



QAD Enterprise Applications
Enterprise Edition

Training Guide

QAD Work Order Costing

70-3236-2016EE
QAD 2016 Enterprise Edition
Workspace: 10USA > 10USACO
April 2016

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Contents

QAD Work Order Costing Change Summary	vii
About this Course	1
Course Description	2
Course Objectives	2
Course Benefits	2
Audience	2
Prerequisites	2
Course Credit and Scheduling	2
Virtual Environment Information	3
Additional Resources	3
QAD Learning Center	3
QAD Document Library	3
QAD Support	3
Chapter 1 Work Orders	5
Work Order Topics	6
Introduction	7
Work Order Maintenance Screen	8
Component Issues	11
Component Issues: Three Methods	12
Floor Stock	14
Work Order Issue: Transactions Detail	15
Work Order Bill of Material	16
Material Rate Variance	18
Issue Components: GL Effect	19
Exercise 1: Review Accounting Records	20
Exercise 2: Set Up a Work Order	22
Exercise 3: Work Order Processing	27
WIP Material Cost Revaluation	33
WIP Material Cost Revaluation: Transactions Detail	35
Floor Stock	36
Floor Stock: Issues Unplanned	37
Floor Stock: Transactions Detail	38

Exercise 4: Floor Stock Issues	39
Intersite Transfers/Multi-Site Component Issues	41
Intersite Transfers and Multi-Site Component Issues Variances	42
Intersite Transfer With Variance: Example	43
Intersite Transfer: Transactions Detail (Receiving Site)	44
Intersite Work Order Issue	45
Intersite Work Order Issue - Transfer With Variance	46
Intersite Transfers and Multi-Site Component Issues: GL Effect	47
Exercise 5: Material Variances	48
Exercise 6: Material Variances Multi-Site Issue	49
Labor Reporting	50
Labor Feedback by Work Order	51
Labor and Burden Absorption	53
Labor Calculations	54
Labor Rate Variance	55
Labor Usage Variance	56
Labor Reporting: GL Effect (Default GL Entry)	58
Burden Calculations	59
Burden Rate Variance	60
Burden Usage Variance	61
Burden: GL Effect	62
Labor Rate Variances: Summary	63
Exercise 7: Work Order Labor Transactions	67
Subcontract: GL Effect	76
Subcontract-Related Variances: Summary	77
Work Order Receipts	78
WO Receipt	79
WO Receipt: Transactions Detail	80
Work Order Receipt: GL Effect	81
Work Order Receipt: Reject Costing	82
Transactions Detail: Reject Costing	83
Work Order Receipt: Loss Costing	84
Exercise 8: Scrap at Work Order Receipt	85
Non-Standard Work Orders	87
Non-Standard WO: Rework	88
WO Accounting Close	89
Material Usage Variance: Summary	90
Method Variance: Work Orders	91
Work Order Accounting Close: GL Effect	92
Work Order Cost Report	93
Accumulated Quantity, Average Cost, Balance	95
Expected Cost: Material	96
Accrued Variance	97

Accumulated Cost: Material	98
Rate Variance Posted: Material	99
Usage Variance Posted: Material	100
Expected Labor Cost	101
Accumulated Cost: Labor	102
Rate Variance Posted: Labor	103
Usage Variance Posted: Labor	104
Expected Cost: Burden	105
Accumulated Cost: Burden	106
Rate Variance Posted: Burden	107
Usage Variance Posted: Burden	108
Expected Cost: Subcontract	109
Rate Variance Posted: Subcontract	110
Standard Cost Received	111
Method Change Variance	112
Information Sources	113
Appendix A Variances and Components Reference.....	117
Purchase-Related Variances	118
Manufacturing-Related Variances	119
Variances by Transaction Flow	121
Components of Item Cost	122
Product Information Resources	123

QAD Work Order Costing Change Summary

The following table summarizes significant differences between this document and the last published version.

Date/Version	Description	Reference
April 2016/v2016 EE	Rebranded for QAD 2016 EE, added links to Preface and book	--
April 2015/v2015 EE	Rebranded for QAD 2015 EE	--
March 2014/v2014 EE	Rebranded for QAD 2014 EE	--
September 2013/v2013.1 EE	Rebranded for QAD 2013.1 EE	--
March 2013/v2013 EE	Rebranded for QAD 2013 EE	--
September 2012/v2012.1 EE	Rebranded for QAD 2012.1 EE; Consistency edit	--
March 2012/v2012 EE	Rebranded for QAD 2012 EE	--
September 2011/v2011.1 EE	Rebranded for QAD 2011.1 EE	--

About this Course

Course Description

This QAD Work Order Costing course offers detailed instruction on how work orders are costed during work in process and when they are closed. Details are provided regarding material, labor, burden, overhead, and subcontract costs; how they are computed; when they are calculated; and how they are reported.

This guide can be taught individually or as a part of the Product Costing and Cost Management course set, which consists of an introductory class, a class covering general setup topics, and a set of classes on specialized costing topics. Most students will benefit from taking the first two classes and then selecting the additional courses that apply to their business implementation. The complete list of classes is:

- Introduction to Product Costing
- Product Costing
- Advanced Repetitive Costing
- Average Costing
- Co/By-Product Costing
- Cost Management, including Simulation and Planning
- Purchase Costing
- Work Order Costing

Course Objectives

Provides the details necessary to track and explain costs and variances in a work order environment. Includes details on subcontract manufacturing in a work order environment.

Course Benefits

Provides the opportunity for personnel responsible for developing costs and explaining variances in a work order environment to understand how the system works.

Audience

Finance and operations personnel who develop product costs and explain variances in a work order environment.

Prerequisites

- *Training Guide: Introduction to Costing*
- *Training Guide: Product Costing*
- Familiarity with the .NET UI

Course Credit and Scheduling

This course is valid for 6 credit hours. This course is typically taught in 1 day.

Virtual Environment Information

The hands-on exercises in this book should be used with the latest Enterprise Edition learning environment in the 10USA > 10USACO workspace. When prompted to log in, specify *demo* for user ID and *qad* for password.

Additional Resources

If you encounter questions on QAD software that are not addressed in this book, several resources are available. The QAD corporate Web site provides product and company overviews. From the main site, you can access the QAD Learning or Support site and the QAD Document Library. Access to some portions of these sites depends on having a registered account.

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

QAD Learning Center

To view available training courses, locations, and materials, use the QAD Learning Center. Choose Education under the Services tab to access this resource. In the Learning Center, you can reserve a learning environment if you want to perform self-study and follow a training guide on your own.

QAD Document Library

To access release notes, user guides, training guides, and installation and conversion guides by product and release, visit the QAD Document Library. Choose Document Library under the Support tab. In the QAD Document Library, you can view HTML pages online, print specific pages, or download a PDF of an entire book.

For more information, see *QAD Costing User Guide*.

To find a resource, you can use the navigation tree on the left or use a powerful cross-document search, which finds all documents with your search terms and lets you refine the search by book type, product suite or module, and date published.

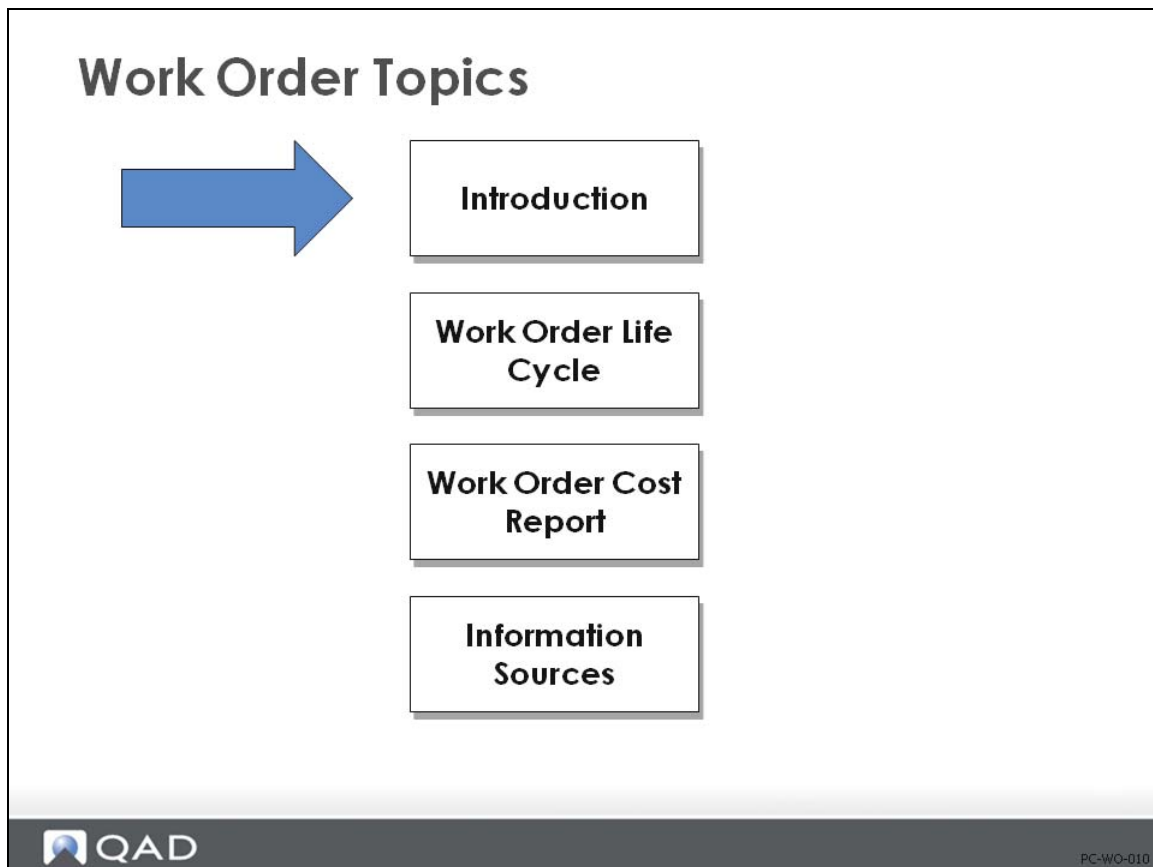
QAD Support

Support also offers an array of tools depending on your company's maintenance agreement with QAD. These include the Knowledgebase and QAD Forums, where you can post questions and search for topics of interest. To access these, choose Visit Online Support Center under the Support tab.

Chapter 1

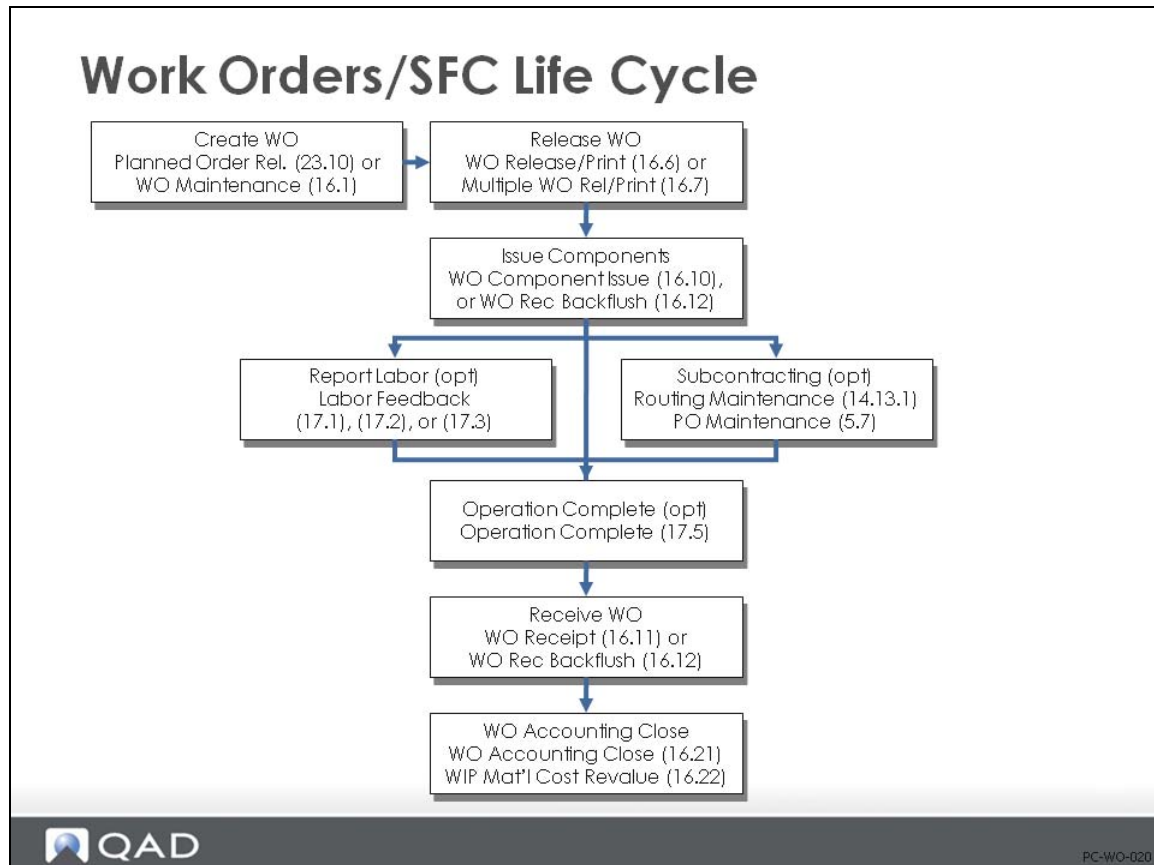
Work Orders

Work Order Topics



This chapter on work order transactions and costing begins with an introductory overview, which is followed by a discussion of the Work Order Maintenance (16.1) and stages of the work order life cycle: component issues, labor reporting, work order receipt, and work order accounting close. The chapter concludes with a detailed review of the Work Order Cost Report (16.3.4) and a list of information sources.

Introduction



First, we will look at work-order based manufacturing. As you can see, many functions affect cost.

Work order activities mainly concentrate on the material aspect of manufacturing. Components are issued, finished products are received, and rejects are recorded. When the entire process is complete, an “accounting close” function issues floor stock, clears out any remaining WIP balance, and calculates variances.

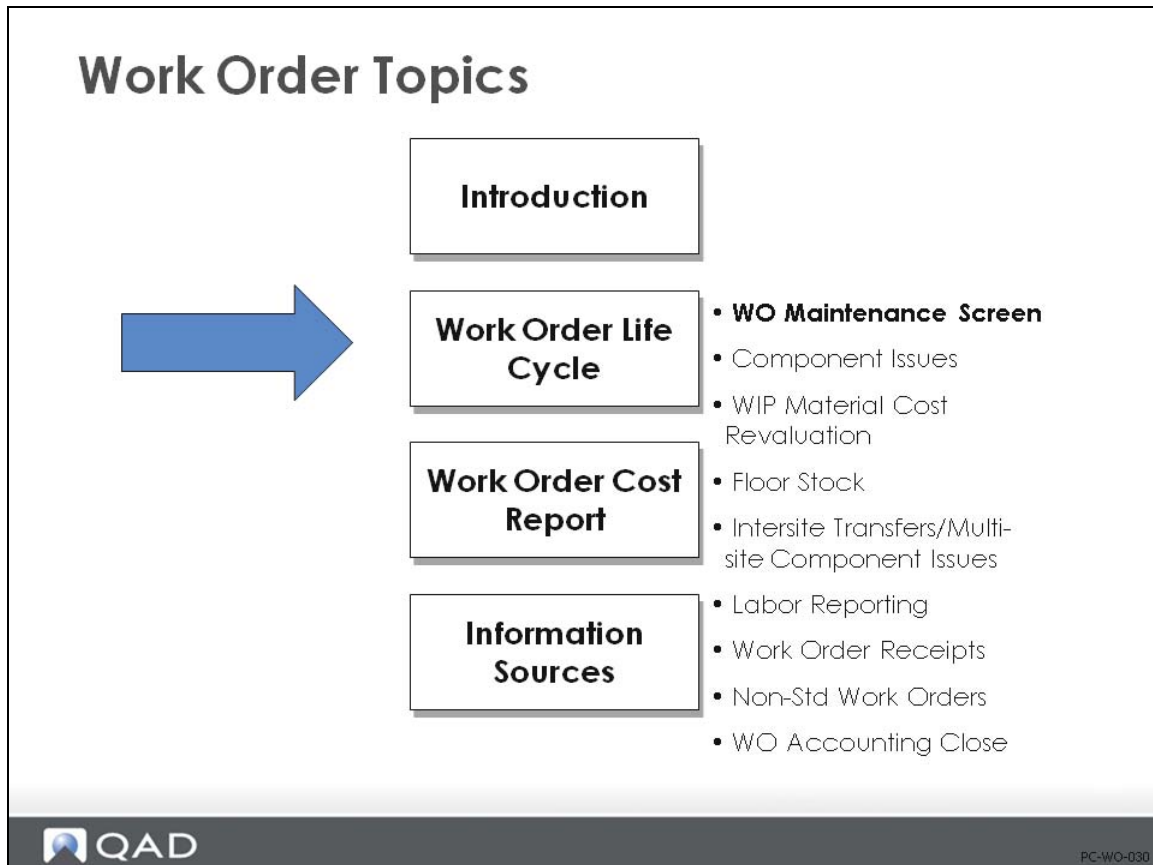
Shop Floor Control (36.20) functions record the movement of a work order as it goes from one operation to the next, and report the labor time spent on each operation. Both labor and burden costs are recorded and rate variances are calculated. Use of Shop Floor Control is optional. If not used, then labor and burden will be applied/absorbed at standard rates when the work order is closed with Work Order Accounting Close (16.21).

GL Transactions

All general ledger transactions are stored in the unposted transaction table until they are posted. Unposted transactions can be reviewed using Unposted Transaction Inquiry (25.13.13). The GL reference begins with IC.

A complete audit trail of all inventory transactions is maintained in transaction history (tr_hist). These can be reviewed using Transactions Detail Inquiry (3.21.1). Each transaction is identified by a transaction number and a transaction type. Several transactions are created; ISS-WO for the issues, RCT-WO for the receipts, and RJCT-WO for the scrap.

Work Order Maintenance Screen



Work Order Maintenance

The screenshot shows the 'Work Order Maintenance' window in QAD. The window title is 'Work Order Maintenance'. The menu bar includes 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. The main area displays work order details for 'Work Order: 1001' with 'ID: 2287250' and 'Item Number: 50010'. The item is an 'Acoustic Transducer' at 'Site: 10-100'. Fields include 'Quantity Ordered' (100), 'Quantity Completed' (0.0), 'Qty Rejected' (0.0), 'Order Date' (9/29/2010), 'Release Date' (9/29/2010), 'Due Date' (10/5/2010), 'Work Order Status' (F), 'Sales/Job', 'Supplier', 'Yield Percent' (100.00%), 'Remarks', 'Comments', 'Routing Code', 'BOM/Formula Code', and 'Post variances at SFC' (checked). Callouts explain that alternate BOM or routing can cause method variance, and defaults from Accounting Control (36.9.11) and Routing Maintenance (14.13.1) are applied.

Work orders specify:

- Item, quantity, and due date
- GL accounts for WIP, material, subcontract, floor stock, and method variance
- BOM and routing code
- Status

These can be changed, including changing the BOM and routing code to any valid alternate. These are copied to the work order when it is exploded or released.

Note Accounting controls can make it difficult or impossible to change account codes.

Status. The work order status can be [P]lanned, [F]irm Planned, [B]atch, [E]xploded, [A]llocated, [C]losed, or [R]eleased. Only released work orders can be processed for material issues, receipts, and labor in the work order and shop floor modules.

Yield. Yield is the item default yield and can be changed manually. If changed, there is no automatic change to rolled up component requirements or cost. For manually entered work orders, MRP will use the revised yield percentage to compute a “scrap requirement” and critique the material plan accordingly. Planned work orders generated by MRP have their order quantities inflated to allow for the yield percentage.

Note Changing this yield will result in Method Variance.

BOM and Routing. These will default from the Item (Site) Planning data menu (1.4), and generally reflect the BOM and routing codes used to cost the item. Approved alternates can be added if the status is [E]xploded, [A]llocated, or [R]eleased.

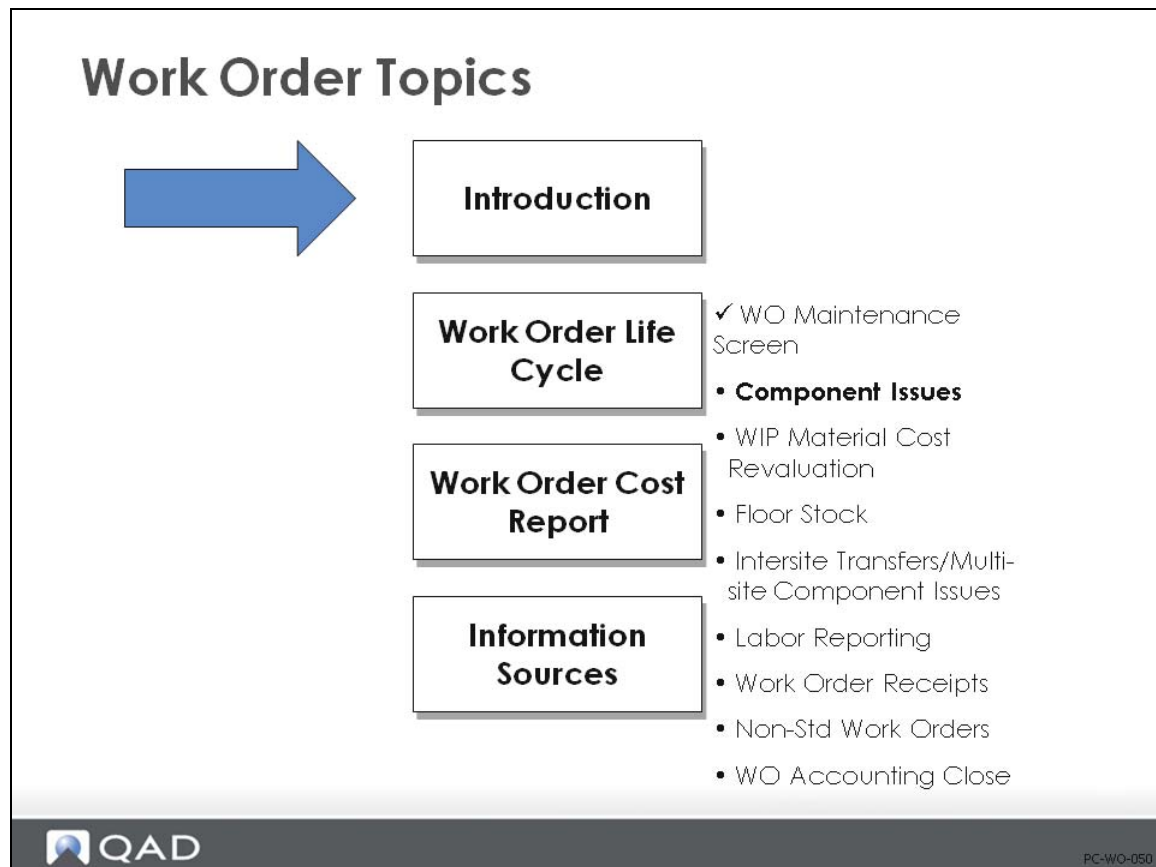
Post Variances at SFC. This field defaults from Work Order Accounting Control (36.9.11) setting, but can be changed manually for each work order in Work Order Maintenance (16.1).

- If this is set to Yes, QAD Enterprise Applications will calculate labor rate and usage variances upon labor input and create GL transactions
- If set to No, QAD Enterprise Applications will calculate variances but not move them until a receipt is processed. This modulates the variances when operations span more than one shift or day or employee.

Project. If a project code is entered, this code will be added to each GL transaction processed for this order.

Accounts. These are the default accounts and can be changed for this work order.

Component Issues



Component Issues: Three Methods

The image displays three overlapping screenshots of the QAD software interface, illustrating three methods for component issues:

- Work Order Component Issue:** The top-left window shows fields for Work Order (1000), Item Number (50010), and Item Number (50011). It includes a 'Quantity' field set to 100.0 and a 'Substitute' checkbox.
- Work Order Receipt Backflush:** The middle window shows fields for Work Order (1000), Item Number (50010), and Item Number (50012). It includes a 'Quantity' field set to 100.0 and a 'Substitute' checkbox.
- Work Order Operation Backflush:** The bottom-right window shows fields for Work Order (1000), Item Number (50010), and Item Number (50012). It includes a 'Quantity' field set to 100.0, a 'Substitute' checkbox, and a 'Scrapped Qty' field set to 0.0000. It also features a 'Conversion' field set to 1.0000 and a 'UM Conversion' field set to 1.0000.

The QAD logo is visible in the bottom left corner, and the text 'PC-WO-060' is in the bottom right corner.

Component materials can be issued in one of three ways:

- 1 Work Order Component Issue (16.10). Most work orders list their required components. When materials are issued from stockroom to manufacturing, a Work Order Component Issue (16.10) records this, decreasing inventory costs and quantities and increasing work in process (WIP).
- 2 Work Order Receipt Backflush (16.12). Automatically issues components based on the number of finished items received and the standard quantity required. Additional items can be issued or quantities can be changed manually. Standard costs are used.
- 3 Work Order Operation Backflush (16.19). Use to report production activity on manufacturing work orders. This program combines issuing, reporting, and receipt features found in other programs:
 - The issuing functions of Work Order Component Issue
 - The labor reporting functions of the three labor feedback programs in Shop Floor Control: Labor Feedback by Work Order, Employee, and Work Center
 - The receipt functions of Work Order Receipt

Each time you use this transaction to report production quantities, the system does one or more of the following: Issues (backflushes) components to the operation at which you are reporting; Backflushes labor and burden to the reporting operation; Moves the quantity processed to the

input queue of the subsequent operation, if Move Next Op is Yes in this program; Receives completed end items into inventory when you report production at the final operation in the routing and Move Next Op is Yes.

At this time, it also updates the quantity completed and reduces the quantity open on the applicable work order.

Floor Stock

Item Planning Maintenance

Item: 90099 Item Number: 90099 Supplier:

Item Number: 90099 Description: Expendable Containers
Unit of Measure: EA

Item Planning Data

Mstr Sched: ☐	Buyer/Planner: 2-02	Phantom: ☐
Plan Orders: ☒	Supplier:	Minimum Order: 0
Time Fence: 0	PO Site:	Maximum Order: 0
MRP Required: ☐	Purchase/Manufacture: P	Order Multiple: 0
Order Policy: POQ	Configuration Type:	Op Based Yield: ☐
Order Qty: 0	Inspect: ☐	Yield Percent: 100.00%
Batch Qty: 1.0	Ins LT: 0	Run Time: 0.000
Order Period: 7	Cum LT: 0	Setup Time: 0.000
Safety Stock: 10	Mfg LT: 0	Pur LT: 5
Safety Time: 0	ATP Enforcement: NONE	EMT Type: NON-EMT
Reorder Point: 0	Family ATP: ☐	Auto EMT Processing: ☐
Item Rev:	ATP Horizon: 0	Network Code:
Issue Policy: ☒	Run Seq 1:	Routing Code:
	2:	BOM/Formula:

QAD PC-WO-070

Floor Stock using Item Planning Maintenance (1.4.7)

Floor stock components have Issue Policy set to No in Item Master Maintenance (1.4.1), Item Planning Maintenance (1.4.7), or Item-Site Planning Maintenance (1.4.17). They are issued to the floor in bulk rather than for individual orders and appear on the Work Order Component Issue screen with Quantity Required as zero. These items should not be issued here, but from stock using Issues Unplanned (3.7). Floor stock costs are charged to the work order during the Work Order Accounting Close (16.21), prior to calculating variances.

