



**DS0175**  
**Pick Order Processing**



## Table of Contents

Table of Contents .....	2
Problem Definition .....	3
Solution Overview.....	4
Design Features .....	6
Pick Order Setup.....	6
Pick Order - Picking.....	10
Pick Order - Shipping .....	18
Order Processing Sheet .....	21
Backorder Report .....	23

## Problem Definition

<b><i>Problem Definition</i></b>	<b>CCDA</b>
<p>ACMECO receives a high volume of sales orders each day. When enough inventory is not available, some lines on the orders get backordered, while others are fulfilled. Fulfilled lines are then transferred to invoices.</p> <p>The backordered lines are transferred to backorder documents. When inventory is received these backorders are combined and transferred to orders for another pass at fulfillment.</p> <p>The current process has several labor intensive steps required to “manage” the order/backorder/transfer cycle. The objective of this process is to drive, or “push”, picking and shipping of inventory.</p> <p>The desired approach is to “pull” inventory from the pick. Rather than manage the documents, and send them to picking when inventory becomes available, the system should manage the documents itself, and automatically generate picking orders based on currently available inventory and business rules for What Gets Fulfilled Next.</p>	

## Solution Overview

<b>Solution Overview</b>	<b>CCDA</b>
<p>The proposed solution will eliminate all document “management” by users, and add a new Pick Order Processor.</p> <pre> graph TD     ORDERS[ORDERS] --&gt; POP[Pick Order Processor]     POP --&gt; PO[Pick Order]     PO --&gt; MD[MaxData vShip]     MD --&gt; VSD[vShip Fulfillment Data]     VSD --&gt; POP     POP --&gt; INVOICE[INVOICE]     POP --&gt; HPO[Historical Pick Order]     </pre> <p>Orders will be entered into the system as they currently are, however, the modification will prevent ANY quantities from being allocated or fulfilled at the time the order is entered. The entire quantity ordered will always default to Qty To Backorder. This prevents a new order from grabbing inventory that should be going to a different order that has a higher priority.</p> <p>When POP runs it will identify line items that need to be picked. This will be order lines</p>	

where the Qty Previously Invoiced is less than the Qty Ordered. This will include order lines that already have inventory allocated to them through the Automated Fulfillment Process, and unfulfilled lines that still need inventory.

There will be three different types of logic used by POP to create Pick Orders, which will be described in more detail below. The general process will be:

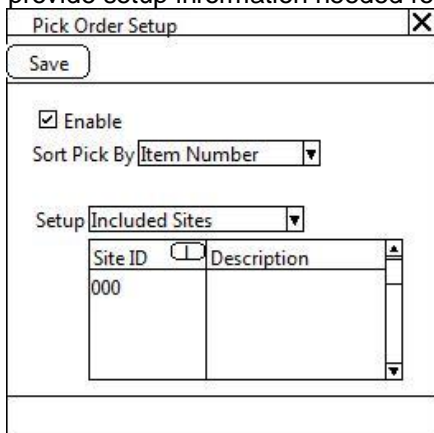

- Find the next sales line that needs to be fulfilled/picked for which there is Available Inventory. Get the Customer for that line.
- Find all other lines for that customer that can be fulfilled
- Add these lines to the Pick Order

The Pick Order is a “dummy” Sales Order that may contain lines from many source orders. Creating the Pick Order is essentially a “Merge” process where all lines that can be picked and shipped become a single Pick Order, which when fulfilled and picked, becomes a single invoice.

The Pick Order is called a “dummy” document because its only purpose is to provide information to the Maximum Data In Touch handheld devices used for picking. The Pick Order will be an actual Order in GP, and it will be moved to history when the Pick is finalized so that the system keeps a historical record of the Picks. However some time consuming tasks such as calculating taxes and distributions will not be performed because the information is not needed for the pick.

When the Maximum Data handhelds record the pick, the information is stored in a table in the company database. POP will use this information to find any discrepancies between what should have been picked according to the Pick Order, and what was physically picked. The actual quantity picked will be used to create an Invoice for the Pick Order, and to update fulfillment on the originating sales orders.

