LOADS AND SHIPMENTS AND WAVES, OH MY!

This blog series will cover scenarios which represent several common practices used in today's warehouses. These scenarios will illustrate how key D3650 Warehouse Management concepts and configuration considerations are used to enable the desired process design to meet the most simple and complex requirements.

Part 1 of 3 – Single Order Picking: one-to-one relationship between Sales Order and Shipment

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Loads and Shipments and Waves, Oh My!

Part 1 of 3 – Single Order Picking: One-to-one relationship between Sales Order and Shipment

Manual Process

To enable this manual process, the configuration settings below must exist:

1. Warehouse management>Setup>Warehouse management parameters>Loads
   a. Automatically create Load at SO entry: No
   b. Consolidate loads during wave processing: No
2. Warehouse management>Setup>Waves>Wave templates
   a. Automate wave creation: No
   b. Process wave at release to warehouse: No
   c. Automate wave release: No
3. Accounts receivables>Setup>Accounts receivables parameters>General>Sales default values>Reservation
   a. NOTE: This is not a required setting. However, for loads and shipments to be created, reservations must exist for the sales order lines. By setting the Reservation parameter to Automatic, the reservation is made at SO line creation if the quantity is available.

The steps below show the procedure to fulfill a sales order using order based picking.

1. Create a sales order for an item(s) that is currently in stock in a WMS managed warehouse. DO NOT "release to Warehosue".
2. In the Load Planning Workbench (Warehouse Management>Loads>Load Planning Workbench) select the relevent sales order and select **ADD >To new load**.

Scenario Summary

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The objective in the two process scenarios was to demonstrate the key concepts of load, shipment, and wave as related to sales orders as well as the impact of the automated functionality available in the wave template. While both scenarios produce the same result, it is clear that the automation of wave creation, processing, and releasing has a huge advantage. While the manual process would most likely not be used as the primary process in practical application, knowing the components of the entire process is important to fully understand. This understanding will provide the ability to adjust loads, shipments, and waves to meet the dynamic demands of any warehouse.

3. Select the relevent Load Template and click OK.

4. The newly created load will the be displayed in the Loads pane on the bottom of the form.
5. Select the Load and click Release and select Release to Warehouse.

6. Upon releasing the load to the warehouse the load status is changed to "Posted", and a ship and wave are created.
7. You can see the shipment in Warehouse Management>Shipments> All Shipments (among other places). Note the related Sales Order and Load numbers exist but the Wave does not yet exist.
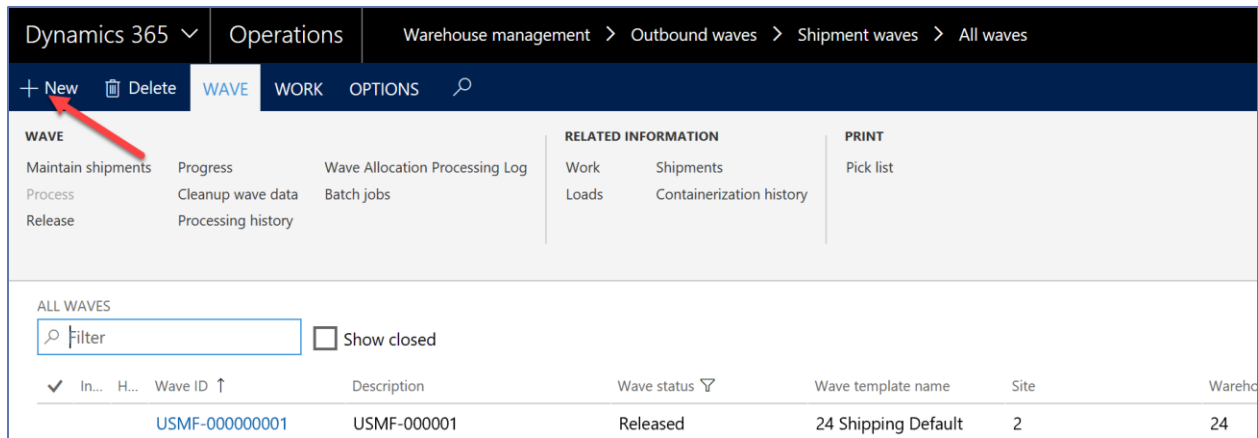
8. To create, process and release a wave go to Warehouse Management>Outbound Waves> Shipment Waves>All Waves and click "New".