Issue Policy = No should only be used for very inexpensive items that are hard to control such as small screws and washers. With backflush capability, even these items can be accounted for at standard directly to the work order.

Work Order Issue: Transactions Detail

WO Issue – Transactions Detail

Transactions Detail Inquiry 09/29/1

Transaction: 27973 Display E-Signature Details: Yes Output: PAGE
 Category: InvTran
 This data is currently unsigned
 End of e-signature details

Trans Type: ISS-WO
 Date: 09/29/10
 Time: 14:13
 Effective Date: 09/29/10
 User ID: qmi
 Program: wowo1s.p
 Currency: USD
 Qty Change: -600.0
 Shipper Number:
 Ship Date:

Order: 1000
 Revision: 0
 Item Number: 60012
 Description: Electrodes
 Unit of Measure: EA
 Address:
 Name:
 SO/Job:
 Ship Type:
 Price: 0.13
 IMC:

Inventory Data
 Begin Balance: 78.0
 Quantity Change: -600.0
 Qty Shp: 0.0
 Begin Loc Bal: 0.0
 Loc Qty Change: -600.0
 Expire Date:
 Batch:

Cost Data
 Material: 0.13
 Labor: 0.00
 Burden: 0.00
 Overhead: 0.00
 Subcontract: 0.00
 Cost Total: 0.13

Debit Acct: 1550 Mech
 Cr Account: 1500 Mech
 Amount: 78.00
 GL Reference: 2010/WOISS000000016

ISS-WO
 Reference ID: IC100929000002

Example

A quantity of 600 of an item with a GL cost of 0.13 per unit is issued

ISS - WO

DR 1550 (WIP) 78.00
 Qty Issued x GL Total Cost
 600 x 0.13 = 78.00
 CR 1500 (Inventory) 78.00

PC-WO-080

When materials are issued by Work Order Issue (16.10) or Work Order Receipt Backflush (16.12), a GL transaction is created to record the issue. Typically, materials are issued from the same site as the work order, creating a GL transaction as follows.

- Component materials are issued from inventory at their total GL cost. This credits Inventory account defined in Inventory Account Maintenance (1.2.13) for the product line, issue site, and issue location if a record exists; otherwise, uses Product Line Maintenance (1.2.1)
- This entire amount is now considered part of Work in Process and debits the WIP account from the work order.
- If the cost of the components issued does not match the frozen cost in the work order bill (Work Order Bill Maintenance (16.13.1)), a material rate variance results. This compares the total GL cost of the item issued (it might be a substitute) to the frozen cost. The difference is removed from WIP (credit WIP) and booked as a material rate variance (debit Material Rate Variance, see page 18).

The frozen cost is created when the work order is Exploded, Allocated, or Released; a WIP Revalue updates the frozen standard cost

Floor Stock and Unplanned Issues will not create material rate variances

Note The GL transaction created by a work order component issue is easily traced. Its type is IC, indicating that it is generated by an inventory transaction and its description indicates that it was a work order issue (ISS-WO) and identifies the work order number.

Work Order Bill of Material

Work Order Bill Maintenance

Item: 50010 Work Order: 1000 ID: 2287245

Work Order: 1000 ID: 2287245
 Item Number: 50010 Acoustic Transducer
 Status: RELEASED

Component Item: 50011 Ultrasound Array
 Operation: 10

Qty Required: 100.0 Qty Per Unit: 1.0
 Quantity Allocated: 100.0 Unit Cost: 60.83006
 Quantity Picked: 0.00000000
 Detail Allocations: ☐
 Quantity Issued: 0.0

Site: 10-100
 Location: 020
 Key Item: ☐
 Issue Date: 9/29/2010
 Deliver To: [dropdown]

QAD PC-WO-090

Work order bills list components required for a work order. The standard bill for the item-site is used initially, but can be changed manually. Work order bills control component picking and issuing, and provide standards against which variances are calculated.

Work order explosion or release generates a bill automatically. These Bills can be modified using Work Order Bill Maintenance (16.13.1). As the work order moves through manufacturing, the work order bill tracks the status of each item number, indicating whether it is allocated, printed on a picklist, or issued. Quantity issued is used to calculate work order cost.

Each item number is listed with the quantity required and the issue site. Quantity required is calculated by multiplying the quantity per unit on the bill by the work order quantity, then adjusting for scrap percentage. Site defaults to the work order site.

When using standard costing, material rate and usage variances are calculated based on the standards in work order bill.

- **Material Rate Variance** is calculated when material is issued to the work order. It is the difference between the standard item cost and the cost in the work order bill, each multiplied by the quantity issued. Variances result from issuing items from another site where they have a different cost, issuing a substitute, or from changing standard costs without running the WIP Material Cost Revaluation to reflect new standards in existing bills.

- Material Usage Variance is calculated by Work Order Accounting Close. The system determines Earned Quantity, which is the expected component quantities from the work order bill to make the quantity reported complete or scrapped. Earned quantity is compared to actual issues (at item standard cost). Any difference is posted as a variance.

Material Rate Variance

Material Rate Variance

Manufacturing-Related Variances

<u>Variance</u>	<u>When Calculated</u>	<u>Cause</u>
Material Rate	WO Component Issue, 16.10 WO Receipt Backflush, 16.12 WO Operation Backflush, 16.19	Difference between component costs issued to the WO (actual) and component costs on the WO BOM (std)
<i>Formula</i>	$(WO\ BOM\ Unit\ Cost\ at\ Issue - GL\ Unit\ Cost) \times Actual\ Qty\ Issued$	



PC-WO-100

Material Rate Variance is calculated as the difference between the GL cost of an item at the time it is issued to a work order and the frozen cost of the item in the work order bill. This variance is calculated when material is issued to a work order by Work Order Component Issue (16.10), Work Order Receipt Backflush (16.12), or Work Order Operation Backflush (16.19)

This variance is calculated as:

$$(WO\ BOM\ Unit\ Cost\ at\ Issue - GL\ Unit\ Cost) * Actual\ Qty\ Issued$$

The material usage variance is calculated at work order accounting close and is dealt with later in the course.

Issue Components: GL Effect

Issue Components – GL Effect

<u>Component Issue from WO site</u>	<u>GL Trans Type</u>
DR WIP CR Inventory	IC
* DR Material Rate Variance CR WIP	IC
* Positive amounts = unfavorable variance; Negative amounts = favorable variance	



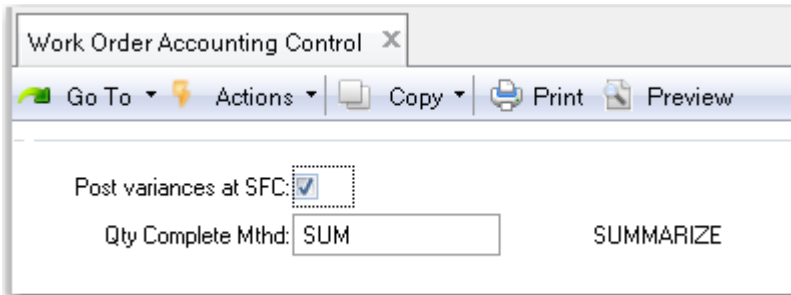
PC-WO-110

Exercise 1: Review Accounting Records

- 4 Review 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 ensure that all account fields have a value in them. Not all sub-account or cost center fields will have values. You can uncheck the Verify GL Accounts selection.
- 5 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.

- 6 Review Work Order Control (16.24) and uncheck work order and routing comments. Check Move First operation; this will automatically move a released work order to the first operation.

- 7 Review Work Order Accounting Control (36.9.11) and verify that the Post Variances at SFC (Shop Floor Control) is checked (Yes). This will post variances (if any) at the time shop floor transactions are done. If unchecked, variances are not posted until Work Order Accounting Close.



The screenshot shows a software window titled "Work Order Accounting Control" with a standard menu bar (Go To, Actions, Copy, Print, Preview). The main area contains two settings: "Post variances at SFC:" with a checked checkbox, and "Qty Complete Mthd:" with a text box containing "SUM". A "SUMMARIZE" button is located to the right of the text box.

Post variances at SFC:	☒
Qty Complete Mthd:	SUM
SUMMARIZE	

Exercise 2: Set Up a Work Order

- 1 Review the Product Structure of the 01020, Implantable Ultrasound. Use Product Structure Inquiry (13.6).



Product Structure Inquiry

09/30

Parent Item/BOM Code: 01020

As Of: 09/30/10

PCO Number:

Levels:

ID:

Implantable Ultrasound

Rev:

Domain:

EA

Output: PAGE

Level	Component Item	Description	Quantity	Per	UM	Ph	T	Iss
Parent	01020	Implantable Ultrasound			EA			
1	50010	Acoustic Transducer	1.0		EA			
.2	50011	Ultrasound Array	1.0		EA			
..3	60010	Prepared Layered Mat	233.42		G			
..3	60011	Oscillator Elements	4.0		EA			
.2	60012	Electrodes	1.0		EA			
.2	60012	Electrodes	1.0		EA			
.2	60012	Electrodes	1.0		EA			
.2	60012	Electrodes	1.0		EA			
.2	60012	Electrodes	1.0		EA			
.2	60012	Electrodes	1.0		EA			
1	60009	Probe Housing	1.0		EA			
1	60051	Microprocessor	1.0		EA			
1	90093	Shipping Carton	1.0		EA			

- 2 Review the Route for the 01020, Implantable Ultrasound. Use (14.13.3).



Routing Inquiry

09/30/10

Routing Code: 01020

Effective: 09/30/10

Implantable Ultrasound

Output: PAGE

Op	Work Center	Machine	Setup	Run Time	Move	Yield%
10	1000 General Assembly-Ul ASSEMBLE COMPONENTS	1001	10.0	40.0	0.0	100.00%
20	1050 Product Test-Ultra TEST FINISHED UNIT	1001	4.0	40.0	0.0	100.00%
30	1060 Packaging -Ultra PACK FOR SHIPPING	1001	0.5	5.0	0.0	100.00%

For these exercises you will modify many elements of the data for these items. This will provide a review of the cost setup and provide knowledge of the cost elements for this item.

- 3 Modify the route for item 01020, use (14.13.1) to change the setup and run times as shown. The setup time for operation 10 and 20 is 1 hour and no setup for operation 30. The run time for operation 10 and 20 is 2 hours and for operation 30 1 hour.



Routing Inquiry

09/30/10

Routing Code: 01020
Effective: 09/30/10

Implantable Ultrasound

Output: PAGE

Op	Work Center	Machine	Setup	Run Time	Move	Yield%
10	1000 General Assembly-Ul ASSEMBLE COMPONENTS	1001	1.0	2.0	0.0	100.00%
20	1050 Product Test-Ultra TEST FINISHED UNIT	1001	1.0	2.0	0.0	100.00%
30	1060 Packaging -Ultra PACK FOR SHIPPING	1001	0.0	1.0	0.0	100.00%

- 4 Modify the Route for the 50010 as shown in this graphic. Make setup at Op 10 1 hour and at all others zero. Run time is 1 hour at operations 10 and 20. Operation 15 is a subcontract operation, set its subcontract cost to 1.00 and uncheck the comments box.



Routing Inquiry

09/30/10

Routing Code: 50010

Effective: 09/30/10

Acoustic Transducer

Output: PAGE

Op	Work Center	Machine	Setup	Run Time	Move	Yield%
10	1000 General Assembly ASSEMBLE ULTRASOUND		1.0	1.0	0.0	100.00%
15	2270 Subcontract Supplie Subc Attach Elec/Plate		0.0	0.0	0.0	100.00%
20	1040 Electrical Test TEST ACOUSTIC TRANSDUCER		0.0	1.0	0.0	100.00%

The 1.00 cost of operation 15 can be seen on the Routing Cost Report.

		Routing Cost Report				09/30/10 1	
		10USA					
Work Ctr	Setup Time	Setup cost	Setup Rate	Lbr Bdn %	Lbr Bdn Rate	Lbr Burden	Total
Machine	Order Qty	Unit Run	Labor Rate	Labor Cost	Mch per Op	Mch Bdn Rate	Mch Burden
Routing: 50010							
Op: 10	ASSEMBLE ULTRASOUND						
1000	1.0	5.00	5.00	10.00%	0.00	1.00	
	1.0	1.00	5.00	10.000	1	1.00	3.00
Op: 15	Subc Attach Elec/Plate						
2270	0.0	0.00	0.00	0.00%	0.00	0.00	
	1.0	0.00	0.00	00.000	1	0.00	0.00
Op: 20	TEST ACOUSTIC TRANSDUCER						
1040	0.0	0.00	5.00	10.00%	0.00	0.50	
	1.0	1.00	5.00	05.000	1	1.00	1.50
				15.000			4.50
							1.00

- 5 Modify the Route for the 50011 as shown in this graphic. Make setup at Op 10 1 hour and the yield 100%, setup at all other Ops is zero, run time is one hour at all operations



Routing Inquiry

09/30/10

Routing Code: 50011
Effective: 09/30/10

Ultrasound Array

Output: PAGE

Op	Work Center	Machine	Setup	Run Time	Move	Yield%
10	1030 Laser		1.0	1.0	0.0	100.00%
	LASER PREPARED LAYERED					
20	1000 General Assembly		0.0	1.0	0.0	100.00%
	ATTACH OSCILLATOR ELEM					
30	1050 Product Test		0.0	1.0	0.0	100.00%
	TEST ULTRASOUND ARRAY					
40	1050 Product Test		0.0	1.0	0.0	100.00%
	FINAL INSPECTION W/TEST					

- 6 Modify the This Level Material Cost data for purchased items. Use (1.4.9) and the exploded product structure above. Use a short cut and enter the new material costs directly into the GL Cost Data Set AND the Current Cost Data Set for site 10-100.

Item	Material	Overhead
60010	1.00	1.00
60011	1.00	
60012	1.00	
60009	30.00	
60051	300.00	
90093	1.00	

Only the 60010 gets an overhead cost.

- 7 Modify the Work Center Data as follows: Use (14.5).

W.C.	Mach	Mach Bur	Labor	Setup	Lab Bur Rt	Lab. Bur%
1000		1.00	5.00	5.00	0.00	10
1000	1001	1.00	25.00	25.00	0.00	10
1030		1.00	5.00	5.00	0.00	10
1040		1.00	5.00	5.00	0.00	10
1050		1.00	5.00	5.00	0.00	10
1050	1001	1.00	25.00	25.00	0.00	10
1060	1001	1.00	25.00	25.00	0.00	10

- 8 Modify the Product Structure of the 50011 Ultrasound Array to call for 20 G of the 60010 Prepared Layer Mat.

Items Product Structure Codes Product Structure Maintenance

Search

Item Number starts at - Search

Viewing 1 - 100 of 178 Records per page: 100

Item Number	Description	UM	BOM/Formula Code	Status	Purchase/Mar
05002	Pills, 50 Tab	EA		ACTIVE	L
05003	Pills, 100 Tab	EA		ACTIVE	L
50001	Probe Unit - 10 Mhz	EA		ACTIVE	M
50002	Probe Unit - 500 kHz	EA		ACTIVE	M
50010	Acoustic Transducer	EA		ACTIVE	M
50011	Ultrasound Array	EA		ACTIVE	M

Component Description Unit of Measure Reference Quantity Start Date End Date Operation BOM Code

50011	Ultrasound Array	EA		1				50011
60010	Prepared Layered Mat	G		20			10	60010
60011	Oscillator Elements	EA		4			20	60011

- 9 Many of the items are either serial or lot controlled. To simplify the Exercise delete either the S or the L from the Lot/Serial field, use (1.4.5) for these items:

Item No.	Lot/Serial is	Make
01020	S	Blank
50010	S	Blank
50011	S	Blank
60010	L	Blank
60011	L	Blank
60012	L	Blank
60051	S	Blank

- 10** Run the Routing Cost Roll Up and the Product Structure Cost Roll Up for the entire domain using the Standard - GL cost data set. Note the rollover defaults to current; you need to change it to Standard. Then review the Product Structure Cost Report.

Site: 10-100 Cost Set: Standard											
Level	Component Item	Quantity	Per Q	UM	T	Material	Labor	Burden	Overhead	Subcontract	Cost Total
Parent	01020										
	Implantable Ultrasound	This Level				0.00	175.00	24.50	0.00	0.00	199.50
	09/30/10	Lower Level				361.00	40.00	12.00	20.00	1.00	434.00
		Unit Total				361.00	215.00	36.50	20.00	1.00	633.50
1	50010	1.0		EA							
	Acoustic Transducer	This Level				0.00	15.00	4.50	0.00	1.00	20.50
	09/30/10	Lower Level				30.00	25.00	7.50	20.00	0.00	82.50
		Unit Total				30.00	40.00	12.00	20.00	1.00	103.00
		Ext Total				30.00	40.00	12.00	20.00	1.00	103.00
.2	50011	1.0		EA							
	Ultrasound Array	This Level				0.00	25.00	7.50	0.00	0.00	32.50
	09/30/10	Lower Level				24.00	0.00	0.00	20.00	0.00	44.00
		Unit Total				24.00	25.00	7.50	20.00	0.00	76.50
		Ext Total				24.00	25.00	7.50	20.00	0.00	76.50
..3	60010	20.0		G							
	Prepared Layered Mat	This Level				1.00	0.00	0.00	1.00	0.00	2.00
	09/30/10	Lower Level				0.00	0.00	0.00	0.00	0.00	0.00
		Unit Total				1.00	0.00	0.00	1.00	0.00	2.00
		Ext Total				20.00	0.00	0.00	20.00	0.00	40.00
..3	60011	4.0		EA							
	Oscillator Elements	This Level				1.00	0.00	0.00	0.00	0.00	1.00
	09/30/10	Lower Level				0.00	0.00	0.00	0.00	0.00	0.00
		Unit Total				1.00	0.00	0.00	0.00	0.00	1.00
		Ext Total				4.00	0.00	0.00	0.00	0.00	4.00
.2	60012	6.0		EA							
	Electrodes	This Level				1.00	0.00	0.00	0.00	0.00	1.00
	09/30/10	Lower Level				0.00	0.00	0.00	0.00	0.00	0.00
		Unit Total				1.00	0.00	0.00	0.00	0.00	1.00
		Ext Total				6.00	0.00	0.00	0.00	0.00	6.00
1	60009	1.0		EA							
	Probe Housing	This Level				30.00	0.00	0.00	0.00	0.00	30.00
	09/30/10	Lower Level				0.00	0.00	0.00	0.00	0.00	0.00
		Unit Total				30.00	0.00	0.00	0.00	0.00	30.00
		Ext Total				30.00	0.00	0.00	0.00	0.00	30.00
1	60051	1.0		EA							
	Microprocessor	This Level				300.00	0.00	0.00	0.00	0.00	300.00
	09/30/10	Lower Level				0.00	0.00	0.00	0.00	0.00	0.00
		Unit Total				300.00	0.00	0.00	0.00	0.00	300.00
		Ext Total				300.00	0.00	0.00	0.00	0.00	300.00
1	90093	1.0		EA							
	Shipping Carton	This Level				1.00	0.00	0.00	0.00	0.00	1.00
	09/30/10	Lower Level				0.00	0.00	0.00	0.00	0.00	0.00
		Unit Total				1.00	0.00	0.00	0.00	0.00	1.00
		Ext Total				1.00	0.00	0.00	0.00	0.00	1.00

By having set up the cost data with whole numbers it should be easier to see how the lower level material, labor, burden, overhead, and subcontract costs roll up to the end item level.

To be clear, the two components of the 50011, the 60010 and 60011, (level 3) roll up to the 50011; the costs of the 50011 and the 60012 (level 2) roll up to the 01020 along with the other level1 items.

In the material column the This Level cost is multiplied by the Quantity Per to get the Extended Total at each level. This is the cost that is rolled up. The cost of the 60010 is 1.00 and 20 are required, the overhead is also 1.00, the Extended Total of 40.00 is rolled into the Lower Level Material Cost of the 01020.

Burden is only absorbed through Labor so only manufactured items earn burden. The cost of the only subcontract operation is obvious.

Exercise 3: Work Order Processing

- 1 Create a work order for 1 each of the 01020 at site 10-100 using Work Order Maintenance (16.1). Let the system assign the WO number and ID, set the status to R and accept other values at default.
- 2 Use Work Order Component Check (16.5) to verify inventory of needed components. You should have enough.



Work Order Component Check

10/

Work Order 1000	ID	Component Item	Short Only No	Output PAGE	
Component Item	Qty Req	UM	On Hand	Qty Alloc	Qty Short
50010		1.0 EA	9.0	1.0	0.0
Acoustic Transducer	10-100				
60009		1.0 EA	9.0	1.0	0.0
Probe Housing	10-100				
60051		1.0 EA	9.0	1.0	0.0
Microprocessor	10-100				
90093		1.0 EA	180.0	1.0	0.0
Shipping Carton	10-100				

- 3 Use Work Order Component Issue (16.10) to issue the material to the work order. Check both Issue Allocated and Issue Picked to make it easy. When prompted to “Display Items Being Issued” click yes. Your screen should look like this.

Work Order Component Issue

Go To Actions Copy Print Preview Attach

Work Order: 1000 ID: 2287245

Work Order: 1000 ID: 2287245 Op: Effective: 10/1/2010

Item Number: 01020 WO Stat: R Issue Alloc: ☒

Implantable Ultrasound Issue Picked: ☒

Document:

Item Number	Site	Location	Lot/Serial	Ref	Quantity
50010	10-100	020	50010-0710-24		1.0
60009	10-100	020			1.0
60051	10-100	020	60051-0710-24		1.0
90093	10-100	020			1.0

Even though you have turned off serial/lot control if the inventory record has a value it will be included with the transaction.

- 4 Review the transaction detail records for the component issue, use (3.21.1). What transactions do you see and what accounts have been affected? You will have four ISS-WO transactions, one for each component. Each will have a credit to inventory (1500) and a debit to WIP (1550) for the GL Standard cost of the item.

5 Review the work order cost report for your work order, use (16.3.4).

Work Order Cost Report								
10USA								
10/01/1								
QAD Work Order: 1000 ID: 2287245 Batch: Item Number: 01020 Sales/Job: Remarks: WO Stat: R Supplier: Qty Ordered: 1.0 Implantable Ultrasound Quantity Completed: 0.0 Order Date: 10/01/10 STD Qty Rejected: 0.0 Release Date: 10/01/10 Due Date: 10/04/10								
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50010	1.0	0.00	0.00	103.00	0.00	0.00	0.00	103.00
60009	1.0	0.00	0.00	30.00	0.00	0.00	0.00	30.00
60051	1.0	0.00	0.00	300.00	0.00	0.00	0.00	300.00
90093	1.0	0.00	0.00	1.00	0.00	0.00	0.00	1.00
Material Total:		0.00	0.00	434.00	0.00	0.00	0.00	434.00
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 30	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Labor Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 30	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Burden Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 30	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00
WO Subtotal:		0.00	0.00	434.00	0.00	0.00	0.00	434.00
- Std Cost Rcvd:								0.00
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								434.00

This report is based on the work order bill and route captured at time of release (or explosion). It is setup with all the components and operations. The accumulated cost and total cost at this time is the component value only.

- 6 Use work order receipt, (16.11) to receive your work order, for a quantity of one, site and location should default to 10-100 and 010, be sure to check the Close box.

Run the work order cost report again. What are the differences, and can you explain them?

Work Order Cost Report								
10USA								
QAD Work Order: 1000 ID: 2287245 Batch: Item Number: 01020 Sales/Job: WD Stat: C Implantable Ultrasound Supplier: Qty Ordered: 1.0 Quantity Completed: 1.0 Qty Rejected: 0.0 Remarks: Order Date: 10/01/10 STD Release Date: 10/01/10 Due Date: 10/04/10								
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50010	1.0	103.00	0.00	103.00	0.00	0.00	0.00	103.00
60009	1.0	30.00	0.00	30.00	0.00	0.00	0.00	30.00
60051	1.0	300.00	0.00	300.00	0.00	0.00	0.00	300.00
90093	1.0	1.00	0.00	1.00	0.00	0.00	0.00	1.00
Material Total:		434.00	0.00	434.00	0.00	0.00	0.00	434.00
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 30	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Labor Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 30	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Burden Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 30	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00
WO Subtotal:		434.00	0.00	434.00	0.00	0.00	0.00	434.00
- Std Cost Rcvd:								-633.50
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								-199.50

The system has added values to the Expected Cost column and the “Standard Cost Received” and calculated a balance. No labor was reported through shop floor control and closing the work order does not book labor and burden at standard. The stand cost received is the GL Standard for item 01020. The -199.50 looks like a favorable variance.

- 7 Review the current cost for the 01020 using (1.4.9). What has happened? The current cost has been updated to the 434.00 reflected by this work order cost.
- 8 Use Unposted Transaction Inquiry (25.13.13) and put WO in the Reference ID field to limit the inquiry to work order transactions. Are there any? No there are not.

9 Run work order accounting close, use 16.21, what has happened?

Review the report of the work order accounting close.

Work Order Accounting Close									
10USA									
Work Order	ID	Item Number	Site	Qty Ordered	Qty Completed	Qty Rejected	SO/Job	Project	E
1000	2287245	01020	10-100	1.0	1.0	0.0			10
Implantable Ultrasound									
Reference ID	Type	DR Acct	Sub-Acct	CC	Description	Cr Acct	Sub-Acct	CC	Description
Amount									
WO101001000001	WO-CLOSE	1550	Mech		Inventory WIP	5120	Mech	mfg	Labor Absorbed
25.00									
WO101001000002	WO-CLOSE	1550	Mech		Inventory WIP	5220	Mech	mfg	Burden Absorbed
3.50									
WO101001000003	WO-CLOSE	1550	Mech		Inventory WIP	5120	Mech	mfg	Labor Absorbed
25.00									
WO101001000004	WO-CLOSE	1550	Mech		Inventory WIP	5120	Mech	mfg	Labor Absorbed
50.00									
WO101001000005	WO-CLOSE	1550	Mech		Inventory WIP	5220	Mech	mfg	Burden Absorbed
3.50									
WO101001000006	WO-CLOSE	1550	Mech		Inventory WIP	5220	Mech	mfg	Burden Absorbed
7.00									
WO101001000007	WO-CLOSE	1550	Mech		Inventory WIP	5120	Mech	mfg	Labor Absorbed
25.00									
WO101001000008	WO-CLOSE	1550	Mech		Inventory WIP	5120	Mech	mfg	Labor Absorbed
50.00									
WO101001000009	WO-CLOSE	1550	Mech		Inventory WIP	5220	Mech	mfg	Burden Absorbed
3.50									
WO101001000010	WO-CLOSE	1550	Mech		Inventory WIP	5220	Mech	mfg	Burden Absorbed
7.00									
Method Change		6800	Mech		Method Variance	1550	Mech		Inventory WIP
0.00									

Running work order accounting close has booked labor and burden at GL Standard. As there are only three operations, can you explain why there are five sets of labor/burden transactions? Note the method change variance is always calculated but here is zero.

