Warehouse Management Overview

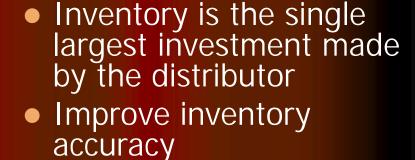


from
The Systems House, Inc.





Benefits of MDS-WMS



- Improve order processing accuracy (less returns)
- Improve personnel performance and accuracy
- Better utilize warehouse space
- Improve customer satisfaction



The MDS Warehouse Management Solution

- Warehouse Design
 - Single or Multiple Warehouses
 - Branches or Stock Rooms
 - Location Management in Warehouse
 - Location as a Reference or
 - Inventory by Location (Random Locator System)
 - Receive, Stock, and Sell in Multiple Units of Measure
 - Solid Case and Quick Pick Areas (Low Unit)
 - Primary and Backup Locations
 - Low Unit vs. Bulk Picking
 - Low Unit replenishment
 - Environmental and Security Considerations
 - Lot#, Serial#, Expiration Date Control





MDS Warehouse Capabilities



- Warehouse Management Functions (WMS)
 - Receiving
 - Put Away
 - Replenishment (location management)
 - Picking
 - Physical Inventory / Movements / Adjustments
 - Returns from Customers and to Vendors
- Interface to UPS and FedEx
- Delivery Route Management
 - Manifest System
 - Proof of Delivery (Signature capture)
 - Package Tracking with Multiple Stops



Advanced Capabilities

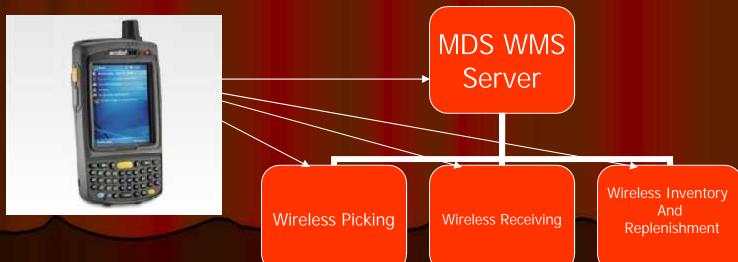
- Implement Bar Coding to Improve Accuracy
 - Not necessarily faster
- Bar Coding Issues
 - Product or Location Bar Coding
 - Manufacturer Can Label Products:
 Not uniform in many industries such as Medical
 - Significant Cost to Barcode Items Upon Receipt
 - Bar Codes do not Define Unit of Measure
 - Alternate Solution: Barcode Locations
 - Maintain Product by Location (one item per location)
- Wireless Solutions
 - Wi-Fi or RF Receiving, Replenishment, and Picking
 - Automated Picking Carousel Systems
 - Voice Response Picking





