracking barcodes attached to each rack, shelf, bin, or other locations where materials are stored.

These location barcodes are scanned whenever the materials are placed in a specific location. Then the part number and lot number are entered, along with the quantity entered into the location.

When parts are withdrawn, then the location barcode is scanned along with entering the part number, lot number, and quantity withdrawn from the location.

That is, unless the item being entered into inventory or withdrawn from inventory is an asset or container with a unique tracking barcode. In this case, data such as lot number, serial number, and expiration date, related to the asset or container only need to be entered once, when the asset or container is first entered into inventory.



Thereafter all that is necessary is to scan the tracking barcode on the asset or container, along with the new destination location barcode, whenever the asset or container is moved to a new location. This greatly reduces the quantity of data entry required and, as a result, significantly reduces inventory errors.

This is similar to how Amazon, UPS, and FedEx track the containers in their supply chains. It also forms the basis of the GS1 standard for tracking materials in the Global Supply Chain.

If materials are entered into a container or withdrawn from a container then all that is needed is to scan the tracking barcode on the container and record the quantity entered or withdrawn. Also, many other attributes can be tracked for each asset or container, such as size and color, including user defined parameters, and, in the case of rolls, reels or sheets of material the length and width dimensions

The tracking barcode label that is applied to each container can be as simple as a uniquely numbered barcode peeled off a roll of pre-printed barcodes, such as shown at left, for use within your own plant, or as complex as a GS1 standard barcode to uniquely identify a pallet or other shipping container in the global supply chain.



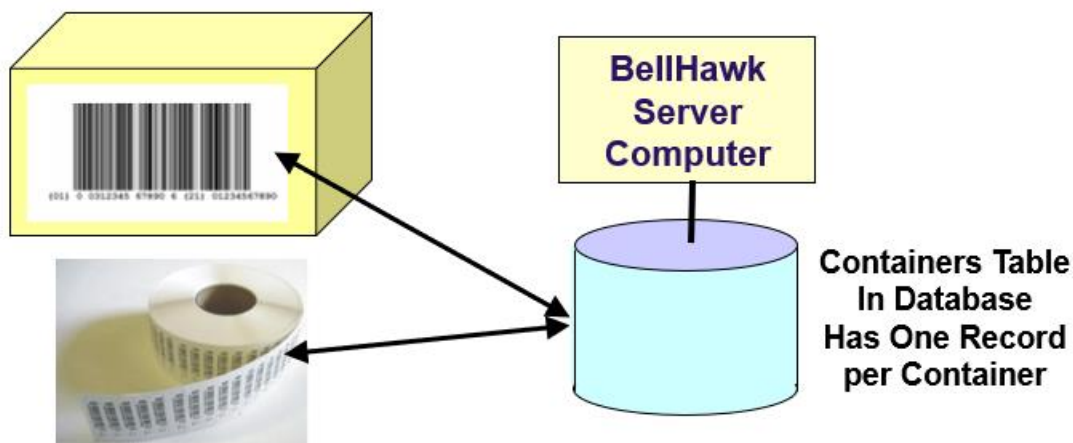
This use of unique tracking barcodes is sometimes known as License-Plate-Number (LPN) tracking, based on the similarity to tracking of vehicles by state issued license-plate.

License-plate-number container tracking gets its name from the registry of motor vehicles, where they issue you with a license-plate for your new car or truck. This license-plate has a state of issue and a set of letters and numbers that uniquely identify the vehicle, but otherwise do not contain any information about the vehicle.



All that information is stored in an electronic database, where it is readily available, irrespective of whether the license-plate is on a car, truck, or motorcycle or who or what is in the vehicle at a specific time.

Similarly, BellHawk enables tracking of materials by location, and as an asset or in a container to be handled in a uniform manner through the use of the containers table in its database.