Review the operation cost report for the 01020, this should help you figure out what how the transactions are being booked.

Routing Cost Report									
10USA									
10/01/10 12:00									
Work Ctr	Setup Time	Setup cost	Setup Rate	Labor	Lbr Bdn %	Lbr Bdn Rate	Lbr Burden	Total	
Machine	Order Qty	Unit Run	Labor Rate	Cost	Mch per Op	Mch Bdn Rate	Mch Burden	Burden	Subcontract
Routing: 01020									
Op: 10	ASSEMBLE COMPONENTS								
1000	1.0	25.00	25.00		10.00%	0.00	7.50		
1001	1.0	2.00	25.00	75.000	1	1.00	3.00	10.50	0.00
Op: 20	TEST FINISHED UNIT								
1050	1.0	25.00	25.00		10.00%	0.00	7.50		
1001	1.0	2.00	25.00	75.000	1	1.00	3.00	10.50	0.00
Op: 30	PACK FOR SHIPPING								
1060	0.0	0.00	25.00		10.00%	0.00	2.50		
1001	1.0	1.00	25.00	25.000	1	1.00	1.00	3.50	0.00
				175.000				24.50	0.00

Do you see that the transaction have been created in the reverse order of the operations, such that the first pair of debits to WIP (1550) are 25.00 and 3.50. This is the labor/burden cost of operation 30. The next set of debits are two for labor of 25.00 and 50.00, this is the setup charge and labor charge, respectively, for operation 20. The last set is the labor and burden for operation 10. As labor rates and setup rates are often different the system always books then separately.

- 10 Run the work order cost report again and see that the labor and burden at standard are now shown for each operation. The WO Subtotal is now 633.50 which is exactly the same as the GL standard cost received into inventory. The balance is now zero indicating the work order was processed exactly on standard.

Work Order Cost Report									
10USA									
10/01/10									
QAD Work Order: 1000 ID: 2287245 Batch: Remarks: Item Number: 01020 Sales/Job: Qty Ordered: 1.0 Order Date: 10/01/10 STD Implantable Ultrasound Supplier: Quantity Completed: 1.0 Release Date: 10/01/10 WO Stat: C Qty Rejected: 0.0 Due Date: 10/04/10									
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance	
50010	1.0	103.00	0.00	103.00	0.00	0.00	0.00	103.00	
60009	1.0	30.00	0.00	30.00	0.00	0.00	0.00	30.00	
60051	1.0	300.00	0.00	300.00	0.00	0.00	0.00	300.00	
90093	1.0	1.00	0.00	1.00	0.00	0.00	0.00	1.00	
Material Total:		434.00	0.00	434.00	0.00	0.00	0.00	434.00	
Operation: 10	1.0	75.00	0.00	75.00	0.00	0.00	0.00	75.00	
Operation: 20	1.0	75.00	0.00	75.00	0.00	0.00	0.00	75.00	
Operation: 30	1.0	25.00	0.00	25.00	0.00	0.00	0.00	25.00	
Labor Total:		175.00	0.00	175.00	0.00	0.00	0.00	175.00	
Operation: 10	1.0	10.50	0.00	10.50	0.00	0.00	0.00	10.50	
Operation: 20	1.0	10.50	0.00	10.50	0.00	0.00	0.00	10.50	
Operation: 30	1.0	3.50	0.00	3.50	0.00	0.00	0.00	3.50	
Burden Total:		24.50	0.00	24.50	0.00	0.00	0.00	24.50	
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 30	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Subcontract Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WO Subtotal:		633.50	0.00	633.50	0.00	0.00	0.00	633.50	
- Std Cost Rcvd:								-633.50	
- Scrapped:								0.00	
- Mthd Chg Var:								0.00	
Balance:								0.00	

- 11 Review the current cost of the 01020 using (1.4.9). What has happened? The current cost was updated at work order close, and has now been updated again at work order accounting close. As the work order closed at standard the current cost now equals the GL cost.
- 12 Review the operations accounting report (16.20.13.10) for a different view of the transactions generated by the work order accounting close.
- 13 Review the unposted transaction inquiry (25.13.13). These transactions will post to the GL the next time Operational Transaction Post is run. This inquiry/report gives you an opportunity to review the transactions before posting.

- 14 Review the Operation Transaction Detail Inquiry (16.20). This inquiry gives the details for shop floor transaction, much like the inventory transaction detail provides for inventory transactions. You will see three transactions, one for each operation, each with several sets of debits and credits. Notice that the type is WO-CLOSE. This is the complete detail of the transaction shown on the work order accounting close report.



Operation Transaction Detail Inq

10/01/10

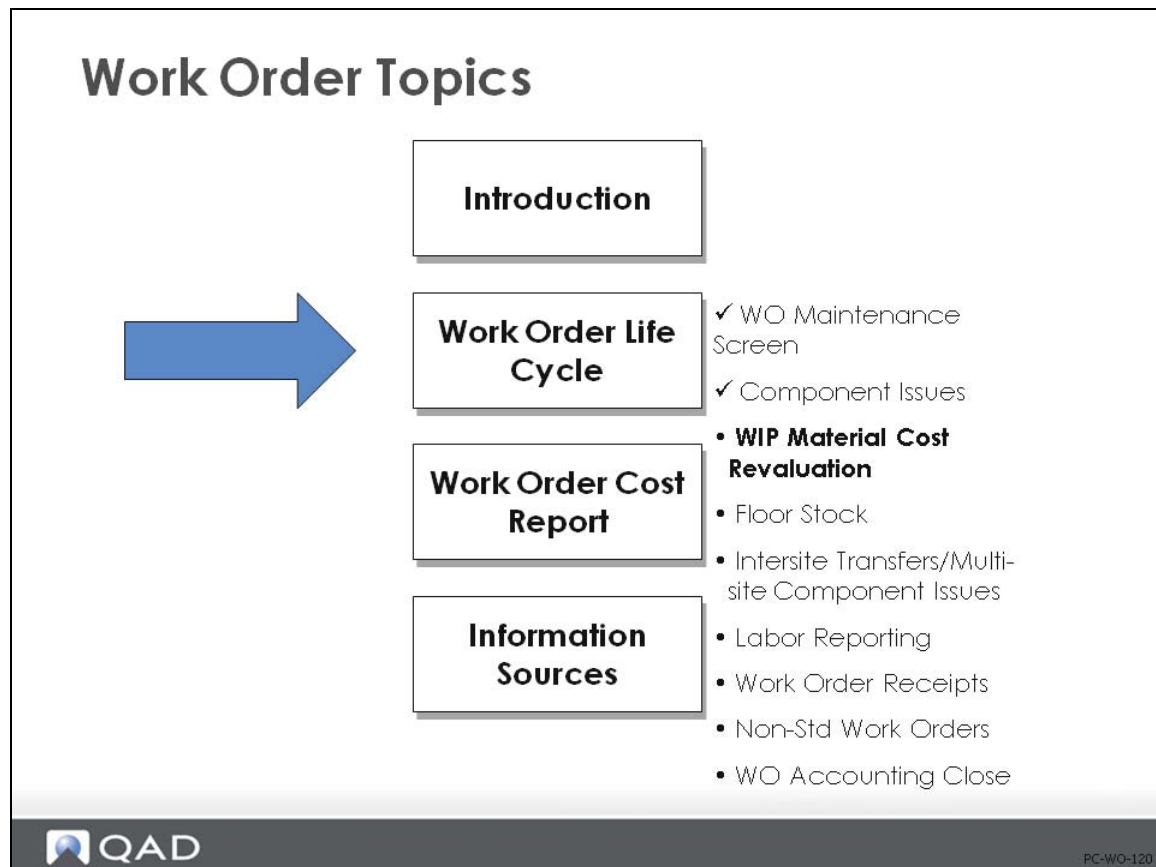
Tran Nbr: 2546 Display E-Signature Details: Yes Output: PAGE

Type: WO-CLOSE
 Transaction Date: 10/01/10 12:07:16 Work Order: 1000
 Effective Date: 10/01/10 Shift: ID: 2287245 Op: 10
 Employee:
 Item Number: 01020 Quantity Completed: 1.0
 Implantable Ultrasound Qty Rejected: 0.0
 Site: 10-100 Line: Reject Reason:
 Work Center: 1000 Machine: 1001 Qty Rework: 0.0
 Department: 0400 Rework Reason:
 Qty Scrapped: 0.0
 Std Setup Time: 1.0 Actual Setup Time: 1.0
 Std Run Time: 2.0 Actual Run Time: 2.0
 Labor Cost Std: 75.00 Labor Cost: 75.00
 Burden Cost Std: 10.50 Burden Cost: 10.50
 Subcontract Std: 0.00 Subcontract Cost: 0.00

===== E-Signature Details =====
 Category: QpHist
 This data is currently unsigned
 ===== End of e-signature details =====

GL Reference	Amount	DR Acct	CR Acct	Sub-Acct	CC	Project
2010/WOCLOSE0000000007	25.00	1550		Mech		
WO101001000007		5120		Mech	mfg	
2010/WOCLOSE0000000008	50.00	1550		Mech		
WO101001000008		5120		Mech	mfg	
2010/WOCLOSE0000000009	3.50	1550		Mech		
WO101001000009		5220		Mech	mfg	
2010/WOCLOSE0000000010	7.00	1550		Mech		
WO101001000010		5220		Mech	mfg	

WIP Material Cost Revaluation



WIP Material Cost Revaluation



PC-WO-130

In a standard cost environment, GL standards are reset on a periodic basis, often once a year. When the standard cost has been changed after the BOM and routing have been attached to a work order, WIP Material Cost Revaluation (16.22) is used to:

- Update the cost of *unissued* components on the work order bill
No rate variance will be calculated
- Update the WIP value of *issued* components
Rate variances will be calculated if the material has been issued prior to running the WIP Material Cost Revaluation (16.22)

Note This variance is not a purchase price variance. That variance between the PO and GL cost is posted to the Purchase Price Variance account.

Once done, a WIP Material Cost Revaluation (16.22) cannot be undone.

WIP Material Cost Revaluation: Transactions Detail

WIP Material Cost Revaluation – Transactions Detail

QAD 10USA 09/29/10

Work Order: 1000 ID: 2287245 Item Number: 50010 Description: Acoustic Transducer Quantity Received: 0.0

Item Number	Qty Issued	Qty in WIP BOM	Quantity	Old Matl Cost	New Matl Cost	Matl Rate Variance Posted
50011	0.0	0.0	1.0	60.830	60.830	0.00
60012	600.0	600.0	6.0	0.130	0.150	12.00
Total:						12.00

QAD 10USA 09/29/10

Order	ID	Item Number	DR Acct	Sub-Acct CC	DR Proj	Cr Acct	Sub-Acct CC	Amount
1000	2287245	50010	1550	Mech		5050	Mech	12.00
Project Total:								12.00
Account Total:								12.00
Report Total:								12.00

WIP-ADJ
DR 1550 (WIP) 12.00
CR 5050 (Material Rate Variance) 12.00

QAD PC-WO-140

WIP Material Cost Revaluation (16.22) updates the work order bill with the currently effective standard GL cost. For material that has been issued prior to running the WIP Material Cost Revaluation any difference between the component issue unit cost and the standard cost is posted as a material rate variance.

WIP Material Cost Revaluation does not update product structures or labor and burden costs.

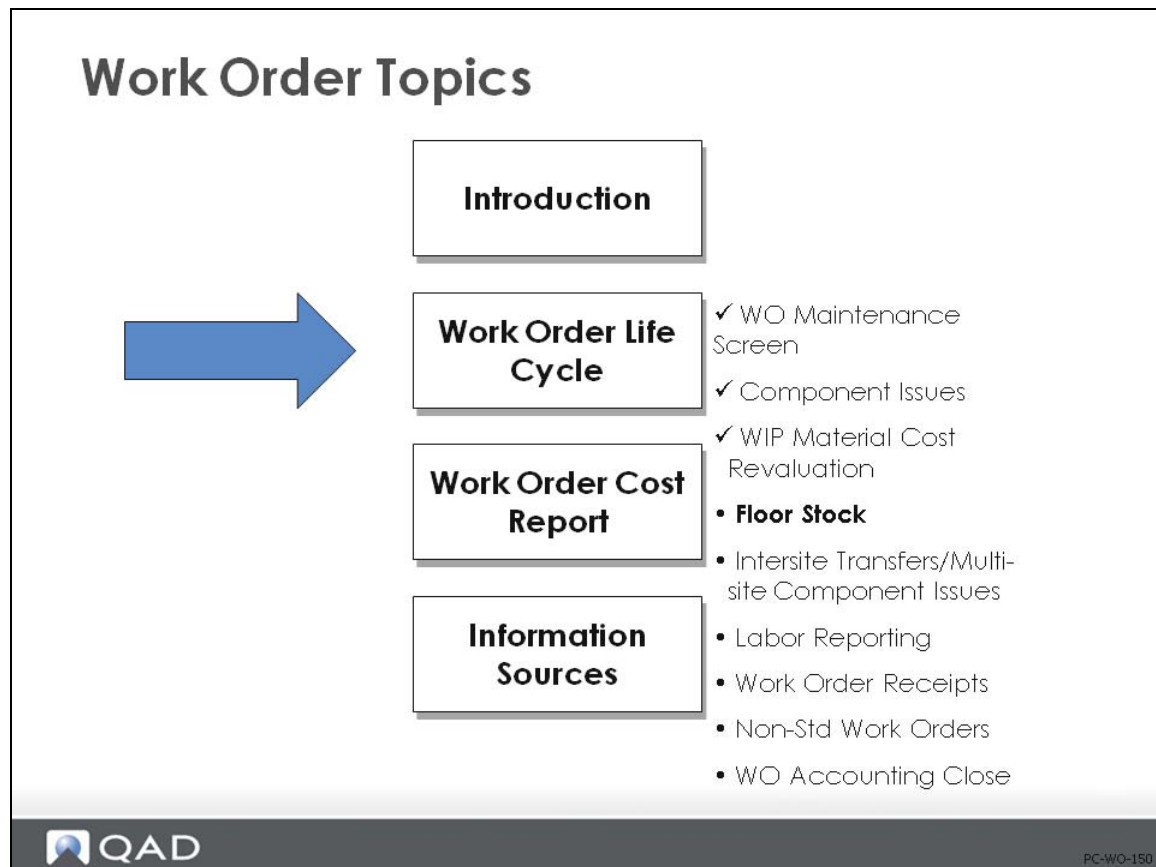
In this example the purchase material cost of the 60012 electrode has gone up from 0.13 to 0.15. There is an open order for 100 of the 50010 acoustic transducer which uses 6 each of the 60012. After the standards change the WIP revaluation is run to up date the WO cost the difference between the old standard and the new. The calculation is:

$$(new\ cost - old\ cost) * quantity\ in\ WIP \\ 0.15 - 0.13 * 600 = 12$$

GL Effect

Debits the WIP account from the work order and credits the Material Rate Variance account found on the work order parent's product line record.

Floor Stock



Floor Stock: Issues Unplanned

Floor Stock: Issues Unplanned

Specify a Floor Stock account as the debit account
- Floor Stock account set up in Product Line Maint. (1.2.1)

PC-WO-160

Floor stock items are bulk issue items—nuts and bolts, for example—that are part of the product structure, but that are usually inexpensive and easily replaced; there is not a need to keep track of them individually.

Floor Stock: Setup

- To use an item as floor stock, change the item data. Upon work order release/print, the component will be listed in a separate floor stock section on the work order picklist, without a quantity to issue.
- To issue the floor stock components out of inventory to work orders, use Issues Unplanned (3.7). The default debit account is automatically set to the Floor Stock account of the component item's product line. (Note that this might not be the same as the parent item's Floor Stock account. For this reason, the Floor Stock account should be the same for all product line records. Upon Work Order Accounting Close (16.21), the cost of any floor stock items is debited to WIP and credited to the Floor Stock account specified on the order.

Floor Stock: Transactions Detail

Floor Stock – Transactions Detail

FLR-STK
(WO Acctg Close)

DR 1500 (WIP)

CR 1600 (Floor Stock)

Std Cost x Std Qty
1.00 x 600 = 600.00

Transactions Detail Inquiry 09/29/10

Transaction: 27985 Display E-Signature Details: Yes Output: PAGE

Category: InvTran

Tran Nbr: 27985 Order: 2287251

Trans Type: ISS-UNP Revision: 0

Date: 09/29/10 Item Number: 90099

Time: 15:43 Description: Expendable Containers

Effective Date: 09/29/10 Unit of Measure: EA

Remarks: Address:

User ID: gmi Name:

Program: icumis.p SO/Job:

Currency: USD Ship Type:

Qty Change: -600.0 Price: 1.00

Shipper Number: IMC:

Ship Date:

Inventory Data

Site: 10-100 Begin Balance: 1,200.0

Location: 020 Quantity Change: -600.0

Lot/Serial: Qty Short: 0.0

Inv Status: Y-Y-Y Begin Loc Bal: 1,200.0

Supplier Lot: Loc Qty Change: -600.0

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

ISS-UNP

Debit Acct: 1600 Mech

Cr Account: 1500 Mech

Amount: 600.00

GL Reference: 2010/ISS-UNP000000005

Reference ID: IC100929000013

PC-WO-170

Effects on the GL

Because the cost of bulk issue items is included in the rolled-up GL cost of the finished item, it is necessary to adjust WIP for the cost of these items. Otherwise, this cost would get written off incorrectly to variance.

Floor stock is calculated as the standard cost per unit multiplied by the quantity required. This quantity is posted at standard cost to WIP (debit) and Floor Stock (credit). If there is more floor stock issued than the standard calls for, the additional value becomes a method variance.

Note These items have been issued and should not be cycle counted back into stock.

Note If quantity tracking is needed as well as cost tracking, rather than issuing the items by Issues Unplanned (3.7), transfer them to a “floor” location. Periodically cycle count this location and debit the appropriate Floor Stock account at that time (rather than Inventory Discrepancy).

Note One issue that might not be apparent regarding Floor Stock is that floor stock accounts used by the Work Order Accounting Close are associated to the work order, which is determined by the product line of the parent item. If the floor stock component is associated to a different product line, then, if the floor stock accounts vary by product line, you might be crediting a different floor stock account than was debited by the issue transaction. For this reason it is recommended that the floor stock account be the same for all product lines.

Exercise 4: Floor Stock Issues

QMI has decided the 90093 shipping carton should be a floor stock item, also referred to as Bulk Items.

- 1 Use item Planning Data Maintenance (1.4.7) to change the Issue Policy field for item 90093 to unchecked, meaning it is not issued.
- 2 Create a work order for 1 each of the 01020 at site 10-100. Leave the status field at F.
- 3 Use Work Order Component Check (16.5) to see if any items are short. If necessary use Receipts Unplanned (3.9) to receive any needed components.
- 4 Use Work Order Release and Print (16.6) to release the order and print (view) the picklist. Review the picklist; note that the 90093 is no longer included on the picklist, but is referenced as Floor Stock.



Work Order Release/Print

10USA

10/04/10 15:1

Pa

Work Order Picklist

Work Order: 1014
ID: 2287266
Batch:
Item Number: 01020
Remarks: Implantable Ultrasound
Qty Ordered: 1.0 EA

Issue Date: 10/04/10
Rev: A
Work Order Due Date: 10/05/10
Sales/Job:
Deliver To:

Item Number	Rev	Site Location	Lot/Serial Ref	Required Qty to Issue	UM	Issued
50010		10-100		1.0	EA	
Acoustic Transducer		020	50010-0710-5	1.0	()	
60009		10-100		1.0	EA	
Probe Housing		020		1.0	()	
60051		10-100		1.0	EA	
Microprocessor		020	60051-0710-5	1.0	()	

Floor Stock	Qty Req UM
90093	1.0 EA
Shipping Carton	

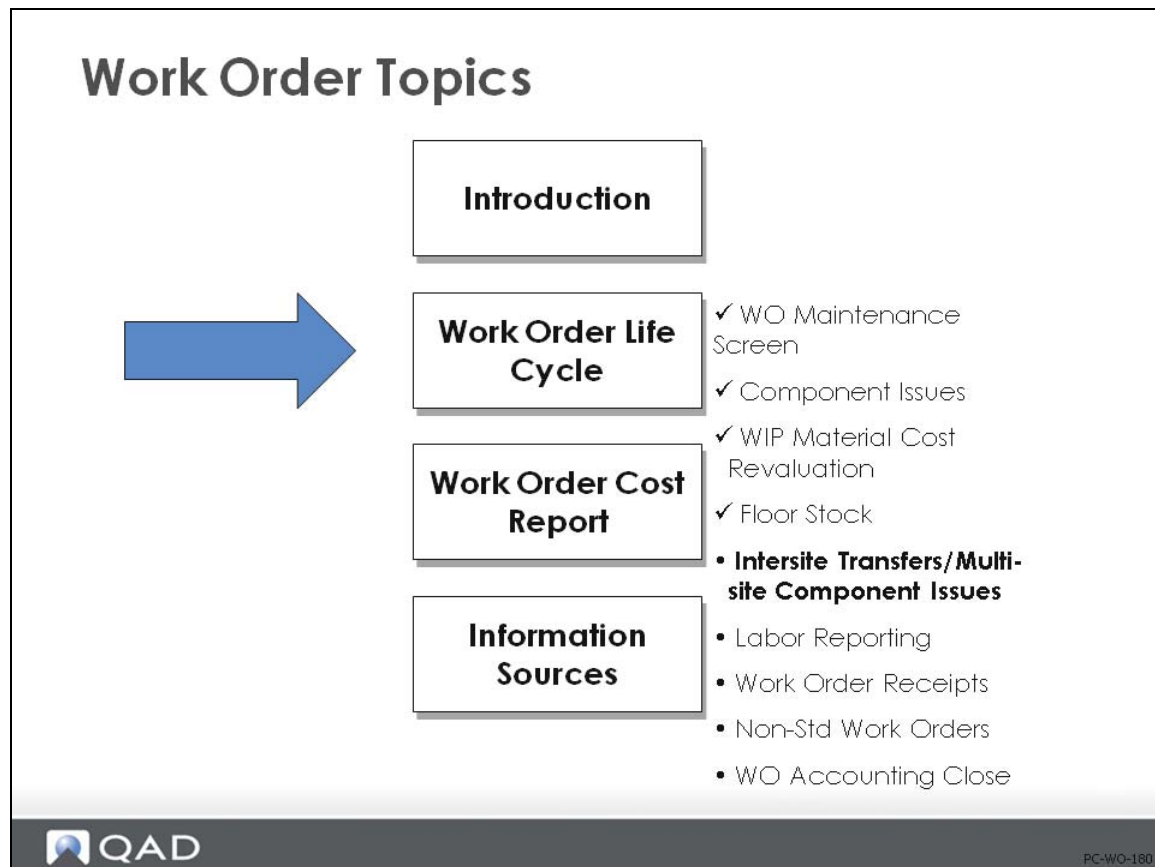
- 5 Issue the components to the work order as in previous exercises; note the 90093 does not appear on the list of items to issue.

- 6 Use Issues Unplanned (3.7) to issue 5 of the 90093 to the production floor. What account is the system using for the debit transaction? The system is debiting 1600 Floor Stock.
- 7 Receive the work order complete and run the work order accounting close. Review the report this generates.

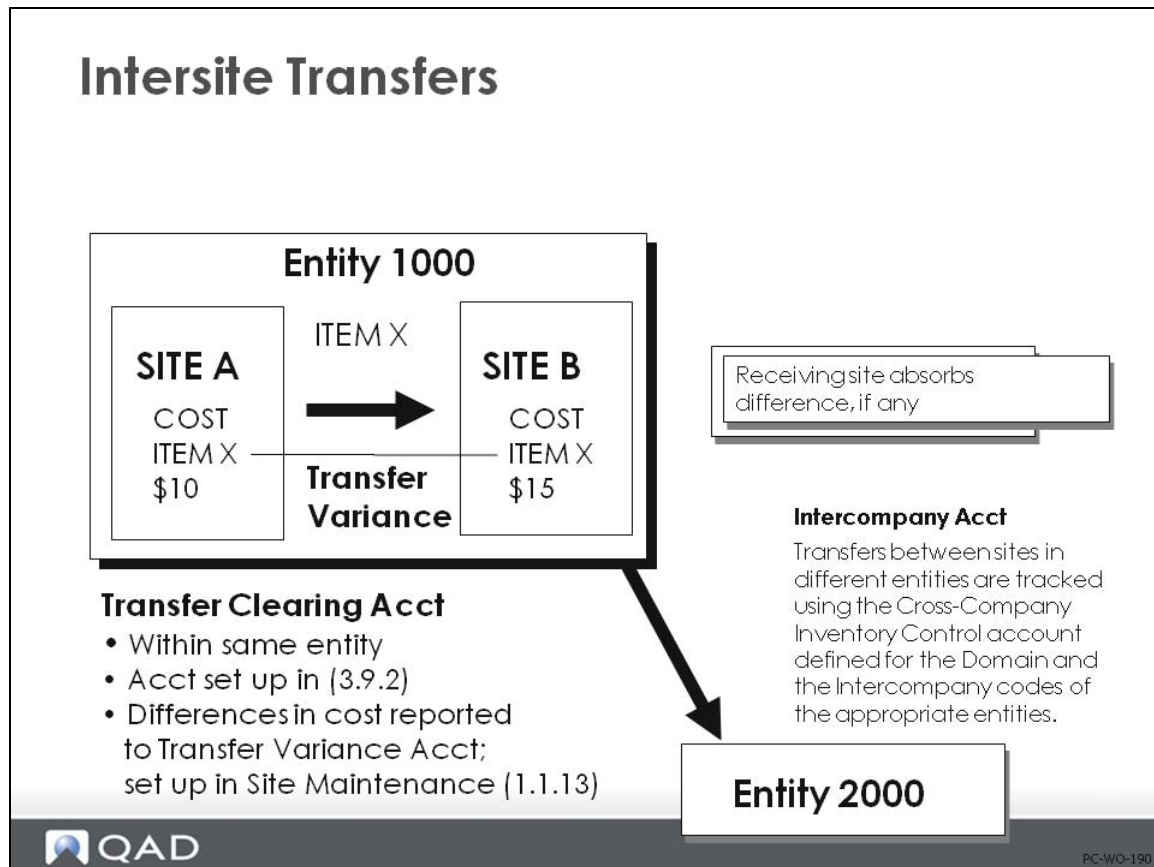
Review the Transaction Detail Inquiry (3.21.1) for the accounting close. What transactions have been created? There is a credit to floor stock (1600) and a debit to WIP (1550) this has removed the cost of the carton from inventory (1600) and charged it to WIP

- 8 Change the 90093 back to an issued item (1.4.7).

Intersite Transfers/Multi-Site Component Issues



Intersite Transfers and Multi-Site Component Issues Variances



The same item used at different sites can have a different GL cost per site. When inventory is moved between sites, the movement is accounted for either through the Transfer Clearing account (for transfers within the same entity) or through the Intercompany account (for transfers between different entities). Differences in costs at sites in the same entity are posted to the Transfer Variance account for the site using Site Maintenance (1.1.13); differences in costs at sites in different entities are posted to the Material Rate Variance account.

