

A Guide to Implementing a World-Class Cycle Counting Program

The implementation of comprehensive cycle counting solutions can result in operational efficiency gains of anywhere from 5 to 10 percent. The opportunity to increase sales through improved service levels while potentially reducing inventory levels in the DC is a real benefit, making cycle counting an appealing best practice.

It is more costly to address inventory discrepancies after they have had a negative impact on the operation than it is to resolve them proactively avoiding disruptions in the normal flow of processing. The ultimate goal of a cycle counting program is to achieve an absolute bin (location) level inventory accuracy of 97 percent or greater, eliminate the need to do wall-to-wall physical inventories, and to achieve this with the most efficient use of resources possible.

In order to achieve the goals stated above, a cycle counting program has to deliver the following results:

- Uncover the root causes of inventory discrepancies and by taking timely corrective action eliminate (or reduce) future inventory discrepancies.
- Increase distribution center (DC) labor efficiency, improve product flow and improve customer service by enabling the identification of and correction of inventory discrepancies prior to them impacting normal DC operations.
- Meet the requirements of the accounting department and external auditors for procedural controls, count frequency, and inventory accuracy levels that will allow for the elimination of wall-to-wall physical inventories.
- Provide the appropriate tools, processes and procedures needed to optimize the deployment of inventory control resources, maximize cycle counting efficiency and enable Inventory Control (IC) to swiftly identify and resolve the root causes of inventory discrepancies.
- Educate the entire distribution team (top to bottom) of the importance of having accurate bin level inventory numbers and the importance of successfully implementing and executing the cycle counting program.

- Provide the means to track and report compliance and performance against a set of pre- defined key metrics, and hold individuals accountable for achieving and maintaining targeted inventory accuracy levels.
- Allow for reductions in safety stock levels as a result of improved accuracy and improved service levels.

Benefits of a Comprehensive, Pro-active Cycle Counting Program

The benefits achieved from a well-executed cycle counting program include lower operating costs, improved service levels, improved shipping accuracy, and lower inventory levels. Cycle counting is superior to annual or bi-annual physical inventories for a number of reasons.

- Inventory accuracy is being maintained at higher levels continuously throughout the entire year.
- The timing associated with inventory discrepancy identification allows for root cause identification and elimination.
- Eliminating the root causes of inventory discrepancies leads to a much higher overall inventory accuracy level than counting once or twice a year.
- A comprehensive cycle counting program will eliminate the requirement to shut the entire building down one or more times a year to do a wall-to-wall physical inventory.

Listed below are a few of the key drivers that will result in the achievement of the reduced costs and improved service levels associated with implementing a cycle counting program.

- Eliminating or reducing the exception handling that occurs when inventory discrepancies are encountered (exception picks, expediting replenishments, down time between waves, etc.).
- Eliminating the cost and service disruptions associated with wall-to-wall physical inventories.

- Eliminating (or reducing) lost sales due to shorts caused by either product not being in the right location, or product being physically out of stock when the system shows an on hand quantity.
- Ensuring the product ordered is the same product that is selected and shipped to the customer.
- High inventory accuracy levels will likely enable lower safety stock levels in the DCs, resulting in inventory reductions and lower inventory carrying costs.

One of the most important benefits of maintaining an accurate slot level inventory is that it allows a company to better leverage the capabilities of its warehouse management system (WMS). A WMS that directs the optimal movement of product and resources through the DC requires extremely high inventory accuracy levels to be effective. Inventory accuracy is critical to fully realize the benefits achievable through using a WMS.

