



BUTLER COMMERCE SOLUTIONS Freedom Series/ec21 Warehouse Management System (WMS)

Introduction:

Butler Commerce Solutions is proud to present this outline of WMS for Freedom Series/ec21, an integrated set of enhancements to the Freedom Series/ec21 solutions family. WMS for Freedom Series/ ec21 has been designed to address the next generation of distribution system requirements, based on current trends in the industry, utilizing barcode scanning in a Wireless Network environment.

The WMS model is comprised of 3 broad categories of material handling processes in the distribution center: Outbound product (order fulfillment, picking, packing and staging operations), Inbound product (receiving, staging, item profiles, put-away), and Internal Product Management (replenishment, transfers, cycle counts).

This outline presents a summary of the functionality built into WMS for ec21 to conform to this model.

WMS is also available as a stand alone product which can be fully integrated into other current ERP packages which support wholesale distributors, distributors, or manufacturers.

CATEGORY 1---- Outbound Products

Order Picking:

Bulk / Bin Split: Dynamic pick allocations based on quantity to pick for each group of sales orders; system determines the most efficient picking locations per item, i.e. full cartons, loose picks, full pallets.

Dynamic Letdown: For each group of orders, replenishment transactions are created to satisfy the pick requirements; "emergency" transfers ensure that product will be in the bin for picking. Extra product called for, to leave the bins full after picking.

'T' bins & 'X' bins: Designate bins as Temporary or un-pickable; allocations will not occur; pickers will not be sent to these bins.

Picking by Cart Logic (Group Orders for simultaneous Pick): For loose picks, choose to pick more than 1 order at a time; improves picker efficiency.

RF Pick Confirmations: Using handheld scanners, pickers confirm each item as they pick; quantities are recorded, shortages identified immediately. Optionally, you can choose to record package contents of each outbound carton.

RF Picking Support for Non-Stock Items: all of the features available above per item will work for non-stocks as well.

RF Picking Support for Kit Components: picks for components are tracked against each other to ensure full-kit quantities are confirmed; a shortage of any 1 component will flag all the other component picks.

Picking Labels/Documents (loose and bulk): There are two primary methods of generating picking documents for RF picking.

1. Picking from labels for both bulk and loose pick items:
 - a. Loose pick items are printed on a small label, allowing you to tag small items when picking loose quantities. This method also allows you to group multiple orders together, allowing the picker to pick multiple orders simultaneously. Orders may be broken down by warehouse section if “wave” picking is desired.
 - b. Bulk labels are larger, containing both pick info and full customer-friendly shipping data. Bulk Items can be picked independently from loose items and are printed in section/bin sequence for more efficient picking. This is of even greater benefit when large groups of orders are released as a group.
2. Picking from Bulk labels and a pick sheet for loose picks.
 - a. Loose pick items are printed on a pick sheet. Orders may be broken down by warehouse section if “wave” picking is desired.
 - b. Bulk labels are larger, containing both pick info and full customer-friendly shipping data. Bulk Items can be picked independently from loose items and are printed in section/bin sequence for more efficient picking. This is of even greater benefit when large groups of orders are released as a group.

RF Package Manifest: When using Package ID support, the system tracks all packages by order, by truck; orders requiring freight charges will prompt for charges & tracking numbers (i.e. UPS); all packages are scanned – helps coordinate outbound staging. When all packages are manifested, the system will Auto-Bill the order!

RF Package Manifest Interface: In addition the systems own manifesting capabilities; we have implemented interfaces to UPS Worldship, DHL and other 3rd party systems.

RF Notes Inquiry: During picking, or from the RF menu, users can view the Notes associated with a sales order.

Order Pool Look-ahead Planning (Wave Planning): For a selected truck run or ship via the warehouse can get a complete real time picture of what is ready to pick, is in picking and what has been picked. The warehouse has more flexibility in controlling the workload and this process may alert them to situations where a change in ship via may be needed. Some of the information displayed to the user includes:

1. Order/Customer/Request Date/Weight/Cube/Stop/Zip/Order#
2. Total Cube
3. Total Weight
4. Number of Stops
5. Number of Order Lines
6. Warehouse Notes
7. Order Line information with quantity to pick

Some of the actions that the warehouse can take on an order include:

1. Put the order on a warehouse hold until a specified date
2. Change the truck run or ship via
3. Add order and warehouse notes
4. Release the order for picking
5. Change the quantity to pick on an order item line to reduce the size of a load
6. Inquire on order picking progress

Order Wave Control Log Report (Pick Details): If desired, each wave of released orders can have a detailed report printed, indicating all pick allocations for the entire warehouse, by order, per wave.