WiFi Equipment Schematic

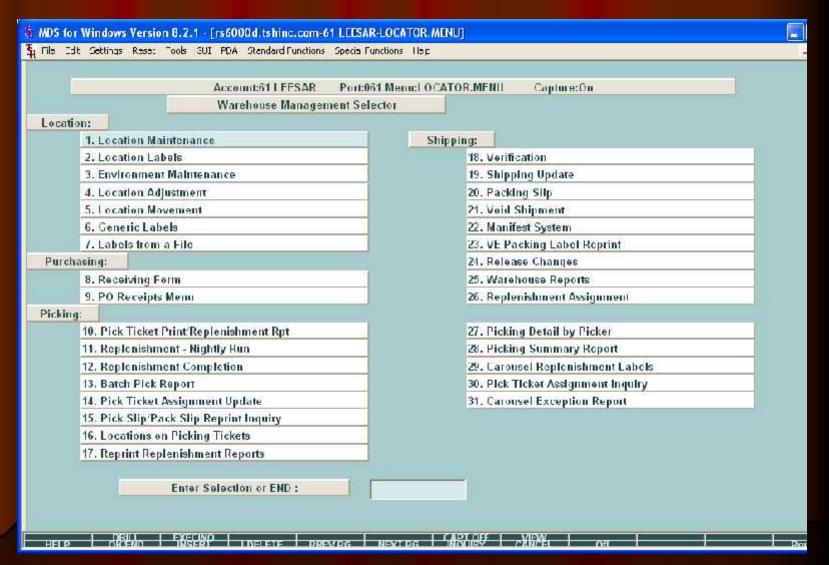




WiFi PDT Handheld/ Equipment



Warehouse Management Menu



8

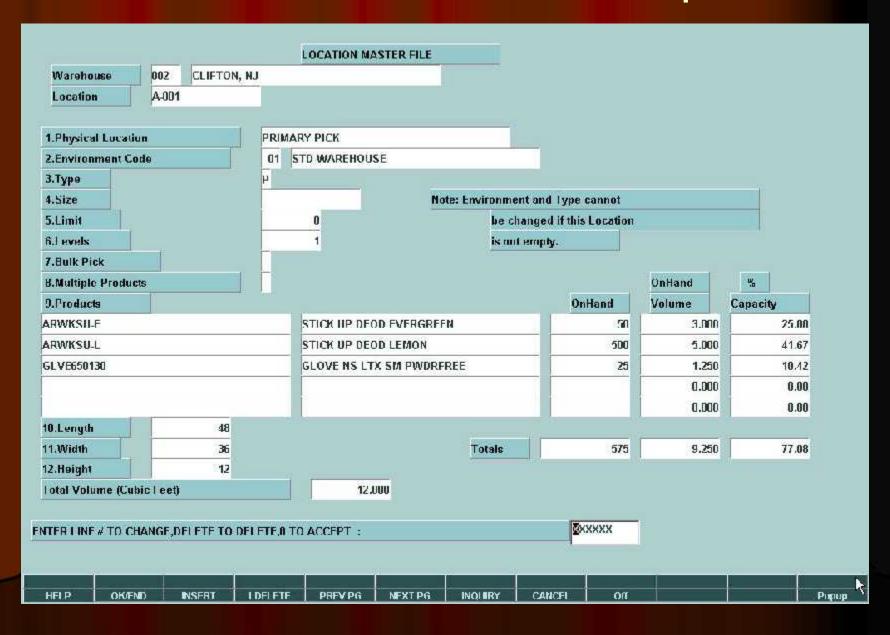
Warehouse Setup

🖣 WinMDS_RS6000 - [rs6000d.tshim	.com-8764 DEMO.12-WAREHOUSE-MAINT	00851]	
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WAREHOUSE MAINTENANCE Warehouse Number 002	MDS Warehouse Maintena	nnce	
1.Warehouse Name	CLIFTON, NJ	24. Trans Shipping Warehouses	
2.Warehouse Addr 1	1033 RT46 EAST	1	1
3.Warehouse Addr 2		2.	
4.Warehouse Addr 3		3.	
5.City	CLIFTON	4.	
6.State	NJ		
7.Zip	07013		
8.Owning Company	01 TSH Import Company		
9.Phone Number			
10.Tax Jurisdiction	NJ NEW JERSEY		
11.Transfer Cust#			
Warehouse Management P	nrameters		
12.Location Control	L 19.Remove Location Flg	N	
13.Wireless Picking	N 20.Replen Case Rounding	Ū	
14.Bulk Redirection	Y 21.Redirect if not in Bulk	U Y Y	
15.Receiving Method	P 22.0E Replen to Max		
16.IM Replen Method	3 23.Wireless Receipts	N	
17.Single Product	N		
18.Prim Replen Method	N		
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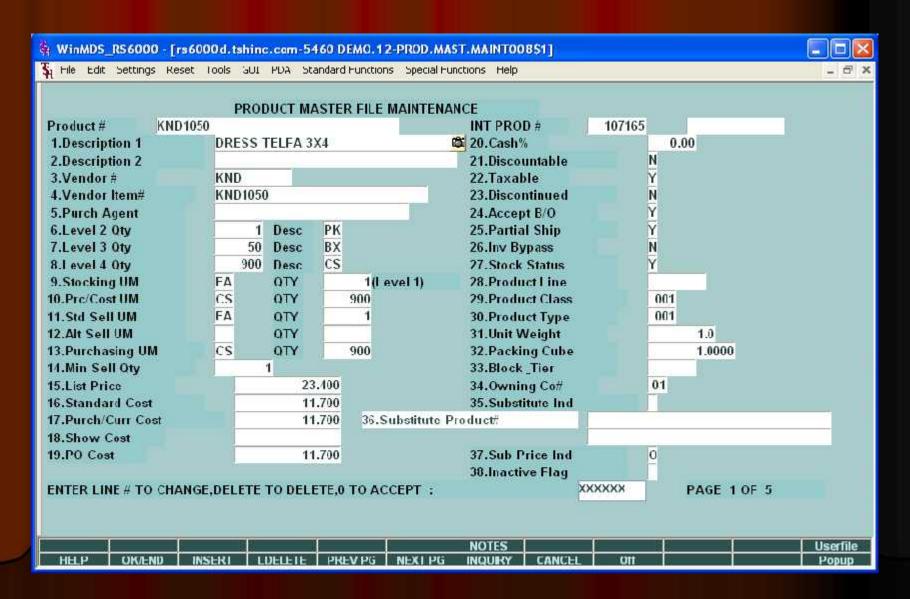
Warehouse Level Parameters

- Location Control in use
- Wireless Picking in use
- Bulk Redirection
- Receiving Method
- IM Replenishment Method
- Single Product per location
- Replenishment Method (Min/Max or to Max)
- Remove Location Flag (upon depletion)
- Replenish Case Rounding
- Redirect if not in Bulk
- OE Replenish to Max
- Wireless Receipts
- Location Format
- Location Match