9. Name the wave (in this case the wave is named after the SO #) and select a the appropriate wave template.

Create shipment wave
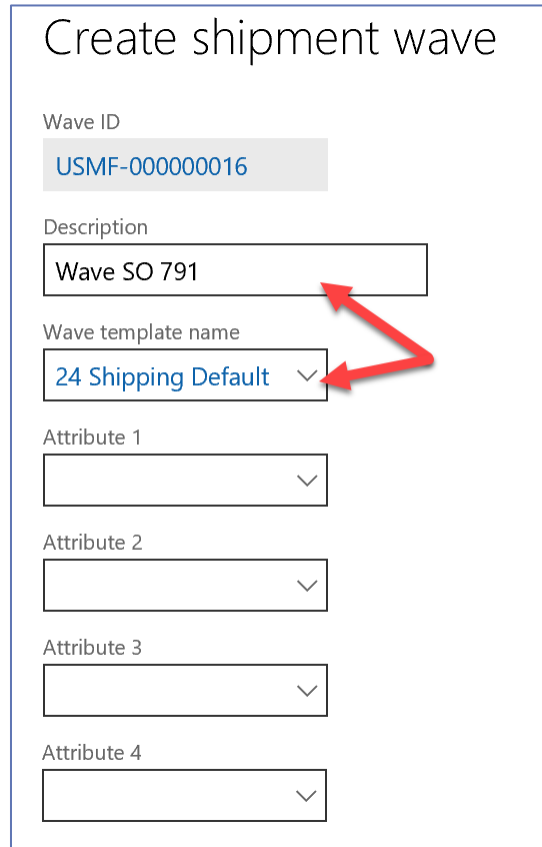
Wave ID

USMF-000000016

Description

Wave SO 791

Wave template name

24 Shipping Default

Attribute 1

Attribute 2

Attribute 3

Attribute 4

10. A wave has now been created. We must now link to a Shipment. Click "Maintain Shipments" then select shipment from the list and click "Add to Wave".

USMF-000000016 : WAVE SO 791

Maintain shipments

Wave filter code

DETAILS

Wave ID

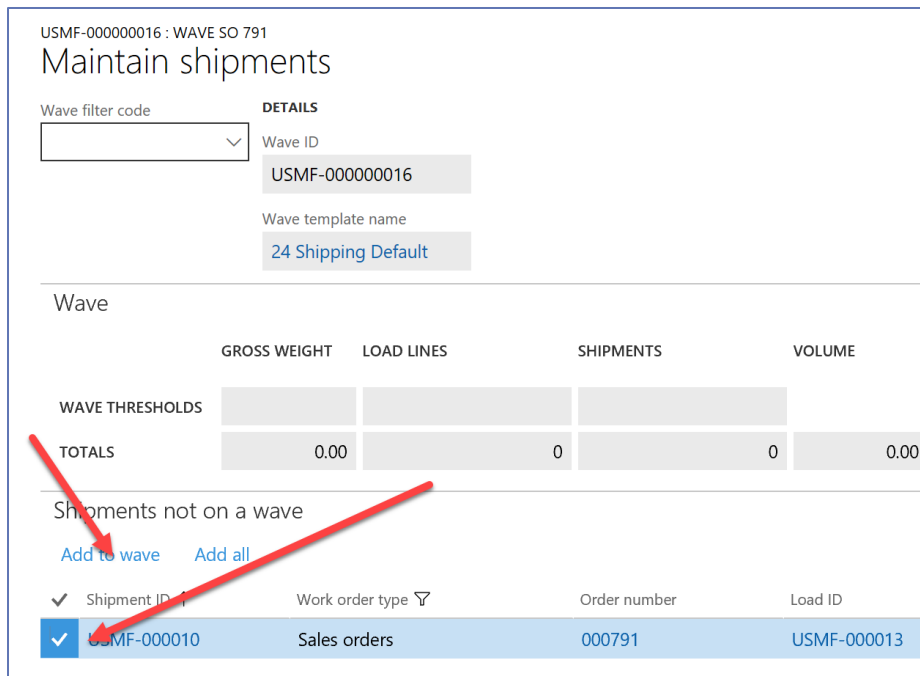USMF-000000016

Wave template name

24 Shipping Default

Wave

	GROSS WEIGHT	LOAD LINES	SHIPMENTS	VOLUME
WAVE THRESHOLDS				
TOTALS	0.00	0	0	0.00

Shipments not on a wave

Add to wave   Add all

✓	Shipment ID	Work order type ▽	Order number	Load ID
✓	USMF-000010	Sales orders	000791	USMF-000013