Billing & Invoicing by Truck: this option allows the billing and invoicing functions to be launched en masse for a given truck run.

Order Release to Picking, Individual Order:
Orders in the pool can be released individually if required.

Packing List Print by individual Order:
On demand, pickers or packers may request a packing list.

Pick Allocations Inquiry: when using Bulk/Bin Split, the system allocates pick quantities from multiple bins per item; this inquiry, available from several places, shows these pick details per line on each sales order.

RF Shipping Label on Demand: mobile users with handheld devices can request a shipping label, with barcodes, for any package or order.

Truck / Stop Manifest (for Route Deliveries): This new report is intended for the drivers on your delivery routes. On demand, when your truck run is complete, submit this program to print a stop-by stop listing of the orders on this route. Summary information is presented by stop, to assist in accurate, timely deliveries.

Carton Content Packing List (Serialized Package ID's): When you activate Package ID support in WMS, the system retains full detail of what's packed in each carton, for every sales order shipped. This Packing list is printed by Package ID per order, listing the items and quantities per package. It is intended to assist your customers' receiving personnel in processing your shipments.

Piece Counts / Bill Of Lading Enhancements: For our customers who use Bill of Lading function for 'Our Truck' orders, WMS has automated the capture of piece counts, taking advantage of our Package ID tracking. During the pick process, RF users select the Package type to describe each serialized package, using the table set up in your database. WMS gathers all of these 'piece counts' and totals them in the order, so that separate entry is no longer needed. Print the Bill of Lading on demand, or configure your system to print one when your order is invoiced.

Productivity Inquiry and Reports: We keep daily statistics on picker and packer productivity by #picks, #lines, #units and \$amount.

Package Consolidation / Scan on Board: In the outbound staging area, multiple serialized packages can be consolidated and palletized, with Pallet Tags assigned and printed as needed. Optionally, the system can be configured to allow a Scan-on-Board confirmation of pallets and packages, in delivery sequence, with the shipping documents printed automatically upon confirmation of the last package.

EDI Support: ec21 can be programmed to generate and transmit EDI ASN/Shipping Confirmations to your EDI trading partners.

UCC128 Shipping Labels: ec21 supports the generation of UCC128 shipping labels, which conform to industry specifications for commercial shipments.

Category 2---- Inbound Product

RF Receiving:

Receive to Default Staging Location: the WMS model of inbound product dictates that receipts to inventory are performed in an incoming staging area. This support now exists in WMS. Onhand balances are updated much sooner in the receiving cycle, providing visibility to your products. Automatically trigger updates to the PO, cost layers, and inventory history; trigger release of held backorders, and launch automatic Putaway to find homes for received product.

Multiple RF users per PO: to assist with expediting the receiving process, multiple users can work on the same PO; each user sees live updates of the progress of this receipt. Each user posts his own transactions when ready. This function is especially helpful in large receipts, such as inbound containers.

Container Support: RF receiving posts receipts to the container records you've built for import orders; multiple containers per PO are allowed, as well as multiple PO's per container.

Receive in multiple UOM's: regardless of your Purchase unit of measure, the system supports receipt in any defined UOM for the item. Now a purchased quantity of 10000 each can be received by pallets, or cases, or any combination.

Functional Equivalent Support: One of the cornerstones of the WMS system is the concept of Functional Equivalents. Now the system 'does the math' for users, performing the quantity conversions among an item's defined units of measure, and protecting users from performing math errors while moving inventory quantities. Throughout the WMS system, products can be handled in larger units, like cases or pallets. These movements are more natural for material handlers, and the system resolves all of the differences between ordered units, purchase units and stocking units, automatically. This functionality will be the largest source of efficiency, accuracy, and cost-savings improvements your company will realize by implementing WMS.

Receiving labels on demand: during the receiving process, RF users can request barcode labels for the product they are working with, with a few keystrokes; labels contain product ID barcode, PO and date, and are available in 3 sizes.

Allow Alias entry in Item/UPC fields: some companies make use of the item alias to store other 'names' for an item. WMS allows entry of the alias in fields, which prompt, for Item number or UPC code.

Open PO Inquiry via RF: users of handheld devices can quickly search the database for open purchase orders by item or vendor. Within a PO, users can also search for open items on the order, to aid in receiving efficiency.