What to Count and How Often to Count It

For most operations, there are seven key drivers that will influence what products to count and at what frequency to count them:

1. The first factor to consider is the minimum number of times a SKU and/or location must be counted in a year to meet the criteria set by accounting and the external auditors for the elimination of the wall-to-wall physical inventories.
2. The second factor to consider is any external regulations that require specific count frequencies and specific documentation. Pharmaceuticals are an example of where an external agency dictates the count frequency and documentation requirements for certain items.
3. The third factor to consider is the annual dollar turnover of an item. Items that fall within the top 20% of annual dollar turnover should be on an accelerated cycle count schedule. Items that are in the bottom 80% of annual dollar turnover fall into the minimum count frequency group.
4. The fourth factor to consider is the annual unit volume of an item. Any items with annual unit volume in the top 20% of the item population should be put on an accelerated cycle count schedule. Items whose unit volume is in the bottom 80% fall into the minimum count frequency group.

5. The fifth factor to consider is the pilferage risk associated with the item. Items that are deemed high-risk should be counted on an accelerated schedule.
6. The sixth factor to consider is the per unit dollar value of the item. Items that fall into the high-value category should be counted on an accelerated schedule.
7. The seventh and final key factor to consider when determining minimum count frequency is the current inventory accuracy level for that particular item or item class. Items within an item class that has a poor accuracy level should be counted on an accelerated cycle count schedule.

On a periodic basis (recommend weekly), every item should be evaluated using the criteria stated above. If an item falls into more than one of the six categories outlined above, the category with the highest count frequency should be applied, and that frequency will become the minimum count frequency for that item.

The SKUs that make up the combined top 20 percent of dollar turnover and the top 20 percent unit volume will typically account for 80 percent or more of the total dollars shipped and 80 percent or more of the total units shipped. By focusing on this subset of SKUs, distribution operations can maximize the accuracy and efficiency gains achieved for the investment in IC resources.

How to Count

There are four distinct processes that should be considered to record cycle counts against a slot in the warehouse.

- **Scheduled Cycle Counts** are the pro-active counts (or normal counts) that are completed daily based on a set of predefined rules and procedures. Cycle counters will be directed by the system to count slots in the most efficient travel path possible. All cycle counts should be blind counts where the system will display the location, and the cycle counter will scan the item, enter a case pack and enter a unit or case count. Upon completion of each cycle count, the system will direct the cycle counter to the closest slot with a pending cycle count. Scheduled cycle counts comply with the minimum count requirements and other rules associated with the cycle counting program.
- **Zero Confirmations** are opportunistic counts performed by warehouse operators during the course of normal day-to-day warehouse operations. Like scheduled cycle counts, zero counts are recorded as a valid cycle count, and count towards meeting the minimum slot and SKU count requirements.

- **Slot Verifications** are triggered when either a normal warehouse operation or a cycle counting operation uncovers a count discrepancy within a slot, and the discrepancy is greater than the pre-defined acceptable variance threshold. An IC resource will be directed by the system to slots with pending slot verification requests based on priority and the most efficient travel path. It is estimated that approximately 25 percent of count discrepancies can be resolved at the location in question. Resolving the discrepancy at the location in question will eliminate the need for IC to do a full SKU verification.
- **SKU Verifications** occur when the slot verification confirms that a count discrepancy exists and it is greater than the pre-defined acceptable variance threshold. The SKU verification process should be set up to logically sequence the slots being verified so that the slots with the highest probability of having the offsetting inventory discrepancy are visited first. For example, if the original inventory discrepancy was found in a reserved location, the first slot to be investigated should be the primary pick location that was replenished from the reserve slot in question. The goal of the slot and SKU verification processes is to minimize the time and labor required to resolve discrepancies, while maintaining a high degree of inventory integrity.

When to Count

Primary picking locations are difficult to cycle count during active picking due to the constant activity of items being picked from and replenished to the primary slots. In the areas that use pick-to-label with no real time confirmation of the picks, it is critical to make sure all picking activity has been confirmed to the WMS prior to conducting counts in those areas. Scheduled cycle counts of the primary locations should take place on non-ship days or during times of the day when picking is either not occurring or is at a minimum. Slot verifications in the primary locations need to occur as discrepancies are discovered and will likely occur on any shift, including those where picking is heavy.