Location Control and Setup



Product Master File



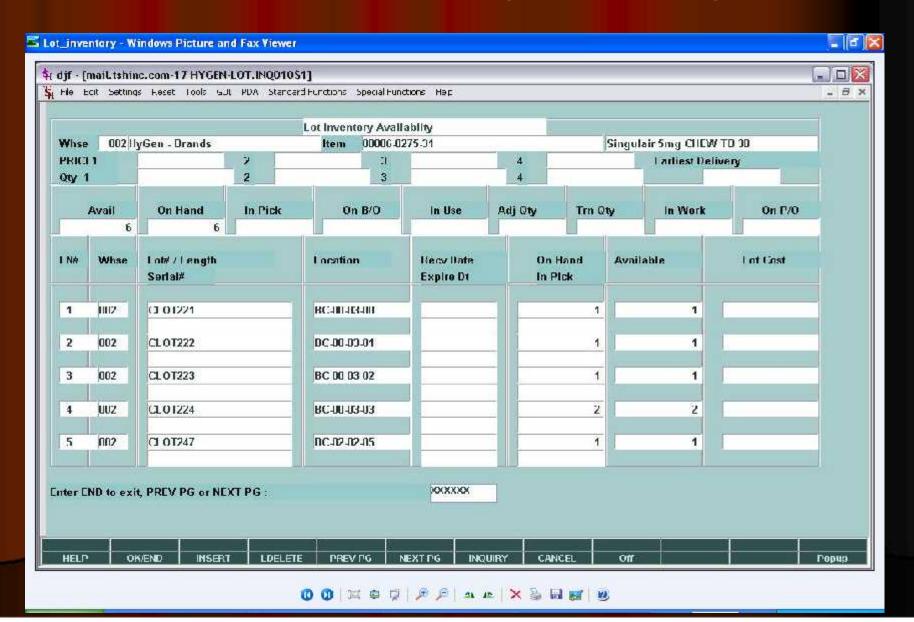
Inventory and Product Information



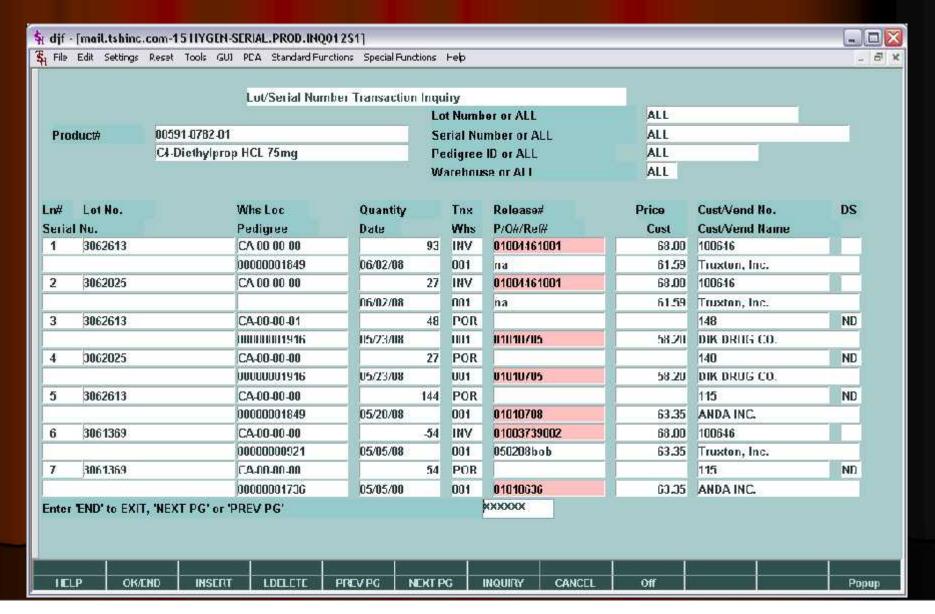


Product P GLULAN LIX SM PWDRFRLL I.Last Cost 2.STD Cost 3.Missage 4.OH Regative Ind 5.Lou Switz Lugic 6.Anne Int Select 7.Unit Len Oty 8.Cycle Count Code 9.Mid-Location Pick in Use 10.Suild Case Pick in Use 11.Suild Case Maximum Pick 12.Phirrary Location Minimum 13.Primary Location Minimum 15.Suild Case Location Minimum 15.Suild Case Location Maximum 15.Suild Case Location Maximum 15.Suild Case Location Minimum 15.Suild Case Location Maximum 15.Suild Case Location Minimum 15.Suild Case Loca	MDS for Windows V File Edit Settings						lep				_ 6 2
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5. Sulid Case Location Maximum	3.Primary Locati	on Maxim	eu en			40					
	4.Solid Case Loc	ation Min	imum								
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Enter Line# to Change, Delete to delete, OK to Accept:											
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Lot Inventory Display



Lot and Serial Number Tracking Inquiry



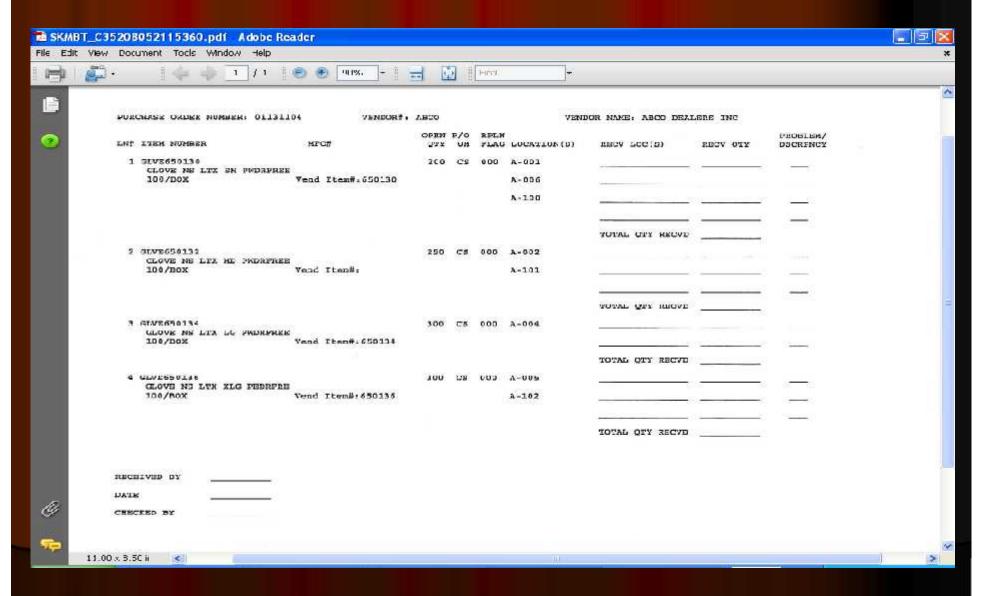


Receiving

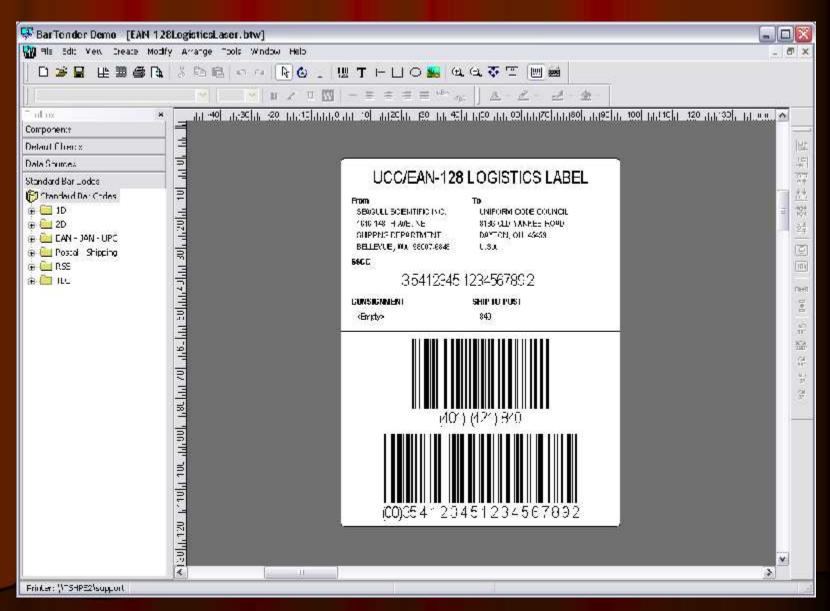


- Receiving Form Printed (by Vendor and Purchase Order)
- Inspect and Approve Receipt
- Receipt and Put Away Information Recorded on Receiving Form
 - Form shows current locations
 - Placement of inventory determined by warehouse personnel
- Generate Bar Coded Labels at Receiving (Optional)
 - Product Labels
 - Lot#, expiration date, weight
- Inventory Receipt Info Entered into MDS System from Receiving Form
 - Can be entered in warehouse or office

Receiving Form



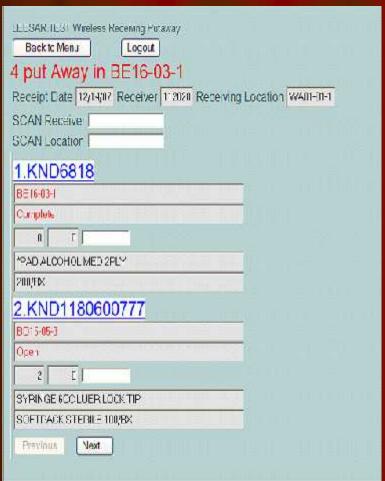
Label Creation Software



Receiving and Put Away Using RF

- Recall Purchase Order(s) to PDT
- Inspect and Approve Receipt
- Paperless Receiving Using Portable Data Terminals (PDTs)
- Receive to "Receiving Location" (Staging Area)
- Generate Bar Coded Labels at Receiving (Optional)
 - Product Labels
 - Lot#, expiration date, weight
 - Pallet Labels
- Put Away Merchandise and Record Bin Locations using PDT based on:
 - Available space in primary location
 - Existing backup location
 - Additional backup location
 - Cross-Docking of Backorders
 - Environmental Requirements (hazardous, security)
 - Weight Requirements (i.e. on ground only)