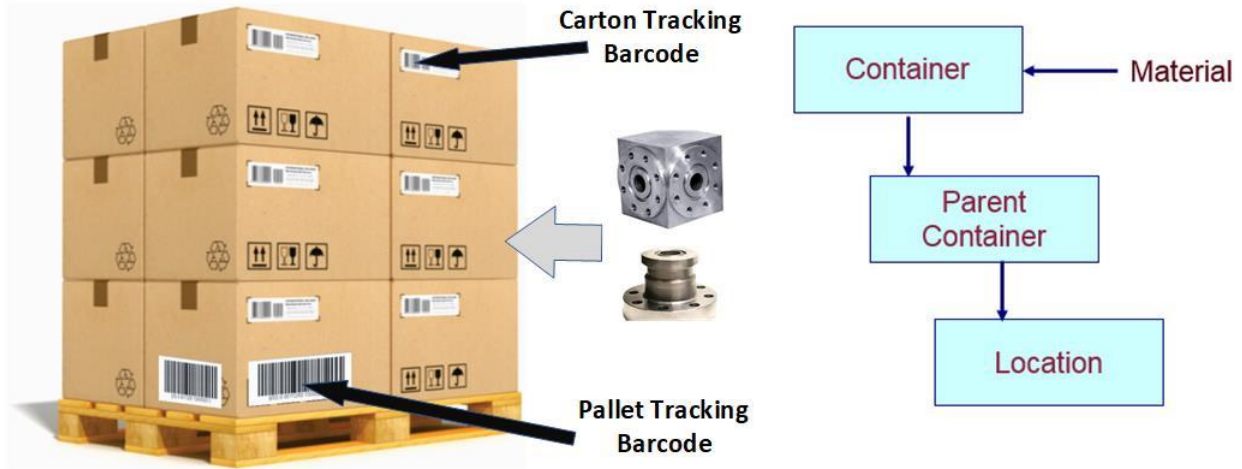


Here a unique tracking barcode and/or RFID tag is applied to each container, or individual part, or asset that is to be tracked and all the details about the contents of the container, part or asset

are captured when the container is first entered into inventory. This data may include: part number, quantity, lot number, expiration date, supplier, location, as well as user defined parameters such as size and color.

Please note that the contents of the database record describing each container is dynamic, so that the barcode label does not need to be changed whenever the quantity of materials in the container is changed. Also, the current location of the container can be changed simply by scanning the tracking barcode and recording the new location.

BellHawk also tracks mixed materials on pallets, or in totes, or in cartons, as nested containers.



In a real-time materials tracking system, it is not sufficient to track inventory at a location or even to track individual containers using license-plate tracking methods. It is also important to track nested containers.

Here, as shown in this example, we have mixed parts, each of which can have their own serial numbers, in cartons, which have their own license-plate tracking barcodes. These cartons are then placed on pallets, which have their own license-plate tracking barcodes.

Inside BellHawk, these are recorded in the Containers table, with a parent-child relationship, as shown above. There can be multiple layers of nested parent-child relationships, in our example, records for the mechanical parts having their carton as a parent container record, each of which has the pallet as a parent container record.

The first benefit of this is that if a pallet is moved, picked, or shipped then it is not necessary to break-down the pallet and scan each circuit card to record the activity. All that is necessary is to scan the pallet barcode. The system knows what is on the pallet and can use this data to generate ASN (Advanced Shipment Notice) data, for delivery by EDI software, describing the nested relationship of all the containers and materials on the pallet. This ASN data can then be sent to a recipient (by EDI software) who will use the information to receive the contents of the pallet simply by scanning the tracking barcode on the pallet.

Another advantage is that cartons can be removed from the pallet and materials removed from the cartons and BellHawk still knows what materials are on the pallet and where the carton now is and which items it still contains, which is necessary for efficient operations tracking and management.

BellHawk also tracks untagged materials directly at locations without these being in containers. Untagged items have no license-plate tracking barcodes on them. Untagged materials might be a pile of sand on the floor or a stack of boxes (without license-plate tracking barcodes) on a shelf. As we might have multiple untagged items at a location with different item numbers, lot numbers, and attributes such as size and color, we have to track them separately. To do this we use the concept of virtual containers, which are tracked the same as real containers except that they do not have tracking barcodes; instead, they have internal reference numbers

In this way BellHawk knows where every container of materials is at all times and is able to provide this information in real-time to users of the BellHawk system. Also, when total quantities of inventory in stock can be quickly reported by simply adding up the quantity of materials in all the containers of each part, wherever they are located.

Please see the data sheet on “How BellHawk uses a Containers Table to Track Materials” for details about how BellHawk implements LPN methods.

For more information, please see www.BellHawk.com.