QAD Enterprise Applications
Enterprise Edition

Training Guide

Introduction to Product Costing

70-3075A
QAD 2010 Enterprise Edition
Lab: Enterprise Edition 2010 - Addons r03 - Training
Workspace: 10USA > 10USACO
Nov 2010

CostingIntroduction_v2010EE.pdf/njm/lkk

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Contents

About this Course

Course Description

This QAD Introduction to Costing 2010 Enterprise Edition training guide offers an overview of the concepts and principles of standard and average costing as implemented in QAD Enterprise Solutions.

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

Course Objectives

Provides the background and structural framework necessary for the more detailed coursework in all of the individual costing courses.

Course Benefits

Provides the groundwork needed to advance to other cost courses and provides an overview for those who need/want a conceptual outline without the detail.

Audience

Finance and operations personal who need the background to take any of the other cost courses.

Prerequisites

Basic understanding of the .NetUI.

Course Credit & 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 "Enterprise Edition 2010 - Addons r03 - Training" environment, in the "10USA > 10USACO" workspace.

QAD Web Resources

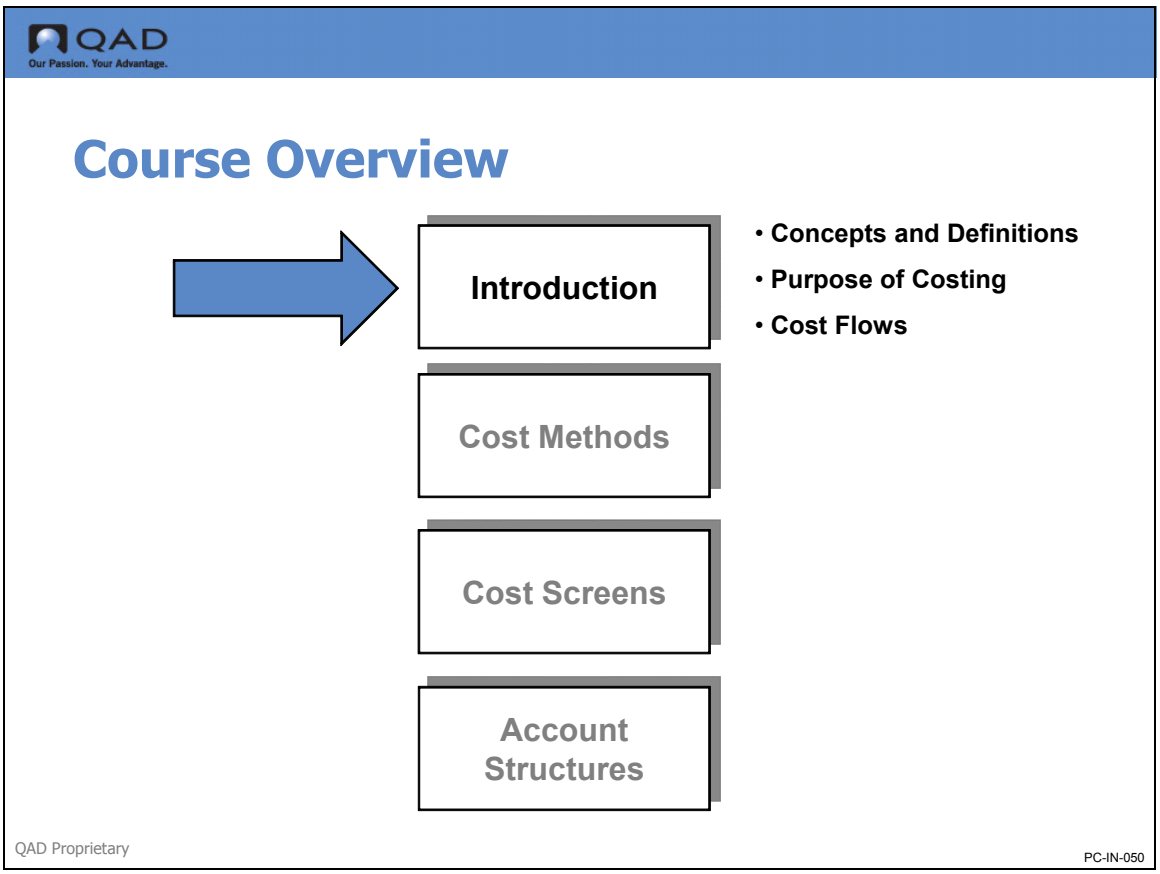
From QAD's main site, you can access QAD's Learning or Support sites.