Transfers between sites in different entities are tracked using the Cross-Company Inventory Control account defined for the domain and the intercompany codes of the appropriate entities.

Set Balanced Entities to Yes using General Ledger Control (25.24). If Balanced Entities is Yes, the system automatically creates intercompany balancing entries

Note On a work order component issue, rather than report differences in cost between two sites to the Transfer Variance account, differences are reported to the work order, crediting the Material Rate Variance account.

Intersite Transfer With Variance: Example

Inter Site Transfer – Transactions Detail (Issuing Site)

Issuing Site

Transactions Detail Inquiry 09/29/10

Transaction: 27981 Display E-Signature Details: Yes Output: PAGE

Event ID User Name Category Date Time Cur

201009290001968889 qmi QMI User 09/29/10 15:37:16 PST yes

Remarks: InvTran TF Authorized Inv Transfer

***** End of e-signature details *****

Tran Nbr: 27981 Order: 027981*

Trans Type: ISS-TR Revision: 0

Date: 09/29/10 Item Number: 90099

Time: 15:37 Description: Expendable Containers

Effective Date: 09/29/10 Unit of Measure: EA

Remarks: Address:

User ID: qmi Name:

Program: vclotr02.p SO/Job:

Currency: USD Ship Type:

Qty Change: -1,000.0 Price: 2.50

Shipper Number: IMC:

Ship Date:

Inventory Data

Site: 10-200 Begin Balance: 17,550.0

Location: 020 Quantity Change: -1,000.0

Lot/Serial: Qty Short: 0.0

Inv Status: Y-Y-Y Begin Loc Bal: 17,550.0

Supplier Lot: Loc Qty Change: -1,000.0

Grade/Assay: Expire Date:

Reference: Batch:

Material: 2.50 Overhead: 0.00

Labor: 0.00 Subcontract: 0.00

Burden: 0.00 Cost Total: 2.50

ISS-TR

Debit Acct: 1670 Mech

Cr Account: 1500 Mech

Amount: 2,500.00

GL Reference: 2010/SYS-08000000194

Qty Change = - 1000 (issuing)

ISS - TR

DR 1670 (Transfer Clearing) 2,500.00
(1,000 x 2.50)

CR 1500 (Inventory) 2500.00

PC-WO-200

Example Transfer 1,000 expendable containers item 9099 from site 10-200, where the GL standard cost of the item is 2.50, to site 10-100 where the item has a GL standard cost of 1.00.

Note Location transfers within a site have no GL effect as there can be only one GL cost at a site.

The Transactions Detail Inquiry (3.21.1) shows the accounts affected by the inventory transfer.

There is only one GL transaction at the Issuing site.

- The components are issued from Inventory (credit Inventory 1500) at the standard GL cost of the 2,500.00, and rather than putting them directly into inventory at the receiving site, the system debits then 2,500.00, to the transfer clearing account (1670).

Intersite Transfer: Transactions Detail (Receiving Site)

Inter Site Transfer – Transactions Detail (Receiving Site)

Site

Transactions Detail Inquiry 09/29/10

Transaction: 27982 Display E-Signature Details: Yes Output: PAGE

Event ID E-Signature Details Category Date Time Cur

User ID User Name Signature meaning

201009290001968889 InvTran 09/29/10 15:37:16 PST yes

qm QMI User TF Authorized Inv Transfer

Remarks:

===== End of e-signature details =====

Tran Nbr: 27982 Order: 027981*

Trans Type: RCT-TR Revision: 0

Date: 09/29/10 Item Number: 90099

Time: 15:37 Description: Expendable Containers

Effective Date: 09/29/10 Unit of Measure: EA

Remarks: Address:

User ID: qm Name:

Program: iclotr02.p 50/Job:

Currency: USD Ship Type:

Qty Change: 1,000.0 Price: 1.00

Shipper Number: IMC:

Ship Date:

Inventory Data

Begin Balance: 200.0

Quantity Change: 1,000.0

Qty Short: 0.0

Begin Loc Bal: 200.0

Loc Qty Change: 1,000.0

Expire Date: Batch:

Cost Data

Material: 1.00 Overhead: 0.00

Labor: 0.00 Subcontract: 0.00

Burden: 0.00 Cost Total: 1.00

Debit Acct: 6820 MECH CST-TR

Cr Account: 1670 Mech

Amount: 2,500.00

GL Reference: 2010/SYS-08000000195

Reference ID: IC100929000011

Debit Acct: 1500 Mech RCT-TR

Cr Account: 6820 MECH

Amount: 1,000.00

GL Reference: 2010/SYS-08000000196

Reference ID: IC100929000012

Qty Change = 1,000
(Receiving)

CST - TR

DR 6820 (TRV)

2,500.00

(1,000 × 2.50)

CR 1670

(Transfer Clearing)

RCT - TR

DR 1500 (Inventory)

1,000.00

1,000 × 1.00

CR 6820 (TRV)

PC-WO-210

Next, the items are transferred to the books at the receiving site. Because inventory transactions generate “matched pairs” of transactions, the following two transactions will be generated even if costs at the respective sites are identical.

- The intersite transfer is recorded (credit transfer clearing, 1670, 2500.00). Because we do not know yet if the costs are the same, the entire standard GL cost at the sending site is booked to Transfer Variance Account (debit Transfer variance 6820, 2500.00).
- The same items are put into inventory at the receiving site at the standard GL cost at that site. (debit inventory, 1500, 1,000.00) The offsetting entry is to Transfer Variance (credit 6820, 1,000). When the GL standard costs are different, the difference ends up in this account.
- In this example, the total value of inventory is revalued downwards, thus generating a debit (unfavorable) variance

This transaction points out the disadvantage of moving inventory from a high cost site to a low cost site. Any variance accrues to the receiving site.

Intersite Work Order Issue

Inter Site Work Order Issue

Work Order Component Issue X

Go To Actions Copy Print Preview Attach

Work Order: 1001 ID: 2287249 Item: 60012

Work Order: 1001 ID: 2287249 Op: Effective: 9/30/2010
 Item Number: 50010 W/O Stat: R Issue Alloc: ☐
 Acoustic Transducer Issue Picked: ☒
 Document:

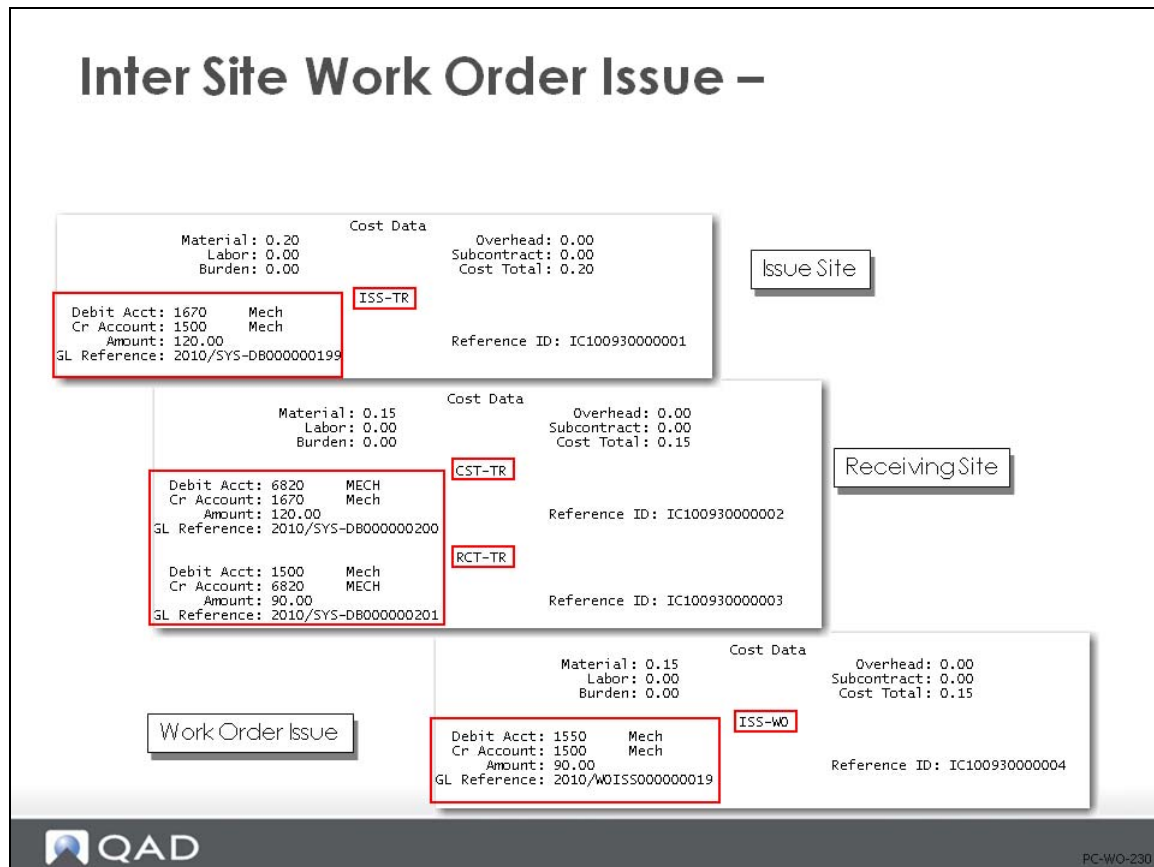
Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss	Qty B/O
50011	100.0	100.0	0.0	0.0	100.0
60012	600.0	600.0	0.0	0.0	600.0
90099	0.0	0.0	0.0	0.0	0.0

Item Number: 60012 Op: Site: 10-200 Loc: 020
 Description: Electrodes Lot/Serial: 456
 Quantity: 600.0 UM: EA Reference:
 Substitute: ☐ Cancel B/O: ☐ Multi Entry: ☐
 Document:



PC-WO-220

Intersite Work Order Issue - Transfer With Variance



It is possible to issue items to a work order from a non standard site. In the graphic the work order for 100 of the 50010 acoustic transducer requires 600 of the 60012 electrode. The work order is released at site 10-100 and all components are expected to be issued from site 10-100. However a shortage is discovered and inquiry reveals the required items at site 10-200, which site agrees to supply the electrodes. The site 10-100 cost of the electrode is 0.15 and the cost at site 10-200 is 0.20. In this case the system atomically generates several inventory transactions.

As seen in the previous example the system generates the material issue from the supply site the material receipt at the demand site and then the work order issue. The detail of the transactions are shown on the next graphic.

In the issue step, the 60012's are credited to inventory (1500) at the GL cost of site 10-200, 120.00 and debited to transfer clearing 1670.

Then received at site 10-100 with a debit to transfer variance (5820) of the 120.00 and a credit to transfer clearing (1670). Then a debit to inventory (1500) at the site 10-100 cost of 90.00 and a credit to transfer variance (6820).

The items are then issued to work in process with a debit to WIP (1550) at the site 10-100 GL cost of 90.00 and a credit to inventory (1500).

This leaves a balance of $120 - 90 = 30$ in the transfer variance account which accrues to the receiving site. As it is a positive number it is unfavorable.

Intersite Transfers and Multi-Site Component Issues: GL Effect

Multi-Site Component Issues – GL Effect

<u>Intersite Transfer - Supply Site</u>		<u>GL Trans Type</u>
DR Intercompany (if different entities)	or	IC
DR Transfer Clearing (if same entity)		
CR Inventory		
<u>Intersite Transfer - Receiving Site</u>		
DR Material Rate Variance (if different entities)		IC
If variances exist	CR Intercompany or	
	DR Transfer Var (if same entity)	
	CR Transfer Clearing	
	DR Inventory	
	CR Material Rate Variance (if different entities) or	
	CR Transfer Var (if same entity)	
	DR Inventory (when no var in cost exists between sites/entities)	
	CR Intercompany (if different entities) or	
	CR Transfer Clearing (if same entity)	
<u>Issue to Work Order - Receiving Site</u>		
DR WIP		IC
CR Inventory		



PC-WO-240

Exercise 5: Material Variances

In this exercise you will look at the sources of material variances and how they are calculated.

- 1 Create a work order for 1, 01020 Implantable Ultrasound, at site 10-100; set the status to R.
- 2 Change the GL standard cost of the 6009 Probe Housing from 30.00 to 25.00.
- 3 Issue the components. For item 90093, Shipping Carton issue 2 instead of 1.
- 4 Review the ISS-WO transactions for this order. Why is there no material usage variance for the 90093? Material usage variance is not calculated until work order accounting close.
- 5 Review the work order cost report. Are there any variances reported? Why? There is an accrued material rate variance of -5.00 for the 60009 because the standard was changed after the work order bill of material was created at work order release.
- 6 Receive the work order. Run work order accounting close, and review the work order cost report. Remember to check Close on your work order receipt. Accounting close will only run against Closed work orders. Can you explain the variances?

Work Order Cost Report								
10USA								
10/01/10								
QAD Work Order: 1001 ID: 2287246 Batch: Item Number: 01020 Sales/Job: Qty Ordered: 1.0 Implantable Ultrasound Supplier: Quantity Completed: 1.0 WO Stat: C Qty Rejected: 0.0 Order Date: 10/01/10 STD Release Date: 10/01/10 Due Date: 10/04/10								
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50010	1.0	103.00	0.00	103.00	0.00	0.00	0.00	103.00
60009	1.0	30.00	-5.00	25.00	-5.00	0.00	0.00	30.00
60051	1.0	300.00	0.00	300.00	0.00	0.00	0.00	300.00
90093	2.0	1.00	1.00	2.00	0.00	1.00	0.00	1.00
Material Total:		434.00	-4.00	430.00	-5.00	1.00	0.00	434.00
Operation: 10	1.0	75.00	0.00	75.00	0.00	0.00	0.00	75.00
Operation: 20	1.0	75.00	0.00	75.00	0.00	0.00	0.00	75.00
Operation: 30	1.0	25.00	0.00	25.00	0.00	0.00	0.00	25.00
Labor Total:		175.00	0.00	175.00	0.00	0.00	0.00	175.00
Operation: 10	1.0	10.50	0.00	10.50	0.00	0.00	0.00	10.50
Operation: 20	1.0	10.50	0.00	10.50	0.00	0.00	0.00	10.50
Operation: 30	1.0	3.50	0.00	3.50	0.00	0.00	0.00	3.50
Burden Total:		24.50	0.00	24.50	0.00	0.00	0.00	24.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 30	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00
WO Subtotal:		633.50	-4.00	629.50	-5.00	1.00	0.00	633.50
- Std Cost Rcvd:								-633.50
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								0.00

$$\text{Rate Var.} = (\text{actual cost} - \text{std. cost}) * \text{qty issued} (25.00 - 30.00) * 1 = -5.00$$

$$\text{Usage Var.} = [(\text{act. qty.} - \text{std qty} + \text{qty. reject}) * \text{qty. per.}] * \text{GL cost} = (2-1) * 1.00 = 1.00$$

The rate variance was created at ISS-WO, the usage variance at WO-CLOSE.

- 7 Change the GL cost of the 60009 back to 30.00, verify the current cost is still 30.00.

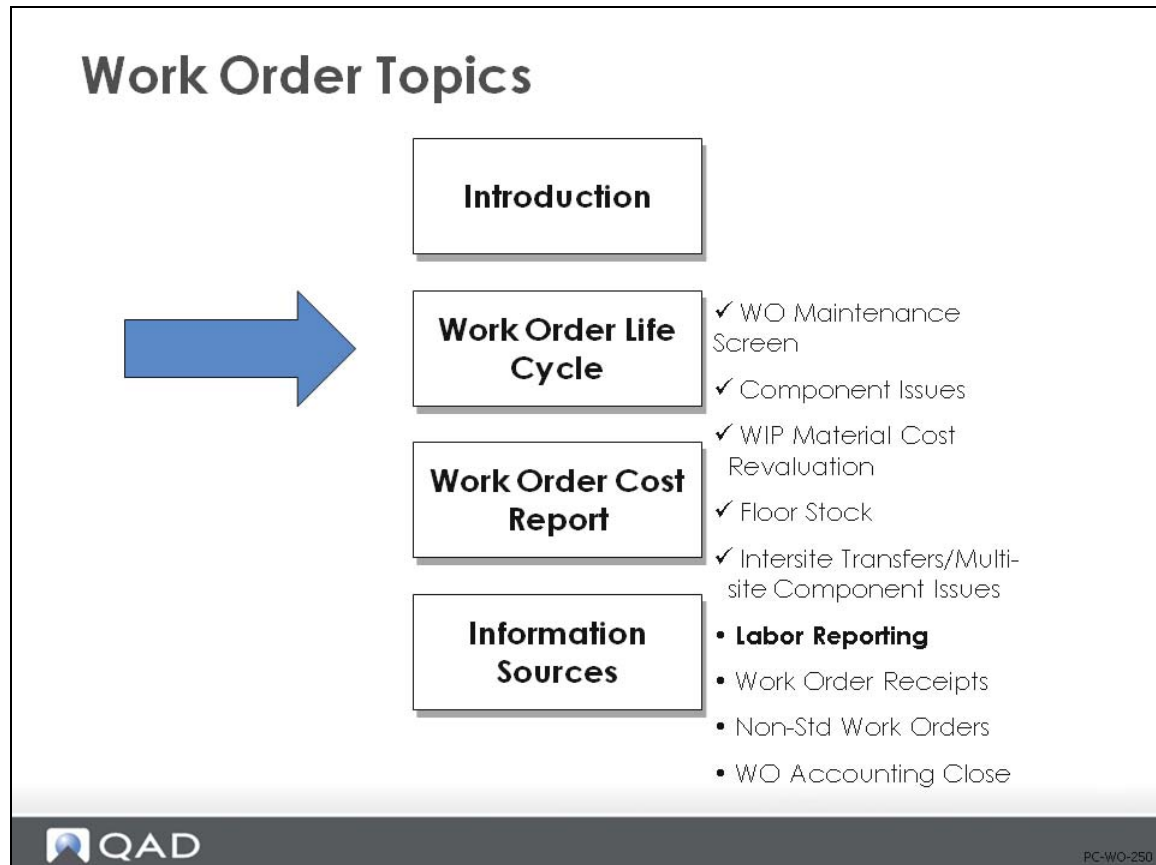
Exercise 6: Material Variances Multi-Site Issue

Another site in the company has gotten a discount by buying Probe Housings, 60009 in large quantity. They have agreed to let us use some.

- 1 Use Issues Unplanned (3.9) to receive 50 of the 60009 Probe Housings into site 10-200 location 020. You will need to change the default site code.
- 2 Use Item Site Cost Maintenance (1.4.18) to set both the GL and current cost of the 60009 at site 10-200 to 25.00.
- 3 Create and release an order for 1 of the 01020 at site 10-100. Issue the components changing the site from which the 60009 is issued to 10-200.
- 4 Receive the work order and close it, and run work order accounting close. Review the work order cost report. What does it report? The work order cost report indicates that everything happened exactly at standard. This is because all transactions were booked at site 10-100 GL costs.

However if you look at Transaction Detail (3.21.1) you will find on the RCT-TR (receipt from transfer) a debit to transfer variance (6820) of 25.00 and a credit of 30.00, leaving a 5.00 credit balance in transfer variance (-5.00) or favorable. Remember any variance on a transfer accrues to the receiving site. The logic here is that from the viewpoint of site 10-100 they received an item worth 30.00 for only 25.00. It is important to keep in mind these are just inventory transactions and have nothing to do with currency changing hands.

Labor Reporting



Labor Feedback by Work Order

Labor Feedback by Work Order

Work Order: 1003 ID: 2287250 Employee: 10-EMP01

Operation: 10 ASSEMBLE ULTRASOUND Op Status:

Document: Alex Erikson Pay Code:

Department: 0400 Work Center: 1000 Time In: Hours Minutes

Shift: Machine: Project:

Quantity Completed: 1.0 Effective Date: 10/4/2010

Rejects: ☐ Operation Complete: ☒

Rework: ☐ Move to Next Operation: ☒

Start Setup: 00:00:00 Previous Ops Complete: ☒

Elapsed/Stop Setup: 00:00:00 Elapsed Setup: 0.000

Start Run: 00:00:00 Elapsed Run: 0.000

Elapsed/Stop Run: 01:00:00

Comment:

Down Time: 00:00:00 Down Time Reason:

QAD PC-WO-260

If set to Yes, previous operations are automatically flagged as complete

- If no labor is reported for these operations, then the standard set-up and run times are reported to WIP

There are three ways to handle labor accrual:

- 1 Report actual setup and run times
- 2 Accept standard setup and report actual run time
- 3 Accept standard setup and run times

This section examines the first scenario - the effects of reporting actual setup and run times. Later, by completing the exercises that are associated with this section, you will see both the effects of accepting standard setup and run times, and reporting actual setup and run times.

Reporting Actual Setup and Run Times

Labor feedback transactions report the quantity completed and the actual labor time spent on a particular work order and operation.

- All labor feedback transactions must specify a work order, operation, employee, and work center
- Each can specify setup, run, and down time

Down time (or non-productive labor) is not related to a work order and has no effect on WIP or variances. It is posted as a miscellaneous Cost of Production, which attracts burden absorption.

In Labor Feedback Work Order (16.20.1), Labor Feedback Employee (16.20.2), Labor Feedback Work Center (16.20.3), and Operation Complete Transaction (16.20.5), you can flag previous operations as complete (see figure on preceding page).

Example You have five operation steps, but only report operations three and five. When you report these operations, the previous operations are automatically flagged as complete. If no labor has been reported for these operations, the standard setup and run times are posted to WIP.

Standard run time is determined based on the quantity completed at the reported operation (that is, if you report 100 complete at operation three, the system assumes that 100 units went through operations one and two).

Variances occur whenever actual rate or time does not match the standard.

Labor and Burden Absorption

Labor and Burden Absorption

- If there is no labor reporting, then calculated at standard during WO Accounting Close (16.21)
- If there is labor reporting, then calculated at (SFC) Shop Floor Control (16.20.1) through (16.20.3) labor transactions
- Variances are calculated when labor reported, or at Work Order Receipt, depending on setting in Work Order Accounting Control File (36.9.11) (Post Variances at SFC flag)



PC-WO-270

The timing for labor and burden absorption is based on whether you report labor.

No Labor Reporting

If you do not report labor, then no absorption will occur until the work order is closed and the Work Order Accounting Close (16.21) is performed.

With Labor Reporting

If you do report labor, then absorption will occur at the time labor is reported for each operation. This is independent of the amount received on the work order.

If you have the Post Variances at SFC field set to Yes on the work order, at the same time the absorption occurs, any variances calculated will be posted. Otherwise, the variances are not calculated and posted until Work Order Receipt (16.11) or Work Order Receipt Backflush (16.12).

Labor Calculations

Labor Calculations

Operations Accounting Report
 10USA

10/04/10

Eff Date	Tran Nbr	Work Order	WO ID Op	GL Reference Reference ID	DR Acct CR Acct	Sub-Acct Sub-Acct	CC CC	Amount
10/04/10	50010	2287268	10	2010/SYS-DB000000245	1550	Mech		5.00
	2585	1016		W0101004000057 LBR-1000: Labor Setup	5120	Mech	mfg	5.00
				2010/SYS-DB000000246	1550	Mech		5.00
				W0101004000058 LBR-2000: Labor	5120	Mech	mfg	1.50
				2010/SYS-DB000000247	1550	Mech		1.50
				W0101004000059 BDN-1000: Burden Setup	5220	Mech	mfg	1.50
				2010/SYS-DB000000248	1550	Mech		1.50
				W0101004000060 BDN-2000: Burden	5220	Mech	mfg	1.50

Labor = Actual Hrs x Actual Rate

Labor (Set-up)

- 1 hr set-up x 5 = 5.00
- DR 1550 (WIP)
- CR 5120 (Labor Absorbed)

Labor (Run)

- 1 hr run x 5.00 = 5.00
- DR 1550 (WIP)
- CR 5120 (Labor Absorbed)

PC-WO-280

Setup and run times are treated the same, but if reported at the same time, the system creates two sets of entries: one for setup and one for run time.

The actual amount of labor is posted to WIP (debit) and Labor Absorption (credit), and is calculated as:

$$\text{Actual Hrs} * \text{Actual Rate}$$

If employee pay rates are not loaded into the system, the standard rate at the work center where work was reported is used.

Example An employee spends 1 hour setup time and 1 hour run time at a pay rate of \$5.00 per hour. The results and calculations are shown in the figure above. Labor Burden transactions at 10% are also shown.

Labor Rate Variance

Labor Rate Variance Calculations									
Operations Accounting Report									
10USA									
Eff Date	Tran	Nbr	Work Order	WO ID Op	GL Reference Reference ID	DR Acct CR Acct	Sub-Acct Sub-Acct	CC CC	Amount
10/04/10	2588	1019		10	2010/SYS-DB000000249	1550	Mech		7.50
					W0101004000061 LBR-1000: Labor Setup	5120	Mech	mfg	
					2010/SYS-DB000000250	5150	Mech	mfg	2.50
					W0101004000062 LBR-1001: Labor Rate Var	1550	Mech		
					2010/SYS-DB000000251	1550	Mech		7.50
					W0101004000063 LBR-2000: Labor	5120	Mech	mfg	
					2010/SYS-DB000000252	5150	Mech	mfg	2.50
					W0101004000064 LBR-2001: Labor Rate Var	1550	Mech		
					2010/SYS-DB000000253	1550	Mech		1.75
					W0101004000065 BDN-1000: Burden Setup	5220	Mech	mfg	
					2010/SYS-DB000000254	5250	Mech	mfg	0.25
					W0101004000066 BDN-1001: Burden Rate Va	1550	Mech		
					2010/SYS-DB000000255	1550	Mech		1.75
					W0101004000067 BDN-2000: Burden	5220	Mech	mfg	
					2010/SYS-DB000000256	5250	Mech	mfg	0.25
					W0101004000068 BDN-2001: Burden Rate Va	1550	Mech		

$$\text{Labor Rate Var} =$$

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

$$[(\text{Act Run Rate} - \text{Std Run Rate}) \times \text{Act Run Hrs}]$$

Labor Rate Variances are posted if the employee pay rate does not match the standard pay rate at the work center where the work was reported.

Calculations

Labor Rate Variance is calculated at the time shop floor labor feedback is reported (only if actual employee pay rates are entered) as:

$$[(\text{Act Setup Rate} - \text{Std Setup Rate}) * \text{Act Setup Hrs}] + [(\text{Act Run Rate} - \text{Std Run Rate}) * \text{Act Run Hrs}]$$

- Actual Pay Rate Maintenance is updated using (14.13.21).
- When variance posting occurs, a positive (unfavorable) or negative (favorable) variance is debited to the Labor Rate Variance account and credited to WIP

The Labor Rate Variance is normally posted at the same time that labor is posted. However, if Post Variances at SFC field in Work Order Accounting Control or Work Order Maintenance is No, variance posting will be delayed until Work Order Receipt (16.11) or Work Order Receipt Backflush (16.12).

Example Because the employee's pay rate of 7.50 per hour is different than the standard pay rate of 5.00 per hour, there is a labor rate variance, as shown in the figure above. The corresponding burden calculates are also shown.

