



QAD Enterprise Applications  
Enterprise Edition

# Training Guide **Purchase Costing**

70-3079A  
QAD 2010 Enterprise Edition  
Lab: Enterprise Edition 2010 - Addons r03 - Training  
Workspace: 10USA > 10USACO  
Nov 2010

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# **About this Course**

## Course Description

This QAD Purchase Costing 2010 Enterprise Edition training guide offers detailed instruction on how purchase orders are costed and how purchase variances are generated and reported.

This guide may be taught individually or as a part of the Product Costing & Cost Management course set.

## Course Objectives

Provides the structural framework and knowledge necessary to track purchase costs and explain purchase variances.

## Course Benefits

Provides the opportunity for personnel responsible for purchase costs and variances in an to understand how the system works.

## Audience

Finance and operations personal who track and explain purchase order costs.

## Prerequisites

Introduction to Costing, Product Costing, and Familiarity with the .NetUI

## Course Credit & Scheduling

This course is valid for 3 credit hours. This course is typically taught in one-half day.

## Virtual Environment Information

The hands-on exercises in this book should be used with the "Enterprise Edition 2010 - Addons r03 - Training" environment, in the "10USA > 10USACO" workspace.

## QAD Web Resources

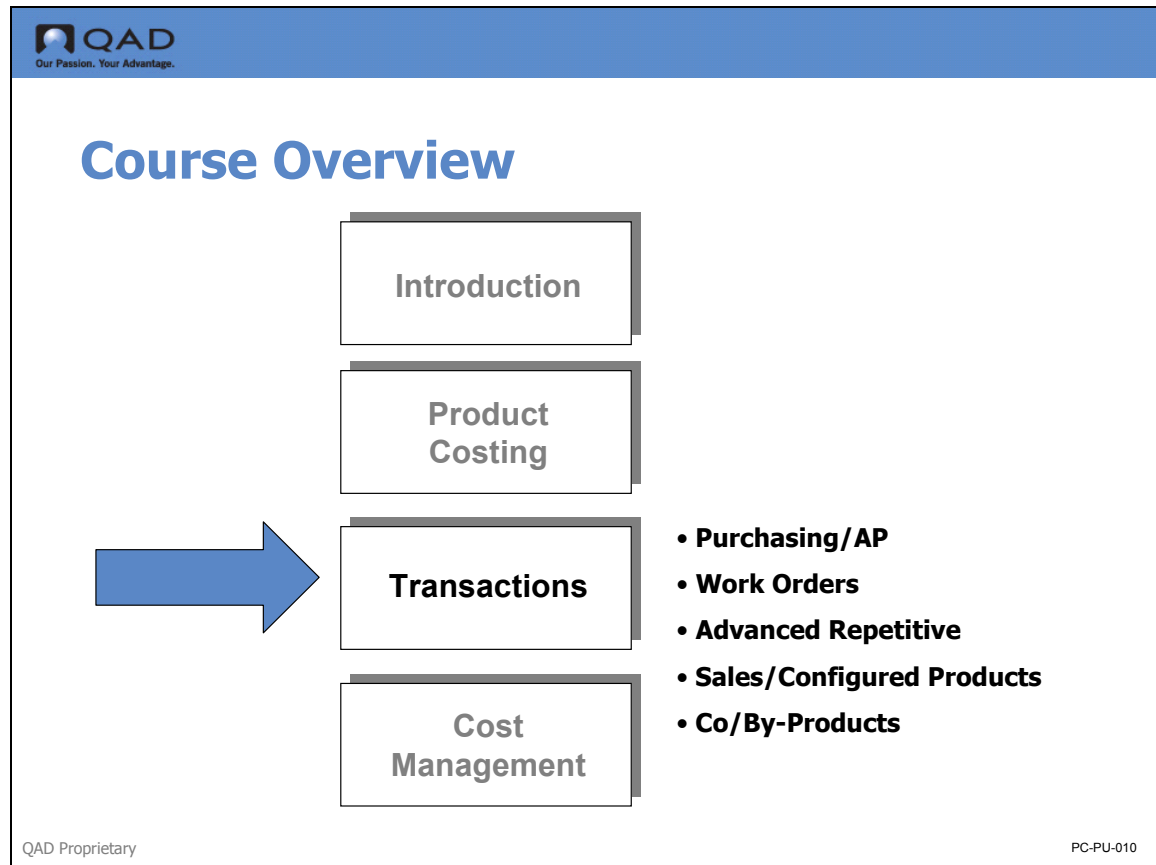
From QAD's main site, you can access QAD's Learning or Support sites.

<http://www.qad.com/>


Chapter 1

# **Purchase Costing**

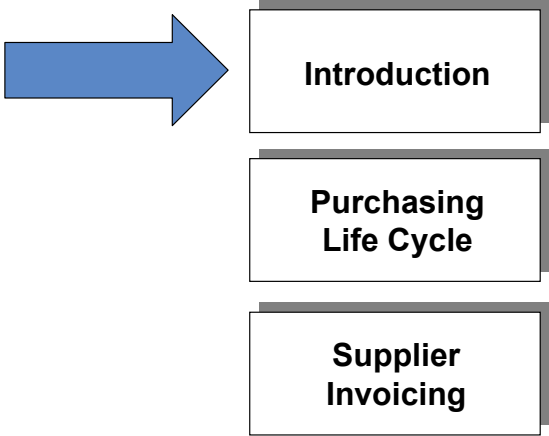
## Course Overview



## Purchasing/AP Topics



### Purchasing/AP Topics

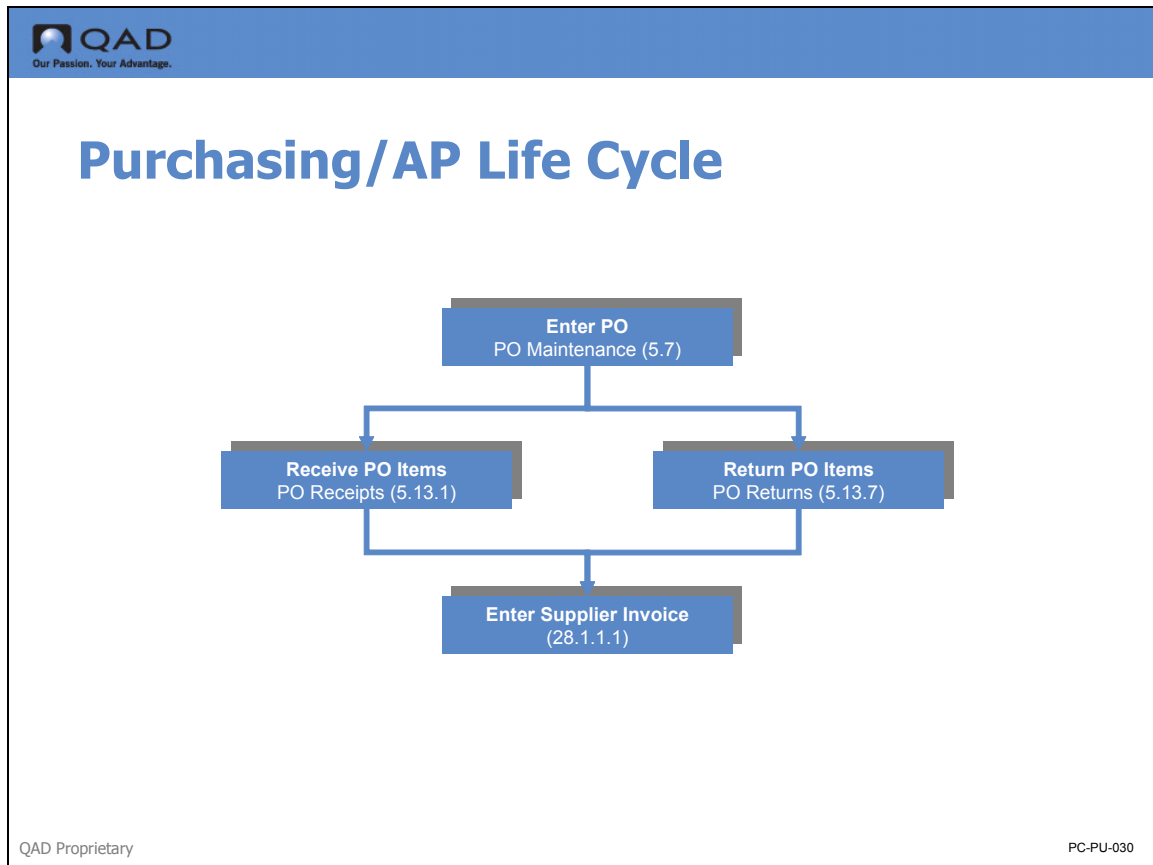


The diagram consists of a large blue arrow pointing to the right. To the right of the arrow are three stacked rectangular boxes, each with a drop shadow. The top box is labeled 'Introduction', the middle box is labeled 'Purchasing Life Cycle', and the bottom box is labeled 'Supplier Invoicing'.

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This chapter on purchasing/accounts payable transactions and costing covers the purchasing life cycle, including PO returns and subcontract purchase orders, followed by a section on vouchering and accounts payable.

## Introduction



Let's look at the Purchasing and Accounts Payable modules. Functions in both modules affect costs and generate variances.

On the purchasing side, costs are not affected and general ledger transactions are not created until you actually record a purchase receipt or return. At this point, Inventory (or Expense) is updated and the purchase amount accrued.

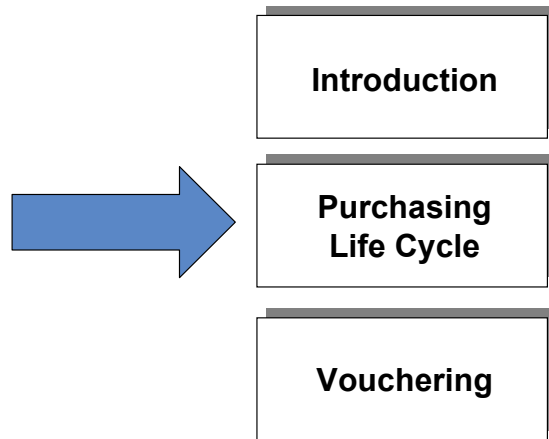
- In a standard cost system, a PO receipt is booked at standard cost and the accrual is booked at actual. Any difference is a variance. On non-base currency POs, some of this variance may be a result of exchange rate fluctuations. The rest is booked as a Purchase Price Variance. Returns do the reverse.

**Note** Return to Supplier (RTS) functions in the Field Service module may have the same effect as purchasing receipt and return functions if they update inventory. These functions are not covered separately here.