http://www.qad.com/

Chapter 1

Introduction: Concepts & Definitions

Course Overview



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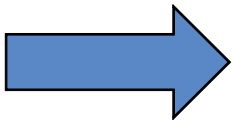
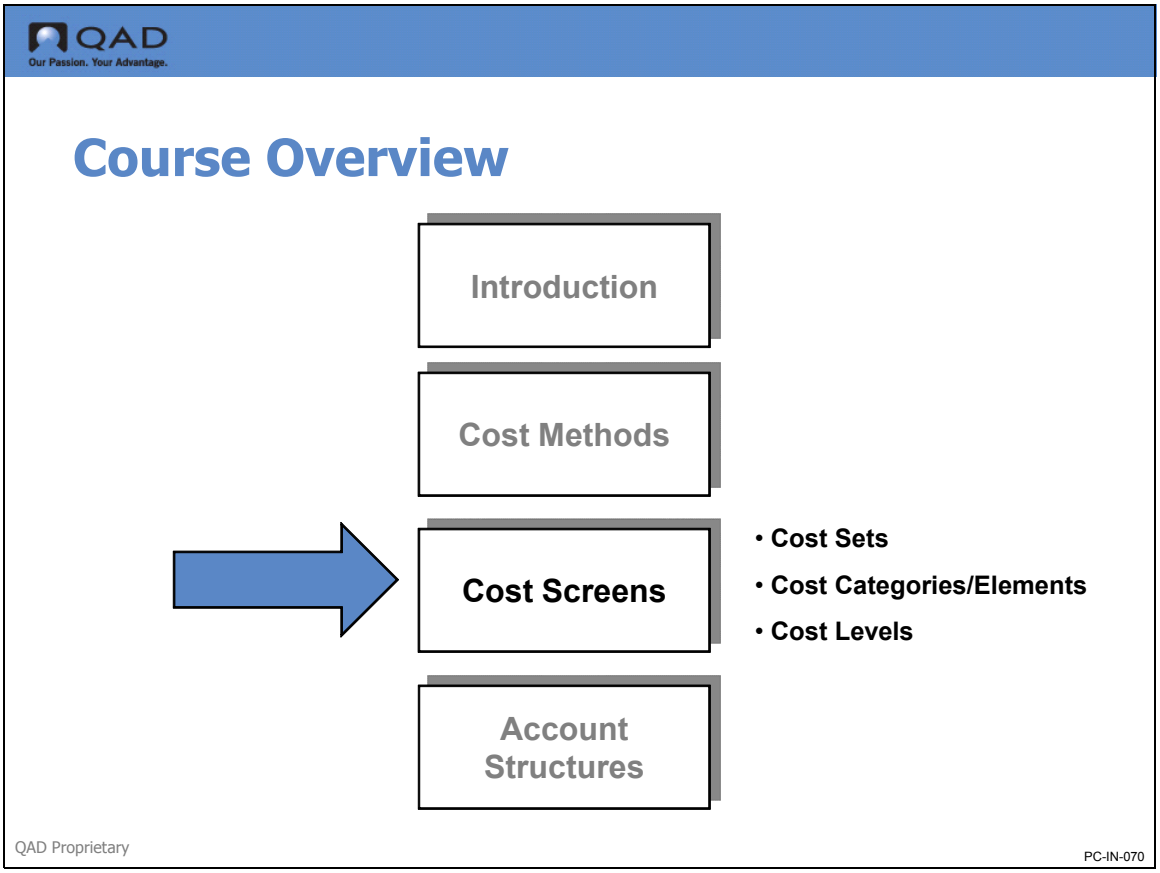
Course Overview