11. You will now see the shipment relfected in the Wave lines tab. Exit the form.

USMF-000000016 : WAVE SO 791

Maintain shipments

Wave filter code

DETAILS

Wave ID

USMF-000000016

Wave template name

24 Shipping Default

Wave

	GROSS WEIGHT	LOAD LINES	SHIPMENTS	VOLUME	INVENTORY QUANTITY
WAVE THRESHOLDS					
TOTALS	6.00	1	1	32.00	2.00

Shipments not on a wave

Load lines

Wave lines

Remove   Remove all   Shipment

Order number

✓	Shipment ID	Load ID	Work order type	Order number ∨
	USMF-000010	USMF-000013	Sales orders	000791

12. Now that the shipment is added to the wave, the wave number will be displayed in the shipment. The wave must now be processed and released. Note the wave status is "Created". Now click "Process".

✎ Edit   ＋ New   🗑 Delete   WAVE   WORK   OPTIONS   🔍

WAVE

Maintain shipments   Progress   Wave Allocation Processing Log
Process   Cleanup wave data   Batch jobs
Release   Processing history

RELATED INFORMATION

Work   Shipments
Loads   Containerization history

PRINT

Pick list

Click the edit button to make changes.

WAVES :: USMF-000000016 : WAVE SO 791
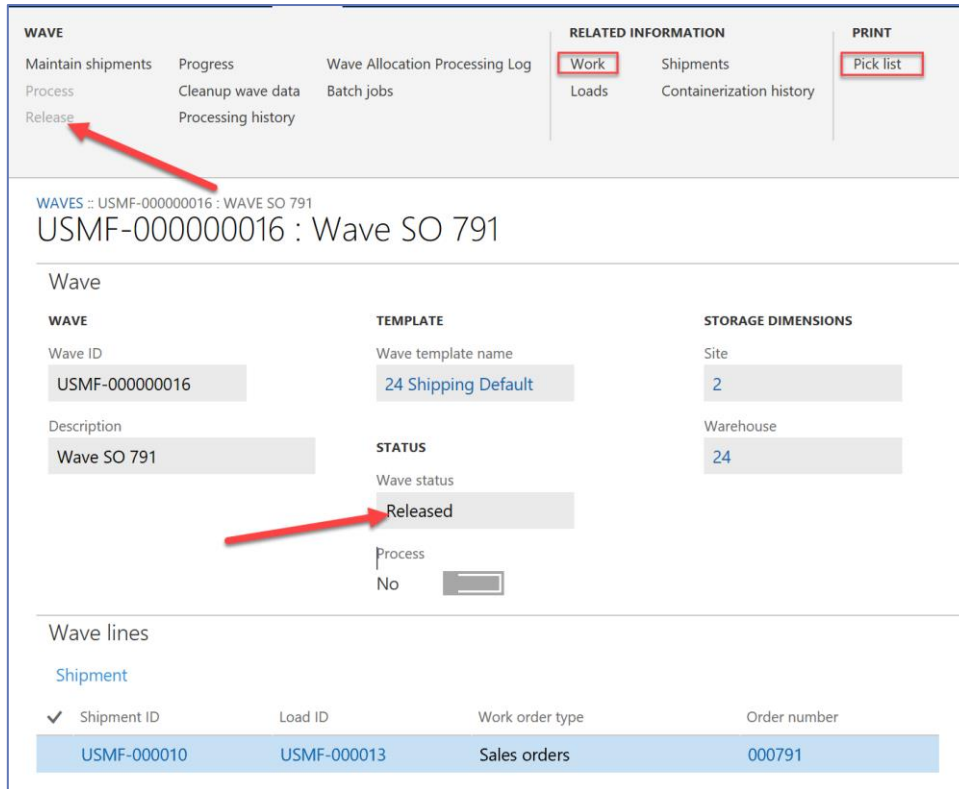
USMF-000000016 : Wave SO 791