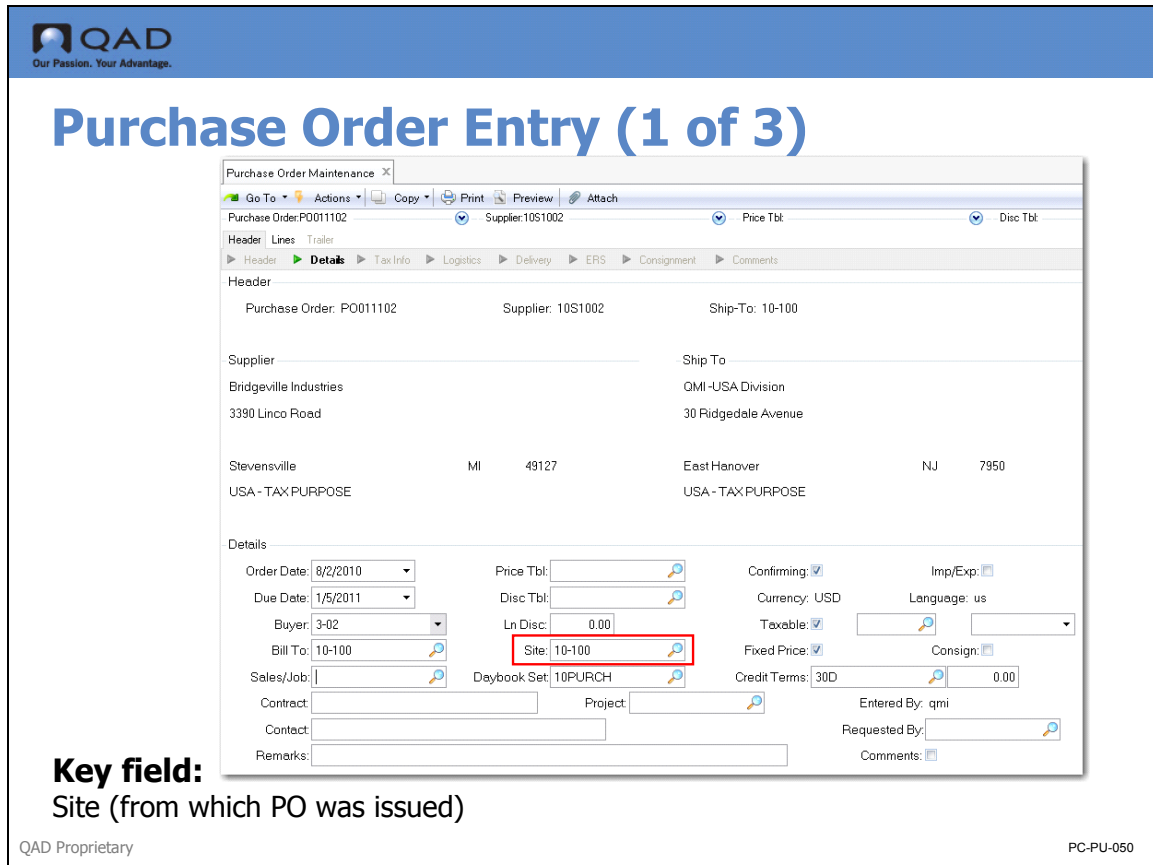
## Purchase Order Entry



### Purchasing/AP Topics



## Purchase Order Maintenance Screen



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## Purchase Order Entry (1 of 3)

Purchase Order Maintenance x

Go To Actions Copy Print Preview Attach

Purchase Order: P0011102 Supplier: 10S1002 Price Tbl: Disc Tbl:

Header Lines Trailer

Header Details Tax Info Logistics Delivery ERS Consignment Comments

Header

Purchase Order: P0011102 Supplier: 10S1002 Ship-To: 10-100

Supplier: Bridgeville Industries 3390 Linco Road Stevensville MI 49127 USA - TAX PURPOSE

Ship To: OMI -USA Division 30 Ridgedale Avenue East Hanover NJ 7950 USA - TAX PURPOSE

Details

Order Date: 8/2/2010 Price Tbl: Confirming:  Imp/Exp:

Due Date: 1/5/2011 Disc Tbl: Currency: USD Language: us

Buyer: 3-02 Ln Disc: 0.00 Site: 10-100 Taxable:  Fixed Price:  Consign:

Bill To: 10-100 Sales/Job: Daybook Set: 10PURCH Credit Terms: 30D 0.00 Entered By: qmi

Contract: Project: Requested By: Remarks: Comments:

**Key field:**  
Site (from which PO was issued)

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**Site.** Each purchase order is associated with a site for inventory reporting. In turn each site is assigned to an entity for financial and tax reporting. GL transactions for sites are posted to the entity for the site.

- During AP Supplier Invoice Create (28.1.1.1), GL transactions for AP are created for the site (entity) identified on the PO
- If you don't enter a site in the header (the first frame), you must manually enter a site for each line item. The site in the header frame is the site from which the PO was issued. The site in the next frame, the line item frame, is the site to which the line item quantity will be delivered.
- Also AP will be posted to the default entity specified in the Domain/Account Control (36.9.24).
- Whenever line items are shipped to sites assigned to different entities, QAD Enterprise Applications creates intercompany transactions. If a PO header site is specified, intercompany transactions are created during PO receipt for the inventory intercompany accounts setup in the financial system. If a PO header site is not specified, intercompany transactions are created during AP supplier invoicing for the AP intercompany account. (Intercompany transactions are discussed in the financial documentation)

## Purchase Order Maintenance Screen, cont.

**Purchase Order Entry (2 of 3)**

**Key fields:**  
Pur Acct, Project, Type, Update Avg/Last Cost

**Type**  
Can be [blank], [M]emo, or [S]ubcontract

**Update Avg/Last Cost**  
Applies to Current cost only

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**Type.** The line item type will control the accounting processes. The type can be [blank], [M]emo, or [S]ubcontract. If the type is [blank], this is considered a normal inventory purchase subject to variances if using the standard costing method or averaging if using the average costing method. (Type is discussed in more detail in this section on Purchase Order Line Types.)

**Update Avg/Last Cost.** The Update Avg/Last Cost field applies to Current costs only. It can be used to change the current cost at receipt time or to not let the change go through to current cost for this PO line item receipt.

**Pur Acct.** Purchase orders don't create GL entries until Purchase Order Receipt, (5.13.1), but the receipt and subsequent supplier invoicing use accounts maintained in the purchase order for memo items or the product line for most inventory items.

The usage and origin of the Purchases account varies depending on the kind of PO line item.

- Non-inventory (memo) items: Used as debit account in Purchase Order Receipts (5.13.1). (PO receipts debit the Purchase account and credits Expensed Item Receipts.) The account defaults from the requisition, Purchase Requisition Maintenance (5.1.4) or (5.2.6), if one exists, or the account listed in the supplier record, Supplier Maintenance (2.3.1), if it doesn't.
- Inventory items (PO type = blank): Not used. In Purchase Order Receipts (5.13.1), the debit account is the Inventory account for the item's product line, Product Line Maintenance (1.2.1) or Inventory Account Maintenance (1.2.13)

- Inventory items (PO type = memo): Used as debit account in Purchase Order Receipts. If an inventory item is purchased as a memo item, the Purchase account defaults from the product line Purchases account, Product Line Maintenance (1.2.1)

*Project.* Optional: You can use Project to track orders or individual line items purchased to support specific company activities. The project in the order header displays as the default for line items but can be changed for individual lines.

- If a PO is associated with a project, any GL transactions created for the order also reference the project code. Project codes are set up in Project Code Maintenance, (25.3.11).

*AP Acct.* Defaults from Supplier Maintenance (2.3.1). Appears on the purchase order, but the system doesn't create GL entries for this account until the PO is vouchered in Accounts Payable.

Overriding the default account on the PO will cause the newly entered AP account to be used when processing vouchers through the ERS (Evaluated Receipts Settlement) process in the AP module.

## Purchase Order Line Types

Line Item	Type	Inventory Effect	GL Entries at Receipt	GL Type
Inventory	blank	Yes	DR Inventory CR PO Receipts	IC
Subcontract (No Work Order)	S	No	DR Cost of Production CR PO Receipts	IC
(With Work Order)	S	No	DR Cost of Production CR PO Receipts	IC
			DR WIP CR Cost of Production	WO
Expensed (memo)	M	No	DR Purchase Expense CR Expensed Item Receipts	IC

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Purchase order line items are categorized by type, which is set by the system when you enter the item. The type determines whether the receipt affects inventory and which GL transactions are created.

### Blank

The normal type of purchase order is an inventory purchase. On these, Type is left [blank]. When the items are received, they are put into inventory, valued at standard or average cost, and a purchase accrual is created. Both the purchase accrual (PO receipts) and inventory accounts come from the product line of the purchased item (Product Line Maintenance (1.2.1) or Inventory Account Maintenance (1.2.13))

**Note** The item number specified on the line must be valid.

### [M]emo

When you enter PO lines for non-inventory items (for example, purchases of office supplies or services), the system automatically flags these as type [M]emo. These items are set up in Item Master Maintenance (1.4.1) with the Memo Order Type set to some code other than blank. Any value in this field other than blank is treated as a Memo Item. These lines don't affect inventory. The expensed Purchases account (from Supplier Record) on the PO line item is the default debit account, but you can change it to another expense or asset account. If you

purchase parts that have valid item numbers for non-production use (for example, for experimental or prototype purposes), then you must manually set the PO line type to [M]emo; the Purchases account defaults from the Product Line Record.

### [S]ubcontract

Another type of purchase is a purchase of subcontract manufacturing operations. Like inventory items, subcontract services are set up in the item master; however, they are received to work orders rather than to inventory. During order entry, the system prompts you to enter the work order number, work order ID, and operation for the subcontract item. (See Subcontract POs for further discussion of subcontract purchases.)

## Automatically Updating Current Costs

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# Automatically Updating Current Costs

**Current Cost = Last**

- If there are 100 units of item A on hand with a current cost of \$10 and a PO for 100 is received with a PO price of 9.50, then the current cost for all 200 units would now be \$9.50/unit

**Current Cost from AP = Yes**

- If update from AP is set to Yes and the supplier invoice is vouchered for 100 at \$9.45, then the current cost for all 200 units would now be \$9.45/unit

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**Note** Current cost is used for comparative analysis only. Current cost and the extended value of inventory at GL cost can be reviewed in the Inventory Valuation Report (3.6.13)

Purchase order receipts update the current cost information if you have set the current method to Average or Last in the Inventory Accounting Control (36.9.2).

### Current Cost Set to Last

When you set your current cost method to Last, the update is very simple. Upon each PO receipt, the purchase order cost for that receipt is set as the new current cost for the item.

Optionally, you can also update the current cost upon each AP voucher transaction for the item, which will use the supplier invoice amount to update the current cost.

### Update Avg/Last Set to No

When you set your current cost method to None, no automatic updating occurs. This is total manual control of current costs.

**PO Update Avg/Last Set to No**

**Update Avg/Last Cost = No**

- If you do not want costs to be updated based on a specific PO transaction, you can set this flag to No.

**Warning**


- If you also have the Update from AP flag set to Yes in the Inventory Control File (3.24), then the AP voucher will update current costs, even though the PO receipt does not update costs.

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There may be times when you do not want to update the current cost based on a specific PO transaction. This may be due to having to pay an unusual price for the item because of a short-term change in business conditions. In this case, in PO Maintenance (5.7), you can set the PO line so that it does not update based on the Avg/Last cost.

**Warning** If you also have the Update from AP flag set to Yes in the Inventory Accounting Control (3.9.4), then, even though the PO receipt does not update the current cost, the AP Supplier Invoice transaction will update the current cost.