Put Away Function



- ➤ Receive to "Receiving Location"
- ➤ Cross Dock Orders
- Receive to Bulk Location
- ► Receive to Primary Pick Location

Replenishment Process

1. Used if inventory by location has been implemented

2. Daily and Just in Time Replenishment

 Daily – Restock all primary pick locations up to pre-determined level (i.e. 3 days supplies)

 During day – replenish locations falling below minimum

3. Transfer request generated on paper or electronically

4. Transfers verified by barcode (Item or Location)



Stock Falls Below Minimum Levels





Replenishment Report







AGE 1 *** REPLENISHMENT REPORT *** 20:50:51 05/29/08

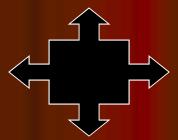
		E-Becket	QTI TO	REAL
PRODUCE #	DESCRIPTION	LOCATION	ORD LOCATION	GRK GAR
BRMFOLO102	POLEY STATLCK ADULT	AA04-04-5	25 01100804A	10 10*
HEDHDS093944	BETADINE SOL BDL 10%	AA07-04-4	48 01100203A	1 1
BHX259790	BAC T/ALBET EN MAROO	AAU7-06-1	100 01200601A	1 1
B-00259791	BAC T/ALBET FA GREEN	AA08-04-2	100 01201001A	1 .
KCD46375052/10	DREES (Q.R.A.C) MED.	AA09-06-E	10 01205401A	1 1 *
HST0798413	SOL. IV. NACL. 98.50ML	AA09-04-2	48 01103401A	1 1 *
ФСВН-1798	*SENSOR.NEO-L.DISP.L	AA13-04-4	20 01101204A	1 1 *
DEREC14-02	SLING. ANN. MED	AA13-05-2	12 01203802A	1 1 *
HSP0654301	SET. TUR. NONVENTED . LF	AA14-02-3	20 01206006A	1 1 *
ALISU/SLMMS	COVER PT RHT LPT LO	AA14-04-3	5 U11U25U4A	1 1 *
TCBT1974	SURGIFORM AGS SS10000	AA14-05-1	6 01101906A	1 1
ERE040-03	EPLING. WRIDE. NO. UNIV	AA16-04-1	1 01202201A	1 1
T.EB15400	REMOVE TO DOLL SKN WID	4415-06-2	10 011034048	1 1 *
XXI2N9060	MANIFOLD IV PLOINK P	AA15-06-3	200 01205503A	1 1 *
BH10-7110	DRESS.SPANDAGE.#9	AA15-09-2	2 01203306A	1 2
ND7203	T.E.D. STOCKING KNEE	AA16-05-4	36 01102205A	3 *
MA128030	ALIONAY LINA UNIT QUE . SE	AA16-06-4	10 01102501A	1 1
0:801:627	DEESS. TEGADERM. 4"X10	AA17-01-2	160 011063028	1 2 .
(1005022662	SAS EIPLOCK 6X6 100/	AA17-06-1	10 01102902A	1 1 *
TIME 98	CATH SIET TRACH RES	AA17-08-2	20 011036064	1 1 *
ID367856	VACUTAINER. LAV. 5. 4MB	AD01-02-1	10 01202501A	1 1 *
13647117	MASK ISO PAPER	BA03-02-6	10 01206306A	1 1 *
CIMI16	SOL NACL .9 15ML	BA03-03-2	144 01202603A	1 1 *
NE06881850810	NDL. POLY. PINK. SAF. 18	BA03-03-4	500 01103603A	1 1 *
/1140251WU	STR BLOOD GAS SCC AD	BA03-04-3	100 01200103A	1 1 *
DE994724500	EPECIMENT TRULD 4000 E	BA02-05-5	900 01205702A	
HANSERE	THERE MEDITIONS 3 514	8405-02-2	200 012043014	9 *
@ED: (DS926103	STETHOSCOPE BLUE	BA05-06-2	78 01201503A	1 78
OMI 535-2	TAPE. HYPOALL. SUBU. PA	BA07-02-2	60 01202404A	
(ND2238	BANDAGE CONFORM 6"X7	BA07-06-1	48 01202302A	
GEDHDX10	PEROXIDE HYDROGEN 40	BA09-02-3	24 01100403A	1 1 *
HUDOUDEN-92AM	NEBULIZER HARREL HI	BA09-03-5	40 01204802A	
M381233	NOT IN INSKAR-M 33GK	90,09-01-2	200 01101901A	
FTT9025THI	SYN BLOOD GAS 100 PR	8413-01-4	100 01103204A	
0.0 €1.530~2	TAPE HYPOALL SURG PA	BA15-03-3	240 01203103A	The second secon
MP326090	ATRWAY ADULT HED 90M	BA17-01-3	30 01101501A	
ALL4320109	COLTORSITE. II. DUAL.S	BA17-04-5	500 01206003A	and the second
BD381444	NOL IV INSYTE 180X1.	BA17-05-5	200 01204703A	
DE030768678	PAPER EKO PADEMPITEN	BA19-02-5	8 012040028	
00061351IP	PLEN DANDAGE IT STRI	DA19-05-6	24 01104303A	
0610829	ACCEMBRICAL VOCTA ART	8331-01-3	1440 01202703A	
NID45012-15-HD0	ARMBOARD 3X9	BA21-06-2	100 01201604A	
ISP0654401	TUBING . ENDO . CYSTO/IR	BB01-04-3	20 01204803A	
DER1190917	Describing Research	BB02-01-3	2 01200103A	
4IC4951	DRAFE.C-ARM.MOBILE.X	BB02-04-3	20 01204305A	
DM02501	*CUP MEDICINE TOE	5509-02-1	50 01103301A	
U1469001	CAP DOUPPART DEUE LO	BB12-04-1	5 01104005A	
0000011000000	TRAY LACREAGION	2812-05-1	16 01101603A	
AJJ_2D72FT75	GLV.EST.SMT.PF.SYNTH	8814-05-3	200 01103203A	1 1 *



Replenishment



- Transfer ID is scanned.
- On the replenishment picking, each "from" location is scanned.
- On the replenishment put-away, each "to" location is scanned.
- After scanning the "to" location, the product is moved in the system to the new location and an inventory audit is created.