Labor Usage Variance

Labor Usage Variance Calculations



10/04/10

Operations Accounting Report 10USA

Eff Date	Tran Nbr	Work Order	WO ID Op	GL Reference Reference ID	DR Acct CR Acct	Sub-Acct Sub-Acct	CC CC	Amount
10/04/10	2591	1020	10	2010/SYS-DB000000257	1550	Mech		7.50
				2010/SYS-DB000000258	5120	Mech	mfg	2.50
				2010/SYS-DB000000259	5140	Mech	mfg	2.50
				2010/SYS-DB000000260	1550	Mech		5.00
				2010/SYS-DB000000261	5120	Mech	mfg	2.25
				2010/SYS-DB000000262	5220	Mech	mfg	0.75
				2010/SYS-DB000000263	5240	Mech	mfg	1.50

Labor Usage Variance

- $[(1.5 - 1) \times 5.00] + [(1 - 1) \times 5.00] = 2.5 (U)$
- DR 5140 (Labor Usage Variance)
- CR 1550 (WIP)

Labor Usage Variance = $[(\text{Actual Set-up Hrs} - \text{Std Set-up Hrs}) \times \text{Std Set-Up Rate}] +$
 $[(\text{Actual Run Hrs} - \text{Std Run Hrs}) \times \text{Std Labor Rate}]$
 $* \text{Std Hrs} = \text{Run Hrs/Unit} \times (\text{Qty Completed} + \text{Qty Rejected})$


PC-WO-300

Labor Usage Variances are posted when actual setup and/or run time differ from the time it should have taken to set up and/or make the number of units reported as complete (referred to as earned hours).

Calculations

Labor Usage Variance is calculated at the time shop floor feedback is reported as:

$$[(\text{Act Setup Hrs} - \text{Std Setup Hrs}) * \text{Std Setup Rate}] + [(\text{Act Run Hrs} - \text{Std Run Hrs}) * \text{Std Run Rate}]$$

Where:

$$\text{Std Run Hrs} = \text{Run Hrs/Unit} * (\text{Qty Completed} + \text{Qty Rejected})$$

When variance reporting occurs, a positive (unfavorable) or negative (favorable) variance is debited to the Labor Usage Variance account and credited to WIP

The Labor Usage Variance is normally posted at the same time that labor is posted. However, if Post Variances at SFC field in Work Order Accounting Control or Work Order Maintenance is No, variance posting will be delayed until Work Order Receipt (16.11) or Work Order Receipt Backflush (16.12).

Example The employee earns the standard rate but has reported 1.5 hours for the setup operation. The standard is one hour so a labor usage variance is created, as shown above. The runtime transaction is reported at standard, so no variance is posted.

Note For operations that span reporting shifts (or days), hold off reporting variances until work order receipt. Set Post Variances at SFC to No in Work Order Maintenance (16.1) or Work Order Accounting Control (36.9.11).

When labor is reported with no completed units, no labor was earned. The total amount not attributable to setup is flagged as unfavorable variance. The setup portion only posts the true variance amount and is unaffected by units. The unfavorable variance is offset later by a favorable variance when completed items are reported. In an operation that takes 12 hours to finish, shift one reports 8 hours and zero complete. All 8 hours is unfavorable variance. Shift two works 4 hours and completes 100 units. It should have taken 12 hours, so shift 2 shows an 8 hours favorable variance.

Labor Reporting: GL Effect (Default GL Entry)

Labor Reporting – GL Effect	
<u>Set-up and Run Time</u>	<u>GL Trans Type</u>
DR WIP	WO
CR Labor Absorbed	
* DR Labor Rate Variance	WO
CR WIP	
* DR Labor Usage Variance	WO
CR WIP	
* Positive amount = unfavorable variance; Negative amount = favorable variance	
The credit and variance accounts are derived from the Dept. record of the work center being processed	
• Post Variances at SFC set in Work Order Accounting Control (36.9.11)	

- Debits WIP
- Credits Labor Absorbed. The credit account is derived from the Department record of the work center being processed

Upon shop floor reporting, labor usage and rate variances are calculated (see following note). If the variance amount is positive, then it is an unfavorable variance; if the amount is negative, then it is a favorable variance. The variance accounts are derived from the Department record (Department Maintenance (14.1)).

Note The Labor Usage and Rate variances are normally posted at the same time that labor is posted. However, if Post Variances at SFC field in Work Order Accounting Control or Work Order Maintenance is No, variance posting will be delayed until Work Order Receipt (16.11) or Work Order Receipt Backflush (16.12).

Burden Calculations

Burden Calculations



Operations Accounting Report
10USA

10/04/10

Eff Date	Tran Nbr	Work Order	WO ID Op	GL Reference Reference ID	DR Acct CR Acct	Sub-Acct Sub-Acct	CC CC	Amount
10/04/10	2585	50010 1016	2287268 10	Acoustic Transducer	1550	Mech		5.00
				2010/SYS-DB000000245	5120	Mech	mfg	5.00
				WO101004000057 LBR-1000: Labor Setup	1550	Mech		5.00
				2010/SYS-DB000000246	5120	Mech	mfg	5.00
				WO101004000058 LBR-2000: Labor	1550	Mech		1.50
				2010/SYS-DB000000247	5220	Mech	mfg	1.50
				WO101004000059 BDN-1000: Burden Setup	1550	Mech		1.50
				2010/SYS-DB000000248	5220	Mech	mfg	1.50
				WO101004000060 BDN-2000: Burden				

$$\{ \text{Set-up Hrs/Qty} \times [\text{Lbr Bdn Rate} + (\text{Actual Set-up Rate} \times \text{Lbr Bdn } \%) + (\text{Mach/Op} \times \text{Mach Bdn Rate})] \} +$$

$$\{ \text{Run Hrs/Unit} \times [\text{Lbr Bdn Rate} + (\text{Actual Lbr Rate} \times \text{Lbr Bdn } \%) + \text{Mach Bdn Rate}] \} = \text{Bdn/Unit}$$

$$\text{Qty Completed} \times \text{Burden per Unit} = \text{Burden Absorbed Dollars}$$


PC-WO-320

Burden is the variable overhead associated with production operations, and the Burden account is used to accumulate accrued burden for a department. Each operation can have labor burden and/or machine burden depending on how variable overhead is applied. Machine burden is applied as a machine hour rate; however, labor burden can be applied either as a labor burden rate and/or as a percentage of direct labor cost.

Example Continuing with the example given earlier, the burden associated with the employee's one hour of setup and one hour of run time is shown in the figure above. Labor Burden is 10% of the Labor Rate. The machine burden rate for this work center is 1.00/hour, or 1.50 for the setup and the run time.

Note The setup burden and run burden are kept separate, as in many cases the rates will be very different.

Burden Rate Variance

Burden Rate Variance Calculations									
Operations Accounting Report									
10USA									
Eff Date	Tran	Nbr	Work Order	WO ID	GL Reference	DR Acct	Sub-Acct	CC	Amount
				Op	Reference ID	CR Acct	Sub-Acct	CC	
10/04/10	2588	50010	1019	2287271	Acoustic Transducer				
				10	2010/SYS-DB000000249	1550	Mech		7.50
					W0101004000061 LBR-1000: Labor Setup	5120	Mech	mfg	
					2010/SYS-DB000000250	5150	Mech		2.50
					W0101004000062 LBR-1001: Labor Rate Var	1550	Mech	mfg	
					2010/SYS-DB000000251	1550	Mech		7.50
					W0101004000063 LBR-2000: Labor	5120	Mech	mfg	
					2010/SYS-DB000000252	5150	Mech	mfg	2.50
					W0101004000064 LBR-2001: Labor Rate Var	1550	Mech		
					2010/SYS-DB000000253	1550	Mech		1.75
					W0101004000065 BDN-1000: Burden Setup	5220	Mech	mfg	
					2010/SYS-DB000000254	5250	Mech	mfg	0.25
					W0101004000066 BDN-1001: Burden Rate Va	1550	Mech		
					2010/SYS-DB000000255	1550	Mech		1.75
					W0101004000067 BDN-2000: Burden	5220	Mech	mfg	
					2010/SYS-DB000000256	5250	Mech	mfg	0.25
					W0101004000068 BDN-2001: Burden Rate Va	1550	Mech		

Burden Rate Variances are posted only if burden is calculated as a percentage of labor cost and the employee pay rate is different than the work center standard.

Calculations

It is calculated at the time shop floor feedback is reported as:

$$[(Act\ Setup\ Bdn - Std\ Setup\ Bdn) * Act\ Setup\ Hrs] + [(Act\ Run\ Bdn - Std\ Run\ Bdn) * Act\ Run\ Hrs]$$

Where:

$$Act\ Setup\ Bdn = (Act\ Setup\ Rate * Lbr\ Bdn\%) + Lbr\ Bdn\ Rate + (Mach\ Bdn\ Rate * Mach/Op)$$

$$Std\ Setup\ Bdn = (Std\ Setup\ Rate * Lbr\ Bdn\%) + Lbr\ Bdn\ Rate + (Mach\ Bdn\ Rate * Mach/Op)$$

$$Act\ Run\ Bdn = (Act\ Run\ Rate * Lbr\ Bdn\%) + Lbr\ Bdn\ Rate + Mach\ Bdn\ Rate$$

$$Std\ Run\ Bdn = (Std\ Run\ Rate * Lbr\ Bdn\%) + Lbr\ Bdn\ Rate + Mach\ Bdn\ Rate$$

Note The Burden Rate Variance is normally posted at the same time that labor is posted. However, if Post Variances at SFC field in Work Order Accounting Control or Work Order Maintenance is No, variance posting will be delayed until Work Order Receipt (16.11) or Work Order Receipt Backflush (16.12).

Example Because the employee's pay rate of 7.50 per hour is different than the work center standard of 5.00 per hour, a burden rate variance is created, as shown in the figure above.

Burden Usage Variance

Burden Usage Variance Calculations									
Operations Accounting Report									
10USA									
Eff Date	Tran Nbr	Work Order	WQ ID Op	GL Reference Reference ID	DR Acct CR Acct	Sub-Acct Sub-Acct	CC CC	Amount	
10/04/10	2591	50011 1020	2287272 10	2010/SYS-DB000000257	1550	Mech		7.50	
				W0101004000069 LBR-1000: Labor Setup	5120	Mech	mfg		
				2010/SYS-DB000000258	5140	Mech	mfg	2.50	
				W0101004000070 LBR-1002: Labor Usage Va	1550	Mech			
				2010/SYS-DB000000259	1550	Mech		5.00	
				W0101004000071 LBR-2000: Labor	5120	Mech	mfg		
				2010/SYS-DB000000260	1550	Mech		2.25	
				W0101004000072 BDN-1000: Burden Setup	5220	Mech	mfg		
				2010/SYS-DB000000261	5240	Mech	mfg	0.75	
				W0101004000073 BDN-1002: Burden Usage V	1550	Mech			
				2010/SYS-DB000000262	1550	Mech		1.50	
				W0101004000074 BDN-2000: Burden	5220	Mech	mfg		

Burden Usage Variance (Run)

- $(1 - 0.5) \times [(10 \times 200\%) + 0 + (10 \times 1)] = 15 \text{ (U)}$
- DR 6470 (Burden Usage Variance)
- CR 1600 (WIP)

Burden usage variance results if the actual hours do not match the standard hours required on the routing. The extra burden on those hours is a burden usage variance. This variance applies to burden calculated by any of the three allocation methods - burden rate, burden percentage, or machine hours.

Calculations

Burden Usage Variance is calculated at the time shop floor feedback is reported as:

$$[(\text{Act Setup Hrs} - \text{Std Setup Hrs}) * \text{Setup Bdn}] + [(\text{Act Run Hrs} - \text{Std Run Hrs}) * \text{Run Bdn}]$$

Where:

$$\text{Setup Bdn} = (\text{Std Setup Rate} * \text{Lbr Bdn\%}) + \text{Lbr Bdn Rate} + (\text{Mach Bdn Rate} * \text{Mach/Op})$$

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

The Burden Usage Variance is normally posted at the same time that labor is posted. However, if Post Variances at SFC field in Work Order Accounting Control or Work Order Maintenance is No, variance posting will be delayed until Work Order Receipt (16.11) or Work Order Receipt Backflush (16.12).

Example From the earlier example because the employee's actual run time (1.5 hour) does not match standard run time (1.0 hour), a burden usage variance is created, as shown in figure above as well as the labor usage variance. Anytime there is a labor variance there will be a burden variance.

Burden: GL Effect

<u>Burden Absorption</u>	<u>GL Trans Type</u>
DR WIP	WO
CR Burden Absorbed	
* DR Burden Rate Variance	WO
CR WIP	
* DR Burden Usage Variance	WO
CR WIP	
* Positive amounts = unfavorable variance; * Negative amounts = favorable variance	
The credit account is derived from the Dept. record of the work center being processed	
As with labor rate variances, burden rate variance is not calculated unless actual pay rate is set up in (14.13.21)	

The default general ledger entry:

- Debits WIP
- Credits Burden Absorbed

The credit account is derived from the Department record of the work center being processed

Upon shop floor reporting, burden usage and rate variances are calculated (see following note). If the variance amount is positive, then it is an unfavorable variance; if the amount is negative, then it is a favorable variance.

Note The Burden Usage and Rate variances are normally posted at the same time that labor is posted. However, if Post Variances at SFC field is No in Work Order Accounting Control or Work Order Maintenance, variance posting will be delayed until Work Order Receipt (16.11) or Work Receipt Backflush (16.12).

Labor Rate Variances: Summary

Labor Rate Variances

Manufacturing-Related Variances

<u>Variance</u>	<u>When Calculated</u>	<u>Cause</u>
Labor Rate	SFC feedback (16.20.1), (16.20.2), (16.20.3) • Can be deferred until WO Receipt (16.11)/(16.12) based on WO Accounting Control setting • Labor and burden rate variances calculated only if actual pay rates have been set up in (14.13.21)	Difference between actual employee pay rate and WC pay rate standard • View employee pay rate in Actual Pay Rate Maint (14.13.21) or Employee Maint (29.15.1); view WC rate in WC Maint (14.5)
<i>Formula</i>	$\{(\text{Act Set-Up Rate} - \text{Std Set-Up Rate}) \times \text{Act Set-Up Hrs}\} + \{(\text{Act Run Rate} - \text{Std Run Rate}) \times \text{Act Run Hrs}\}$	
<i>View in Report</i>	Work Order Cost Report (16.3.4)	



PC-WO-360

Labor Burden Rate Variances

Manufacturing-Related Variances

<u>Variance</u>	<u>When Calculated</u>	<u>Cause</u>
Labor Burden Rate	SFC feedback (16.20.1), (16.20.2), (16.20.3) • Can be deferred until WO Receipt (16.11)/(16.12), based on WO Accounting Control setting	Equivalent to labor rate variance with burden rates factored in; calculated if burden rate has also been calculated as a % of lbr cost
<i>Formula</i>	$\frac{[(Act Set-Up Bdn - Std Set-Up Bdn) \times Act Set-Up Hrs] + [(Act Run Bdn - Std Run Bdn) \times Act Run Hrs]}{Act Set-Up Hrs + Act Run Hrs}$ Where: $Act Set-Up Bdn = (Act Set-Up Rate \times Lbr Bdn\%) + Lbr Bdn Rate + (Mach Bdn Rate \times Mach/Op)$ $Std Set-Up Bdn = (Std Set-Up Rate \times Lbr Bdn\%) + Lbr Bdn Rate + (Mach Bdn Rate \times Mach/Op)$ $Act Run Bdn = (Act Run Rate \times Lbr Bdn\%) + Lbr Bdn Rate + Mach Bdn Rate$ $Std Run Bdn = (Std Run Rate \times Lbr Bdn\%) + Lbr Bdn Rate + Mach Bdn$	
<i>View in Report</i>	Work Order Cost Report (16.3.4)	



PC-WO-370

Labor Usage Variances

Manufacturing-Related Variances

<u>Variance</u>	<u>When Calculated</u>	<u>Cause</u>
Labor Usage	SFC feedback (16.20.1, 16.20.2, 16.20.3) Can be deferred until WO Receipt (16.11)/(16.12), based on WO Accounting Control setting	Difference between actual lbr hrs reported and the std time that should have been required to complete the quantity received View both actual and earned hours in WO Routing Maintenance (16.13.13)
<i>Formula</i>	$[(Act Set-up Hrs - Std Set-up Hrs) \times Std Set-Up Rate] + [(Act Run Hrs - Std Run Hrs) \times Std Lbr Rate]$ $Std Run Hrs = Run Hrs / Unit \times (Qty Complete + Qty Reject)$	
<i>View in Report</i>	Work Order Cost Report (16.3.4)	



PC-WO-380

Labor Burden Usage Variances

Manufacturing-Related Variances

<u>Variance</u>	<u>When Calculated</u>	<u>Cause</u>
Labor Burden Usage	SFC feedback (16.20.1, 16.20.2, 16.20.3); or WO Receipt (16.11/12)	Equivalent to labor usage variance with burden rates factored in
<i>Formula</i>	$[(\text{Act Set-Up Hrs} - \text{Std Set-Up Hrs}) \times \text{Set-Up Bdn}] + [(\text{Act Run Hrs} - \text{Std Run Hrs}) \times \text{Std Run Bdn}]$ Where: $\text{Set-Up Bdn} = (\text{Std Set-Up Rate} \times \text{Lbr Bdn\%}) + \text{Lbr Bdn Rate} + (\text{Mach Bdn Rate} \times \text{Mach/Op})$ $\text{Run Bdn} = (\text{Std Run Rate} \times \text{Lbr Bdn\%}) + \text{Lbr Bdn Rate} + \text{Mach Bdn Rate}$	
<i>View in Report</i>	Work Order Cost Report (16.3.4)	



PC-WO-390

Exercise 7: Work Order Labor Transactions

In his exercise you will process a work order to see the affect of non-standard labor rates and non-standard labor usage. You will see both labor and burden variances calculated. You will see a subcontract variance and will learn how to read the work order cost report.

- 1 Use Item Planning Maintenance (1.4.7) for the 50010, set the order quantity to one (1). Verify the yield is 100%.
- 2 Review the route for the 50010 Acoustic Transducer use the Routing Cost Report (14.13.14) as this shows costs as well as operation times. This will verify your setup steps from an earlier exercise.



Routing Cost Report

10USA

09/30/10 16:30

Page 1

Work Ctr	Setup Time	Setup cost	Setup Rate	Labor	Lbr Bdn %	Lbr Bdn Rate	Lbr Burden	Total		
Machine	Order Qty	Unit Run	Labor Rate	Cost	Mch per Op	Mch Bdn Rate	Mch Burden	Burden	Subcontract	

Routing: 50010										
Op: 10	ASSEMBLE ULTRASOUND									
1000	1.0	5.00	5.00		10.00%	0.00	1.00			
	1.0	1.00	5.00	10.000	1	1.00	2.00	3.00		0.00
Op: 15	Subc Attach Elec/Plate									
2270	0.0	0.00	0.00		0.00%	0.00	0.00			
	1.0	0.00	0.00	00.000	1	0.00	0.00	0.00		1.00
Op: 20	TEST ACOUSTIC TRANSDUCER									
1040	0.0	0.00	5.00		10.00%	0.00	0.50			
	1.0	1.00	5.00	05.000	1	1.00	1.00	1.50		0.00
				15.000				4.50	1.00	
				-----				-----	-----	

You see that the setup time and run time for operation 10 are both one hour at a rate of 5.00/hour. Operation 15 is a subcontract operation with a cost of 1.00, and operation 20 has no setup and run time of 1 hour at a rate of 5.00/hour.

- 3 Use Product Structure Inquiry (13.6) to review the components; set the level option to one.

Product Structure Inquiry

09/30

Parent Item/BOM Code: 01020

Implantable Ultrasound

EA

As Of: 09/30/10 Levels:

Rev:

PCO Number:

ID:

Domain:

Output: PAGE

Level	Component Item	Description	Quantity	Per	UM	Ph	T	Iss
Parent	01020	Implantable Ultrasound				EA		
1	50010	Acoustic Transducer		1.0		EA		
.2	50011	Ultrasound Array		1.0		EA		
..3	60010	Pepared Layered Mat	233.42		G			
..3	60011	Oscillator Elements		4.0		EA		
.2	60012	Electrodes		1.0		EA		
.2	60012	Electrodes		1.0		EA		
.2	60012	Electrodes		1.0		EA		
.2	60012	Electrodes		1.0		EA		
.2	60012	Electrodes		1.0		EA		
.2	60012	Electrodes		1.0		EA		
1	60009	Probe Housing		1.0		EA		
1	60051	Microprocessor		1.0		EA		
1	90093	Shipping Carton		1.0		EA		

- 4 Use Product Structure Cost report to verify the total GL standard 14.5coat of the 50010 is 96.75.
- 5 Use Actual Pay Rate Maintenance (14.13.21) to verify employee 10-EMP02 has a rate of pay of 5.00.
- 6 Verify work center 1000, and 1040 each have machine burden rate of 1.00/hour, both setup and run labor of 5.00/hour and labor burden of 10% and no labor burden rate.
- 7 Create a work order for one 50010 at site 10-100, set its status at R. Use work order component check 16.5, you are probably short the 50011 Ultrasound Array. Use Receipts Unplanned (3.9) to receive 10 each of the 50011.

- 8 Issue the components to the work order, check issue allocated for easy one click issues.
Review the Work Order Cost Report (16.3.4); you should see only the material cost of 82.50.

Work Order Cost Report									
10USA									
10/06/10									
QAD Work Order: 1025 ID: 2287278 Batch:									
Item Number: 50010 Sales/Job: Qty Ordered: 1.0 Order Date: 10/06/10 STD									
Acoustic Transducer Supplier: Quantity Completed: 0.0 Release Date: 10/06/10									
WO Stat: R Qty Rejected: 0.0 Due Date: 10/14/10									
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance	
50011	1.0	0.00	0.00	76.50	0.00	0.00	0.00	76.50	
60012	6.0	0.00	0.00	6.00	0.00	0.00	0.00	6.00	
Material Total:		0.00	0.00	82.50	0.00	0.00	0.00	82.50	
Operation:	10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	
Operation:	15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	
Operation:	20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	
Labor Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation:	10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	
Operation:	15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	
Operation:	20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	
Burden Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation:	10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	
Operation:	15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	
Operation:	20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	
Subcontract Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WO Subtotal:		0.00	0.00	82.50	0.00	0.00	0.00	82.50	
- Std Cost Rcvd:								0.00	
- Scrapped:								0.00	
- Mthd Chg Var:								0.00	
Balance:								82.50	

- 9 Use Labor Feedback by Work Order (16.20.1) for your work order at operation 10, and employee 10-EMP02. For operation 10 report one unit complete, charge one hour setup and 1.5 hours run time. The box Move Next Operation, should default to checked, if not check it. This will move the work order to the subcontract operation.

Note The training system has the default time indicator set to hours and minutes. You can change it to decimal hours by changing the time indicator in Shop Floor Control (16.20.24).

Note Labor feedback has electronic signatures enabled. Use user ID qmi (or whatever you used to log onto the training database), and for Reason Code use active employee.

Review the work order cost report.

You see the expected cost, for labor and burden at operation 10 and the accrued usage variance for both as a result of charging an extra half hour run labor at the operation.

Work Order Cost Report									
10USA									
10/06/10									
 Work Order: 1025 ID: 2287278 Batch: Item Number: 50010 Sales/Job: Qty Ordered: 1.0 Acoustic Transducer Supplier: Quantity Completed: 0.0 WO Stat: R Qty Rejected: 0.0 Order Date: 10/06/10 STD Release Date: 10/06/10 Due Date: 10/14/10									
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance	
50011	1.0	0.00	0.00	76.50	0.00	0.00	0.00	76.50	
60012	6.0	0.00	0.00	6.00	0.00	0.00	0.00	6.00	
Material Total:		0.00	0.00	82.50	0.00	0.00	0.00	82.50	
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00	
Operation: 15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Labor Total:		10.00	2.50	12.50	0.00	2.50	0.00	10.00	
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00	
Operation: 15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Burden Total:		3.00	0.75	3.75	0.00	0.75	0.00	3.00	
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Subcontract Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WO Subtotal:		13.00	3.25	98.75	0.00	3.25	0.00	95.50	
- Std Cost Rcvd:								0.00	
- Scrapped:								0.00	
- Mthd Chg Var:								0.00	
Balance:								95.50	

Use Operation Transaction Detail Inquiry (16.20.13.9) to see how these labor charges have been booked.

		G/L Transactions				
GL Reference		DR	Acct	Sub-Acct	CC	Project
Reference ID	Amount	CR	Acct	Sub-Acct	CC	Project
2010/SYS-DB000000283	5.00		1550	Mech		
W0101006000001			5120	Mech	mfg	
2010/SYS-DB000000284	7.50		1550	Mech		
W0101006000002			5120	Mech	mfg	
2010/SYS-DB000000285	2.50		5140	Mech	mfg	
W0101006000003			1550	Mech		
2010/SYS-DB000000286	1.50		1550	Mech		
W0101006000004			5220	Mech	mfg	
2010/SYS-DB000000287	2.25		1550	Mech		
W0101006000005			5220	Mech	mfg	
2010/SYS-DB000000288	0.75		5240	Mech	mfg	
W0101006000006			1550	Mech		

Account 1550 is the WIP account 5120 is Labor absorbed, 5140 is labor usage variance and 5240 is burden usage variance.

- 10 Use Labor Feedback by Work Order (16.20.1) for your work order at operation 15, and employee 10-EMP02. For operation 15 report one unit complete, and charge no time; this is an outside process. The box Move Next Operation should default to checked; if not, check it. This will move the work order to operation 20.

- 11 Review the work order cost report. You should see the subcontract cost at operation 15 of 1.00 and a variance of -1.0. Because you do not have a PO and PO receipt to cover the vended operation the system thinks you got the operation for free. Note the standard cost of the operation has been added to the total.

Work Order Cost Report								
10USA								
10/06/10								
QAD Work Order: 1025 ID: 2287278 Batch:								
Item Number: 50010 Sales/Job: Qty Ordered: 1.0 Order Date: 10/06/10 STD								
Acoustic Transducer Supplier: Quantity Completed: 0.0 Release Date: 10/06/10								
WO Stat: R Qty Rejected: 0.0 Due Date: 10/14/10								
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	0.00	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	0.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		0.00	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Labor Total:		10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Burden Total:		3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
WO Subtotal:		14.00	2.25	98.75	0.00	2.25	0.00	96.50
- Std Cost Rcvd:								0.00
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								96.50

Use Operation Transaction Detail Inquiry (16.20.13.9) to see how these charges have been booked. Account 5440 is subcontract usage variance.

G/L Transactions				
GL Reference	DR Acct	Sub-Acct	CC	Project
Reference ID	Amount	CR Acct	Sub-Acct	CC
2010/SYS-DB000000289	1.00	1550	Mech	
WO101006000007		5440	Mech	

- 12 Employee 10-EMP02 has been given a pay increase. Use Actual Pay Rate Maintenance (14.13.21) to change the employees pay rate to 7.50.
- 13 Use Labor Feedback by Work Order (16.20.1) for your work order at operation 20, and employee 10-EMP02. For operation 20, report one unit complete, and charge one hour run time. The box Move Next Operation should default to unchecked as there are no more operations. If it is checked, uncheck it.