- Prior to cycle counting primary picking locations, prep the area by making sure any product located on the floor, in rack behind the picking location or product that may have been shifted into an adjacent slot is accounted for and put into its correct location.
- When counting primary locations during an active picking and/or active replenishment cycle, it will be critical to ensure no activity has occurred or is in process on the location being cycle counted that has not been confirmed (posted) within the WMS.

Counting in reserve locations (bulk and rack) while normal warehouse operations are occurring is less risky than counting primary pick locations. Typically, any action performed

on a reserve storage location is going to be confirmed to the WMS in real time, while the operator performing the function is at the physical location. Because of the need to have IC resources available during normal warehouse operations, it is recommended that the reserve locations be cycle counted during first shift when picking and shipping are occurring. This ensures that IC resources are available to address exceptions during times of heavy picking activity and the IC resources stay fully utilized during this critical time period.

- Prior to cycle counting a reserve area, prep the area by making sure any product located on the floor or product that may have been shifted into an adjacent slot is accounted for and put into its correct location.
- When counting reserve locations during normal operations, although the risk is lower than when counting picking locations during active picking, it is still critical to ensure no activity has occurred or is in process on that location that has not been confirmed (posted) within the WMS prior to cycle counting that location.

Performing the Cycle Counting Duties

Separation of duties is a key component of a comprehensive cycle counting program that adheres to industry accepted best practices. Much of the integrity of a cycle counting program hinges on the checks and balances that are put in place to safeguard against inaccurate adjustments being posted, ensure the root causes of inventory discrepancies are being discovered and reduce the risk of inventory loss through employee theft. Separation of duties is a requirement for maintaining the needed checks and balances. There are four distinct roles that need to be performed as part of a cycle counting program:

- **Cycle Counters** perform the scheduled counts to the WMS. These individuals should have the authority to post inventory changes that are within the pre-defined acceptable variance. A Cycle Counter should not have the authority to adjust an on hand value outside of the predefined acceptable variance.
- **Warehouse Operators** conduct zero count confirmations as part of their normal daily operations. The warehouse operators should have no inventory count update authority at all outside of the normal adjustments that results from selecting and placing products into and out of slot locations. If a warehouse operator discovers a count discrepancy while doing a zero confirmation, that location will be flagged for slot verification regardless of the variance amount. The only inventory update authority a warehouse operator should have is to confirm a zero on hand quantity.

- **Inventory Control Specialists** perform slot and SKU verifications. Inventory control specialists should have the authority to make slot level inventory adjustments within the WMS and free up slots that are flagged for investigation. The inventory control specialists should have the authority to complete and clear out both slot verifications and full SKU verifications.
- **Inventory Control Manager** approves and releases inventory adjustments. This is a critical role because the approved adjustments will update the on hand quantities used to make purchasing decisions, and these adjustments will also be used to calculate the annual accounting entries for posting the annual general ledger inventory adjustments.

Establishing the four distinct roles described above will ensure that the right resources with the right qualifications perform all of the critical tasks associated with a well-designed and properly executed cycle counting program. Maintaining the right division of duties will ensure not only a high degree of inventory accuracy but, as importantly, ensure the cycle counting program is executed with the highest degree of integrity.

Things to Consider When Developing a Cycle Counting Program

- A zero confirmation performed during normal warehouse operations should be considered a valid cycle count for that slot and SKU, and count towards meeting the minimum cycle count frequency requirements.
- Inventory discrepancies uncovered during the scheduled cycle counts that are greater than a pre-defined acceptable variance threshold will trigger a slot verification.
- If the slot verification confirms a count discrepancy that is greater than the acceptable variance threshold, a full SKU verification will be triggered.
- The IC manager must approve all adjustments before being released and sent up to be posted to the perpetual (financial) inventory.
- To determine which SKUs fall in to top 20 percent of unit movers and dollar movers, the most recent 30 days of shipments (a rolling 30 days) should be annualized, and that annualized figure should be used to rank the SKUs.