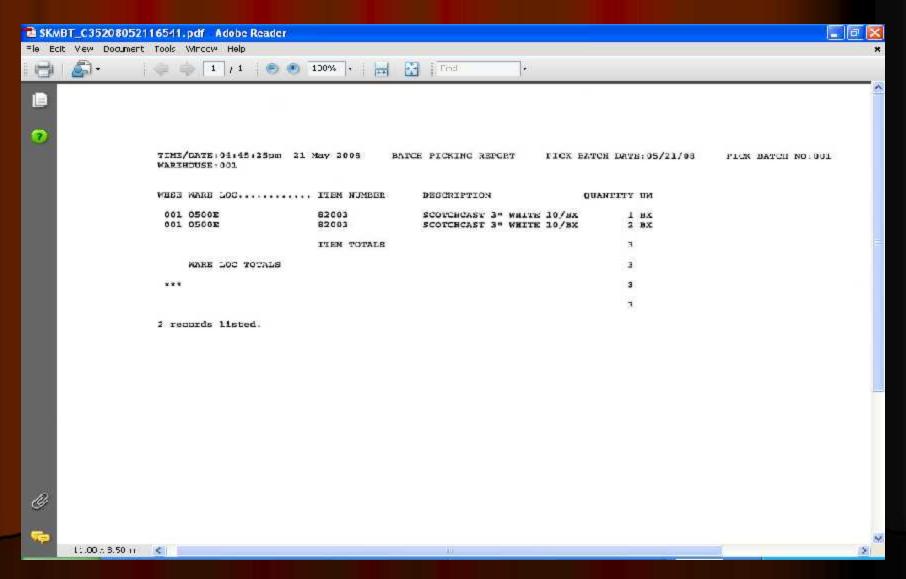


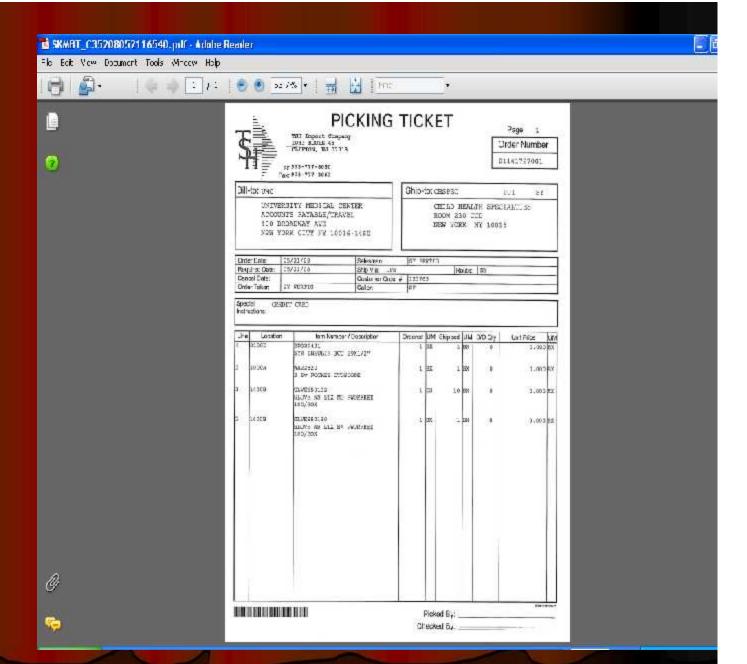
Picking



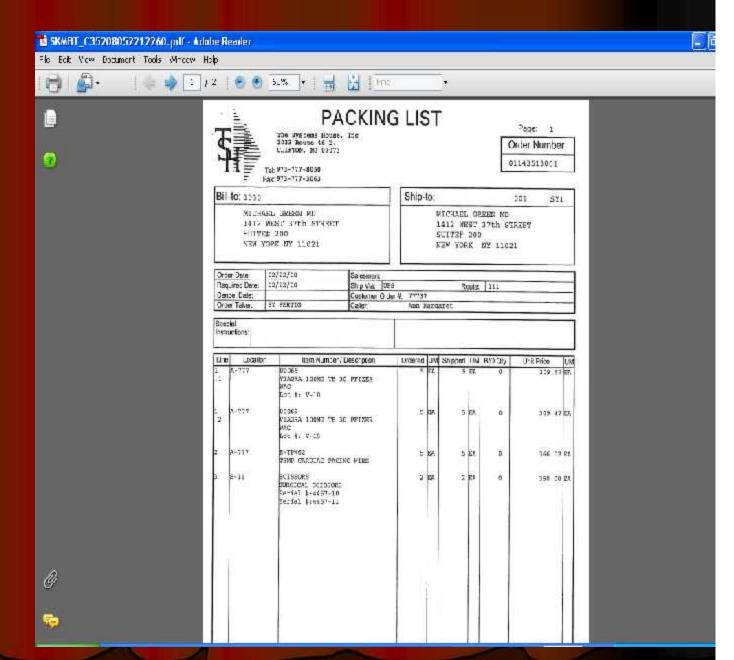
- I tems can be stored in multiple locations. Selection based on:
 - Earliest expiration date
 - Oldest merchandise (receipt date)
 - Solid case vs low unit of Measure
- Orders can be grouped for "batch picking"
- Replenishment if in use, must precede print
- MDS splits each order into picking zones:
 - Bulk Area (solid cases)
 - Low Unit Picks
- Pick Tickets can print upon entry or batched by time Interval
- Pick Tickets typically print in pick location sequence
- Picker picks items and notes discrepancies on the pick ticket
- Order is verified to the system
- Packing Slip Printed
- Shipping process initiated with interface to UPS or FedEx
- Invoice Printed in-line or overnight