14 Review the work order cost report. You should see the labor and burden costs for operation 20.

Work Order Cost Report								
10USA								
10/06/10								
QAD Work Order: 1025 ID: 2287278 Batch: Item Number: 50010 Sales/Job: Quantity Qty Ordered: 1.0 Quantity Qty Completed: 0.0 Quantity Qty Rejected: 0.0 Acoustic Transducer Supplier: Order Date: 10/06/10 STD Release Date: 10/06/10 Due Date: 10/14/10								
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	0.00	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	0.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		0.00	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
WO Subtotal:		20.50	5.00	108.00	2.75	2.25	0.00	103.00
- Std Cost Rcvd:								0.00
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								103.00

You now see a rate variance as the actual pay rate is greater than the standard. You also see the corresponding burden variances.

G/L Transactions					
GL Reference	Amount	DR Acct	Sub-Acct	CC	Project
Reference ID		CR Acct	Sub-Acct	CC	Project
2010/SYS-DB000000290	7.50	1550	Mech		
WO101006000008		5120	Mech	mfg	
2010/SYS-DB000000291	2.50	5150	Mech	mfg	
WO101006000009		1550	Mech		
2010/SYS-DB000000292	1.75	1550	Mech		
WO101006000010		5220	Mech	mfg	
2010/SYS-DB000000293	0.25	5250	Mech	mfg	
WO101006000011		1550	Mech		

Account 5150 is labor rate variance and 5250 is burden rate variance.

15 Receive and close the work order.

Review the work order cost report.

Work Order Cost Report								
10USA								
10/06/1								
QAD Work Order: 1025 ID: 2287278 Batch:								
Item Number: 50010 Sales/Job: Qty Ordered: 1.0 Order Date: 10/06/10 STD								
Acoustic Transducer Supplier: Quantity Completed: 1.0 Release Date: 10/06/10								
WO Stat: C Qty Rejected: 0.0 Due Date: 10/14/10								
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
WO Subtotal:		103.00	5.00	108.00	2.75	2.25	0.00	103.00
- Std Cost Rcvd:								-96.75
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								6.25

The work order status is now C, closed. You have received the GL standard credit to WIP of 96.75 and the debit to inventory in the same amount. The 6.25 is the total of rate and usage variances and will book to the respective variance accounts. The 1.00 is still in the work center record and will be written to the cost of production account.

The work order close does not create any operation transactions. It does create inventory transactions as seen in Transaction Detail Inquiry 3.21.1. The debit to inventory and credit to WIP.

RCT-WO		
Debit Acct: 1500	Mech	
Cr Account: 1550	Mech	
Amount: 96.75		
GL Reference: 2010/WORCT000000020		Reference ID: IC101006000003

16 For purposes of this exercise only employee 10-EMP02 has had their pay increase rescinded. Use Actual Pay Rate Maintenance (14.13.21) to change the employees pay rate back to 5.00.

- 17 Run Work Order Accounting Close for your order. Review the report of this transaction.

Work Order Accounting Close									
10USA									
Work Order	ID	Item Number	Site	Qty Ordered	Qty Completed	Qty Rejected	SO/Job	Project	Eff Date
1025	2287278	50010 Acoustic Transducer	10-100	1.0	1.0	0.0			10/06/10
Reference ID	Type	DR Acct	Sub-Acct	CC	Description	Cr Acct	Sub-Acct	CC	Description
IC101006000004	Method Change 6.25	6800	Mech		Method Variance	1550	Mech		Inventory WIP

You see the 6.25 total in variances have been credited to WIP and debited to method change variance 6800.

- 18 Use Item Cost Maintenance (1.4.9); compare the GL cost with the current cost. What has happened? Based on the control setting the current cost has been updated to reflect the actual costs of the order just closed.

This completes the work order process. You have seen labor usage and rate variances and the corresponding burden variances. The subcontract variance is a usage variance due to the lack of a purchase order to cover the cost and receipt of the item. Had there been a PO that charged a different price than the 1.00 standard you would have seen a purchase price variance (PPV). If, for example, the vendor had damaged the piece beyond repair (or somehow returned more than you sent) you would see a subcontract usage variance.

Subcontract: GL Effect

Subcontract – GL Effect	
<u>Subcontract PO Receipt</u>	<u>GL Trans Type</u>
DR Cost of Production (COP)	IC
CR PO Receipts	
<u>Issue to WIP</u>	
DR WIP	WO
CR Cost of Production	
* DR Subcontract Rate Variance	WO
CR WIP	
* Positive amounts = unfavorable variance	
Negative amounts = favorable variance	
• If purchase order, of type “S,” does not reference a work order, then subcontract amount stays in COP	

In addition to material issues, labor, and burden, a final source of cost on a work order is subcontract cost, which is the cost that an external supplier charges for processing a manufacturing operation for you.

- The materials are received on a purchase order and the actual cost accrued (credit PO Receipts). Because the PO is marked as Subcontract, the cost is posted to Cost of Production (debit). If the purchase order receipt transaction specifies a valid work order and operation, then this transaction is processed to issue the materials to WIP.
- The actual cost is taken out of the Cost of Production account (credit) and put into WIP (debit) where it belongs.
- Then the actual cost on the PO is compared to the standard (frozen) subcontract cost specified on the work order routing. If there is a difference, it is posted as a Subcontract Rate Variance. The amount is:

$$(\text{Subcontract PO Unit Rate} - \text{Subcontract Frozen WO BOM Unit Cost}) * \text{Qty Received}$$

- Upon work order receipt, the total standard cost less overhead is subtracted from WIP and posted to inventory
- Upon Work Order Accounting Close:
 - All Material and Subcontract Usage Variances are subtracted from WIP and posted to work order usage variance
 - Any cost remaining in WIP is posted to work order Method Change Variance

Subcontract-Related Variances: Summary

Subcontract-Related Variances		
<u>Variance</u>	<u>When Calculated</u>	<u>Cause</u>
Subcontract Rate	PO Receipt (5.13.1) Calculated only if WO number and operation are specified	Difference between actual subcontract rate (PO price) and the subcontract rate entered in the routing detail View both actual and standard subcontract rates in Receipt Transactions Report (5.9.14)
<i>Formula</i>	<i>(Subcontract PO Unit Rate - Subcontract Frozen WO BOM Unit Rate) x Qty Received</i>	
Subcontract Usage	WO Accounting Close (16.21)	Difference between the subcontracted quantities received and the work order quantity completed. This variance can be due to yield differences, rework requirements, etc.
<i>Formula</i>	<i>[Qty Rcvd on PO - (Qty Complete + Qty Reject)] x Subcontract Frozen WO BOM Unit Rate</i>	



PC-WO-410

Subcontract Rate Variance

On subcontract purchase orders, there are no Purchase Price Variances (PPV). Instead of PPV, QAD Enterprise Applications debits the Subcontract Rate Variance account.

The total amount posted as Subcontract Rate Variance is:

$$(\text{Subcontract PO Unit Cost} - \text{Subcontract Frozen WO BOM Unit Cost}) * \text{Qty Received}$$

Where subcontract WO BOM unit rate is the rate entered in Routing Maintenance (14.13.1).

Subcontract Usage Variance

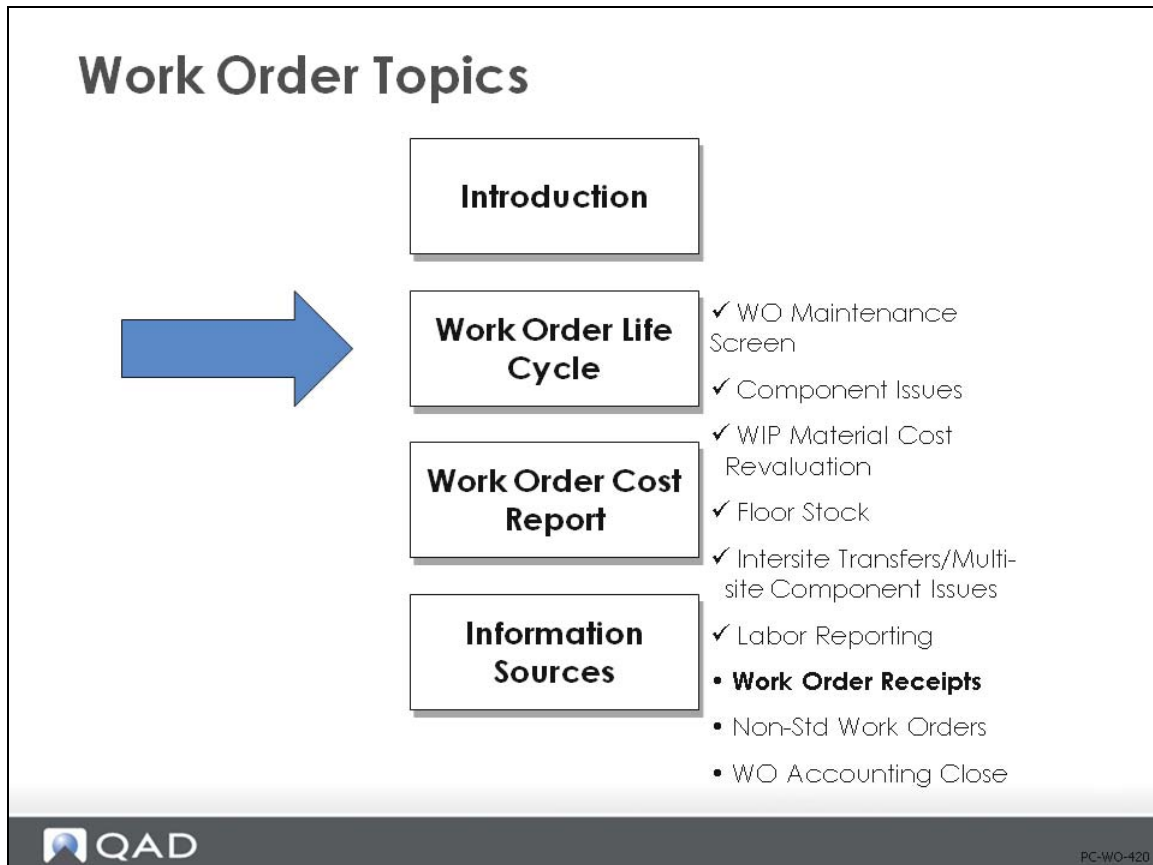
This variance is generated upon Work Order Accounting Close (16.21) and tracks the difference between the quantity invoiced on a subcontract PO and the quantity completed in work in process.

The total amount posted as Subcontract Usage Variance is:

$$[\text{Qty Received on PO} - (\text{Op Qty Complete} + \text{Op Qty Reject})] * \text{Subcontract Frozen WO BOM Unit Cost}$$

Any cost remaining in WIP is posted to work order Method Change Variance.

Work Order Receipts



WO Receipt

WO Receipt

Work Order: 1020
ID: 2287272
Site: 10-100
UM: EA

Work Order: 1020 ID: 2287272 Effective: 10/6/2010

Remarks: Batch:

Item Number: 50011 Lot/Serial Control: UM: EA

Description: Ultrasound Array WO Stat: R

Open Quantity: 1.0 Automatic Lot Numbers: ☐

Document:

Quantity:

UM: EA

Conversion:

Scrapped Qty:

UM: EA

UM Conversion:

Site:

Location:

Lot/Serial:

Reference:

Multi Entry: ☐

Set Attributes: ☐

Total Units: 0.0

Remarks:

Close: ☐

PC-WO-430

Once items have passed through all of the manufacturing operations, the finished units are received into stock either by using Work Order Receipt (16.11) or Work Order Receipt Backflush (16.12).

WO Receipt: Transactions Detail

WO Receipt – Transactions Detail

Transactions Detail Inquiry
10/06/10

Transaction: 28140 Display E-Signature Details: Yes Output: PAGE
 ===== E-Signature Details =====
 Category: InvTran
 This data is currently unsigned
 ===== End of e-signature details =====

Tran Nbr: 28140 Trans Type: RCT-WO Date: 10/06/10 Time: 15:15 Effective Date: 10/06/10 Remarks: User ID: qmi Program: wovorc.p Currency: USD Qty Change: 1.0 Shipper Number: Ship Date:	Order: 1020 2287272 Revision: 0 Item Number: 50011 Description: Ultrasound Array Unit of Measure: EA Address: Name: SO/Job: Ship Type: Price: 76.50 IMC:
--	---

Site: 10-100 Location: 020 Lot/Serial: Inv Status: Y-Y-Y Supplier Lot: Grade/Assay: Reference:	Inventory Data Begin Balance: 11.0 Quantity Change: 1.0 Qty Short: 0.0 Begin Loc Bal: 11.0 Loc Qty Change: 1.0 Expire Date: Batch:
--	--

Material: 24.00 Labor: 25.00 Burden: 7.50	Cost Data Overhead: 20.00 Subcontract: 0.00 Cost Total: 76.50
---	---

Debit Acct: 1500 Mech Cr Account: 1550 Mech Amount: 76.50	RCT-WO Reference ID: IC101006000017
---	--

GL Reference: 2010/WORCT000000022

PC-WO-440

Work order receipt generates two GL transactions.

- First, it increases Inventory (debit) and decreases WIP (credit) for the total standard GL cost (including overhead) of the finished item at that site.
- We removed the total standard cost of the item from WIP, including this-level overhead. But this-level overhead was not posted to WIP, so if we stopped here, our subsequent variance calculations would be incorrect. So, in a second GL transaction, this-level Overhead amount is put back into WIP (debit) and absorbed by posting it to the Overhead Applied account (credit). This ensures that usage and method variances are not created for overhead amounts.

As with other transactions, for ease of audit, the GL transaction is identified as a type IC with the description set to RCT-WO followed by the work order number. The corresponding inventory transaction is identified as type RCT-WO as well.

Note Finished items can be received into a site other than the work order site. When this happens, the system still processes the receipt into the work order site. Then it processes an inventory transfer.

Work Order Receipt: GL Effect

WO Receipt – GL Effect	
<u>Receipt</u>	<u>GL Trans Type</u>
DR Inventory	IC
CR WIP	
– DR WIP	IC
CR Overhead Applied	

The default general ledger entry:

- Debits Inventory
- Credits WIP
- Debits WIP
- Credits Overhead Applied

Work Order Receipt: Reject Costing

WO Receipt – Reject Costing

Work Order Receipt

Go To Actions Copy Print Preview Attach

Work Order: 1019 ID: 2287271 Site: 10-100 UM: EA

Work Order: 1019 ID: 2287271

Remarks:

Item Number: 50010

Description: Acoustic Transducer

Open Quantity: 5.0

Document:

Quantity: 4.0

UM: EA

Conversion: 1.0000

Scrapped Qty: 1.0

UM: EA

UM Conversion: 1.0000

Remarks:

Close

Effective Date:

Batch:

Lot/Serial Control:

WO Status:

Automatic Lot Number:

Site: 10-100

Location: 020

Lot/Serial:

Reference:

Multi Entry:

Set Attributes:

Total Units: 0.0

Work Orders vs Repetitive

- In Work Orders, Quantity is the quantity of Good units; in Repetitive, you report the total processed (Good + Bad)
- In Work Orders, rejects are scrapped at their completed cost; in Repetitive, rejects are scrapped at their operation cost

- Used for product lost in process
- The quantity lost can be reported as Scrapped Qty in the Work Order Receipt function and written off to the scrap account

QAD

PC-WO-460

The following pages provide a brief review of “reject” costing and “loss” costing (yield percent) as they pertain to Work Order Receipt (16.11). These concepts were discussed in detail in *Training Guide: Product Costing*.

In reject costing, you can report scrap in Work Order Receipt (16.21), shown in the figure above.

Transactions Detail: Reject Costing

WO Receipt – Transactions Detail (Reject Costing)

Transactions Detail Inquiry 10/06/10

Transaction: 28141 Display E-Signature Details: Yes Output: PAGE
 Category: InvTran
 This data is currently unsigned
 ***** End of e-signature details *****

Tran Nbr: 28141	Order: 1019	2287271
Trans Type: RCT-WO	Revision: 0	
Date: 10/06/10	Item Number: 50010	
Time: 15:28	Description: Acoustic Transducer	
Effective Date: 10/06/10	Unit of Measure: EA	
Remarks:	Address:	
User ID: qmi	Name:	
Program: woworc.p	SO/Job:	
Currency: USD	Ship Type:	
Qty Change: 4.0	Price: 96.75	
Shipper Number:	IMC:	
Ship Date:		

Site: 10-100	Inventory Data
Location: 020	Begin Balance: 9.0
Lot/Serial:	Quantity Change: 4.0
Inv Status: Y-Y-Y	Qty Short: 0.0
Supplier Lot:	Begin Loc Bal: 5.0
Grade/Assay:	Loc Qty Change: 4.0
Reference:	Expire Date:
	Batch:

Material: 27.00	Cost Data	Overhead: 20.00
Labor: 37.50		Subcontract: 1.00
Burden: 11.25		Cost Total: 96.75

Debit Acct: 1500 Mech RCT-WO
 Cr Account: 1550 Mech
 Amount: 387.00
 GL Reference: 2010/WORCT000000023 Reference ID: IC101006000018

Debit Acct: 6000 Mech RJCT-WO
 Cr Account: 1550 Mech
 Amount: 96.75
 GL Reference: 2010/SYS-DB0000000299 Reference ID: IC101006000019

- Upon completion of production, Inventory is debited the actual quantity of good units (standard quantity - scrapped quantity) × GL cost (see RCT-WO in figure above)

$$(Qty\ Complete - Scrapped\ Qty) * GL\ Cost$$

$$(5-1) * 96.75 = 387.00$$
- Scrapping is booked by crediting for the number of scrapped units * (GL cost - overhead), and debiting the Scrap account for the same amount (see RJCT-WO in figure above)

$$Number\ of\ Scrapped\ Units * (GL\ Cost - Overhead)$$

$$1 * (96.75 - 0) = 96.75$$

Work Order Receipt: Loss Costing

WO Receipt – Loss Costing

Work Order Receipt

Go To Actions Copy Print Preview Attach

Work Order: 1017 ID: 2287269 Site: 10-100 UM: EA

Work Order: 1017 ID: 2287269 Effective: 10/6/2010

Remarks: Batch:

Item Number: 50010 Lot/Serial Control: UM: EA

Description: Acoustic Transducer WO Stat: R

Open Quantity: 5.0 Automatic Lot Numbers: ☐

Document:

Quantity: 4.0 Site: 10-100

UM: EA Location: 020

Conversion: 1.0000 Lot/Serial:

Scrapped Qty: 0.0 Reference:

UM: EA Multi Entry: ☐

UM Conversion: 1.0000 Set Attributes: ☐

Total Units: 4.0

Remarks:

Close:

Starting a work order with a quantity of 5 and completing 4 will leave 1 unit of components, plus any labor and burden expended, in WIP at completion.



PC-WO-480

In loss costing (yield%), a standard yield factor has been added to the item such that the standard yield cost is built into the cost of each unit. In this case when you complete more units or fewer units than standard quantity, you do not report scrap at work order receipt. For more information, see [QAD Product Costing Training Guide](#) for a detailed discussion of Loss Costing (yield%).

The Work Order Accounting Close (16.10) calculates the usage variances.

Exercise 8: Scrap at Work Order Receipt

In this you will process a work order and scrap some a unit at work order receipt. To demonstrate an additional function you will use work order receipt backflush. You will not process any labor transactions so you will see all labor booked at standard based on the backflush quantity. So the costs will look familiar you will use the 50010 as in the previous exercise.

- 1 Create a work order for two of the 50010 at site 10-100, set the status to R. As you are using a backflush transaction, do not issue components.

You had a bad day in manufacturing and one of the units has been damaged beyond repair.

- 2 Use Work Order Receipt Backflush (16.12) for your order. Note in the header the system has defaulted the Receive and Backflush boxes with a check mark. This indicates you are going to both receive the finished units and backflush the components required for that number of items with this one transaction. Leave both boxes checked.

In the body of the form note the open quantity of 2. In the quantity field enter 1, and in the Scrapped Quantity field enter 1. Close the order, check the close box. After the system shows you the item being received a screen appears that asks how many units worth of components do you want to backflush. The system defaults to the open order quantity. As you have used all the components leave the quantity at 2. The following screens are the component issue screens and are processed the same way.

- 3 Review the work order cost report.

Work Order Cost Report									
10USA									
10/06/10									
QAD Work Order: 1027 ID: 2287281 Batch: Item Number: 50010 Acoustic Transducer WO Stat: C Sales/Job: Supplier: Qty Ordered: 2.0 Quantity Completed: 1.0 Qty Rejected: 1.0 Remarks: Order Date: 10/06/10 STD Release Date: 10/06/10 Due Date: 10/14/10									
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance	
50011	2.0	153.00	0.00	153.00	0.00	0.00	0.00	153.00	
60012	12.0	12.00	0.00	12.00	0.00	0.00	0.00	12.00	
Material Total:		165.00	0.00	165.00	0.00	0.00	0.00	165.00	
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Labor Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Burden Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Subcontract Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WO Subtotal:		165.00	0.00	165.00	0.00	0.00	0.00	165.00	
- Std Cost Rcvd:								-96.75	
- Scrapped:								-96.75	
- Mthd Chg Var:								0.00	
Balance:								-28.50	

You see that the order has been charged with two sets of components and credited with the GL cost of the one unit received, and the cost of the one unit scrapped. There are not yet any labor charges.

4 Run work order accounting close, and review the report.

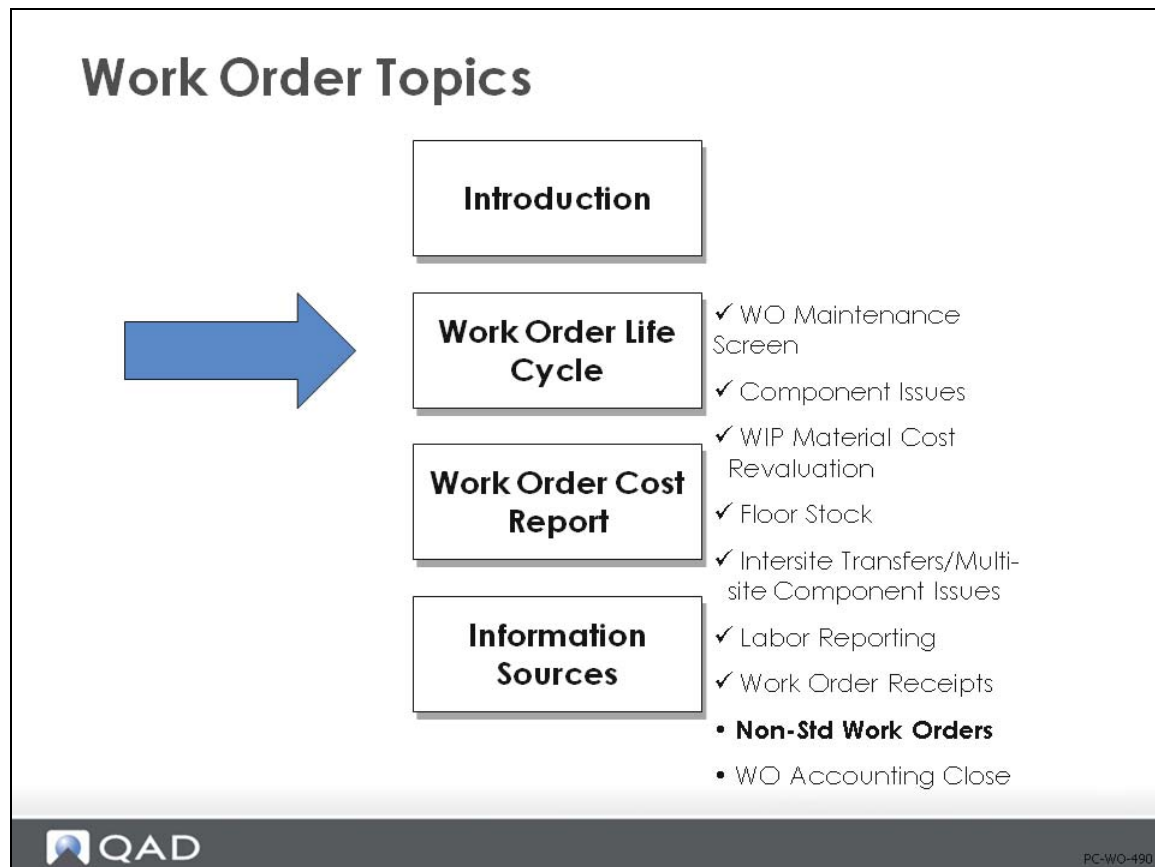
Work Order Accounting Close									
10USA									
Work Order	ID	Item Number	Site	Qty Ordered	Qty Completed	Qty Rejected	SO/Job	Project	En
1027	2287281	50010	10-100	2.0	1.0	1.0			10
Acoustic Transducer									
Reference ID	Type	DR Acct	Sub-Acct	CC	Description	Cr Acct	Sub-Acct	CC	Description
Amount									
WO101006000019	WO-CLOSE	1550	Mech		Inventory WIP	5120	Mech	mfg	Labor Absorbed
10.00									
WO101006000020	WO-CLOSE	1550	Mech		Inventory WIP	5220	Mech	mfg	Burden Absorbed
3.00									
WO101006000021	WO-CLOSE	1550	Mech		Inventory WIP	5120	Mech	mfg	Labor Absorbed
5.00									
WO101006000022	WO-CLOSE	1550	Mech		Inventory WIP	5120	Mech	mfg	Labor Absorbed
10.00									
WO101006000023	WO-CLOSE	1550	Mech		Inventory WIP	5220	Mech	mfg	Burden Absorbed
1.50									
WO101006000024	WO-CLOSE	1550	Mech		Inventory WIP	5220	Mech	mfg	Burden Absorbed
3.00									
WO101006000025	WO-CLOSE	5440	Mech		Subcontract Usage Va	1550	Mech		Inventory WIP
-2.00									
IC101006000016	Method Change	6800	Mech		Method Variance	1550	Mech		Inventory WIP
6.00									

The labor and burden charges have now been made, and the subcontract and method variance. The work order cost report now looks like this.

Work Order Cost Report									
10USA									
10/06/10									
QAD									
Work Order: 1027 ID: 2287281 Batch: Remarks:									
Item Number: 50010 Sales/Job: Qty Ordered: 2.0 Order Date: 10/06/10 STD									
Acoustic Transducer Quantity Completed: 1.0 Release Date: 10/06/10									
WO Stat: C Supplier: Qty Rejected: 1.0 Due Date: 10/14/10									
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance	
50011	2.0	153.00	0.00	153.00	0.00	0.00	0.00	153.00	
60012	12.0	12.00	0.00	12.00	0.00	0.00	0.00	12.00	
Material Total:		165.00	0.00	165.00	0.00	0.00	0.00	165.00	
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Labor Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Burden Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Subcontract Total:		0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WO Subtotal:		165.00	0.00	165.00	0.00	0.00	0.00	165.00	
- Std Cost Rcvd:								-96.75	
- Scrapped:								-96.75	
- Mthd Chg Var:								0.00	
Balance:								-28.50	

Why is there a 6.00 method change variance on this order? Because you made two on one order and the standard order quantity is one. Setup time is only charged once per order, while run time is per piece. This order saved 5.00 in setup labor and 1.00 in setup machine burden.