Wave

WAVE

Wave ID

USMF-000000016

Description

Wave SO 791

TEMPLATE

Wave template name

24 Shipping Default

STATUS

Wave status

Created

Process

No

STORAGE DIMENSIONS

Site

2

Warehouse

24

Wave lines

Shipment

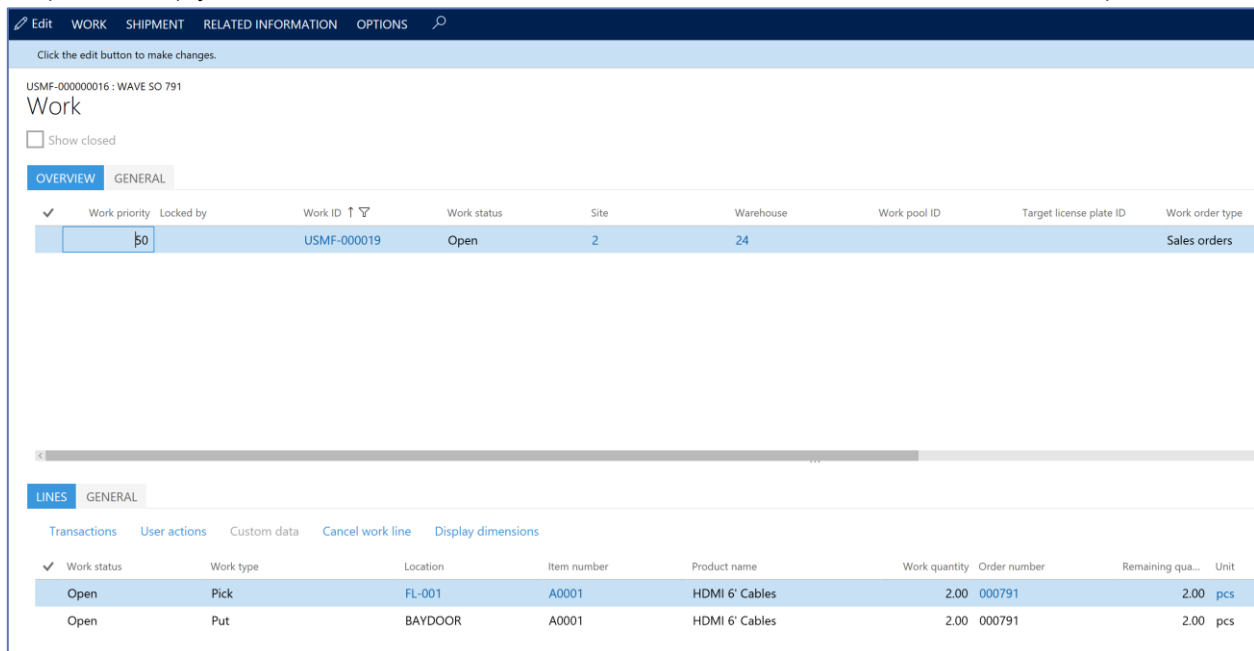| ✓	Shipment ID	Load ID	Work order type	Order number
	USMF-000010	USMF-000013	Sales orders	000791

13. The wave status as now been changed to "Held". This means the wave has been completed and "approved," but has not been released for picking. The picking work has been created at this point but it is not yet available to be performed . To release the wave, click "Release". The wave status is now released.

14. As an optional step you can view the work created for the wave. This work is the source of the pick list.

15. Now the wave/order is ready to be picked. Click Print>Print Picklist to print the picklist. The picklist will then be picked using the Dynamics 365 for Operations Warehousing App on a mobile device. Once the picking work is complete the shipment must be confirmed. Below is the related pick list.
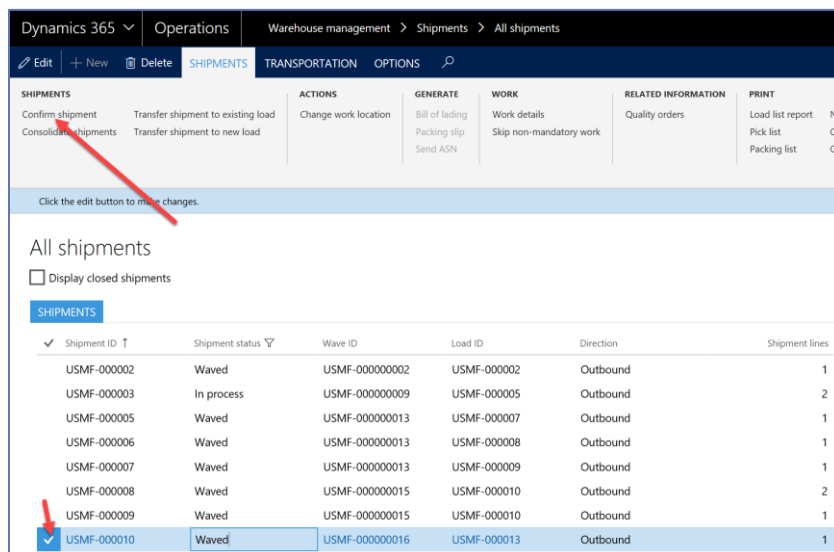
16. The shipment confirmation can be done in either the shipment itself or in the load/load planning workbench.
    a. Confirm a shipment from the shipment:

    b. Confirm a shipment from the Load:

c. Confirm a shipment from the Load Planning Workbench:

17. The shipment has now been confirmed. Packing Slip, Bill-of-Lading and/or other required documention can now be printed to be shipped with the order. The process is complete.
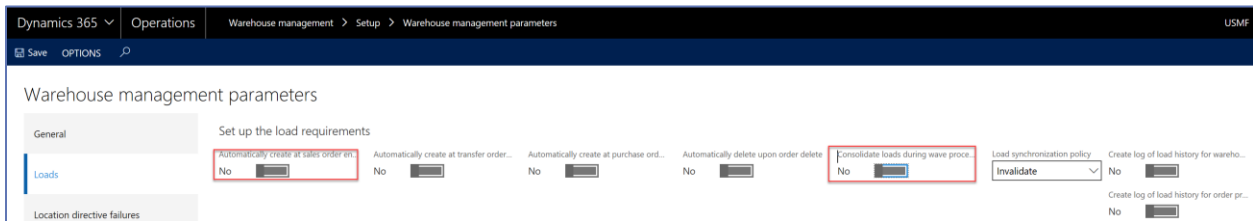

Automated Process

As noted previously, the above process will most likely never be used as the main process in a practical application. The process was demonstrated to illustrated the functions and/or relationhips between sales order, loads, shipments, waves and work.

The process below will show the same scenario using some automated functionality that will create loads, shipments and waves at "release to warehouse". Additionally, the waves will be automatically processed and released.

First, some configuration cosiderations to the wave template must be made to facilitate this automated process.

To enable this manual process, the configuration settings below must exist:

1. Warehouse management> Setup>Warehouse management parameters>Loads (unchanged from prior scenario)
    a. Automatically create Load at SO entry: No
    b. Consolidate loads during wave processing: No


2. Warehouse management>Setup>Waves>Wave templates
    a. Automate wave creation: Yes
    b. Process wave at release to warehouse: Yes
   c. Automate wave release: Yes
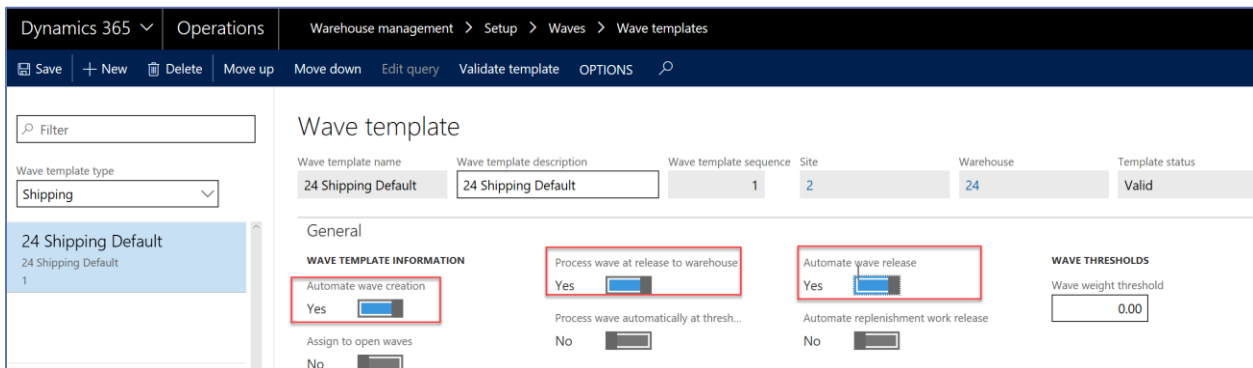
3. Accounts receivables>Setup>Accounts receivables parameters>General>Sales default values>Reservation (unchanged from prior scenario).