## Current Cost Set to Avg


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## Updating Current Costs: Avg

Inventory Accounting Control

Go To Actions Copy Print Preview

Transfer Clearing Acct: 1670

Accounting

Current Cost (AVG/LAST/NONE):

Sum LL Costs Into Matl Cost:

Current Cost from AP:

Create GL Transactions:

Transfer Clearing Acct: 1670 Mech

**Current Cost = Average**

- If there are 100 units of item A with a current cost of \$10 and a PO for 100 is received with a PO price of \$9.50, then the Current cost would now be \$9.75:

$$\frac{(100 \times \$10) + (100 \times \$9.50)}{200} = \$9.75$$

**Current Cost from AP = Yes**

- If the supplier invoice is vouchered for 100 at \$9.45, then the current cost would now be \$9.725:

$$\$9.75 - \frac{[100 \times (\$9.50 - 9.45)]}{200} = \$9.725$$

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For the average current cost update, the current quantity on hand is multiplied by the current cost, and the receipt quantity is multiplied by the PO cost. This total is divided by the new total quantity on hand to obtain the new average cost.

As in the previous example, you can elect not to update your current cost during purchase order entry, but the AP Supplier Invoice will update the costs here if the Update from AP flag has been set to Yes in the Inventory Accounting Control (3.9.4).

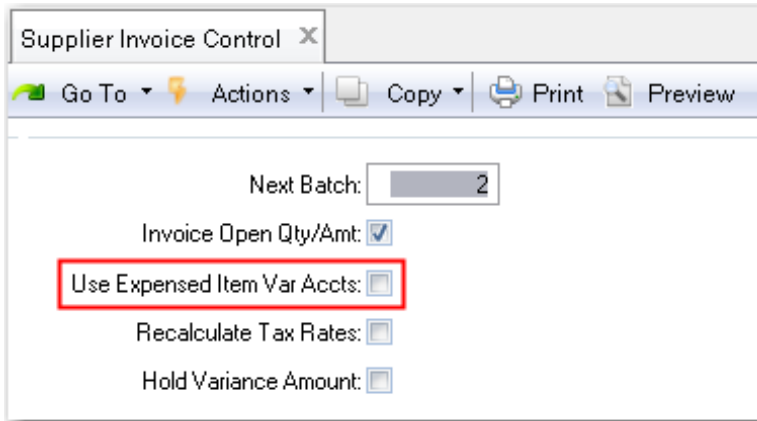
## Exercise 1: Review Accounting Records

- 1 Review the Domain/Account Control 36.9.24. You should be in Entity 10USACO, If not check the workspace you are in, it should be 10USA USA Division [USD], the currency code in brackets is the currency for this entity. Use the next button to cycle through all the screens to insure that all account fields have a value in them. Not all sub-account or cost center fields will have values. You may wish to uncheck the Verify GL Accounts selection.
- 2 Review the Inventory Accounting Control 36.9.2. (In QAD SE this is in the Inventory Control 3.24) Set the Current Cost field to LAST. This allows the system to update current costs automatically based on the last purchase cost or work order cost and insures the system will generate variances when these costs differ from the GL or Standard cost. The use of average costing is covered in another course.

The Supplies Kit, 01011 has two purchased components, the 01012 Sterile Probe covers and the 01013 Sterile Wipes. A kit requires one box of the 01012, and two boxes of the 01013. Both of these items are purchased from Heron Surgical Supply, vendor number 10S103.

- 3 Use Item Planning Maintenance 1.4.7 to review the Purchase/Manufacture code to insure it is P, for both items.
- 4 Use Item Cost Maintenance 1.4.9 to review the material cost. The This Level Material cost for item 01012 should be 2.50 in both the GL and the Current cost sets. If not, make it so. This Level Material cost for item 01013 should be 1.00 in both the GL and the Current cost sets. If not, make it so. Both of these items are lot controlled.

- 5 Review Supplier Invoice Control 28.24, uncheck the Use Expense Item Var Accts: This indicates you are not calculating variances for Memo items but expensing their entire cost.



Supplier Invoice Control

Go To Actions Copy Print Preview

Next Batch: 2

Invoice Open Qty/Amt:

Use Expensed Item Var Accts:

Recalculate Tax Rates:

Hold Variance Amount:

## Purchase Transactions: Example

The screenshot displays the QAD software interface for Purchase Transactions. It features three main windows:

- Item Cost Maintenance:** Shows the total standard cost for Item 60012 as 0.15371. This is composed of Material (0.13973) and Overhead (0.01397).
- Purchase Order Maintenance:** Shows a purchase order for Item 60012 with a quantity of 150.0 and a unit cost of 0.13. The order is for Supplier 10S1002 at Site 10-100.
- Purchase Order Receipts:** Shows a receipt for Item 60012 with a quantity of 150.0. The receipt is for Supplier 10S1002 at Site 10-100, Location Ref 020, and Lot 123.

The following example illustrates the sequence of functions used and the accounts affected when purchasing and receiving items.

**Example** A purchase order is issued for 150 electrodes (item 60012) at 0.13 each (Purchase Order Maintenance (5.7)).

- The total standard cost for this item is material 0.13973 + overhead 0.01397 = 0.15371 as shown in Item Cost Maintenance (1.4.9)
- Because the PO unit cost is different than the standard GL cost, it will generate a Favorable Purchase Price Variance upon PO receipt.
- This is a rate variance because the PO price is different than the GL standard.
- If the invoice price is difference from the PO price an AP Rate variance will be generated.

## Purchasing—Transactions Detail

**Transactions Detail Inquiry** 09/24/10

Transaction: 28080 Display E-Signature Details: Yes Output: PAGE  
 Category: InvTran E-Signature Details  
 This data is currently unsigned  
 End of e-signature details

Tran Nbr: 28080 Order: P001102 R1010068  
 Trans Type: RCT-PO Revision: 0  
 Date: 09/24/10 Item Number: 60012  
 Time: 15:24 Description: Electrodes  
 Effective Date: 09/24/10

Remarks:  
 User ID: qmi  
 Program: poporc.p  
 Currency: USD  
 Qty Change: 150.0  
 Shipper Number:  
 Ship Date: 09/24/10

Site: 10-100  
 Location: 020  
 Lot/Serial: 123  
 Inv Status: Y-Y-Y  
 Supplier Lot:  
 Grade/Assay:  
 Reference:

Material: 0.13973 Overhead: 0.01397  
 Labor: 0.00 Subcontract: 0.00  
 Burden: 0.00 Cost Total: 0.15371

Debit Acct: 1500 Mech RCT-PO  
 Cr Account: 2520 Mech  
 Amount: 20.96  
 GL Reference: 2010/RCT-P0000000016 Reference ID: IC100924000001

Debit Acct: 1500 Mech RCT-PO  
 Cr Account: 5330 Mech  
 Amount: 2.10  
 GL Reference: 2010/RCT-P0000000017 Reference ID: IC100924000002

**Receipt Transactions Report** 09/24/10 15:4  
 10USA

Tran Nbr	T	Eff Date	Order	Sales/Job	Address	Name	Loc	Qty	Ch	R	C	Unit Price	Extended Cost	PO-Std	Variance
Item: 60012						Electrodes						UM: EA			
28080		09/24/10	P001102		10S1002	Bridgeville Indus		150.0				0.13	19.50		-1.46
Item Total:												150.0		19.50	-1.46
Report Total:														19.50	-1.46

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You can review the transactions by using Transaction Detail Inquiry (3.21.1). The resulting account debits and credits are shown for each transaction.

In this example, upon purchase order receipt (RCT-PO), the system:

- Receives the item into inventory at standard cost less overhead

$$\text{Qty rec'd} \times (\text{standard GL cost} - \text{overhead})$$

$$150 \times (0.15371 - 0.01397) = 20.96$$

- Applies the overhead amount

$$\text{Qty rec'd} \times \text{Overhead}$$

$$150 \times 0.01397 = 2.10$$

- Calculates the Purchase Price Variance (PPV)

$$[\text{PO Cost} - (\text{GL Cost} - \text{Overhead})] \times \text{PO Qty Received}$$

$$[0.13 - (0.15371 - 0.01397)] \times 150 = -1.4595$$

The Purchase Price Variance PPV for any given transaction or range of transaction can be viewed using the Receipt Transaction Report 5.9.14.

Negative result = favorable variance; Positive result = unfavorable variance. A negative value is favorable because it is a reduction of an expense.

### GL Transaction Format

All of the resulting GL transactions are type IC (Inventory Control). When you review them in Transaction Detail Inquiry (3.21.1), you will see that the journal reference begins with IC, followed by the effective date of the transaction and a sequential number.

## Exercise 2: Issue Purchase Order

- 1 Use Purchase Order Maintenance 5.7 to create a purchase order for these two items, 01012 and 01013. Let the system assign the next PO number, use the lookup icon on the supplier field to find Heron Surgical Supplies. Advance to the line item screen accepting the default values for all other fields.

Line 1; enter Site 10-100, use tab or enter to by-pass the requisition field, in the item number field enter 01012, in the quantity field enter 100. Cycle through the screens until you return to line items screen, then, enter the 01013 for a quantity of 200. Note that the system has brought up the GL standard cost for both items. However for the 01013 you have a recent e-mail from the supplier saying the price has gone up to 1.50 per box. Change the unit cost to 1.50. Your PO line 2 should look like this: note that the UpdateAvg/Last Cost field is checked.

Purchase Order: P1010002    Supplier: 10S1003    Site: 10-100    Item Number: 01013

Header    Lines    Trailer

► Lines    ► Line Details    ► Tax Info    ► Comments

Header

Purchase Order: P1010002    Supplier: 10S1003    Ln Format S/M: Single

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
2	10-100		01013	200.0	BX	1.50	0.00

Line Details

Qty Received: 0.0    Due Date: 9/27/2010    CRT Int: 0.00

Qty to Rel: 0.0    Pur Acct: 6610    Mech    ADM

Single Lot:     Performance Date: 9/27/2010    Project:

Location: 010    Need Date: 9/27/2010    Type:

Item Revision:    Sales/Job:    Taxable:

Status:    Fixed Price:     Inspect Req:     Cmmts:

Supplier Item:    UM Conversion: 1.0000

Manufacturer:    Stock UM Quantity: 200.0    BX

Description: Sterile Wipes, Box of 50    Update Avg/Last Cost:     Extended Net Cost: 300.00

If you thought the new cost of 1.50 for item 01013 was a one time event or, aberration, you could uncheck the line item UpdateAvg/Last Cost flag and the system would not update the current cost based on the PO and line item.

The Quality Assurance Lab has called and asked to buy 50 boxes of the sterile wipes as they use them for testing and cleaning purposes. Add a third line item for 50 of the 01013 at the cost of 1.50 but in the Type field make these Type M, memo items. This will charge them to an expense account not inventory.

Complete the PO through the trailer and note the total PO cost of 625.00

- 2 Use Purchase Order Receipts 5.13.1 to receive one half the order quantity of each of line one and two and all of line three. As these are lot controlled items you will need to add a lot number to the receiving inventory transaction. The example uses Lot 123 for line one and 456 for line two and 789 for line three. Your Purchase Receipts screen should look like this.

## 22 Training Guide — Purchase Costing

Purchase Order Receipts						
Go To Actions Copy Print Preview Attach						
Order: P1010001		Supplier: 10S1003		Status:		Packing Slip:
Ln	Item Number	Site	Location Ref	Lot/Serial	Supplier Lot	Quantity
1	01012	10-100	010	123		50.0
2	01013	10-100	010	456		100.0
3	01013	10-100	010	789		50.0

Click Is All Information correct Yes to complete the transaction.