## Design Features

<b>Pick Order Setup</b>		<b>CCDA</b>
<p>Pick Order Setup is used to provide setup information needed for the Pick Order Module.</p>  <p> = Lookup Button</p>		
<p>Pick Order Setup will be accessed from Tools &gt;&gt; Sales &gt;&gt; Pick Order Setup.</p>		
Field	Function	
Enable	<p>One feature added by the Pick Order module will be that all sales line quantities on Orders will be forced into Qty To Backorder. This will prevent orders from allocating inventory.</p> <p>To ensure this feature is not applied to the system before ACME is ready, the entire Pick Order module can be enabled/disabled. The Pick Order Processor window will also NOT open until the module is enabled.</p>	

<p>Sort Pick By</p>	<p>Determines the order in which lines are presented on the Pick Order. There are two options:</p> <ul style="list-style-type: none"> <li>• Item Number</li> <li>• Bin</li> </ul> <p>When Item Number is selected, items will be added to the Pick Document in alpha-numeric order by Item Number.</p> <p>When sorted by Bin, the items will be added to the Pick Document in alpha-numeric order by the Bin assigned to the Item-Site on Item Quantities Maintenance (this is not multi-bins functionality). If two items have the same Bin, they will be sorted by Item Number.</p>	
<p>Setup</p>	<p>There are several Setup options that can be selected from the Dropdown:</p> <p><b>Included Sites</b> – this is used to specify Location Codes (Sites) that will be included when POP generates picks. If a Site is not in this list, a sales document for that site will be ignored by POP (i.e. SISK would not be included in this list). Documents are selected using the Site ID on the Sales Line.</p> <p><b>Included Order IDs</b> - in the event that ACME needs an order &amp; invoice process that is outside of POP, those Order IDs can be excluded. Only the Order ID's specified here will be included when POP generates new picks, and, the Qty To Backorder modification described above will only be active when orders are entered using an Order ID from this list. If ACME needs to have Orders that (1) allocate inventory when the ordered is entered, and (2) are not "seen" by POP, those Order IDs would not be included in this setup list.</p> <p><b>Invoice Batch</b> - user enters the Sales Batch ID to be used when POP creates invoices (i.e. INV HOLD). This option will allow the user to only enter one Batch ID.</p> <p><b>Included Batches:</b> sometimes ACME prepares for a big release, such as a Fall Release, by getting orders into the system and</p>	

	<p>inventory allocated to those orders, but they are not picked until a predetermined release date. Those orders will be placed in a special Batch, and not made available to the Pick Order until they are ready. Included Batches provides the ability to specify which SOP Batch IDs will be visible to the Pick Order module.</p> <p><b>Pick Order ID</b> - user enters the Order ID to be used for the Pick Orders. This option will allow the user to only enter one Order ID. POP will use this Order ID to find the Next Pick Number (such as PICK00001). The PICK Order ID must be set up to Allocate By Line.</p> <p><b>Ground Ship Method</b> – the Shipping Method ID for “Ground”. The need for GROUND is explained below in the Pick Order-Picker section. See description about Pick Orders when the Order have different Shipping Methods.</p> <p><b>POS Item Class:</b> the item class, or item classes, that contain POS items. This list may contain one or more Item Classes. POS Items are handled differently in the Pick Order windows, and appear separately on the OPS.</p> <p><b>No Merge Customers:</b> some customers require that their orders not be combined with other orders. Customer IDs in this list will only have Picks generated that contain lines from one order only. Like picks for other customers, No Merge Customers will have their documents fulfilled oldest first.</p> <p><b>Priority Customers:</b> some customers are high priority customers whose orders are picked as soon as possible after the order is entered. See page 14 for more details. The Priority Customers list is a list of Customer IDs.</p>	
Scrolling window	<p>The headers for the scrolling changes depending on the Setup selection.</p> <p>For example, when Included Sites is selected, the column headers will be Site ID and Description. When Priority Customers is</p>	