Picking Summary

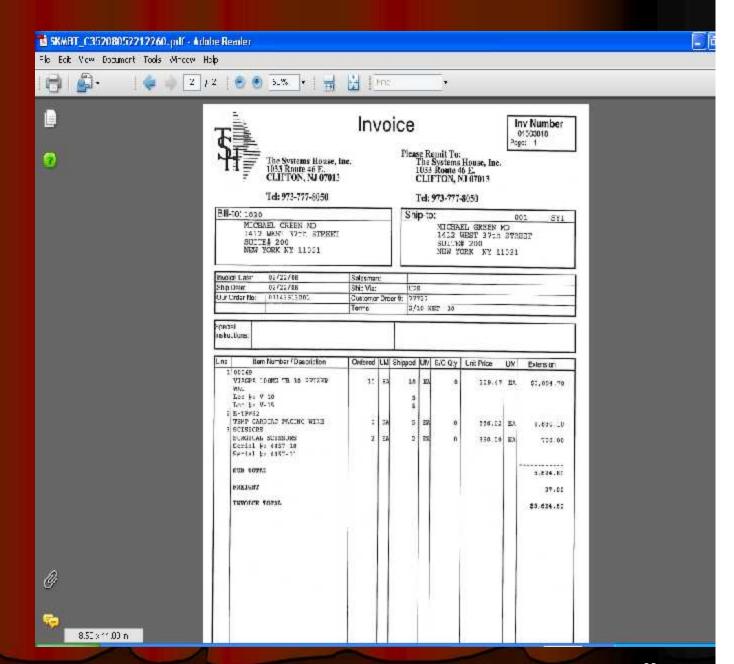




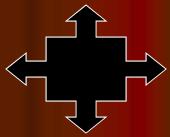
Picking Ticket



Packing Slip



Invoice

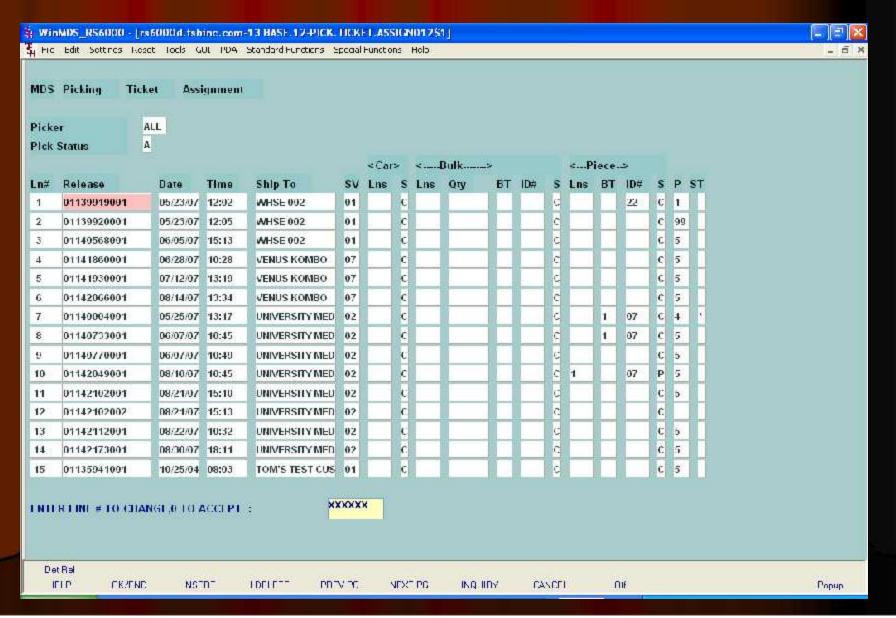


Picking using RF

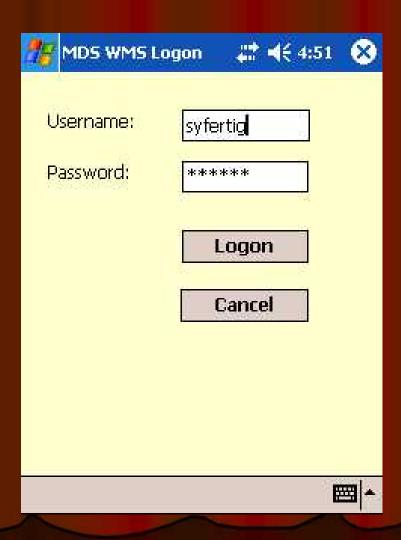


- Customer order scheduling based on priority, shipping schedule and personnel availability
- I tems can be stored in multiple locations. Selection based on:
 - Earliest expiration date
 - Oldest merchandise (receipt date)
 - Solid case vs low unit of Measure
- Replenishment if in use, must precede print
- MDS splits each order into picking zones:
 - Bulk Area (solid cases)
 - Low Unit Picks
 - Carousel
 - Pick to Light Flow Rack (PTL)
 - Voice Response
- Orders can be grouped for "batch picking"
- Warehouse manager assigns orders to pickers
- Picker obtains next assigned order from PDT
- Display in pick sequence picker can change sequence
- Picker verifies picked items and quantities by barcode (Item or Location)
- Discrepancies noted for review and correction
- Order is verified to the system
- Shipping process initiated

Picking Ticket Assignment



Operator Logon



Wireless Menu



Customizable Menu by Operator

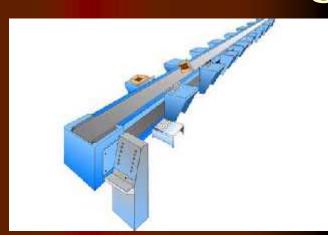
Picking



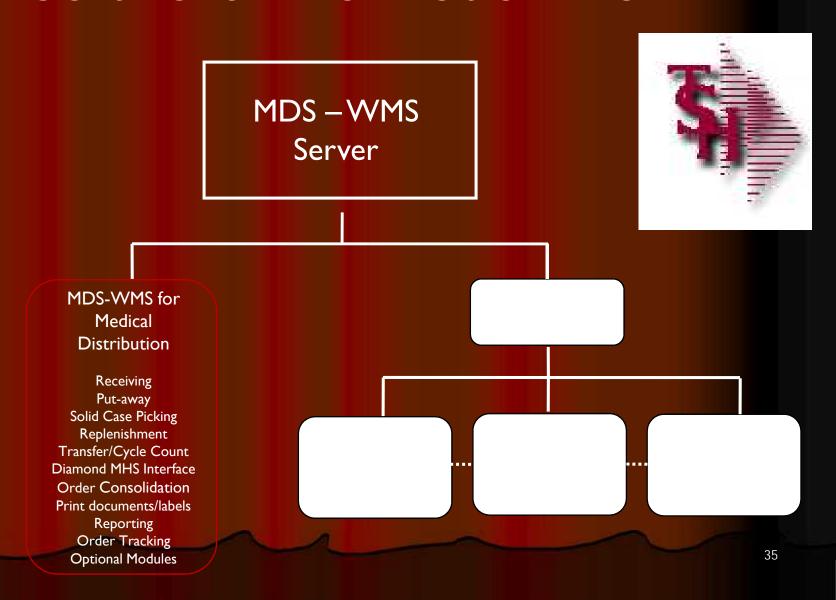
Wireless Picking Using Scanners

Automated Material Handling

- Innovative technologies
- Advanced software solutions
- Data collection and analysis
- Hardware Solutions:
 - Horizontal carousels
 - Vertical carousels
 - Heavy-duty carousels
 - Vertical lift modules
 - Heavy-duty vertical lift modules
 - Storage and retrieval machines
 - Automatic inserter/extractors
 - Pallet conveyor
 - Tote/case conveyor
 - Sortation systems
 - Light-directed picking
 - Voice-directed picking
 - Wireless picking
 - Specialty products