- 3 Use Transaction Detail Inquiry 3.21.1 to review the last three transactions. The display comes up on the last transaction processed. Use the scroll arrows to move to the previous transactions. The last transaction is the receipt of the 50, 01013 memo items.

The top frame of the transaction detail displays all relevant data about the transaction. Its type, RCT-PO, receipt - purchase order; the PO number. It shows the date, time and user ID of the person making the transaction and the effective date of the transaction. It shows the item number and description of the subject of the transaction, the address code and name of the supplier of the goods, and the PO price of the item and the currency code the transaction has been made in.

The second frame displays all relevant inventory data; the site and location where the goods were received; the lot/serial number assigned, and the location quantity change. Had the information been available and needing to be recorded the inventory record can also maintain, the inventory status code of the material in this location, the supplier lot number, grade or assay codes, expiration date, batch number and a general purpose reference field.

The GL Standard cost data is displayed in the five cost elements and a total. The bottom set of data show the specific GL accounts that have been debited and credited what amounts to record this transaction, and the GL reference in case the transaction needs to be found in the general ledger.

Transactions Detail Inquiry		09/27/10
Transaction: 27977    Display E-Signature Details: Yes    Output: PAGE		
===== E-Signature Details =====		
Category: InvTran		
This data is currently unsigned		
===== End of e-signature details =====		
Tran Nbr: 27977	Order: P1010001	R1010068
Trans Type: RCT-PO	Revision: 0	
Date: 09/27/10	Item Number: 01013	
Time: 15:18	Description: Sterile Wipes, Box of 50	
Effective Date: 09/27/10	Unit of Measure: BX	
Remarks:	Address: 10S1003	
User ID: qmi	Name: Heron Surgical Suppl	
Program: poporc.p	SO/Job:	
Currency: USD	Ship Type: M	
Qty Change: 0.0	Price: 1.50	
Shipper Number:	IMC:	
Ship Date: 09/27/10		
Inventory Data		
Site: 10-100	Begin Balance: 0.0	
Location: 010	Quantity Change: 0.0	
Lot/Serial: 789	Qty Short: 0.0	
Inv Status:	Begin Loc Bal: 0.0	
Supplier Lot:	Loc Qty Change: 50.0	
Grade/Assay:	Expire Date:	
Reference:	Batch:	
Cost Data		
Material: 1.00	Overhead: 0.00	
Labor: 0.00	Subcontract: 0.00	
Burden: 0.00	Cost Total: 1.00	
RCT-PO		
Debit Acct: 6610    Mech    ADM		
Cr Account: 2550    Mech		
Amount: 75.00		
GL Reference: 2010/RCT-P0000000019	Reference ID: IC100927000004	

In this case the system has debited the Purchases Acct. (6610) and credited the Expense Item Receipts Acct. (2550), 75.00 the total cost of 50 units at 1.50 each. You have selected not to report variances for memo items.

The first previous transaction is the partial receipt of 100 of the 01013, looking only at the account data:

```

                                Cost Data
Material: 1.00                    Overhead: 0.00
Labor: 0.00                      Subcontract: 0.00
Burden: 0.00                    Cost Total: 1.00

                                RCT-PO
Debit Acct: 1500    Mech
Cr Account: 2520    Mech
Amount: 100.00
GL Reference: 2010/RCT-P0000000017    Reference ID: IC100927000002

                                RCT-PO
Debit Acct: 6710    Mech    ADM
Cr Account: 2520    Mech
Amount: 50.00
GL Reference: 2010/RCT-P0000000018    Reference ID: IC100927000003
    
```

Here the system has debited Inventory (1500) and credited PO Receipts (2520) the 100.00 GL Standard cost. And has debited PO variance (6710) and credited PO Receipts (2550) 50.00 the difference between the PO cost and the GL cost. The two credits to PO Receipts total the amount to be invoice by the supplier, 150.00.

The second previous transaction is the receipt of the 50 each 01012. As this transaction is at standard there is just the debit to inventory and the credit to PO Receipts.

```

                                Cost Data
Material: 2.50                    Overhead: 0.00
Labor: 0.00                      Subcontract: 0.00
Burden: 0.00                    Cost Total: 2.50

                                RCT-PO
Debit Acct: 1500    Mech
Cr Account: 2520    Mech
Amount: 125.00
GL Reference: 2010/RCT-P0000000016    Reference ID: IC100927000001
    
```

Review the Item Master Cost 1.4.9 to see that the Current Cost has been updated to 1.50.

Item Cost Maintenance x

Go To Actions Copy Print Preview Attach

Item: 01013 Item Number: 01013 Tax Class:

Item Number: 01013 Description: Sterile Wipes, Box of 50  
Unit of Measure: BX

Totals						
Totals:	1.50	0.00	1.50	<input type="checkbox"/>	09/27/10	<input type="checkbox"/>

Current Cost Data (GL Cost Source Site: 10-100 / Set: Current)

Element	This Level	Lower Level	Total	Pri	Category	A/D
Material	1.50	0.00	1.50	<input checked="" type="checkbox"/>	Material	<input type="checkbox"/>
Labor	0.00	0.00	0.00	<input checked="" type="checkbox"/>	Labor	<input type="checkbox"/>
Burden	0.00	0.00	0.00	<input checked="" type="checkbox"/>	Burden	<input type="checkbox"/>
Overhead	0.00	0.00	0.00	<input checked="" type="checkbox"/>	Overhead	<input type="checkbox"/>
Subcontr	0.00	0.00	0.00	<input checked="" type="checkbox"/>	Subcontr	<input type="checkbox"/>

## PO Returns

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# PO Returns

Purchase Order Returns x

Go To Actions Copy Print Preview Attach

Purchase Order: PO011102 Ship From: 10-100 UM: Site:

Purchase Order: PO011102 Supplier: 10S1002 Status: RTV Nbr: R1010069

Purchase Order Line Items

Ln	Item Number	UM	Net Received UM	Return Qty UM	Project	Due Date	T
4	60012	EA	150.0 EA	50.0 EA	Project	1/5/2011	T

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Returns to suppliers are processed in Purchase Order Returns (5.13.7). The purchase order does not have to be open but must exist in the database for a return to be processed. The return transaction reverses the inventory and GL effects of the receipt, if any, and can optionally reopen the PO or PO line.

If the purchase return transaction is checked Return to Replace, a line item for the replacement quantity is opened. If the return to replace box is left unchecked the system reverses the receipt transactions.

In Purchase Receipt Inquiry (5.13.3), returns are indicated with an “R” and a negative quantity

PO Returns—Transactions Detail

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## PO Returns – Transactions Detail

**Transactions Detail Inquiry** 09/24/10

**QAD**

Transaction: 28081    Display E-Signature Details: Yes    Output: PAGE  
 ===== E-Signature Details =====  
 Category: InvTran  
 This data is currently unsigned  
 ===== End of e-signature details =====

Tran Nbr: 28081	Order: P0011102	R1010069
Trans Type: ISS-PRV	Revision: 0	
Date: 09/24/10	Item Number: 60012	
Time: 16:32	Description: Electrodes	
Effective Date: 09/24/10	Unit of Measures: EA	
Remarks:	Address: 10S1002	
User ID: qmi	Name: Bridgeville Industri	
Program: porvis.p	SO/Job:	
Currency: USD	Ship Type:	
Qty Change: -50.0	Price: 0.13	
Shipper Number:	IMC:	
Ship Date: 09/24/10		

Site: 10-100	Inventory Data
Location: 020	Begin Balance: 228.0
Lot/Serial: 323	Quantity Change: -50.0
Inv Status: Y-Y-Y	Qty Short: 0.0
Supplier Lot:	Begin Loc Bal: 150.0
Grade/Assay:	Loc Qty Change: -50.0
Reference:	Expire Date:
	Batch:

Material: 0.13973	Cost Data	Overhead: 0.01397
Labor: 0.00		Subcontract: 0.00
Burden: 0.00		Cost Total: 0.15371

Debit Acct: 1500	Mech	ISS-PRV
Cr Account: 2520	Mech	
Amount: -6.99		Reference ID: IC100924000003
GL Reference: 2010/ISS-PRV0000000001		

Debit Acct: 1500	Mech	ISS-PRV
Cr Account: 5330	Mech	
Amount: -0.70		Reference ID: IC100924000004
GL Reference: 2010/ISS-PRV0000000002		

QAD Proprietary PC-PU-140

The calculations and GL entries for PO returns are listed below.

- ISS-PRV (PO Return to Vendor)
  - DR Inventory with a negative
  - CR PO Receipts with a positive

$$Qty\ Ret'd \times [(Std\ Cost - Overhead) \times -1]$$

$$50 \times (0.15371 - 0.01397) \times -1 = - 6.99$$

- DR Inventory
- CR Overhead Applied

$$Qty\ Ret'd \times (Overhead \times -1)$$

$$50 \times (0.01397 \times -1) = - 0.70$$

## Exercise 3: PO Returns

After receiving their 50 boxes of 50 each sterile wipes the QA Lab has decided that is more than a lifetime supply and want to return 25 boxes. The vendor agrees to accept the return for credit.

- 1 Use Purchase Order Returns 5.13.7 to return 25 boxes of the 01013. Enter the original PO number. On the header note the check boxes for Return All and Return to Replace, leave these both unchecked. In the case where you are returning an entire order checking return all will prefill the return transaction with all the line items on the original PO. When prompted to Reopen PO line click Yes. Advance to the line items, enter line 3 for 25 each and add your lot number. If the notes window appears click Back. When prompted for supplier performance data enter Category 03 and Event ISO Cert. (the system has been set up with restrictions in the area of supplier performance, use these codes to insure your transaction processes). Your transaction should look like this. Complete the transaction.

Purchase Order: P1010001      Ship-From: 10-100

---

Purchase Order: P1010001      Supplier: 10S1003      Status:      RTV Nbr: R1010069

---

Ln	Item Number	Site	Location	Lot/Serial	Quantity	UM
3	01013	10-100	010	789	25.0	BX

Is all information correct

		Cost Data		
	Material: 1.00			Overhead: 0.00
	Labor: 0.00			Subcontract: 0.00
	Burden: 0.00			Cost Total: 1.00
			ISS-PRV	
Debit Acct: 6610	Mech	ADM		
Cr Account: 2550	Mech			
Amount: -37.50				Reference ID: IC100927000005
GL Reference: 2010/ISS-PRV000000001				

Current F. Signature Category Fields

## Subcontract POs

**Subcontract POs**

Header  
Purchase Order: P1010001      Supplier: 10PLATSP      Ln Format S/M: Single

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
1	10-100		02001	100.0	EA	0.20	0.00

Line Details  
Qty Received: 0.0      Due Date: 9/27/2010      CRT Int: 0.00  
Qty to Rel: 0.0      Pur Acct: 6610      Mech: ADM  
Single Lot:       Performance Date:      Project: Type: S  
Location: 010  
Item Revision:      Work Order: 1003      Taxable:   
Status:      ID: 2287256      Inspect Req:       Crmts:   
Manufacturer:      Operation: 20      UM Conversion: 1.0000  
Description: Auto      Subcontract Type:      Stock UM Quantity: 100.0 EA  
Lot/Serial:      Update Avg/Last Cost:   
Extended Net Cost: 20.00

**PO Subcontract Cost = 0.20**

Rolled up from Routing Maintenance (14.13.1)

**Type = [S]ubcontract**

**Work order and subcontract operation are identified on PO**

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Subcontract POs reference a valid item number, but rather than receiving the item into inventory, they receive it into manufacturing as a cost of production. If no work order number is specified, the process stops there. The entire PO cost is reported as a cost of production and accrued. However, if the PO references a valid work order and operation, additional transactions are generated to issue the cost to WIP and to calculate variances, if any.