Non-Standard Work Orders



Non-Standard WO: Rework

Non-Standard WO: Rework

Work Order Maintenance

Work Order: 1028 ID: 2287283 Item Number: 50011

Item Number: 50011 Type: R Site: 10-100

Quantity Ordered: 2.0 Quantity Completed: 0.0 Qty Rejected: 0.0

Order Date: 10/6/2010 Release Date: 10/6/2010 Due Date: 10/6/2010

Site: 10-100

Sales/Job: Supplier: BOM/Formula Code: Yield Percent: 100.00%

Work Order Status: A

Status = Allocated

Used to repair rejected items

All value added to rework orders (material & labor) are expensed as variances

PC-WO-500

Rework

Rework is used to repair items and uses the same calculations for variances as normal work orders. However, repair work orders have only one component, the item itself. Therefore, if 10 units of an item are to be reworked, then 10 are issued at standard to WIP, and if 10 are received as good items to stock, they will relieve WIP at standard. This will leave material issued and labor in WIP, which will be expensed as variances:

- Unrepairable units should be recorded as Scrap in the receipt, so they are written off to scrap
- All value added to rework orders are expensed as variances

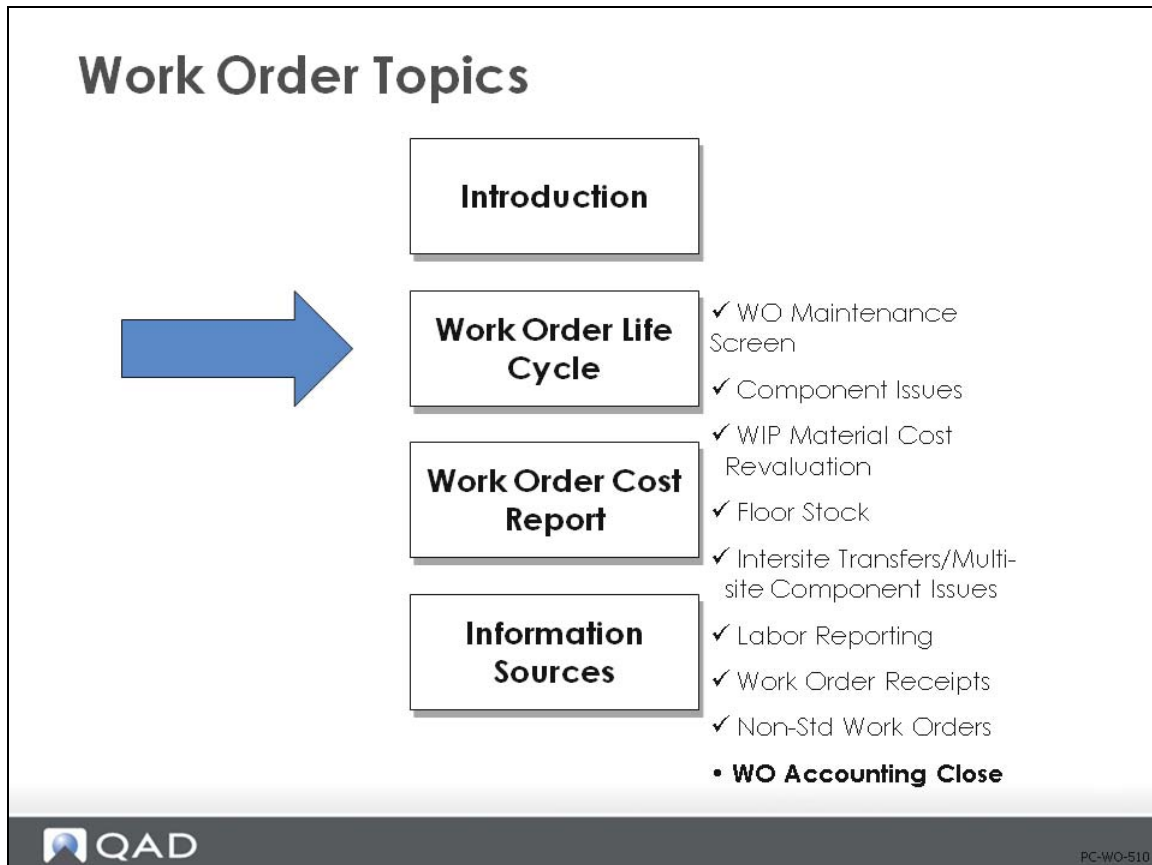
Note Use unique work order numbers for reworks and reclassify variances by journal entry (for labor and burden). Material variances can be redirected by changing accounts in Work Order Maintenance (16.1). Perform Work Order Accounting Close separately for these work orders.

Expense

Expense work orders (Type E) are used for non-inventory jobs, such as engineering prototypes or design projects. They are tracked by a work order so costs can be accumulated. Usually a special GL account and project code are entered.

- Expense work orders are normally not used for direct material and not received. Therefore all material and labor are expensed as variances.
- Expense work orders should not be accounting closed because the amount will be credited out of the Special GL account used and charged to variance.

WO Accounting Close



Work Order Accounting Close (16.21) is usually run at the end of each GL calendar period as part of the period-end closing process. The accounting close serves several functions:

Completes Open Operations. Marks all operations complete. No more labor can be recorded against this work order. Any unreported operations are closed at standard. (This operates like Complete Previous Operations in SFC labor feedback transactions and creates the same GL transactions to update WIP and absorb labor and burden.) Adjusts quantities completed at open operations to match the total of completions plus rejects at Work Order Receipt.

Posts Floor Stock. Costs of components flagged as Issue Policy No are added to WIP before variances are calculated. Thus floor stock cost is not included in variance.

Calculates Usage Variances. Calculates material and subcontract usage variances. Total quantity issued is compared to total quantity required to make quantity reported complete (receipts plus rejects). Any difference is a usage variance.

Clears Out WIP Balance. Sets any remaining WIP balance to zero. Any amount left in WIP at this point is reported as a miscellaneous method variance that cannot be traced to any specific source (for example, material or labor, rate or usage). Method variances can result from the use of alternate bills and routings, different lot sizes, in-process loss, or changes in GL costs (without revaluing WIP). Because costs of component issues are tracked by operation, a method variance occurs if you issue components at an operation different than the one recorded in the bill.

Material Usage Variance: Summary

Material Usage Variance		
<u>Manufacturing-Related Variances</u>		
<u>Variance</u>	<u>When Calculated</u>	<u>Cause</u>
Material Usage	WO Accounting Close (16.21)	Difference between the actual quantity of components issued and the standard quantity required
<i>Formula</i>	<i>{Actual Qty Issued - [Qty Per x (Qty Complete + Qty Reject)]} x Std Unit Cost</i>	

Material usage variance is generated when there is a difference between the actual quantity of components issued/backflushed and the standard quantity required.

This variance is calculated at Work Order Accounting Close (16.21). This variance is calculated as:

$$\{Actual\ Qty\ Issued - [Qty\ Per * (Qty\ Completed + Qty\ Rejected)]\} * Frozen\ Std\ Unit\ Cost$$

Alternate structures and issues of non-standard components will also create material usage variances, and if the costs differ from standard, a method change variance will be charged for that difference.

Method Variance: Work Orders

Method Variance: Work Orders

- Any value left in WIP after WO Accounting Close is relieved from WIP and posted to Method Variance account of parent
- Causes
 - Changes to BOM or routing without cost recalculation
 - Alternate structures or routings
 - Item substitutions
 - Order quantity (non-standard; 1.4.1, 1.4.7, 1.4.17)
 - Floor stock issued (non-standard quantity)



PC-WO-530

After Work Order Accounting Close (16.21), no value should be left in WIP for the order accounting closed. If any value is left in WIP after the Work Order Accounting Close has processed variances and floor stock, then this value will be relieved from WIP and posted to the Method Variance account of the parent item.

Causes of Method Variance

Some causes of method variance are:

- Changes to the bill of material or routing without recalculating new costs
- Use of alternate structures and/or routings or item substitutions
- Order quantity (non-standard)
- Floor stock (non-standard quantity issued)
- Manually changing the Yield% in the Item Planning screen for manufactured items so that the planning yield does not equal the rolled-up routing and product structure yield
- Batch quantity in Formula Maintenance (15.5) not the same as order quantity in Item Planning Maintenance (1.4.7) or Item Site Planning Maintenance (1.4.17)
- Wrong Quantity Per on work order BOM (Work Order Bill Maintenance (16.13.1))

If setup cost is calculated as part of standard labor and burden, a method variance occurs for the difference between the standard order quantity on the item planning record and work order quantity.

Work Order Accounting Close: GL Effect

WO Accounting Close – GL Effect	
<u>Floor Stock</u>	<u>GL Trans Type</u>
DR WIP	IC
CR Floor Stock	
<u>Material & Subcontract Usage Variances</u>	
* DR Mat'l Usage Variance	IC
CR WIP	
* DR Subcontract Usage Variance	WO
CR WIP	
<u>WIP Reconciliation</u>	
* DR Method Variance	IC
CR WIP	
* Positive amounts = unfavorable variance; Negative amounts = favorable variance	

The calculations and GL transactions created by the Work Order Accounting Close are listed below.

- Floor stock is calculated as:

$$[(Qty\ Rcvd + Qty\ Rejected) * Qty\ Per] * Std\ Cost\ Per\ Unit$$

This quantity is posted at standard cost to WIP (debit) and Floor Stock (credit).

- Material Usage Variance is calculated. If unfavorable, WIP is decreased (credit) by this amount and the variance is posted to the Material Usage Variance account (debit). The amount is equal to:

$$Actual\ Qty\ Issued - [(Qty\ Completed + Qty\ Rejected) * Qty\ Per] * Frozen\ Std\ Unit\ Cost$$

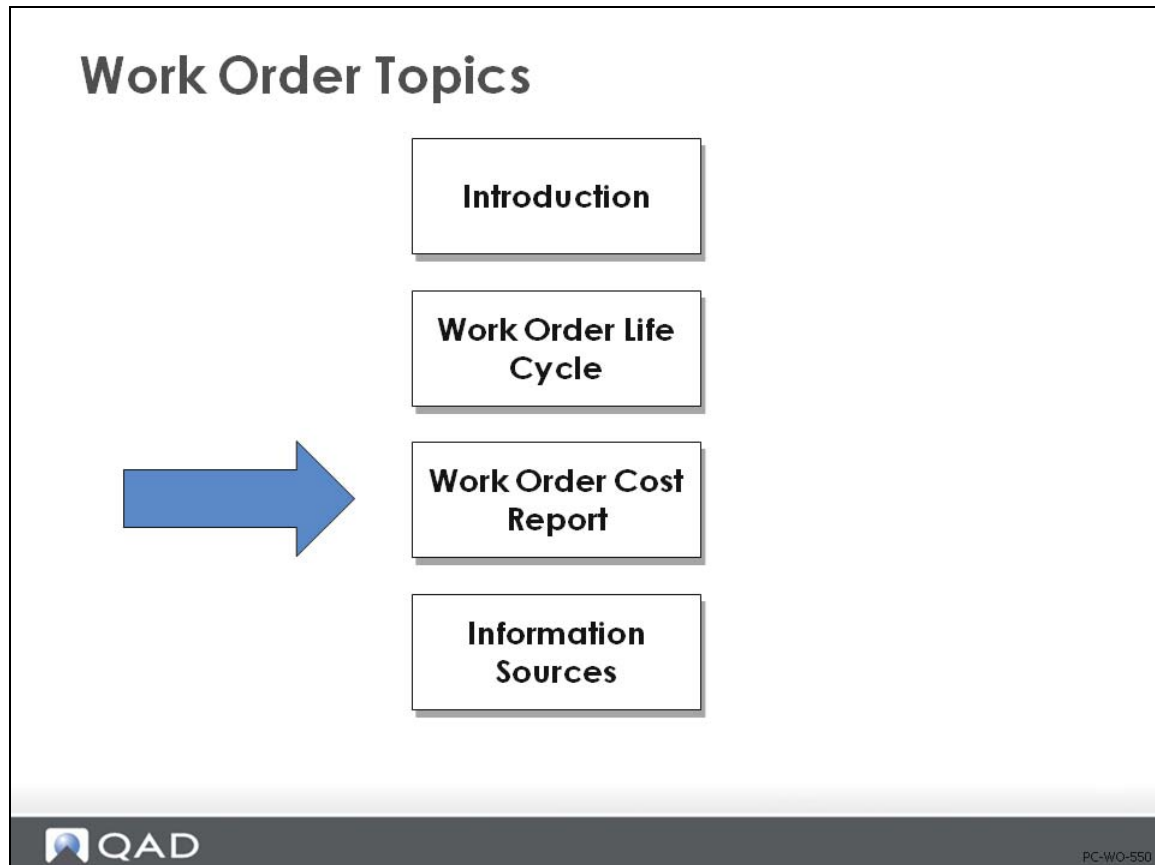
- Subcontract Usage Variance is calculated in the same way as Material Usage Variance, comparing the number of subcontract items received to the number that should be required. It is calculated as:

$$[Qty\ Received\ on\ PO - (Op\ Qty\ Completed + Op\ Qty\ Rejected)] * Subcontract\ Frozen\ WO\ BOM\ Unit\ Cost$$

- WIP is now set to zero. Any outstanding WIP amount is removed from WIP (credit) and posted to the Method Variance account (debit).

Note The GL transaction is WO-CLOSE wo#. Transaction type is IC or WO, as indicated.

Work Order Cost Report



Work Order Cost Report

Work Order Cost Report									
QAD		10USA		10/06/10					
Work Order: 1027		ID: 2287281		Batch:					
Item Number: 50010		Sales/Job:		Remarks:		Order Date: 10/06/10 STD			
Acoustic Transducer		Supplier:		Qty Ordered: 2.0		Release Date: 10/06/10			
WO Stat: C				Quantity Completed: 1.0		Due Date: 10/14/10			
				Qty Rejected: 1.0					
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance	
50011	2.0	153.00	0.00	153.00	0.00	0.00	0.00	153.00	
60012	12.0	12.00	0.00	12.00	0.00	0.00	0.00	12.00	
Material Total:		165.00	0.00	165.00	0.00	0.00	0.00	165.00	
Operation: 10	2.0	15.00	0.00	15.00	0.00	0.00	0.00	15.00	
Operation: 15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 20	2.0	10.00	0.00	10.00	0.00	0.00	0.00	10.00	
Labor Total:		25.00	0.00	25.00	0.00	0.00	0.00	25.00	
Operation: 10	2.0	4.50	0.00	4.50	0.00	0.00	0.00	4.50	
Operation: 15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 20	2.0	3.00	0.00	3.00	0.00	0.00	0.00	3.00	
Burden Total:		7.50	0.00	7.50	0.00	0.00	0.00	7.50	
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Operation: 15	0.0	2.00	-2.00	0.00	0.00	-2.00	0.00	2.00	
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Subcontract Total:		2.00	-2.00	0.00	0.00	-2.00	0.00	2.00	
WO Subtotal:		199.50	-2.00	197.50	0.00	-2.00	0.00	199.50	
- Std Cost Rcvd:								-96.75	
- Scrapped:								-96.75	
- Mthd Chg Var:								-6.00	
Balance:								0.00	

The Work Order Cost Report (16.3.4) is designed for accountants and managers who need to analyze the costs and variances associated with work orders. This report is normally used for reporting closed work orders. It identifies work order costs, grouping them into five categories: material, labor, burden, subcontract, and method change.

- Material costs are supported by data from inventory transactions for work order components
- Labor, burden, and subcontract costs are supported by transactions for work order operations

Note If this report is run for work orders before they have been processed by Work Order Accounting Close (16.21), the variances calculated for those work orders might be incomplete.

Detailed Discussion of the Work Order Cost Report

On the following pages, the calculations behind the numbers are provided by column (expected cost, accrued variance, accumulated cost, rate variance posted, usage variance posted) and by category (material, labor, burden, subcontract, method variance).

First, though, three headings—accumulated quantity, average cost received, and balance—are covered more generally rather than by category.

Note Work Order Cost Report (16.3.4) does not detail overhead costs.

Accumulated Quantity, Average Cost, Balance

Work Order Cost Report								
10USA								
10/06/1								
QAD Work Order: 1025 ID: 2287278 Batch: Item Number: 50010 Acoustic Transducer WD Stat: C Sales/Job: Supplier: Qty Ordered: 1.0 Quantity Completed: 1.0 Qty Rejected: 0.0 Order Date: 10/06/10 STD Release Date: 10/06/10 Due Date: 10/14/10								
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
WO Subtotal:		103.00	5.00	108.00	2.75	2.25	0.00	103.00
- Std Cost Rcvd:								-96.75
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								6.25

For Material, Accumulated Quantity is the actual quantity of components issued to this work order or parent items processed by operation. For Labor and Burden, Accumulated Quantity represents the quantity reported complete in Shop Floor Control.

Average Cost Received to Finished Goods

Average Cost Received to Finished Goods is only used when the costing method for the GL cost set is average. This covered in detail in the Average Costing class.

Balance

Balance is the accumulated cost minus the rate and usage variances.

Expected Cost: Material

Expected Material Costs

- The cost that is expected to be issued to the work order
- $(Qty\ Completed + Qty\ Rejected) \times Std\ Qty\ Per \times Std\ Cost$



Work Order Cost Report

10USA

10/06/1

Work Order: 1025

ID: 2287278

Batch:

Item Number: 50010

Sales/Job:

Qty Ordered: 1.0

Acoustic Transducer

Supplier:

Quantity Completed: 1.0

WO Stat: C

Qty Rejected: 0.0

Order Date: 10/06/10 STD

Release Date: 10/06/10

Due Date: 10/34/10

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
WO Subtotal:		103.00	5.00	108.00	2.75	2.25	0.00	103.00
- Std Cost Rcvd:								-96.75
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								6.25

The material section of the report lists all the components associated with the work order.

The Expected Cost is:

$(Qty\ Complete + Qty\ Reject) \times Frozen\ Qty\ Per \times Frozen\ Std\ Cost$

If this amount is zero, you probably did not receive or scrap anything against this work order. If you have received something and the value is still zero or the wrong value, then check the frozen quantity per and standard cost. These can be viewed and updated in Work Order Bill Maintenance (16.13.1).

Accrued Variance

Accrued Variance

- Equal to the total of the Rate Variance and Usage Variance Columns
- Rate Variance + Usage Variance

QAD **Work Order Cost Report** 10/06/1
10USA

Work Order: 1025 ID: 2287278 Batch:
Item Number: 50010 Sales/Job: Qty Ordered: 1.0 Order Date: 10/06/10 STD
Acoustic Transducer Supplier: Quantity Completed: 1.0 Release Date: 10/06/10
WO Stat: C Qty Rejected: 0.0 Due Date: 10/14/10

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
WO Subtotal:		103.00	5.00	108.00	2.75	2.25	0.00	103.00
- Std Cost Rcvd:								-96.75
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								6.25

The accrued variance is the variance the system has already recognized. It should be equal to the total of the rate variance posted and the usage variance posted columns.

Accumulated Cost: Material

Accumulated Material Cost

Work Order Cost Report
10USA

10/06/1

Work Order: 1025
 Item Number: 50010
 WD Stat: C

Sales/Job: Acoustic Transducer
 Supplier:

ID: 2287278
 Batch: Remarks: Qty Ordered: 1.0
 Quantity Completed: 1.0
 Qty Rejected: 0.0

Order Date: 10/06/10 STD
 Release Date: 10/06/10
 Due Date: 10/14/10

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
WO Subtotal:		103.00	5.00	108.00	2.75	2.25	0.00	103.00
- Std Cost Rcvd:								-96.75
- Scrapped:								0.00
- Mthd Chg Var:								0.00
								6.25

- Actual Qty x Std Unit Cost

Where Did the Numbers Come From?

- For standard cost per unit, look in Item Cost Maintenance (1.4.9)

PC-WO-600

The accumulated cost of material is the actual cost of the work order. It is the actual quantity issued multiplied by the standard cost that was in effect at the time of the issue.

Rate Variance Posted: Material

Material Rate Variance

- The difference between the standard cost of the component at the time of issue and the frozen standard cost of the component, multiplied by the actual quantity issued
- Favorable variances are indicated by a negative number; unfavorable variances are indicated by a positive number
- $(\text{WO BOM Unit Cost at issue} - \text{GL Unit Cost}) \times \text{Actual Qty Issued}$

Work Order Cost Report 10/06/10
10USA

Work Order: 1025 ID: 2287278 Batch: 10010
Item Number: 50010 Sales/Job: Acoustic Transducer Supplier: Quantity Ordered: 1.0 Order Date: 10/06/10 STD
WO Stat: C Qty Completed: 1.0 Release Date: 10/06/10
Qty Rejected: 0.0 Due Date: 10/14/10

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
WO Subtotal:		103.00	5.00	108.00	2.75	2.25	0.00	103.00
- Std Cost Rcvd:								-96.75
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								6.25

The material rate variance posted is the standard cost of the component at the time of issue minus the frozen standard cost of the components multiplied by the quantity issued. This is calculated at the point of issue.

- Favorable variances display as negatives

A negative indicates a credit balance. A credit balance for income statement accounts like variances are favorable.

- Unfavorable variances show as positives

Usage Variance Posted: Material

Material Usage Variance

- The difference between the actual quantity used and the quantity that should have been used, multiplied by the frozen standard unit cost
- The quantity that should have been used is the quantity completed plus the quantity rejected, times the frozen quantity per
- $\text{Actual Qty} - [(\text{Qty Completed} + \text{Qty Rejected}) \times \text{Qty Per}] \times \text{Frozen Std Unit Cost}$

Work Order Cost Report 10/06/10

QAD 10USA

Work Order: 1025 ID: 2287278 Batch: 1005A
 Item Number: 50010 Sales/Job: Acoustic Transducer Supplier: Quantity Ordered: 1.0
 MO Stat: C Quantity Completed: 1.0 Qty Rejected: 0.0
 Order Date: 10/06/10 STD
 Release Date: 10/06/10
 Due Date: 10/14/10

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
MO Subtotal:		103.00	5.00	108.00	2.75	2.25	0.00	103.00
- Std Cost Rcvd:								-96.75
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								6.25

The material usage variance posted is calculated during an accounting close. If you have not run an accounting close, the usage variance will be zero.

The usage variance is the actual quantity used minus the quantity that should have been used multiplied by the frozen standard of the component:

- The quantity that should have been used is the quantity completed plus the quantity rejected multiplied by the frozen quantity per
- The frozen standard is used rather than the standard currently in effect because the rate variance already adjusted for the differential. If the current standard is used, it will effectively calculate the rate variance twice for the quantity over or under issued.

Expected Labor Cost

Expected Labor Cost

- The labor cost that is expected to be issued to the work order
- For each operation, add together:
 $(\text{Std Set-up Hrs/Qty} \times \text{Std Set-up Rate}) + (\text{Std Run Hrs/Unit} \times \text{Std Labor Rate}) = \text{Labor Cost per Unit}$
- Labor Cost per Unit
 $\times \text{Qty Completed}$

QAD **Work Order Cost Report** 10/06/1
10USA

Work Order: 1025 ID: 2287278 Batch:
 Item Number: 50010 Sales/Job: Qty Ordered: 1.0 Order Date: 10/06/10 STD
 Acoustic Transducer Supplier: Quantity Completed: 1.0 Release Date: 10/06/10
 WO Stat: C Qty Rejected: 0.0 Due Date: 10/14/10

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
WO Subtotal:		103.00	5.00	108.00	2.75	2.25	0.00	103.00
- Std Cost Rcvd:								-96.75
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								6.25

The expected labor cost is the standard run and setup hours multiplied by the work center rate.

Accumulated Cost: Labor

Accumulated Labor Cost

The actual hours multiplied by the actual pay rate

- Actual Hrs x Actual Pay Rate
- Actual Hrs = Actual Set-up Time + Actual Run Time

Work Order Cost Report 10/06/10

10USA

Work Order: 1025 ID: 2287278 Batch: 10/06/10 STD
 Item Number: 50010 Sales/Job: Quantity Ordered: 1.0 Order Date: 10/06/10
 Acoustic Transducer Supplier: Quantity Completed: 1.0 Release Date: 10/06/10
 WO Stat: C Qty Rejected: 0.0 Due Date: 10/14/10

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:								
WO Subtotal:								
- Std Cost Rcvd:								
- Scrapped:								
- Mthd Chg Var:								
Balance:								

Where Did the Numbers Come From?

- For actual pay rate, look in Actual Pay Rate Maintenance (14.13.21)
- For actual hours, look in WO Routing Maintenance (16.13.13)

The accumulated cost for labor is the actual hours multiplied by the actual pay rate.

The actual pay rate is the employee's pay rate from Actual Pay Rate Maintenance if available, or the work center rate if Actual Pay Rate not available.

Rate Variance Posted: Labor

Labor Rate Variance

- The difference between the actual employee pay rate and the standard work center labor rate
- Not calculated unless actual pay rate set up in (14.13.21) or (29.15.1)
- $[(\text{Act Set-Up Rate} - \text{Std Set-Up Rate}) \times \text{Act Set-Up Hrs}] + [(\text{Act Run Rate} - \text{Std Run Rate}) \times \text{Act Run Hrs}]$

QAD Work Order Cost Report 10USA 10/06/1

Work Order: 1025 ID: 2287278 Batch: Remarks:
 Item Number: 50010 Sales/Job: Qty Ordered: 1.0 Order Date: 10/06/10 STD
 Acoustic Transducer Supplier: Quantity Completed: 1.0 Release Date: 10/06/10
 WO Stat: C Qty Rejected: 0.0 Due Date: 10/14/10

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
					0.00	0.00	0.00	0.00
					0.00	-1.00	0.00	1.00
					0.00	0.00	0.00	0.00
					0.00	-1.00	0.00	1.00
					2.75	2.25	0.00	103.00
								-96.75
								0.00
								0.00
Balance:								6.25

Where Did the Numbers Come From?

- For actual pay rate, look in Actual Pay Rate Maintenance (14.13.21)
- For standard work center rate, look in WC Maintenance (14.5)

The rate variance posted for labor is the difference between the work center rate and the actual pay rate multiplied by the actual hours.

Usage Variance Posted: Labor

Labor Usage Variance

10/06/10


Work Order Cost Report
10USA

Work Order: 1025 ID: 2287278 Batch:
 Item Number: 50010 Sales/Job: Remarks: Qty Ordered: 1.0 Order Date: 10/06/10 STD
 WO Stat: C Acoustic Transducer Supplier: Quantity Completed: 1.0 Release Date: 10/06/10
 Qty Rejected: 0.0 Due Date: 10/14/10

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	1.0	-1.00	0.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		-1.00	0.00	0.00	0.00	-1.00	0.00	1.00
		5.00	108.00	2.75	2.25	0.00		105.00
								-96.75
								0.00
								0.00
								6.25

Where Did the Numbers Come From?