Software Information Flow



Carousel And Conveyors

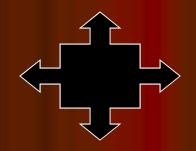




Carousel System

- Automated Storage and Retrieval System for High Speed Order Picking
- The PowerPick software works seamlessly in conjunction with the MDS software
- Saves time while increasing productivity, can improve order picking productivity by as much as 600 percent
- Improves order accuracy and inventory control
- Reduces labor costs
- Saves space

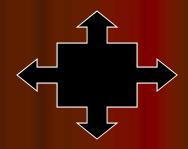




Order Consolidation



- Totes can have fixed Tote ID's, or the Tote number can be assigned and a tote label prepared by MDS at the carousel or PTL system.
- DiamondPick uploads all tote numbers used for an order.
- MDS prints labels for the solid case picks with order number and product bar codes.
- At consolidation station tote bar codes and solid case labels are scanned:
 - Confirm entire order has been picked
 - Print shipping labels
 - Print packing slip(s) by tote.

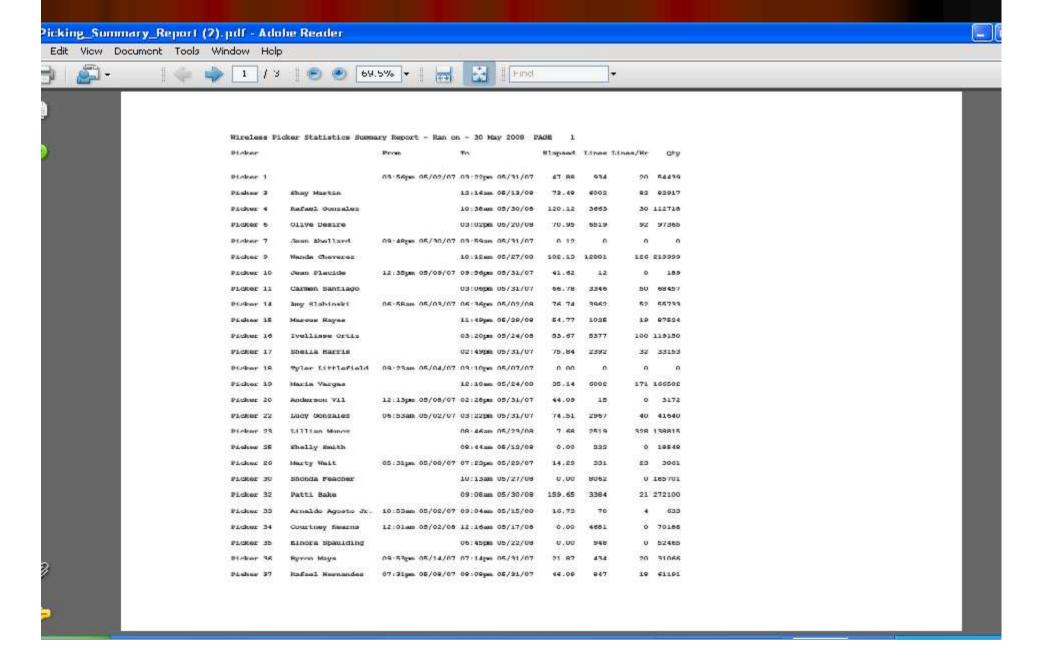


Labor Statistics

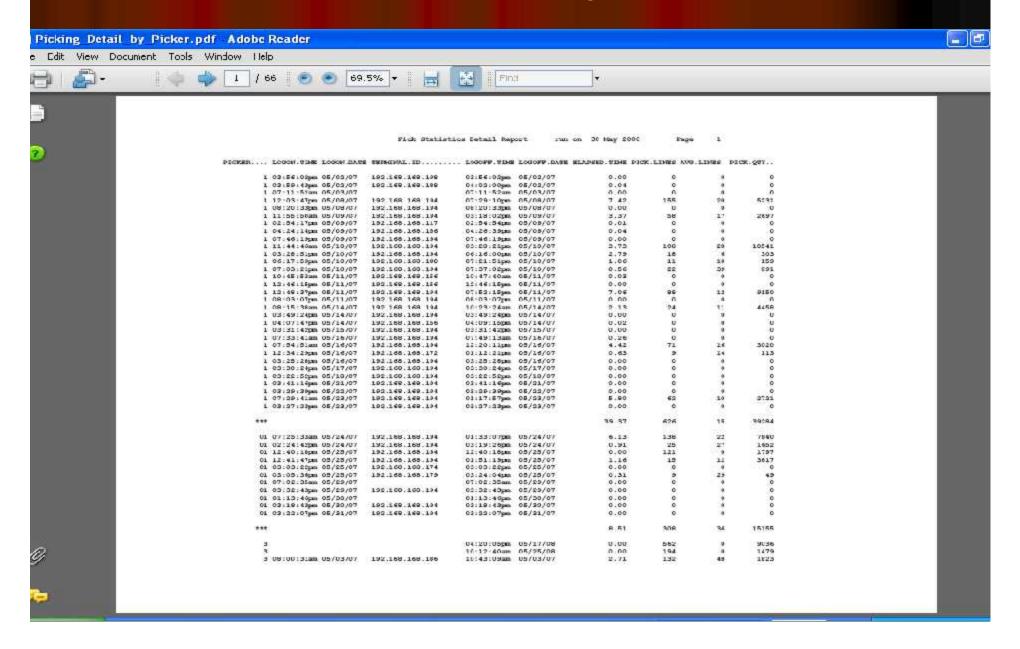


- Labor tracking by picker
 - Number of Lines/Hour/Day/Month
 - Number of Orders/Hour/Day/Month
 - Dollar Value
 - Oty of Items picked
 - Time to Pick
 - Average Lines/Orders