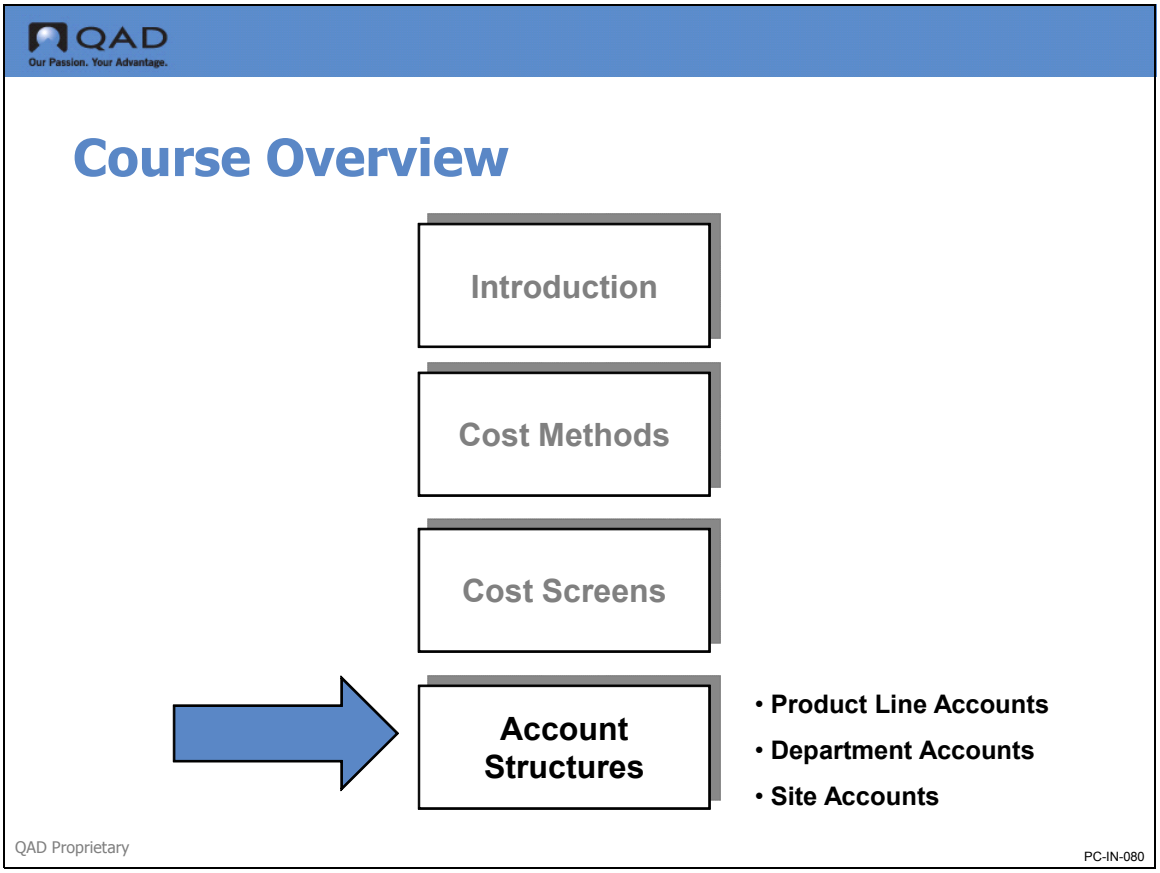


- Introduction
- **Cost Methods**
  - **Standard Cost**
  - **Average Cost**
  - **Period Cost**
- Cost Screens
- Account Structures