	<p>selected, the columns will be Customer ID and Name.</p> <p>The scrolling window displays the selections that have already been made, and allows editing that information.</p>	

<b>Pick Order - Picking</b>	<b>CCDA</b>
<p>The Pick Order - Picking will be accessed from Transactions &gt;&gt; Sales &gt;&gt; Pick Order Picking. The window will not have a “close” button (Red X) in the upper right hand corner. Since this will be the primary (only) window used in picking, this will help prevent accidental closure of the window so that users do not need to repeatedly open it again via the menu navigation. This will not prevent the user from opening and using other GP windows.</p> <p>Pickers will go to a terminal, select a Pick Type, and click the CREATE PICK button. The software will figure-out which Customer’s order(s) are next in the queue to be picked, and generate a Pick Order. The OPS will also print at that time.</p> <p>While picking the user will scan the picked items with the MaxData handhelds. The data from the handhelds will be retrieved by the Pick Order module and used to update the Pick Order with the actual quantity picked.</p> <p>The Picker will return to the terminal and scan-in the Pick Order Number into the bottom section of the window. The Pick Order will be displayed, and by default the scrolling window will only show lines with discrepancies (where the Qty To Invoice is less than the Qty to Pick). The Pick Order-Picking window will not show POS items in either the Discrepancy or All Items view.</p> <p>The Picker will fill in the Picker and Checker and SAVE the document. This will make it available to the Pick Order – Shipper window (next section).</p>	

Pick Order - Picking
✕

Clear
PRIORITY PICK READY

New Orders  
 Back Orders  
 Customer

Pick Order Number PICK000001
CREATE PICK

Customer Number ASTORSTE0001 P
PRINT OPS

Name Aaron Fitz Electrical

---

Pick Order Number PICK000001
SAVE PICK

Customer Number AARONFITZ0001

Discrepancies  
 All

Name Aaron Fitz Electrical

Item Number	Description	QTY to Pick	QTY to INV
100XLG	Green Phone	10	5
CAP100	Capacitor	10	9

Picker HLR P

Checker AHL P

P = Lookup Button    
 P = Priority Customer Lookup Button

Field	Function
	<b>TOP WINDOW SECTION</b>
New Orders Back Orders Customer	<p>Pick Type – this determines the logic used to generate the next pick.</p> <p><b>New Orders:</b> ACMECO charges freight on new orders, but not backorders, and they can include backordered items with the shipment of a new order. A New Order is a sales order that has no previous shipments (the Qty Previously Invoiced is zero for all lines on the document).</p> <p>When this Pick Type is selected, the system will search for the</p>

	<p>oldest New Order. These documents will be located with the following steps:</p> <ul style="list-style-type: none"> <li>• Find documents where none of the lines have been shipped</li> <li>• Sort the documents oldest to newest by Requested Ship Date</li> <li>• When there is a tie by Requested Ship Date, the Dex_Row_ID will be used to determine the oldest document (lower Dex_Row_ID = older).</li> </ul> <p>The New Order status will follow the Pick through to the Invoice, where the Freight field on Sales Entry will be ENABLED.</p> <p>Once a New Order has been identified, the system will find which lines can be fulfilled given current available inventory. These will be added to the Pick Order. Then other lines for that customer will also be added to the pick. These will include:</p> <ul style="list-style-type: none"> <li>• Pre-allocated lines.</li> <li>• Other open lines. These will be selected in order of Requested Ship Date, oldest first. These additional lines will be added as long as there is available inventory to pick.</li> </ul> <p>Orders that are currently being entered for Customer on the Pick Document, will not be included.</p> <p><b>Back Orders:</b> The Back Order pick will be created as follows:</p> <ul style="list-style-type: none"> <li>• Find the Customer ID with oldest lines based on Requested Ship Date from sales lines</li> <li>• The fulfillment described in first step will also automatically fulfill any items on New Orders for this Customer ID to be shipped along with the back ordered lines. The pick will also include and pre-allocated lines.</li> <li>• If any Order Document exists for a customer where the</li> </ul>	
--	--	--