- Maintaining the highest possible service levels to the stores should drive the task priority associated with resolving count discrepancies. Those discrepancies that have an immediate (or near term) impact on filling customer orders should be resolved as soon as possible. For all other discrepancies, slot verifications should be completed within a maximum of 8 hours, and full SKU verifications should be completed within a maximum of 24 hours.
- Completing slot verifications in a timely manner is key to achieving maximum efficiency gains. A slot that has been flagged for slot verification should be systematically locked from normal warehouse operations until the slot verification is completed, at which time it is released.
- The timing associated with completing SKU verifications is critical, but not as critical as completing slot verifications. Swift completion of SKU Verifications will reduce the number of operational issues that result from inaccurate inventory levels. All SKU verifications will be completed within a maximum of 24 hours of being triggered. The SKU verification process will end when either the discrepancy is isolated and resolved, or when all of the locations containing that SKU have been investigated-whichever comes first.
- To build the cycle count work queue, each SKU / License Plate and Slot Location will be scored and prioritized based on the last date it was counted and its individual count frequency rules.
- Slot verification requests will enter the cycle counting work queue in real time from three primary sources, discrepancies discovered during normal daily operations, discrepancies discovered while performing schedule cycle counts or as a discretionary slot verification request entered on line by the inventory control manager.
- SKU verification requests will enter the cycle counting work queue in real time as a result of a slot verification request that confirms an inventory discrepancy exists that falls outside of the acceptable variance threshold, or as a SKU verification request entered directly into the system by the inventory control manager.

Cycle Counting Reporting Requirements

MONITORING THE CYCLE COUNTING WORK QUEUE

The inventory control manager will need the ability to monitor progress being made against the cycle counting task queue. A real time inquiry screen that will include the following

items will be required.

- Total number of scheduled counts inserted into the work queue.
- Total number of scheduled counts completed.
- Total number of zero confirmations completed.
- Number of pending scheduled cycle counts.
- Total number of pending slot verification requests.
- Total number of slot verifications completed.
- Total number of SKU verification requests.
- Total number of SKU verifications completed.

The work queue inquiry should allow the inventory control manager to view the items listed above, in total, and by area. The inquiry should also allow the inventory control manager to see the work that has been completed by each individual performing cycle counts, slot verifications and/or SKU verifications. The inventory control manager should be able to view this same data historically.

COMPLIANCE REPORTING

In order to eliminate the wall-to-wall physical inventories, the distribution operation must stay within compliance of the cycle counting program rules. This will be accomplished through exception based reporting that alerts the Inventory Control manager to situations where a SKU or slot is either out of compliance or at risk of being out of compliance.

A compliance summary report (on line) should provide the following information along with drill down capabilities to view details:

- The total number of SKU's and locations that are past due for cycle counting.
- The total number of SKU's and locations that are within five days of their must-count

date.

- The total number of Slot Verification requests that are older than eight hours.
- The total number of SKU Verification requests that are older than 24 hours.
- Compliance scores should be summarized and posted for all to see on a monthly basis.

CYCLE COUNTING PERFORMANCE REPORTING

The ability to meet cycle counting demands and stay in compliance will hinge on the ability to properly manage and allocate cycle counting resources. In order to manage and properly deploy IC resources, the IC manager needs to be able to predict and track performance levels.

Cycle counting performance reporting will provide the following information:

- Historical Cycle Counting rates, Slot Verification rates and SKU Verification rates (counts per hour) by area and by individual.
- The ability to set rate expectations by activity and area, and track actual performance against target rates.
- Flag and report performance exceptions (significantly below expected rates or significantly above expected rates).
- Overall performance, showing number of actions completed compared to the number of actions requested.
- Graphical representations of the information above should be posted for all to see on either a weekly or monthly basis

INVENTORY ACCURACY AND INVENTORY ADJUSTMENT REPORTING

Maintaining high inventory accuracy at the slot level will be the key to achieving the benefits associated with implementing a comprehensive Cycle Counting Program. The inventory accuracy reports should track accuracy at the bin (or slot) level. In other words, offsetting discrepancies should not cancel each other out. Tracking and reporting inventory

adjustments will be required once the wall-to-wall physical inventories are discontinued, and the annual general ledger inventory adjustments are made using estimated shrink based on cycle counting historical adjustments.