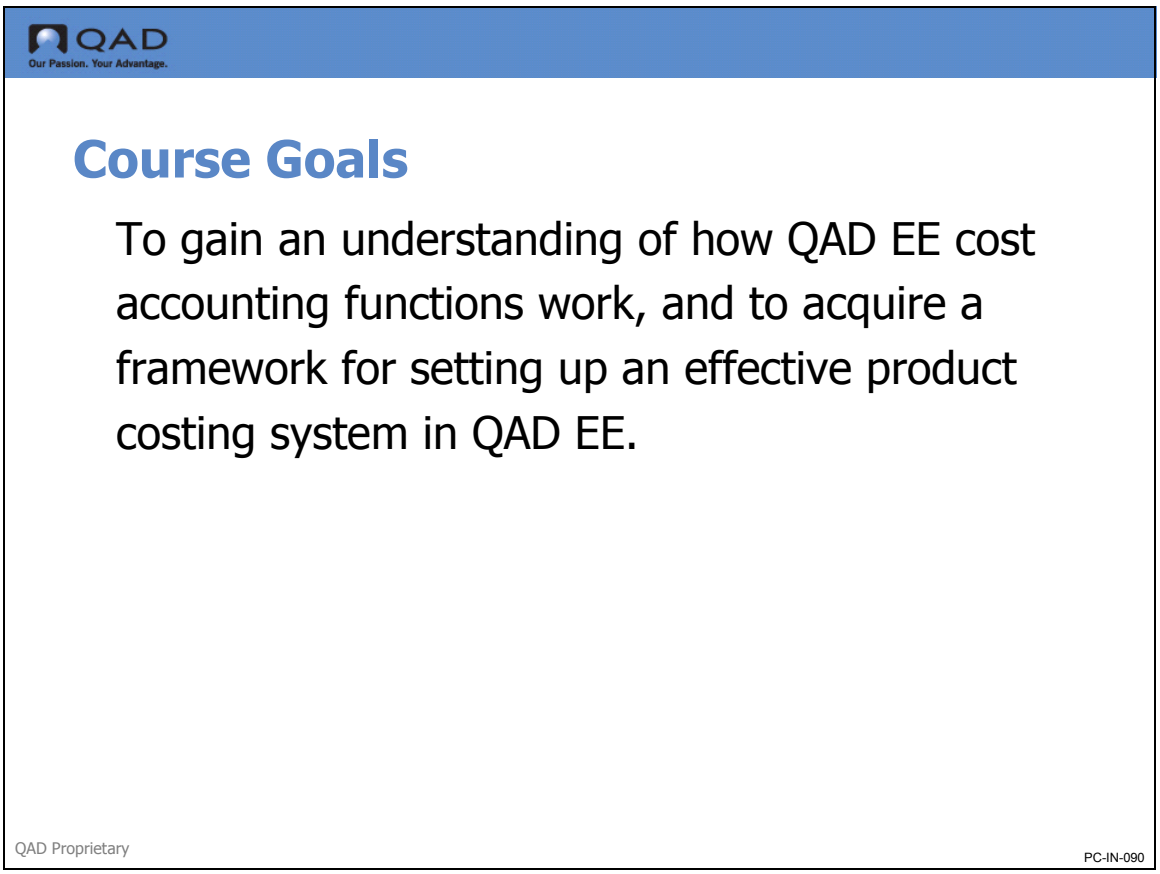
Course Overview, cont.



Course Overview, cont.



Course Goals



Concepts and Definitions

Purpose of Cost Accounting

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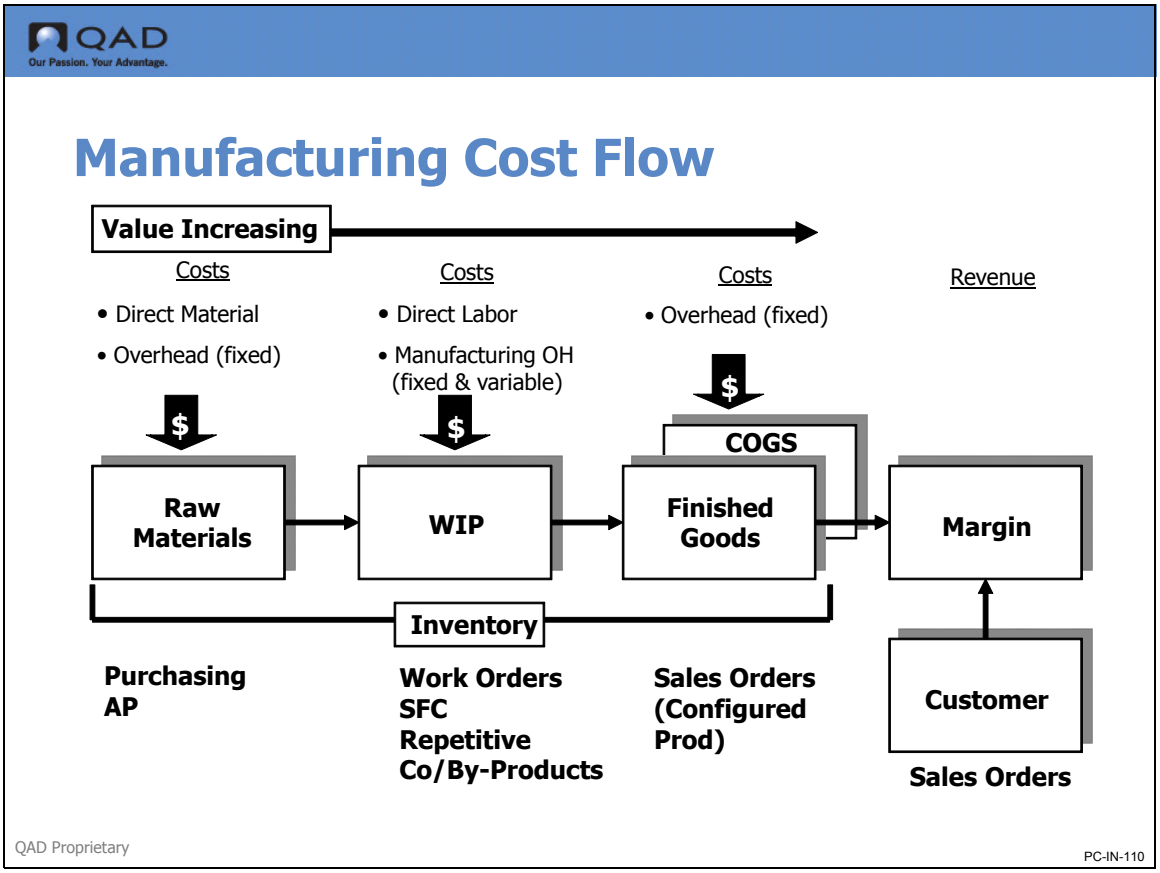
Purpose of Cost Accounting