In this example the 02001 connector has an outside operation for plating at a quoted price of 0.20 per unit. A purchase order is released for 100 pieces at 0.20 each (extended cost 20.00). The purchase order is linked to work order 1003 at operation 20.

On this PO the trailer has added a tax of 1.50, this could be a mistake as it's likely that this operation is not taxable.

**Note** Set up Supplier Item Maintenance (1.19) to automate the pricing of subcontract purchasing and avoid mistakes in pricing.

## Subcontract (PO Receipt)—Transactions Detail

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## Subcontract (PO Receipt) – Transactions Detail

**Transactions Detail Inquiry** 09/27/10

Transaction: 28083    Display E-Signature Details: Yes    Output: PAGE  
 Category: InvTran    E-Signature Details  
 This data is currently unsigned  
 ===== End of e-signature details =====

Tran Nbr: 28083	Order: P1010001	R1010070
Trans Type: RCT-PO	Revision: 0	
Date: 09/27/10	Item Number: 02001	
Time: 11:22	Description: Automotive Connector	
Effective Date: 09/27/10	Unit of Measure: EA	
Remarks:	Address: 10PLATSP	Name: P1sting Subcontracto
User ID: qmi	SO/Job:	
Program: poporc.p	Ship Type: S	
Currency: USD	Price: 0.20	
Qty Change: 0.0	IMC:	
Shipper Number:		
Ship Date: 09/27/10		

**Inventory Data**

Site: 10-100	Begin Balance: 0.0
Location: 010	Quantity Change: 0.0
Lot/Serial:	Qty Short: 0.0
Inv Status:	Begin Loc Bal: 0.0
Supplier Lot:	Loc Qty Change: 100.0
Grade/Assay:	Expire Date:
Reference:	Batch:

**Cost Data**

Material: 0.00	Overhead: 0.00
Labor: 0.01	Subcontract: 0.40
Burden: 0.00016	Cost Total: 0.41016

Debit Acct: 5770	Mech	RCT-PO	
Cr Account: 2520	Mech		
Amount: 20.00			
GL Reference: 2010/RCT-P0000000018			Reference ID: IC100927000001

Debit Acct: 6710	Mech	ADM	RCT-PO
Cr Account: 2520	Mech		
Amount: 1.50			
GL Reference: 2010/RCT-P0000000019			Reference ID: IC100927000002

QAD Proprietary PC-PU-160

The PO Receipts transaction uses the PO unit cost as the GL amount.

In this example 20.00 has been debited to cost of production (5770), credited to PO receipts (2520) and 1.50 has been debited to PO variance (6710) and credited to PO receipts (2520). In this case the taxable amount (if the transaction is taxable) should have been allocated to the line item to prevent the variance.

A subcontract rate variance accounts for any difference between the PO unit cost and the standard unit cost for this operation as recorded on the Work Order Routing (16.13.13)



## Activity 4: Subcontract PO

To demonstrate the Subcontract PO you will create a work order for item 50010, Acoustic Transducer. This item has three operations; operation 15 is a subcontract operation with a standard cost of 0.20 per piece as entered in Routing Maintenance.

Item Routing Cost Report											09/27/10 16:3
10USA											Pa
Work Ctr	Setup Time	Unit Setup	Setup Rate	Labor Cost	Lbr Bdn %	Lbr Bdn Rate	Lbr Burden	Total			
Machine	Order Qty	Unit Run	Labor Rate		Mch Bdn Op	Mch Bdn Rate	Mch Burden	Burden	Subcontract		
Item: 50010 Acoustic Transducer											Routing: 50010
Op: 10 ASSEMBLE ULTRASOUND											
1000	0.5	0.5	5.00	2.95	0.01%	0.02	0.012295	0.042295			
	0.0	0.1	4.50		1	0.05	0.03				
Op: 15 Subc Attach Elec/Plate											
2270	0.0	0.0	0.00	0.00	0.00%	0.00	0.00	0.00	0.20		
	0.0	0.0	0.00		1	0.00	0.00				
Op: 20 TEST ACOUSTIC TRANSDUCER											
1040	0.5	0.5	5.00	2.725	0.01%	0.02	0.0112725	0.0387725			
	0.0	0.05	4.50		1	0.05	0.0275				
				5.675					0.0810675	0.20	

- 1 However, if you review 1.4.9 Item Cost there is no GL or Current cost for this operation in the Item Master Cost Maintenance. This indicates a routing cost roll up had not been done. Use 14.13.13.Routing Cost Roll Up for item 50010. Note the roll up defaults to the Current Cost set. Look at 1.4.9 and you should now have a current cost of 0.20.
- 2 As all transactions are costed at GL Standard you need the cost in that data set as well. You could do the roll up again for the GL set, or you could use Current Cost Move to GL 1.4.22, or you could simply add the 0.20 manually to the GL Cost set as Subcontract cost. Pick one.

Item Number: 50010		Description: Acoustic Transducer				
Unit of Measure: EA						
Totals						
Totals:	5.95607	61.61006	67.56612			
GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)						
Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	55.27516	55.27516	<input checked="" type="checkbox"/>	Material	<input type="checkbox"/>
Labor	5.675	6.24676	11.92176	<input checked="" type="checkbox"/>	Labor	<input type="checkbox"/>
Burden	0.08107	0.08814	0.1692	<input checked="" type="checkbox"/>	Burden	<input type="checkbox"/>
Overhead	0.00	0.00	0.00	<input checked="" type="checkbox"/>	Overhead	<input type="checkbox"/>
Subcontr	0.20	0.00	0.20	<input checked="" type="checkbox"/>	Subcontr	<input type="checkbox"/>

- 3 Use 16.1 Work Order Maintenance to create a work order for 100 of the 50010. Let the system assign the work order number and ID, just click enter, enter the item number and Site 10-100. Enter the quantity of 100 and change the Status code to R for released. Complete the order release accepting all other values at default. Note the order number.
- 4 Use Purchase Order Maintenance 5.7 to create a PO for the subcontract operation. Let the system assign the PO number. The supplier for plating is 10PLATSP, Plating Subcontractor-USA. Use the lookup icon to find it. Advance to the line items, for line one change the site to 10-100, enter the item number and the quantity of 100, and make the Unit Cost 0.25. This will create a subcontract price variance.

In the lower frame be sure to set the line item Type to S for subcontract. This tells the system how to handle the costs for this line item.

Header  
 Purchase Order: P1010003      Supplier: 10PLATSP      Ln Format S/M: Single

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
1	10-100		50010	100.0	EA	0.25	0.00

Line Details

Qty Received: 0.0      Due Date: 9/27/2010      CRT Int: 0.00

Qty to Rel: 0.0      Pur Acct: 6610      Mech      ADM

Single Lot:       Performance Date:      Project:      Type: S

Location: 020      Need Date:      Taxable:       Cmnts:

Item Revision:      Sales/Job:      Inspect Req:       UM Conversion: 1.0000

Status:      Fixed Price:       Stock UM Quantity: 100.0      EA

Supplier Item:      Description: Acoustic Transducer      Update Avg/Last Cost:       Extended Net Cost: 25.00

When the pop up appears enter the work order and operation numbers. The work order ID is required when using Advanced Repetitive. Details are covered in that cost course. Full details on the use of subcontract operations is in the Work Center and Routings course, and in the Advanced Repetitive Course.

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
1	10-100		50010	100.0	EA	0.25	0.00

Line Details

Qty Received: 0.0      0.00

Qty to Rel: 0.0      Mech      ADM

Single Lot:       Subcontract Type: S

Location: 020      Lot/Serial:      Cmnts:

Item Revision:      Status:      Work Order: 1000      ID:      Operation: 15

Complete the Purchase Order.

- Receive the subcontract operation from the vendor. Use PO Receipts 5.13.1 to receive all 100 units.

Order: P1010003		Supplier: 10PLATSP	Status:	Packing Slip:
Ln	Item Number	Site	Location Ref	Lot/Serial Supplier Lot
1	50010	10-100	020	

- Use Transaction Detail Inquiry 3.21.1 to review the inventory transaction.

Site: 10-100		Inventory Data	
Location: 020	Lot/Serial:	Begin Balance: 0.0	Quantity Change: 0.0
Inv Status:	Supplier Lot:	Qty Short: 0.0	Begin Loc Bal: 0.0
Grade/Assay:	Reference:	Loc Qty Change: 100.0	Expire Date:
		Batch:	
Material: 55.27516		Cost Data	
Labor: 11.92176	Burden: 0.1692	Overhead: 0.00	Subcontract: 0.20
		Cost Total: 67.56612	
Debit Acct: 5770		Mech	RCT-PO
Cr Account: 2520	Amount: 25.00	Mech	Reference ID: IC100927000010
GL Reference: 2010/RCT-P0000000020			

In the RCT-PO you see a debit to cost of production (5770 and a credit to PO receipts of the entire 25.00.

- Review Operation Transaction Detail Inquiry 16.20.13.9, to see the work order transactions. Two transactions have been created by the system. The first transaction as displayed in the inquiry is the move from operation 20 (now complete) to operation 30. This transaction has no cost impact.

The first previous transaction is the WO issue of the subcontract line item.

GL Reference	Reference ID	Amount	G/L Transactions		
			DR Acct	Sub-Acct	CC Project
2010/SYS-DB000000190	W0100927000001	25.00	1550	Mech	Project
			5770	Mech	
2010/SYS-DB000000191	W0100927000002	5.00	5450	Mech	
			1550	Mech	

Here you see a debit to WIP (1550) and a credit to cost of production (5770) for 25.00 then a debit to subcontract rate variance (5450) and a credit to WIP (1550) of the 5.00 purchase price variance. The work order transactions remove the total amount from cost of production and moves it to WIP, then moves the variance amount from cost of production to Subcontract Variance. This is automatic because the PO had a link to a specific WO and Operation.