Cycle counting accuracy reporting should provide the following information:

- Inventory accuracy will be tracked in the following ways, the percent of locations with errors to the total locations cycle counted during the reporting period, and by the percent of dollar discrepancy to the total value of the items cycle counted during the reporting period. All discrepancies (over and short) are treated as a positive value when calculating total dollar discrepancy resulting in an absolute inventory accuracy measurement.
- Weekly inventory accuracy by area and by product class.
- Rolling 4 to 6 weeks inventory accuracy by area and by product class.
- Year to date inventory accuracy by area and by product class.
- The information above should be graphed and posted weekly for all to see. Cycle counting financial adjustment reporting should provide the following information:
- For the purposes of reporting financial adjustments, net adjustments is what should be tracked-off setting adjustments will cancel each other out.
- Month to date inventory adjustment totals by item class.

Cycle Counting Implementation Strategy

The objective of a cycle counting program roll out strategy is to first get the inventory accuracy up, and secondly to eliminate the need for wall-to-wall physical inventories. Outlined below are the steps necessary to implement a program with the best possible results.

PROGRAM DEVELOPMENT AND IMPLEMENTATION

The first phase is to develop and implement cycle counting tools and processes. Below is a high level list of the program development steps.

- Develop detailed systems specifications
- Develop procedural documentation and training materials
- Develop and test required systems functionality
- Develop and execute a communication/change management strategy focused on the importance of inventory accuracy
- Train personnel at a pilot location
- Implement the program at a pilot site
- Test the program for 30 days
- Train the inventory control personnel at remaining sites
- Roll the program out to the remaining sites

RAMP-UP PERIOD

Each facility will go through a ramp-up period. During the ramp-up period, IC should become proficient with the program, and the overall inventory accuracy within the facility will climb. The following items should be accomplished during the ramp-up period.

- Inventory control will become experts in cycle counting.
- The root causes for most of the current inventory discrepancies will be discovered and corrected.
- The bin level accuracy of the inventory will continuously improve.
- The DC personnel will become educated about and the importance of bin level inventory accuracy.

- The DC associates will track and get excited about the progress of the improving inventory accuracy levels.
- Inventory accuracy levels will climb to 98 percent or higher.
- Count frequency rules will be adjusted to levels required to maintain the high inventory accuracy and minimize inventory control resource requirements.

ELIMINATION OF WALL-TO-WALL PHYSICAL INVENTORIES

Upon completion of the ramp-up period, one last wall-to-wall physical inventory should be conducted. This will wipe the slate clean for the DC, and all future cycle count accuracy and adjustment tracking will occur from that point forward.

- Conduct a wall-to-wall physical inventory.
- Continue to perform scheduled cycle counts, slot verifications and SKU verifications.
- Continue to identify and resolve the root causes of inventory discrepancies.
- Stay in compliance with all minimum count requirements and verification windows.
- Track inventory accuracy and record all inventory adjustments.
- Maintain absolute bin level inventory accuracy at 97 percent or higher and net inventory accuracy levels at 99.45 percent or higher.
- Calculate the year-end inventory adjustments by projecting annual shrink based on cycle counting results. Accounting and Audit should help develop and sign off on the calculation to be used.
- Post GL entries without having to shut down the operation and conduct a wall-to-wall physical inventory.

Cycle Counting is Key to Inventory Management

Inventory crosses a variety of functional areas, in some cases with little or no distinction. Inventory policy is a strategic, corporate management issue with broad supply-chain ramifications. Inventory control represents the tactical, day-to-day aspects of executing the policies, as particularly focused in replenishment order releasing, the taking of physical inventories, and cycle counting. Without cycle counting, inventory cannot be managed effectively.