- Determination of product costs for
  - Inventory valuation
  - COGS
  - Cost-plus product pricing models
- Determination of costs for other units of activity
  - Departments
  - Sales territories
  - Customer/industry groups
  - Distribution channels
- Internal performance measurement
- Control and planning

PC-IN-100

Manufacturing Cost Flow Overview

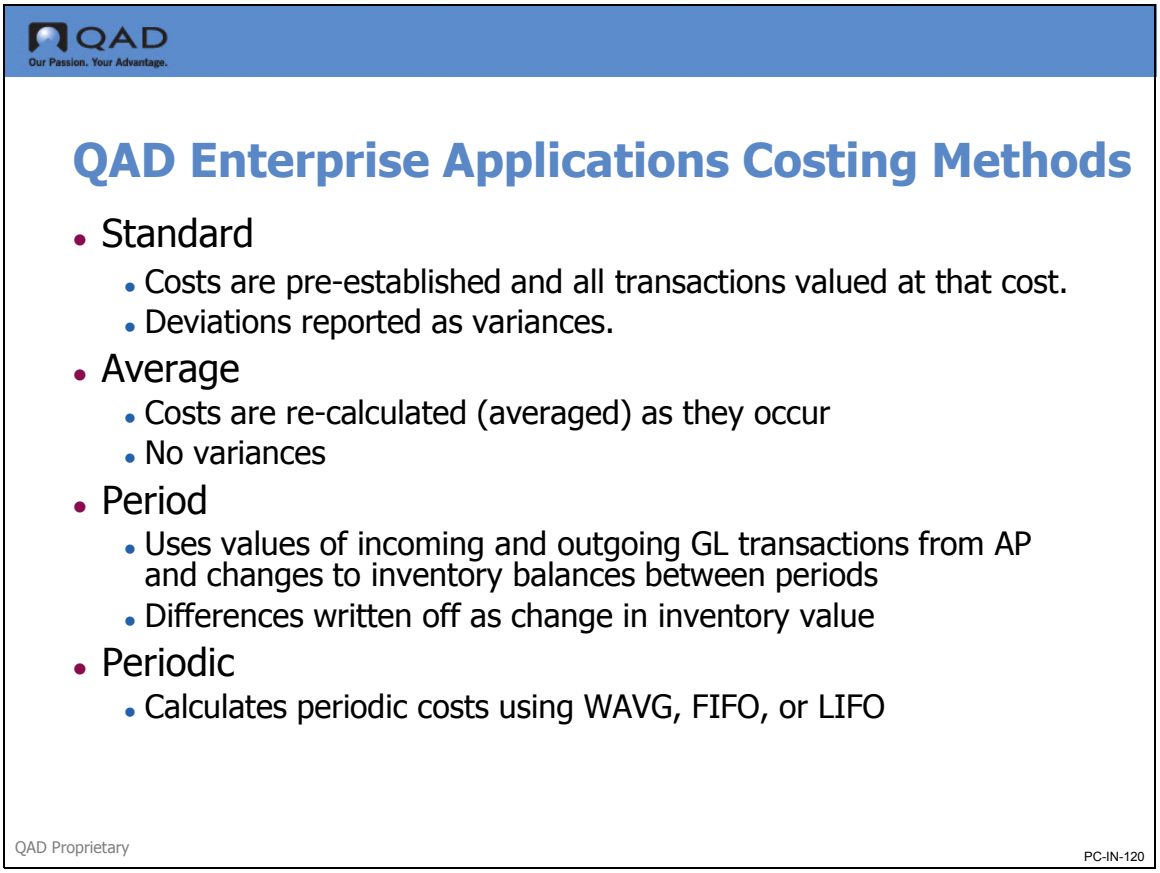


Study Questions

What are the two primary uses of a standard cost?