Picker Statistics Report - Summary



Picker Statistics Report - Detail





Warehouse Procedures

Other Procedures

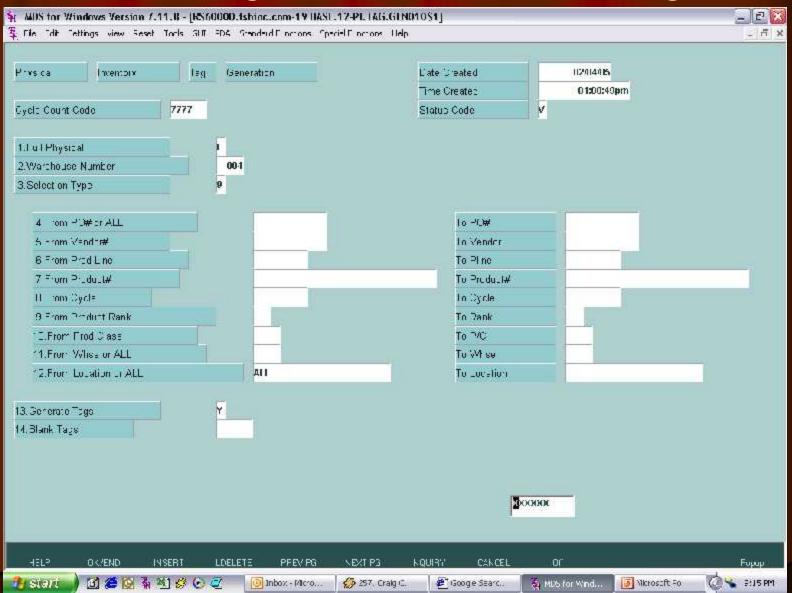
- Cycle Counts
- Physical Inventory
- Inventory Adjustments
- Transfers
- Customer Returns
- Return to Vendor





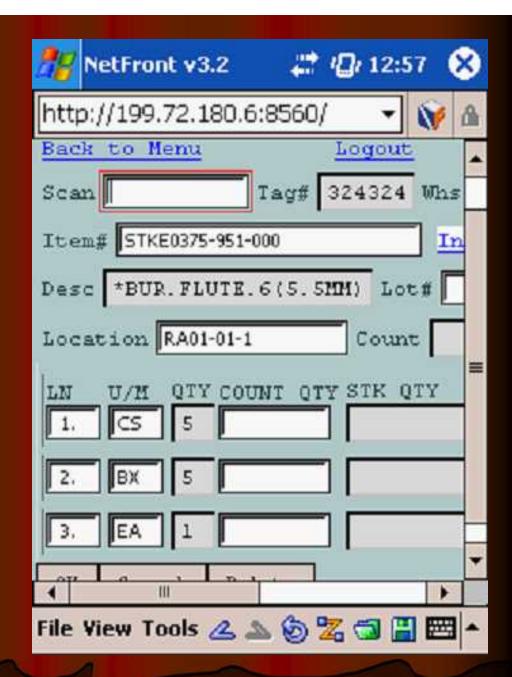
from The Systems House, Inc.

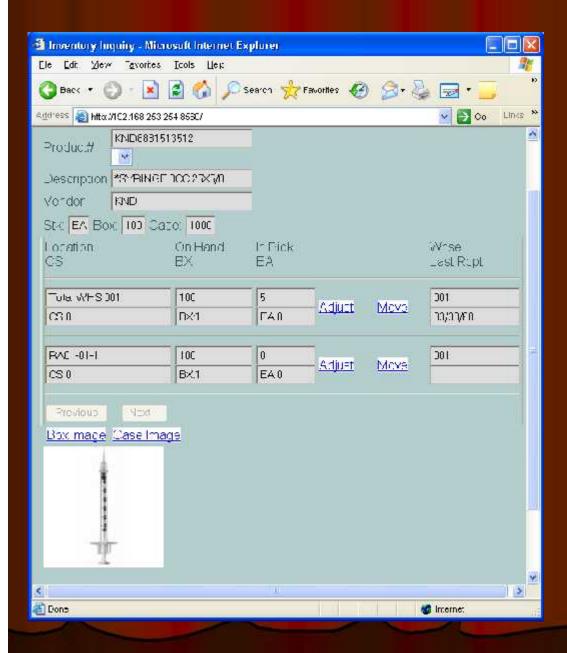
Physical Inventory



Physical Inventory

Scan tag, location or product and enter counts.





Inventory Movements and Adjustments

	56:8555 - Inventory Adjustn	iem Pri
File Edit View Favo	rites Tools Help	
DEMO.12 Invento	ory Processor - Move	Γicket
	and the extra the contract	
Product Number	WA22820	
Warehouse	001	
Quantity	79	
Location	1000A	
Reason	Miscount 💌	
	Miscount	
Adjust Inventory	Damaged Expired Lot	

Inventory Transaction Tracking



Reporting

Account61 I FESAR Por	rt:061 Menu:INV.RFPORTS Capture:On	
Inve	entory Reports System	
Fransaction Registers	Inquiries	
1. On Order Posting Register	16. Inventory by Vendor Inquiry	
2. In-Transit Posting Register	17. Inventory by Vender Inquiry (CRT)	1
3. Receipts Posting Register	18. Inventory Transaction - by Customer	
4. Inventory Adjustment Register	19. Inventory Transaction - by Product	
5. Transfer Register	20. Inventory Transaction Report	
6. Inventory Transaction Audit Report	21. Lot Availability Inquiry	
7. Product Activity Report	22. A∨ailability Detail Report	
8. PO Product Activity Report	23. Availability Detail Inquiry	
	24. Availability Summary Report	
Inventory Status Reports	25. Availability Summary Inquiry	
9. Stock Status-Sales Report	26. Arcos Acquisitions Transaction Rpt	
0. Low Stock Reports	27. Arcos Dispositions Transaction Rpt	
1. Excess Inventory Report	28. Lot Expiration Date Report	
2. Purchasing Report by Vendor	29. Product Inactive Report	0.
3. Weeks Supply Analysis	30. Inventory Adjustment Report	
4. Lot Availability Report	31. Physical Inventory Variance Report	6
5. Intransit Listing	32. Excess On-Hand Report	
	33. On Hand Value Excel Γile	
	Enter Selection or END :	



Benefits of MDS-WMS



- Improved inventory accuracy
- Improve personnel performance and accuracy
- Determine time to pick by individual
- Better utilization of warehouse space
- More flexible scheduling