WESTERN COMPUTER

a. NOTE: This is not a required setting. However, for loads and shipments to be created, reservations much exist for the sales order lines. By setting the Reservation parameter to Automatic, the reservation is made at SO line creation if the quantity is available.
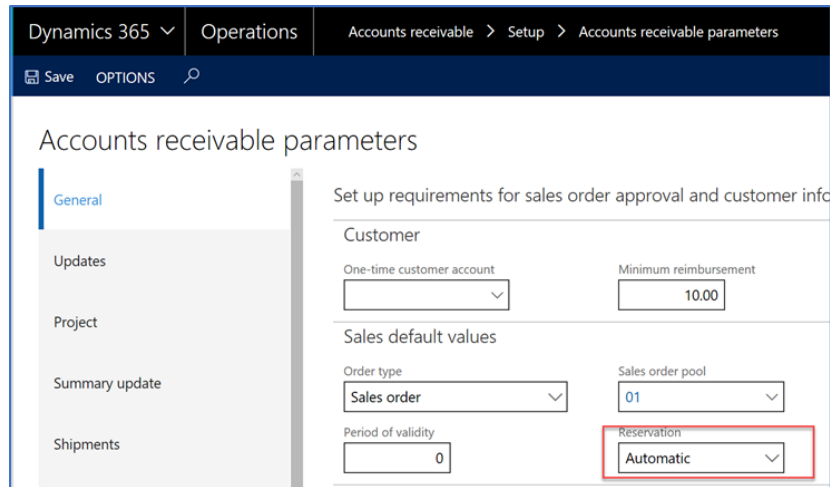
1.   We are now ready to create a sales order. The one key differnece is the fact that, with the auotmated process, the sales taker will release the order to the warehouse from within the SO. Sales Order>Warehosue tab>Release to Warehouse. Once released, a message displaying that the wave has been posted will be displayed.
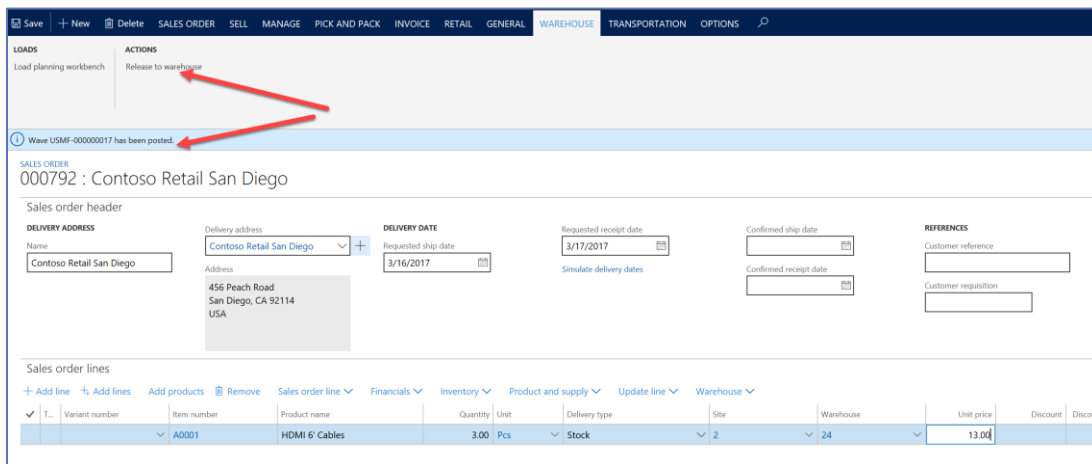
2. Upon releasing the order to the warehouse, a load and shipment has been created. Also, a wave for the shipment has been created, processed and released.
   a. LOAD:

b. SHIPMENT: Note the shipment status of Waved.

c. WAVE: Note the wave status of Released.

3. By releasing the order to the warehouse within the SO and changing the Wave template parameters as described above, steps 2-14 form the manual process are elimated.

4. At this point the pick list is ready to be be printed. There are multple ways to print the picklist. The pick list can be printed from within the shipment or wave. To stay with the automation theme, pick list printing can be run in a batch either ad-hoc or at scheduled times in Warehouse Management>Inquiries and Reports>Pick List Reports.

5. Now the wave/order is ready to be picked. Click Print>Print Picklist to print the picklist. The picklist will then be picked using the Dynamics 365 for Operation Warehousing App on a mobile device. Once the picking work is complete the shipment must be confirmed.

6. See step 15 in the prior prior process to confirm the shipment. The process is now complete.