## Activity 5: Subcontract PO

1 To familiarize yourself with some of the information sources review these reports.


### Purchase Receipts Report 5.13.5

Purchase Receipt Report									
10USA									
09/29/10 11:5									
Page									
Order	Supplier			Project					
P1010001	10S1003 Heron Surgical Supply								
Receiver	Item Number	Receipt	Recd Qty	GL Cost	Ext PO Cost				
PS Nbr	Ln ERS Option	Ship Dt	Ps Qty R	PO Cost C	Ext GL Cost	Ext PO Tax	PO-GL Var		
R1010068	1 01012	09/27/10	50.0	2.50	125.00	125.00	0.00		
	1	09/27/10	50.0	2.50		0.00			
R1010068	2 01013	09/27/10	100.0	1.00	100.00	150.00	50.00		
	1	09/27/10	100.0	1.50		0.00			
Base PO Total:					225.00	275.00	50.00		
						0.00			
Order	Supplier			Project					
P1010003	10PLATSP Plating Subcontractor - USA								
Receiver	Item Number	Receipt	Recd Qty	GL Cost	Ext PO Cost				
PS Nbr	Ln ERS Option	Ship Dt	Ps Qty R	PO Cost C	Ext GL Cost	Ext PO Tax	PO-GL Var		
R1010072	1 50010	09/27/10	100.0	0.20	20.00	25.00	5.00		
	1	09/27/10	100.0	0.25		0.00			
Base PO Total:					20.00	25.00	5.00		
						0.00			

### Transaction Accounting Report 3.21.16

Transactions Accounting Report									
10USA									
09/29/10 11:53:43									
Page: 1									
Eff Date	Tran Nbr	Type	Order Item	Entity	GL Reference Document	Reference ID	Description	DR Acct CR Acct	Sub-Acct CC Sub-Acct CC
09/27/10	27975	RCT-PO	P1010001 01012	10USACO	2010/RCT-P0000000016	IC100927000001	50.00 @ 2.50 Sterile Probe Covers, 20	1500 2520	Mech Mech
09/27/10	27976	RCT-PO	P1010001 01013	10USACO	2010/RCT-P0000000017	IC100927000002	100.00 @ 1.00 Sterile Wipes, Box of 50	1500 2520	Mech Mech
				10USACO	2010/RCT-P0000000018	IC100927000003	100.00 @ 0.50	6710 2520	Mech Mech ADM
09/27/10	27977	RCT-PO	P1010001 01013	10USACO	2010/RCT-P0000000019	IC100927000004	50.00 @ 1.50 Sterile Wipes, Box of 50	6610 2550	Mech Mech ADM
09/27/10	27978	ISS-PRV	P1010001 01013	10USACO	2010/ISS-PRV0000000001	IC100927000005	-25.00 @ 1.50 Sterile Wipes, Box of 50	6610 2550	Mech Mech ADM
09/27/10	27979	ISS-PRV	P1010001 01013	10USACO	2010/ISS-PRV0000000002	IC100927000006	-1.00 @ 1.50 Sterile Wipes, Box of 50	6610 2550	Mech Mech ADM
09/27/10	27980	CST-ADJ	50010	10USACO	2010/SYS-DB0000000187	IC100927000007	Acoustic Transducer	1500 6100	Mech Mech
09/27/10	27981	CST-ADJ	50010	10USACO	2010/SYS-DB0000000188	IC100927000008	Acoustic Transducer	1500 6100	Mech Mech
09/27/10	27982	CST-ADJ	50010	10USACO	2010/SYS-DB0000000189	IC100927000009	Acoustic Transducer	1500 6100	Mech Mech
09/27/10	27984	RCT-PO	P1010003 50010	10USACO	2010/RCT-P0000000020	IC100927000010	100.00 @ 0.25 Acoustic Transducer	5770 2520	Mech Mech

## Purchase-Related Variance

		
<h1>Purchase-Related Variance</h1>		
<u>Variance</u>	<u>When Calculated</u>	<u>Cause</u>
Purchase Price	PO Receipts (5.13.1)	Difference between an item's PO cost and its GL cost excluding GL this-level overhead
<i>Formula</i>	<i>[PO Unit Cost - (GL Unit Cost - OH)] x PO Qty Received</i> <i>Negative result = favorable variance;</i> <i>Positive result = unfavorable variance</i>	
<i>View in Report</i>	<i>Purchase Receipt Report (5.9.14)</i>	
QAD Proprietary	PC-PU-180	

### Purchase Price Variance

Upon PO receipt, a variance is calculated that is later reflected in AP reporting—purchase price variance (PPV).

- PPV is calculated when the item's PO unit cost does not match its standard cost (GL unit cost).

The formula for PPV is:


$$[PO \text{ Unit Cost} - (GL \text{ Unit Cost} - \text{Overhead})] \times PO \text{ Quantity Received}$$

*Negative result = favorable variance; positive result = unfavorable variance*

#### GL Effects

At PO Receipt (5.13.1), the system debits Inventory for the item's standard GL cost minus overhead and credits PO Receipts for the item's PO cost. Because the two costs are different, QAD Enterprise Applications creates a balancing entry for the PPV account.

## Purchasing—GL Effect



### Purchasing – GL Effect

<b>PO Receipt (Inventory Item)</b>	<b>GL Trans Type</b>
<b>DR Inventory</b>	<b>IC</b>
<b>CR PO Receipts</b>	
<b>DR Inventory</b>	<b>IC</b>
<b>CR Applied Overhead</b>	
* <b>DR PPV</b> (Material category only)	<b>IC</b>
<b>CR PO Receipts</b>	
* <b>Positive Amount = Unfavorable Variance;</b> <b>Negative Amount = Favorable Variance</b>	

QAD Proprietary PC-PU-190

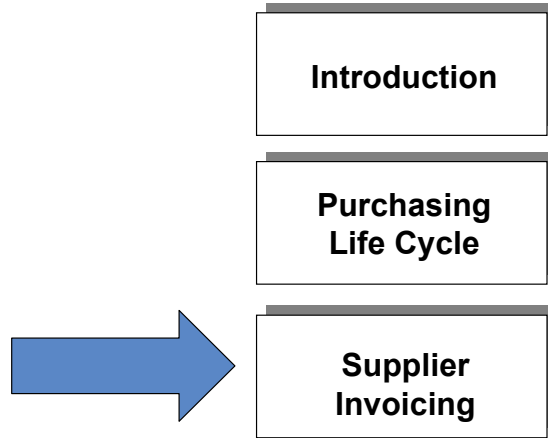
- The default general ledger entry:

Debits Inventory  
Credits Applied Overhead  
Debits Purchase Price Variance  
Credits PO Receipts Accrual

Because this is the purchase of an inventory item, these accounts are accessed based on the product line of the purchased item—the Purchases account on the PO is not used.

When the Supplier Invoice is created (28.1.1.1), QAD Enterprise Applications calculates Accounts Payable rate and usage variances (and price variances due to exchange rate fluctuation). This is discussed in the next section.

## Purchasing/AP Topics



## Accounts Payable

The screenshot displays the 'Supplier Invoice Create' interface in QAD. The form is organized into several sections:

- Attachments:** Supplier Code (10S1002), Bridgeville Industries, Reference, Posting (2010 / SINV / 000000000), 09/24/2010, TC Invoice Amount (13.00 USD).
- General:** Supplier Code (10S1002), Business Relation (10S1002), Bridgeville Industries, Reference, Description, PO Number (P0011102), Registration Number (70), Invoice Type (Invoice), Daybook Set Code (10PURCH), Site (10-100), Daybook Code (SINV), 000000000, Year (2010), 09, Posting Date (09/24/2010), Invoice Status Code (RM-INIT), Invoice Status Code Allocation Status (No Allocation), Taxable (checked).
- Financial Info:** Invoice Date (09/24/2010), TC Invoice Amount (13.00 USD), Exchange Rate (1.000000000), BC Invoice Amount (13.00 USD).
- Sub-Account:** Gserv, Project, Cost Center, Link to Invoice (0000, 000000000).
- Approval/Status:** Approved (unchecked), Receiver Matching (checked), Lock Payment (checked), Open (checked), Initial Status (Selected), Adjustment (0).

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The invoice from the supplier is entered into the system using Supplier Invoice Create (28.1.1.1), it is then approved and finally released for payment. Note: You can also use Initial Supplier Invoice Create (28.1.1.10). The system matches the purchase order quantity and price with the receiver quantity and price and the invoice quantity and price. Variances are calculated and the receivers are flagged as closed. This process is commonly known as a three-way match.

### Example of AP Transactions

To show the AP process, we will continue with the example given on Purchase Transactions.

**Example** The supplier has charged you for 13.00 for 100 electrodes at 0.13 each. This is exactly correct as from the initial order of 150 you returned 50.

For demonstration purposes suppose the supplier had invoiced you for 90 electrodes at 0.15

- Because the invoice quantity is less than the quantity actually received, this generates a favorable AP usage variance (negative amount)
- Because the invoice cost is higher than that on the PO, this generates an unfavorable AP rate variance (positive amount)
- The system also flags the invoice as not matching and the details need to be resolved before invoice approval.

When the supplier invoice is approved for payment, the system:

- Clears out the purchase accrual account (amount accrued at time of receipt)

*Qty Received x PO Unit Cost*

*Example: 100 x 0.13 = 13.00 based on your original PO*

- Accounts for the difference between the PO unit cost and the price listed on the invoice (AP rate variance)

*(Invoice Unit Cost - PO Unit Cost) x Invoice Qty*

*Example: (0.15 - 0.13) x 90 = 1.80 based on our example of invoice not matching*

- Accounts for any difference between the quantity received and the quantity invoiced (AP usage variance)

*(Invoice Qty - Qty Received) x PO Unit Cost*

*Example: (90 - 100) x 0.13 = -1.30*


- Reports entire invoice amount to the Accounts Payable account

*Invoice Qty x Invoice Unit Cost*

*Example: 90 x 0.15 = 13.50*

**Note** If you do not want to calculate AP rate or usage variances for non-inventory (memo) purchases, set Use Expensed Item Var Accts to No (leave box unchecked) in the Supplier Invoice Control (28.24), and any variances are simply expensed.

## AP-Related Variances—Summary

		
<h1>AP-Related Variances</h1>		
<u>Variance</u>	<u>When Calculated</u>	<u>Cause</u>
<b>AP Rate</b>  <i>Formula</i>	Supplier Invoice Create, 28.1.1.1  <i>(Invoice Unit Cost - PO Unit Cost) x Invoice Quantity</i>	Difference between an item's PO cost and its invoice cost.  <ul style="list-style-type: none"> <li>• Can be caused by errors made during PO entry or incorrect quotes received from suppliers, for example.</li> </ul>
<b>AP Usage</b>  <i>Formula</i>	Supplier Invoice Create, 28.1.1.1  <i>(Invoice Quantity - PO Receipt Quantity) x PO Unit Cost</i>	Difference between an item's PO receipt quantity and its invoice quantity.
<b>Purchase Gain/Loss</b>  <i>View in Report</i>	Supplier Invoice Create, 28.1.1.1  <i>Matching Variance Report (28.2.7)</i>	Exchange rate fluctuations between the time an order is received and when it is invoiced. Goes into account defined in Purchase Gain/Loss Acct. Maint. 26.17

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### AP Rate Variance

AP Rate Variance occurs if there is a discrepancy between an item's PO cost and its invoice cost. AP Rate Variances can be caused by a variety of things, the most common being errors made during PO entry or incorrect quotes received from suppliers.

- AP Rate Variance is calculated at Supplier Invoice Create (28.1.1.1), as:

$$(Invoice\ Unit\ Cost - PO\ Unit\ Cost) \times Invoice\ Quantity$$

### AP Usage Variance

AP Usage Variance occurs if there is a discrepancy between an item's PO receipt quantity and its invoice quantity. This can be caused if you close a receiver with a quantity still open or with an invoice quantity greater than the PO receipt quantity.

- AP Usage Variance is calculated at Supplier Invoice Create (28.1.1.1), as:

$$(Invoice\ Quantity - PO\ Receipt\ Quantity) \times PO\ Unit\ Cost$$

## Purchase Gain/Loss

The Purchase Gain/Loss account is used to track variances resulting from exchange rate fluctuations between the effective dates of the PO receipt and the vouchering of the supplier invoice. It is calculated when at Supplier Invoice Create (28.1); the account number defaults from Purchase Gain/Loss Acct. Maint. (26.17). Purchase cost variances due to exchange rate fluctuations are usually kept separate from purchase price variances. Because they cannot be controlled by the supplier, they should not influence performance evaluation.