	<p>document has no previously shipped lines (a New Order), and there is inventory to fulfill some quantity on one or more of the lines, then the <b>Customer will be charged freight on the INV document</b> (freight fields will not be locked for shippers).</p> <ul style="list-style-type: none"> <li>• Orders that are currently being entered for Customer on the Pick Document, will not be included.</li> </ul> <p><b>Customer:</b> The Customer pick will be created as follows:</p> <ul style="list-style-type: none"> <li>• The system will check to see if there are any Sales Documents open for the selected customer in Sales Transaction Entry. The user will be alerted that there are open documents and who has them open. To continue with a pick for this customer the users must get out of the document(s).</li> <li>• Fulfillment will be based on Requested Ship Date from sales lines (sub-sort by DEX_ROW_ID, lower = older)</li> <li>• The Pick will include any pre-allocated lines.</li> <li>• If any Order Document exists for the customer where the document has no previously shipped lines (a New Order), and where there is inventory to fulfill some quantity on one or more of the lines, then the <b>Customer will be charged freight on the INV document</b> (freight fields will not be locked for shippers).</li> </ul> <p>When a <b>Priority Customer</b> (see Setup) has an order in the system for which there is inventory for one or more lines on the order, an alert will be displayed at the top of the Pick Order window. PRIORITY PICK READY will be displayed in a red text box at the top of the window. To perform a pick for the Priority customer, the user will select the Customer Pick Type, then click the Priority Customer Lookup button (shown here with a P). This will open a custom lookup window that shows only the priority customer, or customers, that have a pending pick.</p>	
Pick Order Number	This field is editable. When the CREATE PICK button is clicked,	

	<p>the system will generated the next Pick Order and display that number here. The user can also manually enter an existing Pick Order Number so that they can re-print the OPS sheet.</p> <p>The field will not allow the user to manually enter a “new” Pick Number.</p>	
Customer Number	This is editable if Pick Type = Customer is selected. When the Customer is selected, the system will perform a check to see if any Sales Documents are open in Sales Transaction Entry for that customer.	
Name	Displays the Customer Name	
CREATE PICK	Prompts the user to confirm they are ready to generate the next pick. The status message bar at the bottom of the window will display progress/status information while the pick is generated. Pick Order Number is populated with the new Pick Number.	
PRINT OPS	OPS = Order Processing Sheet. The details of this report are described in the next section. An OPS can be printed, or re-printed for an Open Pick. When the pick is finalized, it moves to history and the OPS report can no longer be printed.	
	<b>BOTTOM WINDOW SECTION</b>	
Pick Number	<p>User enters or scans-in the Pick Number. When user presses TAB to move out of the field, the customer information and scrolling window will populate with information from the Pick.</p> <p>When the document is displayed the system will retrieve the Actual Quantity Picked from the table populated by the MaxData handhelds. The actual quantity picked will be in the QTY to INV column. The quantity invoiced and quantity fulfilled will be based on what was picked using the handhelds.</p>	
Customer Number and Name	Display only	
Discrepancies All	By default the scrolling window will display only lines where the QTY To Pick is different than the QTY To INV (in other words, the quantity fulfilled is less than the quantity required).	