Item Profile: This RF program gives a user access to the Item Master's profile screens, to assist in recording product weights and dimensions.

RF Putaway, Replenishment:

Intelligent Putaway: As receipts are processed in WMS, the system determines homes for the products based on cube, bin type, and bin availability. The putaway programs support FIFO stock movement by generating separate 'letdown' transactions, pushing older stock to forward pick locations. Putaway logic also will seek to maximize existing, partially full bins, or directly fill out-of-stock pick locations. Finally, overstock is assigned to open available floating bins, according to a pre-defined fill sequence.

Directed Putaway via ICMOVE: the Intelligent Putaway function of WMS generates move transactions for inbound products from Staging to the final destination. These paperless transactions are then processed using an RF menu option. Scan a 'From' bin, and the system will display all pending moves from that bin. The program also allows for unlimited interim moves, enabling product to be dropped off in 'drop zones', while keeping track of its final destination. The program supports partial moves and group moves (assign a pallet tag to multiple items and move all at once). Vehicles can be defined as valid bin locations. All of these features are designed to increase product visibility throughout the distribution center.

Directed Replenishment via ICMOVE: Similarly, WMS creates movement transactions for 'Letdowns', or bin replenishments. Whether created dynamically during the Pick allocation process, or run at night to fill partial bins, replenishment transactions in the ICMOVE database allow complete, system-monitored control of the internal movement of inventory. By the way, ICMOVE is a 'self-cleaning' database; when the transactions are confirmed complete, the record is deleted.

Delete Empty Floating bins: the concept of random storage of products, where bins are reused as soon as they are available, can generate many records over time in the system's Bin Location master file. For any given item, these bin records are no longer needed once the onhand quantity reaches zero. This function sweeps through the Bin Master file, deleting these empty bin records, and marking the bin as available for other product.

Replenishment labels: To help expedite the replenishment process, especially in 'emergency' situations, the system can produce Replenishment labels, identifying the item, quantity, 'From' and 'To' bins, for every internal move transaction.

Category 3---- Internal Product Management

Item & Warehouse Data Management:

Warehouse Map Mass Maintenance: The Warehouse Map database provides a central location to define and store critical information about the storage locations in your facility. The locations' naming convention, bin types, storage method (static or random) and sequence are all contained here. This function, mass maintenance, allows our customer to create and maintain thousands of bins from a single point.

Integrate Warehouse Map to Bin Creation: As a tool to promote inventory accuracy, you can configure the system to use values you have established in the map as the official values for all item/bin records. As the system creates many new item/bins, this information from the map ensures that your established rules will be applied to all inventory movements.

Generate Alternate UPC codes, mass create: To begin utilizing WMS, UPC barcodes are required for every item and all of its packing units. This requires a massive data entry effort. Many companies do not have this information at the outset. A utility has been created to bridge this gap and provide a value to scan for all items. A Generic UPC, containing Item number and pack size, is written to the Alternate UPC file.

Item UOM Maintenance, generic UPC code: In addition to the mass creation above, you can configure the system to create a generic every time a new UOM is added to your system. This provides protection for items whose true UPC code is not readily available.

Allow Alias entry in UOM maintenance: Customers who make heavy use of item aliases can now use the alias as a valid entry in fields which prompt for Item number or UPC code.

RF UPC code Capture: Mobile users in the warehouse have the ability to capture the UPC codes on packages, such as master cartons from your vendors, using this utility. For the many items whose barcodes cannot be scanned, this feature fills a critical need. It can be called from many programs in the system, to allow users to keep working (on receipts, or picks) and quickly resolve the dilemma.

UPC validation for multiple Aliases: Sometimes an item alias can represent multiple items. If this happens, RF users receive a list of all the items, and must select the one they are working with. This is another safeguard built into the WMS system to ensure inventory accuracy.

RF UOM Inquiry: This utility is one of the most-used features of the WMS system. A user can enter any item, or scan any barcode, and receive a table showing all of the item's units of measure, their pack size (quantity per), and their Functional equivalent to each other (i.e., 1 PL = 24 CS).

RF UOM Packsize Maintenance: Another tool to assist in the massive data capture effort, this program allows direct maintenance to the UOM table, for items whose units have not been defined. This powerful feature can be secured to only the highest-authority users, since its information is so crucial.

RF Bin UOM Maintenance: In a multi-unit environment like WMS, a given item can be stored in several units of measure (EA in the loose-pick bins, CS in bulk-pick zones, PL in overstock). If needed, an RF user can change the Picking UOM in the bin itself.

