

On a Roll - Tracking in the Peculiar World of Roll Converters by Dr. Peter Green BellHawk Systems Corporation



There are a large group of manufacturers out there that I call roll converters. These people make or convert rolls of material. These can be rolls of paper or plastic. They can be reels of wire or coils of cable. Roll converters may start with a roll and coat it with something or they may start with a roll and split it into smaller rolls. They may start with a roll and convert it into sheets and other products. They may even take multiple rolls of material and press them together into one roll.

So what do all these manufacturers have in common? They cannot use standard inventory tracking methods to track their materials. If I make or use widgets, then my inventory consists of boxes of widgets. There is a part number for each different size of widget. My inventory records record how many boxes of widgets I have and how many widgets are in each box. If I have 200 widgets in one box and 300 widgets in another then this is the same as having 500 widgets in stock. Not so for roll converters.

In roll converting we have a part number for a type of material. All rolls, reels, or coils of this material have the same part number no matter what their width, length, or (often) thickness. We have to track each individual roll, as if it were a container. We measure each roll by its weight because that is all we can do without unrolling it. Yet we may buy or sell it by the square yard or in linear meters.

A standard inventory system records part number and quantity. A more sophisticated one may track the location of each container and the quantity it contains. To track each roll we need to track a whole range of attributes such as weight, width, length and thickness as well as its location. In addition we may also have attributes such as color and grade (quality). For each part number there is usually a primary unit of measure, such as length, and a secondary unit of measure, such as weight. There is also a formula for converting from one to the other given the other attributes of the roll. This enables us, for example, to weigh a specific roll, and estimate what length of material is on the roll.

Rolls of material are not commutable. Two rolls having the same part number may not be identical. One may be twice as wide as the other. Even if two rolls are identical in everything except for length, I cannot simply add up the lengths and to get a count of my inventory. If I have a customer who wants a 400 foot length of cable, I cannot supply him out of stock if all I have in stock is a 200 foot length and a 300 foot length of cable. I have a sufficient total quantity in inventory but not structured the way my customer wants to buy it.

The peculiarity of measures persists even when rolls have been converted to sheets. Here many different sizes of sheets may have the same part number. Again we have to track all the attributes of the sheets but now we may measure the sheets in reams as well as by weight.

Many roll manufacturers have to track quality data for each roll and provide this to their customers. This data may be in terms of the number and location of defects on the roll. It may be from quality control testing on samples taken from the roll or it may be from the computer controlling the roll manufacturing process. This data has to be associated with each roll, so that this data can be quickly reviewed if there is a problem with the roll.

In their manufacturing processes, many roll manufacturers use counters to measure the length

consumed or the length made. This data has to be captured and associated with the roll, preferably by automatically transferring the data into the tracking system.

Another peculiarity of roll converters is how they consume materials on a job. In a typical assembly manufacturing operation, I draw enough materials from inventory to make a batch of parts. These parts are assembled and the finished goods placed into inventory. I essentially consume the parts once I start assembly. In the case of roll converters, they bring a roll of material to the floor, convert part of it, and then weigh the remainder as it is being placed back into stock. Only then do I infer how much material they used off the roll by weighing the remainder.

This leads to another peculiarity of roll converters. They may take one roll and slit it into multiple smaller rolls for different customer orders. The scheduling issue is to efficiently assign customer orders to the rolls being slit so as to minimize wastage. In terms of job tracking, we have multiple orders combined into a single job, that produces rolls of material with the same part number but with different attributes for different customers.

What does all this imply? First and foremost that a standard inventory and batch job tracking system will simply not do the job for roll converters. What is needed is a tracking system capable of tracking each individual roll and handling multiple units of measure and many attributes for each roll. Such a system needs to be easily customizable to handle measure conversions, specific to the manufacturing process being tracked. It also needs to be easily customized to interface to process control and test data collection systems so that this data from these systems can be automatically associated with each roll.

Do such tracking systems exist? Yes, systems such as BellHawk® from BellHawk Systems Corporation have been proven to efficiently solve this tracking problem for many roll converters. Not only do such systems work efficiently on the factory floor and in the warehouse but also they work in conjunction with front-office accounting systems. A good roll tracking system can provide accurate information to the accounting system so that it can track the value of the raw, intermediate, and finished goods inventory. The roll tracking system can also provide information about rolls received and rolls shipped so as to enable efficient processing of accounts payable and accounts receivable.

For more information please call 1-800-747-1377, see our website at www.BellHawk.com, or send Email to sales@BellHawk.com.

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