	ALL – will display all lines on the Pick Order.	
Scrolling Window	The only editable field is the QTY To INV, which is the actual quantity picked. It cannot exceed the QTY To Pick.	
Picker	This is SOP User Defined List #1. This is a required field. A Picker must be provided to click SAVE PICK.	
Checker	This is SOP User Defined List #3. This is a required field. A Checker must be provided to click SAVE PICK.	
SAVE PICK	If a Picker and Checker are provided, it will prompt the user if they are ready to Save the pick. Saving the Pick with a Picker and Checker confirms that picking is complete. This makes the document available to the Shipper to pick the POS items, create the Invoice, and ship the order. The Pick Doc can always be opened in the Pick Order – Picking window, until the point it is FINALIZED and moved to history by the Pick Order – Shipping window.	
<p><b>Pick Order Creation:</b></p> <ul style="list-style-type: none"> <li>• Regardless of the Pick Type, if a No Merge Customer (see Setup) is identified for the next pick, the Pick will be created with only lines from a single document.</li> <li>• Similar line items will be merged for the Pick Order, but not the Invoice. If there are two separate lines for the same item, the total quantity needed will be shown on the Pick Order rather than two separate lines.</li> <li>• Items will be added to the Pick in alphanumeric order by either the Item Number, or the Item-Site-Bin (from Item Quantities Maintenance). The method used is determined by Setup.</li> <li>• In the event there is not enough inventory completely fulfill a pick, merged order lines will be fulfilled based on Requested Ship Date (older lines get fulfilled first).</li> <li>• Regardless of the Pick type, the originating sales orders must be for the same Customer, Bill To Address ID, and Ship To Address ID</li> <li>• <b>Payment Terms:</b> A customer could normally have credit card payment terms, but place one order COD. The Pick will not merge documents with different Payment Terms. The first time an order is picked (a New Order), the Invoice will use the terms of the originating Order (and the order would only be combined with lines from another document if it also had the same terms—such as a second New Order). Once one or more lines are fulfilled from a New Order, they payment terms for the</li> </ul>		

order will be set to the Customers Default Payment Terms ID from Customer Maintenance. The result is that all backorders for a customer will have the customer's default Payment Terms ID. If a New Order has Payment Terms that are not the Customer's default terms, this will result in a Pick including only lines for that New Order.

- **Shipping Method:** The Shipping Method specified on a New Order will be used to ship the first line(s) invoiced on that Order, as well as any other lines that can be included with the New Order. As soon as a line is shipped on a New Order, the Shipping Method for all lines on the order will be reset to the GROUND Shipping Method (see Setup).
- A pick will not merge orders for different customers, or different Address IDs.
- A pick will include all lines for a customer that can be fulfilled given current available inventory and the rules described above for the Pick Type.
- Point of Sales (POS) Items: there are some items which are included on orders, such as displays and brochures, which belong to the Item Class POS. These are stocked items. They will be included on the Pick Order, but will not be picked using the handhelds. The handhelds will display these lines, but will be skipped by the Picker. POP will always assume the items were picked, and they will be moved forward to the Invoice.
- At the time the Pick Order Number is generated, the Invoice Number to be used for the completed Pick will also be created.

**Invoice Creation:**

The Invoice Creation process will be similar to the current document merge functionality.

- Lines for similar Items will NOT be merged. There will be one line on the Invoice for each originating order line.
- The Customer PO Number from the source Order will be added to the Line Comment for the Item on the merged Invoice. This will allow the users to research the Customer PO Number, and trace back to the originating Sales Order.
- Based on the actual pick recorded by the handhelds, the line quantities on the originating orders will be updated to reflect what was picked and invoiced.
- If an order is completely shipped by the Pick, the originating order will be moved to history.
- The Pick Number will be added to the new invoice as the "Originating SOP Number" and "Originating SOP Type". When viewing the Invoice users will be able to click



the Document Number expansion button and see the Pick Doc Number. From there they can drill back to view the Pick Doc in the Sales Inquiry window.

- There will also be a cross-reference table maintained by POP that would allow more sophisticated reporting/inquiries on the links between orders, pick docs, and invoices (such reporting is not included in this estimate).
- The Invoices will be created into a Sales Batch called INV HOLD (see Setup). In the event that INV HOLD does not exist, it will be created. If INV HOLD has a Batch Status other than "Available" or "No Transactions", a new batch will be created called INV HOLD1 (the number will increment if needed to find a new Batch ID).
- A "NEW" Invoice (contains 1 or more lines from a "new" Order), will have the Freight Field ENABLED on Sales Transaction Entry. Otherwise the field will be DISABLED.