- For actual and standard set-up and run hours, look in Work Order Routing Maintenance (16.13.13)
- For work center labor rate, look in Work Center Maintenance (14.5)


PC-WO-660

The usage variance posted for labor is the difference between the actual hours and the standard hours multiplied by the work center rate. These variances can be calculated at each shop floor control transaction: Labor Feedback Work Order (17.1), Labor Feedback Employee (17.2), Labor Feedback Work Center (17.3) or at Work Order Accounting Close (16.21)

When these calculations occur is controlled by the Work Order Control (16.24)

Accumulated Cost: Burden

Accumulated Burden Cost

- The burden that is actually issued to the work order
- For each operation, add together:

$$\{ \text{Actual Set-up Hrs/Qty} \times [\text{Lbr Bdn Rate} + (\text{Actual Set-up Rate} \times \text{Lbr Bdn \%}) + (\text{Mach/Op} \times \text{Mach Bdn Rate})] \} + \{ \text{Actual Run Hrs/Unit} \times [\text{Lbr Bdn Rate} + (\text{Actual Lbr Rate} \times \text{Lbr Bdn \%}) + \text{Mach Bdn Rate}] \} = \text{Burden/Unit}$$
- Actual Burden per Unit

$$\times \text{Qty Completed}$$

Work Order Cost Report 10/06/10

10USA

Work Order: 1025 ID: 2287278 Batch: 10010

Item Number: 50010 Sales/Job: 10010 Qty Ordered: 1.0 Order Date: 10/06/10 STD

Acoustic Transducer Supplier: Quantity Completed: 1.0 Release Date: 10/06/10

W0 Stat: C Qty Rejected: 0.0 Due Date: 10/14/10

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
W0 Subtotal:		103.00	5.00	108.00	2.75	2.25	0.00	103.00
- Std Cost Rcvd:								-96.75
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								6.25

The accumulated cost for burden is the actual quantity completed multiplied by the actual burden rate.

In the example above the standard setup and run labor rates are both 5.00. The standard setup and run time for operation 10 are both one hour. The machine burden rate in this work center is 1.00/hour. There is no labor burden rate but a 10% of labor cost labor burden%.

In this example setup time was charged 1.5 hours. An easy way to see the burden cost is; the machine at 1.0 per hour burden for a total of 2.5 hours (rather than the standard 2.0); and labor at a burden rate of 0.50 per hour for 2.5 hours for a total burden at operation 10 of 2.5 machine + 1.25 labor or 3.75 total burden, or 0.75 unfavorable to standard. This is also seen in the 2.50 labor usage variance.

Rate Variance Posted: Burden

Burden Rate Variance

- The difference between the actual pay rate and the work center pay rate multiplied by the actual hours worked and labor burden percent
- Not calculated unless actual pay rates set up in (14.13.21)
- $[(\text{Act Set-Up Bdn} - \text{Std Set-Up Bdn}) \times \text{Act Set-Up Hrs}] + [(\text{Act Run Bdn} - \text{Std Run Bdn}) \times \text{Act Run Hrs}]$

QAD Work Order Cost Report 10/06/10

10USA

Work Order: 1025 ID: 2287278 Batch: Remarks: Qty Ordered: 1.0 Order Date: 10/06/10 STD
 Item Number: 50010 Sales/Job: Acoustic Transducer Supplier: Quantity Completed: 1.0 Release Date: 10/06/10
 WO Stat: C Qty Rejected: 0.0 Due Date: 10/14/10

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
							0.00	0.00
							-1.00	0.00
							0.00	0.00
							-1.00	0.00
							2.25	0.00
							103.00	-96.75
							0.00	0.00
							0.00	6.25

Where Did the Numbers Come From?

- For actual pay rate, look in Actual Pay Rate Maintenance (14.13.21)
- For standard work center rate, look in WC Maintenance (14.5)
- For actual hours, look in WO Routing Maintenance (16.13.13)

QAD PC-WO-710

The burden rate variance for labor is the difference between the work center rate and the actual pay rate multiplied by the actual hours and the labor burden percent.

In the example shown above, operation 20 was performed by an employee earning an above standard pay rate causing the labor rate variance of 2.50. The burden rate variance of 0.25 is related to that labor variance.

Burden Rate Variance Calculation

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

Where:

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

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

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

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

Expected Cost: Subcontract

Expected Subcontract Cost

- The subcontract labor cost that is expected to be issued to the purchase order
- Qty Completed x Std Subcontract Cost per Unit

Work Order Cost Report 10/06/10
10USA

Work Order: 1025 ID: 2287278 Batch: 10/06/10 STD
Item Number: 50010 Sales/Job: Qty Ordered: 1.0 Release Date: 10/06/10
W0 Stat: C Acoustic Transducer Supplier: Quantity Completed: 1.0 Due Date: 10/14/10
Qty Rejected: 0.0

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
W0 Subtotal:		103.00	5.00	108.00	2.75	2.25	0.00	103.00
								-96.75
								0.00
								0.00
								6.25

Where Did the Numbers Come From?

- For subcontract cost per unit, look in Routing Maintenance (14.13.1)

In this example the expected cost is 1.00 but there is no purchase order linked to the work order to receive the units back into WIP; hence, the -1.00 subcontract variance.

Subcontract is similar to material in the way that it is handled.

- The Accumulated Quantity is the quantity received on the purchase order
- The Expected Cost for subcontract is the quantity completed plus rejects multiplied by the subcontract cost from the routing operation (see figure above)
- The Accrued Variance is the variance the system has already recognized. It should be equal to the total of the rate variance posted and the usage variance posted columns.
- Accumulated cost is the actual purchase order cost multiplied by the quantity received

- The difference between the actual subcontract rate (PO) and the standard subcontract rate (Work Order Routing)
- (Subcontract PO Unit Rate - Subcontract Frozen WO BOM Unit Rate) x Quantity Received

Where Did the Numbers Come From?

- To see both actual and standard subcontract rates, look in Receipt Transactions Report (5.9.14)
- The actual subcontract rate was entered in P.O. Maintenance (5.7)

The Subcontract Rate Variance is the actual purchase order cost minus the subcontract cost from the routing multiplied by the quantity received. It is calculated at the point of receipt (see figure above).

(Subcontract PO Unit Cost - Subcontract Frozen WO BOM Unit Cost) * Qty Received

The Usage Variance for subcontract is the difference between the quantity received on the purchase order and the quantity completed plus rejected multiplied by the subcontract cost from the router. It is calculated at accounting close.

*[Qty Received - (Op Qty Completed + Op Qty Rejected)] * Subcontract Frozen WO BOM Unit Cost*

Standard Cost Received

Standard Cost Received

- Qty Completed x Std Unit Cost of Parent Item

QAD		10USA						10/06/1
Work Order: 1025		ID: 2287278		Batch:				
Item Number: 50010	Sales/Job:	Qty Ordered: 1.0		Remarks:		Order Date: 10/06/10 STD		
W0 Stat: C	Acoustic Transducer	Supplier:		Quantity Completed: 1.0		Release Date: 10/06/10		
				Qty Rejected: 0.0		Due Date: 10/14/10		
Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operation: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operation: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operation: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operation: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operation: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operation: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
W0 Subtotal:		103.00	5.00	108.00	2.75	2.25	0.00	103.00
- Std Cost Rcvd:								-96.75
- Scrapped:								0.00
- Mthd Chg Var:								0.00
Balance:								6.25



PC-WO-790

The Standard Cost Received is the quantity completed multiplied by the standard cost of the parent in effect at the point of receipt.

Scrapped amount is the quantity rejected multiplied by the GL Standard cost of parent item at the point of receipt.

Method Change Variance

Method Change Variance

Residual cost in WIP

The screenshot displays a 'Work Order Cost Report' for Work Order 1025, ID 2287278, Batch 10USA. It includes a table with columns for Item Number, Accumulated Quantity, Expected Cost (Ref Only), Accrued Variance (Ref Only), Accumulated Cost, Rate Variance Posted, Usage Variance Posted, Avg Cost Received to Finished Goods, and Balance. The table shows costs for materials (50011, 60012), labor (Operations 10, 15, 20), and burden (Operations 10, 15, 20). A callout box highlights the 'Method Change Variance' (Mthd Chg Var) as a residual cost in WIP, caused by changing the cost standard, product structure, routing, or work center.

Item Number	Accumulated Quantity	Expected Cost (Ref Only)	Accrued Variance (Ref Only)	Accumulated Cost	Rate Variance Posted	Usage Variance Posted	Avg Cost Received to Finished Goods	Balance
50011	1.0	76.50	0.00	76.50	0.00	0.00	0.00	76.50
60012	6.0	6.00	0.00	6.00	0.00	0.00	0.00	6.00
Material Total:		82.50	0.00	82.50	0.00	0.00	0.00	82.50
Operations: 10	1.0	10.00	2.50	12.50	0.00	2.50	0.00	10.00
Operations: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operations: 20	1.0	5.00	2.50	7.50	2.50	0.00	0.00	5.00
Labor Total:		15.00	5.00	20.00	2.50	2.50	0.00	15.00
Operations: 10	1.0	3.00	0.75	3.75	0.00	0.75	0.00	3.00
Operations: 15	1.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operations: 20	1.0	1.50	0.25	1.75	0.25	0.00	0.00	1.50
Burden Total:		4.50	1.00	5.50	0.25	0.75	0.00	4.50
Operations: 10	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operations: 15	0.0	1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
Operations: 20	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subcontract Total:		1.00	-1.00	0.00	0.00	-1.00	0.00	1.00
WO Subtotal:		103.00	5.00	108.00	2.75	2.25	0.00	103.00
- Std Cost Rcvd:								-96.75
- Mthd Chg Var:								0.00
Balance:								6.25

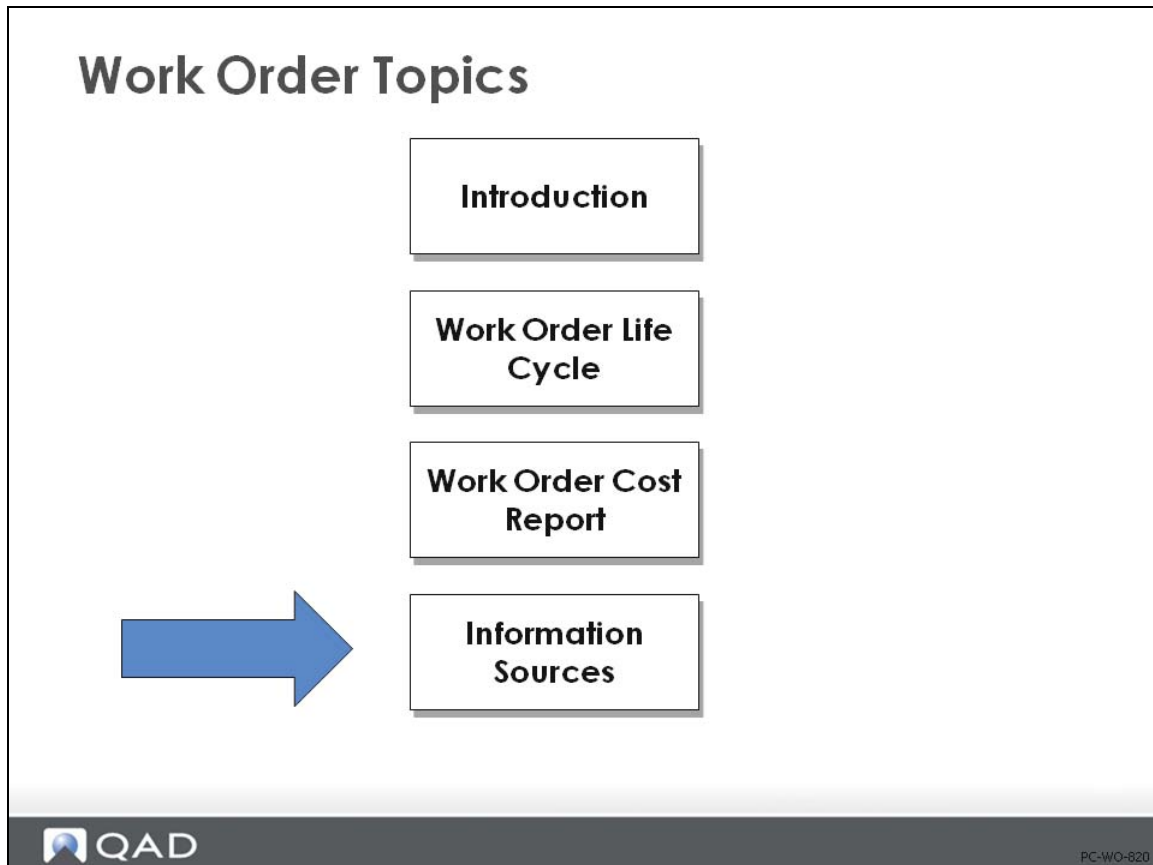
Caused by changing

- Cost standard
- Product structure
- Routing
- Work center

Method Change Variance is the residual cost in work in process. A residual work in process is caused by changing the cost standard, product structure, routing, or work center.

- If roll-ups are not performed after a change, the resultant differential in costs will produce a method change variance
 - If the work order is in process at the time of the roll-up, a revaluation of work in process might be required
 - Work orders that are not released or closed do not need to be revalued
- Using an alternate bill of material or routing will result in a Method Change Variance, unless the cost of the alternate is equal to the primary bill of material and routing that was the basis for the standard cost
- Direct updates to values in the WO BOM/Routing, which control variance calculation, like frozen quantity per, will result in a Method Change Variance
- If setup time is used and the Qty Received-plus-Qty Rejected amount on the work order varies from the Order Qty in Item Planning Data, a Method Change Variance will result
- If the Qty Complete in the Shop Floor Control reporting is different than the Qty Received-plus-Qty Rejected amount in the work order, a Method Change Variance will result

Information Sources



Information Sources



Work Order History Report
 10USA

10/07/10 12:08
 Page

Work Order: 1025	ID: 2287278	Batch:	
Item Number: 50010	Sales/Job:	Qty Ordered: 1.0	Order Date: 10/06/10
Acoustic Transducer		Quantity Completed: 1.0	Release Date: 10/06/10
WO Stat: C	Supplier:	Qty Rejected: 0.0	Due Date: 10/14/10
Received By: qmi	Received Date: 10/06/10	WO Closed By: qmi	WO Close Date: 10/06/10

Item Number	Description	UM	Qty Required	Qty Issued	Unit Cost	Extended Cost
50011	Ultrasound Array	EA	1.0	1.0	76.50	76.50
60012	Electrodes	EA	6.0	6.0	1.00	6.00
						82.50

Op	Standard Operation	Work Ctr	Qty Comp	Standard Amt Req'd	Std Rate	Standard Cost	Actual Amt Used	Act Rate	Actual Cost
10	ASSEMBLE ULTRASOUND	1000	Labor: 1.0	2.0	5.00	10.00	2.5	5.00	12.50
			Burden: 1.0	2.0	1.50	3.00	2.5	1.50	3.75
			Subcontr: 0.0	0.0	0.00	0.00	0.0	0.00	0.00
Operation Total :						13.00			16.25
15	Subc Attach Elec/Plate	2270	Labor: 1.0	0.0	0.00	0.00	0.0	0.00	0.00
			Burden: 1.0	0.0	0.00	0.00	0.0	0.00	0.00
			Subcontr: 0.0	1.0	0.00	1.00	0.0	0.00	0.00
Operation Total :						1.00			0.00
20	TEST ACOUSTIC TRANSDUCER	1040	Labor: 1.0	1.0	5.00	5.00	1.0	7.50	7.50
			Burden: 1.0	1.0	1.50	1.50	1.0	1.75	1.75
			Subcontr: 0.0	0.0	0.00	0.00	0.0	0.00	0.00
Operation Total :						6.50			9.25
Routing Total :						20.50			25.50
Work Order Total :									108.00


PC-WO-830

Information sources that are particularly relevant to work order transactions and costing are outlined below.

Work Order Cost Report (16.3.4)

Prints general cost information for one or more work orders, including issues, labor costs, receipts, GL cost, and variance information. This report can be printed for closed and open work orders. If this report is run for work orders that have not been processed by Work Order Accounting Close (16.21), the variances calculated can be incomplete.

Work Order WIP Cost Report (16.3.5)

Shows how the WIP balance is supported by work order activity. It sorts first by WIP account, then work order, displaying the accumulated material, labor, burden, and subcontract costs, and the cost of receipts and rejects, to arrive at the cost currently in WIP for each order and each WIP account. Activities that affect these costs include component issues, labor feedback, operation completions, purchase order receipts (for subcontract orders), and work order receipts. The WIP Cost Report should be reconciled to the GL WIP account at month-end.

Work Order History Report (16.3.6)

The Work Order History Report documents closed work orders with their bills and routings (see figure on preceding page). Components are reported with the quantities required and issued. Operations are reported with the actual number of units completed and the expected and actual hours for setup and run time. It also shows a comparison of actual values to expected values. The Standard Rate column expresses what each unit of a particular category (labor, burden, subcontract) costs based upon the quantity completed. The rate can then be compared with the actual rate. The Work Order History Report can be printed only for closed work orders.

Operation Transaction Detail Inquiry (16.20.13.9)

Lists detailed audit information about a specific labor feedback transaction; includes time and cost.

Operations Accounting Report (16.20.13.10)

Prints a summary of the GL transactions of type WO generated by Shop Floor Control activities. Several examples of this report are shown throughout this chapter.

Transactions Detail Inquiry (3.21.1)

Lists detailed audit information about a specific work order issue or receipt transaction. Several examples of this report are shown throughout this chapter.

Transactions Accounting Report (3.21.16)

Prints a summary of the GL transactions of type IC.

Unposted Transaction Inquiry (25.13.13); Unposted Transaction Register (25.13.14)

Lists GL transactions that have been created but not yet posted.

Appendix A

Variances and Components Reference

Purchase-Related Variances

Variance	Calculation Method
Purchase Price Calculated at: PO Receipts (5.13.1) Reports: Transaction Receipts Report (5.9.14) Transactions Detail Inquiry (3.21.1)	$[\text{PO Unit Cost} - (\text{GL Unit Cost} - \text{OH})] * \text{PO Qty Received}$
AP Rate Calculated at: Supplier Invoice Create (28.1.1.1) Reports: Matching Variance Report (28.2.7) Transactions Detail Inquiry (3.21.1)	$(\text{Invoice Unit Cost} - \text{PO Unit Cost}) * \text{Invoice Qty}$
AP Usage Calculated at: Supplier Invoice Create (28.1.1.1) Reports: Matching Variance Report (28.2.7) Transactions Detail Inquiry (3.21.1)	$(\text{Invoice Qty} - \text{PO Receipt Qty}) * \text{PO Unit Cost}$

Manufacturing-Related Variances

Variance	Calculation Method
Material Rate Calculated at: WO Component Issue (16.10) WO Receipt Backflush (16.12) Repetitive Backflush (18.22.13) Reports: Work Order Cost Report (16.3.4) Transactions Detail Inquiry (3.21.1)	$(\text{WO BOM Unit Cost at Issue} - \text{GL Unit Cost}) * \text{Actual Qty Issued}$
Material Usage Calculated at: WO Accounting Close (16.21) Cumulative Order Close (18.22.10) Post Accumulated Usage Variances (18.22.9) Reports: Work Order Cost Report (16.3.4) Transactions Detail Inquiry (3.21.1) Rep Operations Accounting Report (18.22.4.9)	$\{ \text{Actual Qty Issued} - [\text{qty per} * (\text{qty completed} + \text{qty rejected})] \} * \text{GL Unit Cost}$
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) Reports: Work Order Cost Report (16.3.4) Operations Accounting Report (16.20.13.10) Rep Operations Accounting Report (18.22.4.9)	Per Operation: $[(\text{Actual Setup Rate} - \text{Std Setup Rate}) * \text{Actual Setup Hrs}] + [(\text{Actual Run Rate} - \text{Std Run Rate}) * \text{Actual Run Hrs}]$ Setup 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 Variances (18.22.9) Cumulative Accounting Close (18.22.10) Reports: WO Cost Report (16.3.4) Operations Accounting Report (16.20.13.10) Rep Operations Accounting Report (18.22.4.9)	Per Operation: $[(\text{Actual Setup Hrs} - \text{Std Setup Hrs}) * \text{Std Setup Rate}] + [(\text{Actual Run Hrs} - \text{Std Run Hrs}) * \text{Std Run Rate}]$ $\text{Std Run Hrs} = \text{Std Run Hrs} * (\text{Qty Completed} + \text{Qty Rejected})$

Variance	Calculation Method
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 Report (16.20.13.10) Rep Operations Accounting Report (18.22.4.9)	Per Operation: $[(\text{Actual Setup Bdn} - \text{Std Setup Bdn}) * \text{Actual Setup Hrs}] + [(\text{Actual Run Bdn} - \text{Std Run Bdn}) * \text{Actual Run Hrs}]$ $\text{Actual Setup Bdn} = (\text{Actual Setup Rate} * \text{Lbr Bdn}\%) + \text{Lbr Bdn Rate} + (\text{Mach Bdn Rate} * \text{Mach/Op})$ $\text{Std Setup Bdn} = (\text{Std Setup Rate} * \text{Lbr Bdn}\%) + \text{Lbr Bdn Rate} + (\text{Mach Bdn Rate} * \text{Mach/Op})$ $\text{Actual Run Bdn} = (\text{Actual Run Rate} * \text{Lbr Bdn}\%) + \text{Lbr Bdn Rate} + \text{Mach Bdn Rate}$ $\text{Std Run Bdn} = (\text{Std Run Rate} * \text{Lbr Bdn}\%) + \text{Lbr Bdn Rate} + \text{Mach Bdn Rate}$
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 Variance (18.22.9) Cumulative Order Close (18.22.10) Reports: WO Cost Report (16.3.4) Operations Accounting Report (16.20.13.10) Rep Operations Accounting Report (18.22.4.9)	Per Operation: $[(\text{Act Setup Hrs} - \text{Std Setup Hrs}) * \text{Std Setup Bdn}] + [(\text{Act Run Hrs} - \text{Std Run Hrs}) * \text{Std Run Bdn}]$ $\text{Std Setup Bdn} = (\text{Std Setup Rate} * \text{Lbr Bdn}\%) + \text{Lbr Bdn Rate} + (\text{Mach Bdn Rate} * \text{Mach/Op})$ $\text{Std Run Bdn} = (\text{Std Run Rate} * \text{Lbr Bdn}\%) + \text{Lbr Bdn Rate} + \text{Mach Bdn Rate}$
Subcontract Rate Calculated at: PO Receipt (5.13.1)	$(\text{Subcontract PO Unit Cost} - \text{Subcontract Unit Cost from Routing}) * \text{Qty Received}$
Subcontract Usage Calculated at: WO Accounting Close (16.21) Post Accumulated Usage Variance (18.22.9) Cumulative Order Close (18.22.10)	$[\text{Qty Received} - (\text{Op Qty Completed} + \text{Op Qty Rejected})] * \text{Subcontract Unit Cost from Routing}$
Method Calculated at: WO Accounting Close (16.21) Cumulative Accounting Close (18.22.10)	Balance of WO/ID value remaining
Mix (Co/By-Products) Calculated at: WO Accounting Close (16.21)	$[\text{Order Qty} - (\text{Receipt Qty} + \text{Scrap Qty})] * \text{GL Unit Cost}$

Variances by Transaction Flow

Variances by Transaction Flow
PO Receipts Purchase Price Variance $[PO \text{ Unit Cost} - (GL \text{ Unit Cost} - OH)] * PO \text{ Qty Received}$ Subcontract Rate Variance $(Subcontract \text{ PO Unit Cost} - Subcontract \text{ Unit Cost from Routing}) * Qty \text{ Received}$
Receiver Matching Accounts Payable Rate Variance $(Invoice \text{ Unit Cost} - PO \text{ Unit Cost}) * Invoice \text{ Quantity}$ Accounts Payable Usage Variance $(Invoice \text{ Qty} - PO \text{ Receipt Qty}) * PO \text{ Unit Cost}$
Work Order Component Issue Material Rate Variance $(WO \text{ BOM Unit Cost at Issue} - GL \text{ Unit Cost}) * Actual \text{ Qty Issued}$
Labor Feedback Labor Rate Variance $[(Actual \text{ Setup Rate} - Std \text{ Setup Rate}) * Actual \text{ Setup Hrs}] + [(Actual \text{ Run Rate} - Std \text{ Run Rate}) * Actual \text{ Run Hrs}]$ Labor Usage Variance $[(Actual \text{ Setup Hrs} - Std \text{ Setup Hrs}) * Std \text{ Setup Rate}] + [(Actual \text{ Run Hrs} - Std \text{ Run Hrs}) * Std \text{ Run Rate}]$ $* Std \text{ Run Hrs} = Std \text{ Run Hrs} * (Qty \text{ Completed} + Qty \text{ Rejected})$ Burden Rate Variance $[(Actual \text{ Setup Bdn} - Std \text{ Setup Bdn}) * Actual \text{ Setup Hrs}] +$ $[(Actual \text{ Run Bdn} - Std \text{ Run Bdn}) * Actual \text{ Run Hrs}]$ Burden Usage Variance $[(Act \text{ Setup Hrs} - Std \text{ Setup Hrs}) * Setup \text{ Bdn}] + [(Act \text{ Run Hrs} - Std \text{ Run Hrs}) * Run \text{ Bdn}]$
Work Order Accounting Close Subcontract Usage Variance $[Qty \text{ Received} - (Op \text{ Qty Completed} + Op \text{ Qty Rejected})] * Subcontract \text{ Unit Cost from Routing}$ Material Usage Variance $[Actual \text{ Qty Issued} - [qty \text{ per} * (qty \text{ completed} + qty \text{ rejected})]] * GL \text{ Unit Cost}$ Method Variance

Components of Item Cost

Components of Item Cost	
Material <i>Dependent On</i> Material/Purchase Price Quantity Per Scrap % Phantom Pur/Mfg Structure Type Yield %	<i>Defined In</i> Item Master Maintenance (1.4.1), (1.4.9), (1.4.18) Product Structure Maintenance (13.5), (15.5) Product Structure Maintenance (13.5), (15.5) Item Master Maintenance (1.4.1), (1.4.7), (1.4.17) Item Master Maintenance (1.4.1), (1.4.7), (1.4.17) Product Structure Maintenance (13.5) Routing Maintenance (14.13.1)
Labor <i>Dependent On</i> Work Center Labor Rates Work Center Setup Rates Run Time per Unit Setup Time per Lot Order Quantity Subcontract Cost	<i>Defined In</i> Work Center Maintenance (14.5) Work Center Maintenance (14.5) Routing Maintenance (14.13.1), (14.13.2) Routing Maintenance (14.13.1), (14.13.2) Item Master Maintenance (1.4.1) Routing Maintenance (14.13.1)
Burden <i>Dependent On</i> Work Center Labor Burden Rates Work Center Labor Burden Percent Work Center Machine Burden Rate Machines/Operation All of the items under Labor (above)	<i>Defined In</i> Work Center Maintenance (14.5) Work Center Maintenance (14.5) Work Center Maintenance (14.5) Work Center Maintenance (14.5)

Product Information Resources

QAD offers a number of online resources to help you get more information about using QAD products.

[QAD Forums \(community.qad.com\)](https://community.qad.com)

Ask questions and share information with other members of the user community, including QAD experts.

[QAD Knowledgebase \(knowledgebase.qad.com\)*](https://knowledgebase.qad.com)

Search for answers, tips, or solutions related to any QAD product or topic.

[QAD Document Library \(www.qad.com/documentlibrary\)](https://www.qad.com/documentlibrary)

Get browser-based access to user guides, release notes, training guides, and so on; use powerful search features to find the document you want, then read online, or download and print PDF.

[QAD Learning Center \(learning.qad.com\)*](https://learning.qad.com)

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