## Managing Variances


Variances can arise because the supplier quote is incorrect. You can review and change these quotes in Supplier Item Maintenance (1.19).

- When an unfavorable variance is calculated during vouchering, QAD Enterprise Applications automatically assumes that you will be disputing the amount with the supplier and records the variance as a hold amount

## Reports

The Matching Variance Report (28.2.7) displays the details of variances resulting from mismatches in the supplier invoice process.

## AP—GL Effect



## AP – GL Effect

<b>Accounts Payable</b>	<b>GL Trans Type</b>
<b>DR PO Receipts (or Expensed Item Receipts)</b>	<b>AP</b>
<b>** DR AP Rate Variance (or *Expensed Item Rate Variance)</b>	<b>AP</b>
<b>** DR AP Usage Variance (or *Expensed Item Usage Variance)</b>	<b>AP</b>
<b>CR Accounts Payable</b>	<b>AP</b>
<b>** DR Purchase Gain/Loss CR PO Receipts</b>	<b>AP</b>

\* If you don't want to calculate AP rate and usage variance amounts for non-inventory (memo) purchases, set Use Expensed Item Var Accts to No in the Supplier Invoice Control, 28.24, and any variances are simply expensed.

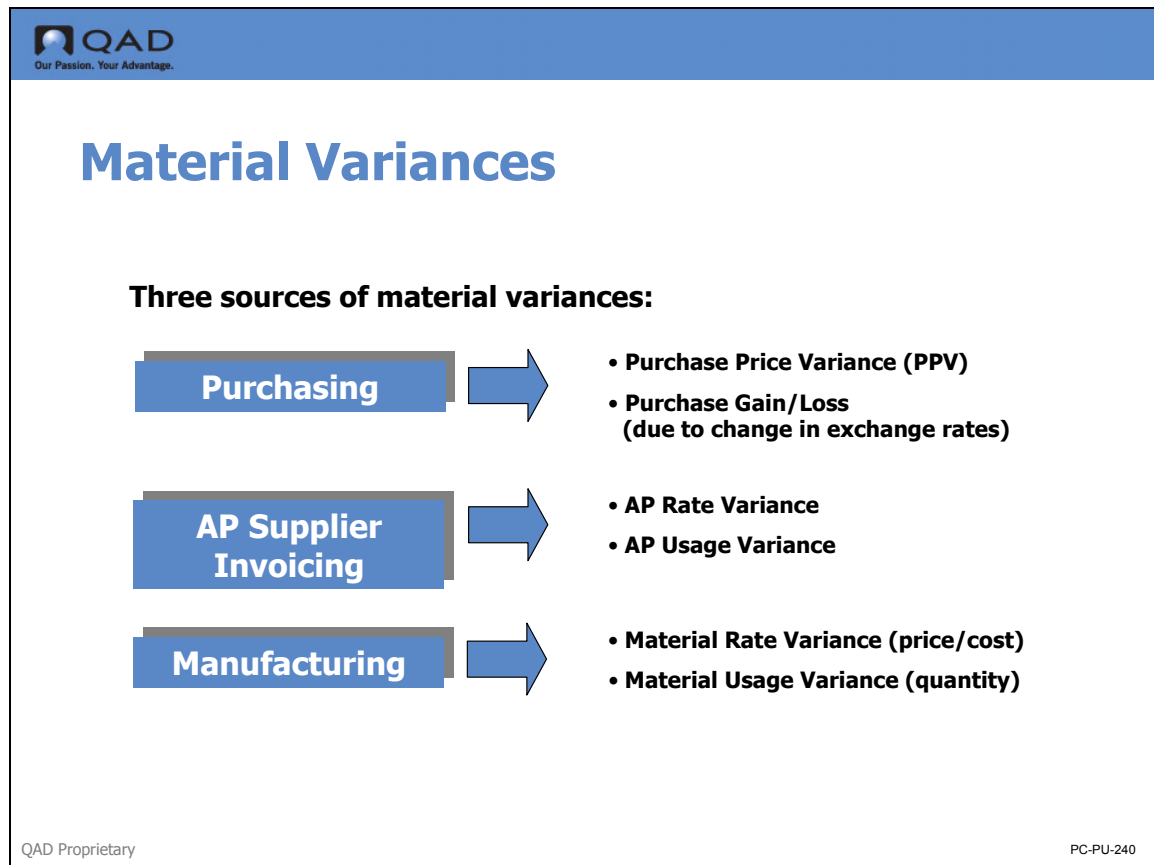
\*\* Positive amount = unfavorable variance; Negative amount = favorable variance

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The default general ledger entry when vouchering against a purchase order (excluding the GL effects of direct taxes):

- Debits the PO Receipts account from the product line for inventory items and Domain/Account Control File (36.9.24)
- Debits the AP Usage Variance account and the AP Rate Variance account from the product line for inventory items and Domain/Account Control File (36.9.24). Negative amounts indicate a favorable variance; positive amounts indicate an unfavorable variance.
- Credits the Accounts Payable account from the supplier

## Material Variances—Summary



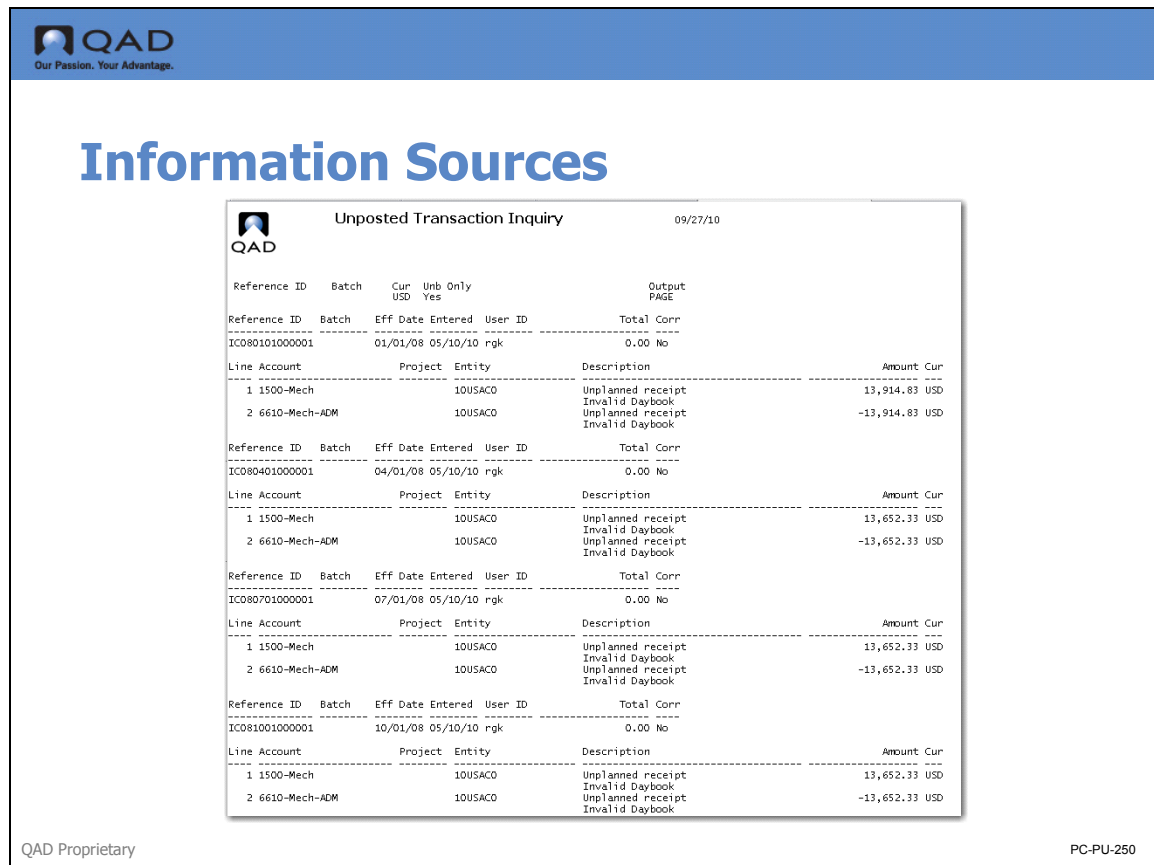
At this point, we have examined two of the three sources of material variance—Purchasing and Accounts Payable.

- In Purchasing, material variances are identified as purchase variances—Purchase Price Variance and Purchase Gain/Loss due to exchange rate fluctuations. Both of these indicate that the cost of the material purchased did not match the established standards.
- In Accounts Payable, material variances are identified as AP variances—AP Rate and AP Usage Variance. The AP Rate Variance indicates that the cost on the supplier’s invoice did not match the price on the PO; the AP Usage Variance indicates that the quantity on the supplier’s invoice did not match the quantity received.

Another source of material variance is manufacturing. In manufacturing, material variances occur when the cost or quantity of material issued to a manufacturing order does not match what was called for on that order. These are identified as material rate and usage variances.

Next, we will review how costs and variances are reported in the manufacturing modules.

## Information Sources



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# Information Sources

**Unposted Transaction Inquiry** 09/27/10

Reference ID	Batch	Cur USD	Unb Only Yes	Entered	User ID	Total	Corr	Output PAGE
IC080101000001				01/01/08 05/10/10	rgk	0.00	No	
<b>Line Account</b>	<b>Project</b>	<b>Entity</b>	<b>Description</b>		<b>Amount</b>	<b>Cur</b>		
1 1500-Mech		10USACO	Unplanned receipt		13,914.83	USD		
2 6610-Mech-ADM		10USACO	Invalid Daybook		-13,914.83	USD		
IC080401000001				04/01/08 05/10/10	rgk	0.00	No	
1 1500-Mech		10USACO	Unplanned receipt		13,652.33	USD		
2 6610-Mech-ADM		10USACO	Invalid Daybook		-13,652.33	USD		
IC080701000001				07/01/08 05/10/10	rgk	0.00	No	
1 1500-Mech		10USACO	Unplanned receipt		13,652.33	USD		
2 6610-Mech-ADM		10USACO	Invalid Daybook		-13,652.33	USD		
IC081001000001				10/01/08 05/10/10	rgk	0.00	No	
1 1500-Mech		10USACO	Unplanned receipt		13,652.33	USD		
2 6610-Mech-ADM		10USACO	Invalid Daybook		-13,652.33	USD		

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### Purchase Receipt Report (5.13.5)

Prints receipt/return transaction information—item, quantity, PO and GL cost, variance, and inventory information.

### Transactions Detail Inquiry (3.21.1)

Lists detailed audit information about a specific receipt or return transaction. Includes inventory transaction information as well as all of the GL debits and credits.

### Transactions Accounting Report (3.21.16)

Prints GL transactions generated by one or more inventory transactions; selected by date, account, or type.

### Matching Variance Report (28.2.7)

Shows the variance between an item's supplier invoice cost and the standard cost.

### AP versus Control GL Validation (25.21.2.6)

Prints a summary of the unposted GL transactions generated by AP activities.