<b><i>Pick Order - Shipping</i></b>	<b>CCDA</b>
<p>The Pick Order will be generated by the Pickers with the Pick Order – Picking window. Once picking of the jewelry items is complete, the Picker will enter the Picker and Checker and SAVE the Pick. This action indicates that the Pick is complete, making it available to the Pick Order – Shipping window.</p> <p>When the Pick Order is created, the system will default all POS (Item Class = POS, see Setup) to being fully picked (QTY To INV = QTY To Pick). The Pick Order – Picking window will not show the POS items in either of its views.</p> <p>The Pick Order – Shipping window will only show Pick Orders that are Complete, and will only show the POS lines. The Shipper will pick POS items using the OPS report. If there are any discrepancies in the pick, the Shipper will locate those items in the scrolling window and change the QTY To INV to match the quantity picked.</p> <p>The Shipper will then click the FINISH PICK button, which will generate an Invoice, and update the fulfillment information on the originating order. See <b>Invoice Creation</b> in the previous section.</p>	

✕
Pick Order - Shipping

Pick Order Number

Customer Number

Name

Item Number	Description	QTY to Pick	QTY to INV ▲
BRAGBOOK	Brag Book	3	3
POSTERSET	Poster Set	4	4

Picker       Checker

Field	Description
Pick Order	User scans in the Pick Order Number from the OPS
Customer Number and Name	Display only.
	<b>Scrolling Window</b>
QTY to INV	This is the only editable field. The scrolling window will display only POS items, and by default the QTY To INV is automatically set to the QTY To Pick when the Pick Order is created. The Shipper will change this field if needed to reflect the actual quantity picked. The QTY To INV cannot exceed the QTY To Pick.
	<b>Buttons</b>
CLEAR	Clears the window. Changes made to the scrolling window are automatically saved as soon as the quantity is changed (CLEAR



	will not undo these changes).	
FINISH PICK	See the previous section for the <b>Invoice Creation</b> process.	



<b>Order Processing Sheet</b>		<b>CCDA</b>
<p>See mock-up sample layout of the Order Processing Sheet in the Appendix. Where fields are populated with information from the Pick Order, the source field is shown. If the Description is blank, the field on the report is just a blank that the user enters manually.</p>		
<b>Field</b>	<b>Description</b>	
Bag Ref #		
Pick Number	Prints bar code and text of the Pick Document Number	
Invoice Number	Prints bar code and text of the Invoice Document Number	
Store Name	Customer Name	
City/State	From Billing Address	
Ship To	Address-1, Address-2, Address-3, City, State, ZIP from Ship To	
Picked By		
Invoiced By		
Verified By		
Special Notes		
Weight		
Decline		
Packed By		
Shipped By		
Allocated Total Pieces	Total Quantity of items on the Pick Order, excluding POS items.	
Allocated Total \$	Total extended price of items on the Pick Order, excluding POS items	
Shipping Method	Shipping Method Description (not the ID).	
Customer Class	Customer Class ID	
Payment Terms	Payment Terms Description (not the ID).	
Different Credit Card		
	Sales Order Numbers & Customer PO Numbers	



	<p>This detail section will list all of the originating sales orders included on this pick, and the Customer PO Number for each Order.</p> <p><b>Also add a column for Document Date. This is not shown in the mock-up.</b></p>	
	<p>POS Item #, Description, Qty To Ship</p> <p>This detail section will list all of the POS items from the originating orders</p>	

<b><i>Backorder Report</i></b>	<b>CCDA</b>
<p>When the Invoice is printed, a new report will automatically print at the same time that shows the customer's open sales lines.</p> <p>This will be a simple report with the following information:</p> <ul style="list-style-type: none"><li>• Customer Number and Name</li></ul> <p>Columns:</p> <ul style="list-style-type: none"><li>• Order Date</li><li>• Order Number</li><li>• Customer PO Number</li><li>• Item Number and Description</li><li>• Qty Ordered</li><li>• Qty Invoiced</li><li>• Qty Backordered</li></ul>	