Add Picking UOM to Bin Maintenance: The Picking unit now becomes more important for a bin location. In the past, this UOM was assumed to be Lowest Stocking Unit. Bin Maintenance has been changed to permit entry or change of this UOM in any bin record.

RF Bin / Item Locator: The greatest time-saver in the system is the answer to the question, "Where is this item stored?" The bin/item locator is an inquiry, which shows you all of the homes for an item (simply scan any barcode) or all of the contents for any bin (simply scan the bin label).

Save UPC codes in Alternate UPC File: As newer UPC codes are gathered, or generics are replaced by 'official' UPC codes, logic has been added to retain the old codes in the alternates file. This allows WMS to continue to recognize old barcodes that may exist in the warehouse, so that you are not forced into re-labeling older product.

Reports/ Updates: Largest Functional Equivalent for Bins: These analysis tools were designed to assist in the conversion of stock locations to other Picking units. Traditional ec21 sites store all products in LSU. These reports can evaluate your bins to determine which bins can be converted to higher stocking units, such as cases or pallets. Each report has a corresponding update version to allow mass changes to the bins' picking unit.

'X' Bin Updates for Pallet Area Bins: Another analysis tool has been designed to mark certain bin locations or entire areas, as off limits for picking. This is the concept of the 'X' bin, whose quantity is available for sale, but whose location is undesirable for picking. This designation can be given to your overstock and higher-elevation bins.

Cycle Counts:

RF Bin Count, Immediate Update: a very powerful inventory control utility, makes quick work of 'demand' cycle counts; simply scan a bin, scan the item, enter the quantity, update the system. Multiple units of measure are supported; full inventory history logging, variance posting and cost layer updates are built in to this function.

Bar-coded Count Labels: specialty labels can be produced for a targeted segment of the warehouse, to support a quick, methodical cycle count; the program can run from a driver file, so you have flexibility in cycle count selections.

RF Transfers:

Internal Transfers Enhancements: A number of enhancements have been added to the WMS version of RF transfers, to improve user productivity, visibility and data integrity. Among these new features:

Allow Alias Entry in Item / UPC fields: Once again, for customers who make use of Item Alias, the alias is now a valid value in fields which prompt for Item or UPC code.

Functional Equivalents Support: mobile users can now transfer product in any defined unit of measure, and the system will perform the quantity conversions. Safeguards have been added to ensure that only proper quantities are moved. For instance, transfers from a 'Case' bin must be done in whole-case increments.

Calculate 'Available to Transfer': Before transfers are allowed from a given bin, the system adds up all commitments of stock from that bin (open picks or pending replenishments), preventing the chance for unseen problems later on.

RF User Interface:

RF version of Inquiry & Maintenance Screens: The screens on RF devices are attained through a web browser or a standard 5250 emulation for the iSeries processor just like every device on your system. We have designed WMS to conform to the size of the RF screen. WMS contains the behind-the-scenes components to make RF-screen technology a natural environment.

RF Menu, ec21 'Breeze' Menu system: An important, but often overlooked feature of WMS for ec21 is that it is a completely integrated module. Freedom Series/ec21's 'Breeze' Menu System has been enhanced to contain a complete set of RF-sized menus, again conforming to the standard RF screen size.

Integrated Security for RF menus: Control access to menu options in the RF environment the same way, and from the same place, as you control all of the Freedom Series/ ec21 menu security. In this regard, WMS has been designed to provide users with some familiarity and ease-of-use aspects, in the 'Whole new World' of mobile computing.

Barcode Labels:

One of the most difficult hurdles for the deployment of barcode scanning is how to handle design and printing of barcode labels. BCS has resolved this issue by developing our barcode print programs using NiceLabel software from Niceware, an international leader in label technology. This enhancement leaves you with a complete choice of thermal-transfer printer vendors, including Zebra, Datamax, Sato, and other recognized leaders. We have utilized NiceLabels protocol to produce our WMS labels (listed below) directly from ec21, any of which can be customized to meet your needs.

Product UPC Labels - 3 sizes - On Demand
Bin Shelf Labels - 2 sizes - On Demand
Receiving Labels - 3 sizes - On Demand
Package ID Labels
Shipping Labels on Demand
Picking Labels, Loose & Bulk
Replenishment Labels

Miscellaneous:

Data Conversion Tools
Analysis Tools (reports and file updates)
Custom label and forms design
Consulting & Professional Services (including RF product evaluation, site survey assistance, network setup and management recommendations)



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