**Unposted Transaction Inquiry (25.13.13)**

Lists GL transactions that have been created but not yet posted. Used to review the GL effects of any transaction. All you need to know is the module code and the effective date.

**Unposted Transaction Registerap (25.13.14)**

Use to review unposted transactions prior to posting.



Appendix A

# **Variances and Components Reference**

**Purchase-Related Variances****Purchase Price**

*Calculated* at PO Receipts, 5.13.1  $[\text{PO Unit Cost} - (\text{GL Unit Cost} - \text{OH})] \times \text{PO Qty Rcv'd}$

*Reports:*

Transaction Receipts Report, 5.9.14; Transactions Detail Inquiry, 3.21.1

**AP Rate**

*Calculated* at Supplier Invoice Create, 28.1.1.1  $(\text{Invoice Unit Cost} - \text{PO Unit Cost}) \times \text{Invoice Qty}$

*Reports:*

Matching Variance Rpt. 28.2.7  
Transactions Detail Inquiry, 3.21.1

**AP Usage**

*Calculated* at Supplier Invoice Create, 28.1.1.1  $(\text{Invoice Qty} - \text{PO Receipt Qty}) \times \text{PO Unit Cost}$

*Reports:*

Matching Variance Rpt. 28.2.7;  
Transactions Detail Inquiry, 3.21.1

**Manufacturing-Related Variances****Material Rate**

*Calculated* at WO Component Issue, 16.10; WO Receipt Backflush, 16.12; Repetitive Backflush, 18.22.13  $(\text{WO BOM Unit Cost at Issue} - \text{GL Unit Cost}) \times \text{Actual Qty Iss'd}$

*Reports:*

Work Order Cost Report, 16.3.4; Transactions Detail Inquiry, 3.21.1

**Material Usage**

*Calculated* at WO Accounting Close, 16.21; Cum Order Close, 18.22.10; Post Accumulated Usage Var, 18.22.9  $\{\text{Actual Qty Issued} - [\text{qty per x} (\text{qty completed} + \text{qty rejected})]\} \times \text{GL Unit Cost}$

*Reports:*

Work Order Cost Report, 16.3.4; Transactions Detail Inquiry, 3.21.1; Repetitive Operations Accounting Report, 18.22.4.9

**Labor Rate**

*Calculated* at SFC feedback, 16.20.1, 16.20.2, 16.20.3; can be deferred until WO Receipt, 16.11, 16.12; Repetitive Backflush, 18.22.13 **Per Operation:**  
 $[(\text{Actual Set-Up Rate} - \text{Std Set-Up Rate}) \times \text{Actual Set-Up Hrs}] + [(\text{Actual Run Rate} - \text{Std Run Rate}) \times \text{Actual Run Hrs}]$

*Reports:*

Work Order Cost Report, 16.3.4; Operations Accounting Rpt, 16.20.13.10; Rep Ops Accounting Rpt, 18.22.4.9

Set-up and run rates are equal to the payroll rate (defined in 14.13.21) or the work center rate if payroll is not set up  
No variances if no labor reporting

**Labor Usage**

*Calculated* at SFC feedback, 16.20.1, 16.20.2, 16.20.3; can be deferred until WO Receipt, 16.11, 16.12; Post Accumulated Usage Var, 18.22.9; Cum Accounting Close, 18.22.10 **Per Operation:**  
 $[(\text{Actual Set-Up Hrs} - \text{Std Set-Up Hrs}) \times \text{Std Set-Up Rate}] + [(\text{Actual Run Hrs} - * \text{Std Run Hrs}) \times \text{Std Run Rate}]$

*Reports:*

WO Cost Report, 16.3.4;  
Operations Accounting Rpt, 16.20.13.10;  
Rep Ops Accounting Rpt, 18.22.4.9

\*Std Run Hrs =  
Std Run Hrs x (Qty Completed + Qty Rejected)

---

**Burden Rate**

*Calculated* at SFC feedback, 16.20.1, 16.20.2, 16.20.3; WO Receipt, 16.11, 16.12; Repetitive Backflush, 18.22.13

*Reports:*

WO Cost Report, 16.3.4;  
Operations Accounting Rpt, 16.20.13.10;  
Rep Ops Accounting Rpt, 18.22.4.9

Per Operation:

$$[(\text{Actual Set-Up Bdn} - \text{Std Set-Up Bdn}) \times \text{Actual Set-Up Hrs}] + [(\text{Actual Run Bdn} - \text{Std Run Bdn}) \times \text{Actual Run Hrs}]$$

$$\text{Actual Set-Up Bdn} = (\text{Actual Set-Up Rate} \times \text{Lbr Bdn \%}) + \text{Lbr Bdn Rate} + (\text{Mach Bdn Rate} \times \text{Mach/Op})$$

$$\text{Std Set-Up Bdn} = (\text{Std Set-Up Rate} \times \text{Lbr Bdn \%}) + \text{Lbr Bdn Rate} + (\text{Mach Bdn Rate} \times \text{Mach/Op})$$

$$\text{Actual Run Bdn} = (\text{Actual Run Rate} \times \text{Lbr Bdn \%}) + \text{Lbr Bdn Rate} + \text{Mach Bdn Rate}$$

$$\text{Std Run Bdn} = (\text{Std Run Rate} \times \text{Lbr Bdn \%}) + \text{Lbr Bdn Rate} + \text{Mach Bdn Rate}$$


---

**Burden Usage**

*Calculated* at SFC feedback, 16.20.1, 16.20.2, 16.20.3; can be deferred until WO Receipt, 16.11, 16.12; Post Accumulated Usage Var, 18.22.9; Cum Order Close, 18.22.10;

*Reports:*

WO Cost Report, 16.3.4;  
Operations Accounting Rpt, 16.20.13.10;  
Rep Ops Accounting Rpt, 18.22.4.9

Per Operation:

$$[(\text{Act Set-Up Hrs} - \text{Std Set-Up Hrs}) \times \text{Std Set-Up Bdn}] + [(\text{Act Run Hrs} - \text{Std Run Hrs}) \times \text{Std Run Bdn}]$$

$$\text{Std Set-Up Bdn} = (\text{Std Set-Up Rate} \times \text{Lbr Bdn \%}) + \text{Lbr Bdn Rate} + (\text{Mach Bdn Rate} \times \text{Mach/Op})$$

$$\text{Std Run Bdn} = (\text{Std Run Rate} \times \text{Lbr Bdn \%}) + \text{Lbr Bdn Rate} + \text{Mach Bdn Rate}$$


---

**Subcontract Rate**

*Calculated* at PO Receipt, 5.13.1

$$(\text{Subcontract PO Unit Cost} - \text{Subcontract Unit Cost from Routing}) \times \text{Qty Received}$$


---

**Subcontract Usage**

*Calculated* at WO Accounting Close, 16.21; Post Accumulated Usage Var, 18.22.9; Cum Order Close, 18.22.10

$$[\text{Qty Received} - (\text{Op Qty Completed} + \text{Op Qty Rejected})] \times \text{Subcontract Unit Cost from Routing}$$


---

**Method**

*Calculated* at WO Accounting Close, 16.21; Cum Accounting Close, 18.22.10

Balance of WO/ID value remaining

---

**Mix (Co/By-Products)**

*Calculated* at WO Accounting Close, 16.21

$$[\text{Order Qty} - (\text{Receipt Qty} + \text{Scrap Qty})] \times \text{GL Unit Cost}$$


---

### Variances by Transaction Flow

#### PO Receipts

Purchase Price Variance

$[\text{PO Unit Cost} - (\text{GL Unit Cost} - \text{OH})] \times \text{PO Qty Rcv'd}$

Subcontract Rate Variance

$(\text{Subcontract PO Unit Cost} - \text{Subcontract Unit Cost from Routing}) \times \text{Qty Received}$

#### Voucher Maintenance

Accounts Payable Rate Variance

$(\text{Invoice Unit Cost} - \text{PO Unit Cost}) \times \text{Invoice Qt}$

Accounts Payable Usage Variance

$(\text{Invoice Qty} - \text{PO Receipt Qty}) \times \text{PO Unit Cost}$

#### Work Order Component Issue

Material Rate Variance

$(\text{WO BOM Unit Cost at Issue} - \text{GL Unit Cost}) \times \text{Actual Qty Iss'd}$

#### Labor Feedback

Labor Rate Variance

$[(\text{Actual Set-Up Rate} - \text{Std Set-Up Rate}) \times \text{Actual Set-Up Hrs}] + [(\text{Actual Run Rate} - \text{Std Run Rate}) \times \text{Actual Run Hrs}]$

Labor Usage Variance

$[(\text{Actual Set-Up Hrs} - \text{Std Set-Up Hrs}) \times \text{Std Set-Up Rate}] + [(\text{Actual Run Hrs} - * \text{Std Run Hrs}) \times \text{Std Run Rate}]$

\*Std Run Hrs = Std Run Hrs x (Qty Completed + Qty Rejected)

Burden Rate Variance

$[(\text{Actual Set-Up Bdn} - \text{Std Set-Up Bdn}) \times \text{Actual Set-Up Hrs}] + [(\text{Actual Run Bdn} - \text{Std Run Bdn}) \times \text{Actual Run Hrs}]$

Burden Usage Variance

$[(\text{Act Set-Up Hrs} - \text{Std Set-Up Hrs}) \times \text{Set-Up Bdn}] + [(\text{Act Run Hrs} - \text{Std Run Hrs}) \times \text{Run Bdn}]$

#### Work Order Accounting Close

Subcontract Usage Variance

$[\text{Qty Received} - (\text{Op Qty Completed} + \text{Op Qty Rejected})] \times \text{Subcontract Unit Cost from Routing}$

Material Usage Variance

$\{\text{Actual Qty Issued} - [\text{qty per} \times (\text{qty completed} + \text{qty rejected})]\} \times \text{GL Unit Cost}$

Method Variance

**Components of Item Cost**

**Material**

<i>Dependent On</i>	<i>Defined In</i>
Material/Purchase Price	Item Master Maintenance, 1.4.1, 1.4.9, 1.4.18
Quantity Per	Product Structure Maintenance, 13.5, 15.5
Scrap %	Product Structure Maintenance, 13.5, 15.5
Phantom	Item Master Maintenance, 1.4.1, 1.4.7, 1.4.17
Pur/Mfg	Item Master Maintenance, 1.4.1, 1.4.7, 1.4.17
Structure Type	Product Structure Maintenance, 13.5
Yield %	Routing Maintenance, 14.13.1

**Labor**

<i>Dependent On</i>	<i>Defined In</i>
Work Center Labor Rates	Work Center Maintenance, 14.5
Work Center Setup Rates	Work Center Maintenance, 14.5
Run Time per Unit	Routing Maintenance, 14.13.1, 14.13.2
Setup Time per Lot	Routing Maintenance, 14.13.1, 14.13.2
Order Quantity	Item Master Maintenance, 1.4.1
Subcontract Cost	Routing Maintenance, 14.13.1

**Burden**

<i>Dependent On</i>	<i>Defined In</i>
Work Center Labor Burden Rates	Work Center Maintenance, 14.5
Work Center Labor Burden Percent	Work Center Maintenance, 14.5
Work Center Machine Burden Rate	Work Center Maintenance, 14.5
Machines/Operation	Work Center Maintenance, 14.5
All of the items under Labor (above)	