If you take an item out of finished goods inventory, issue it to WIP, disassemble it, and put the components back into inventory, what are the cost impacts?

QAD 2008 SE Costing Methods



Below is a summary of the QAD Enterprise Applications costing methods. Each method is described in more detail on the pages that follow this summary.

Standard

Costs are pre-established and all transactions valued at that cost. Deviations between base settings and actuals transacted are reported as variances.

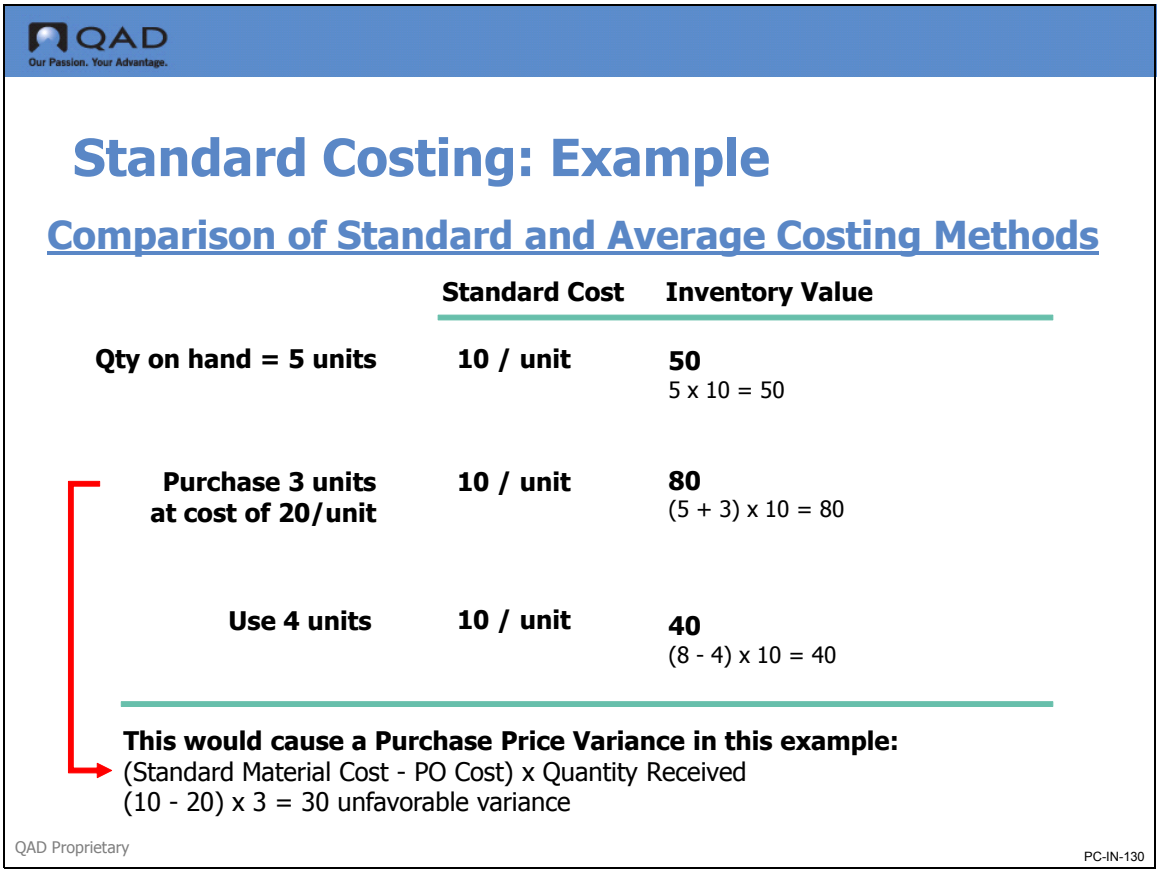
Average

Costs are recalculated as they occur. The costs associated with a transaction are weighted with the existing costs to provide a new average cost. The average cost may be used for valuation as a GL cost for information only as a current cost.

Period

This costing method omits the valuation of inventory type transactions and uses the values of the incoming GL transaction from Accounts Payable functions, along with changes to inventory balances between accounting periods. This can be set in Inventory Control (3.9.24).

Standard Costs

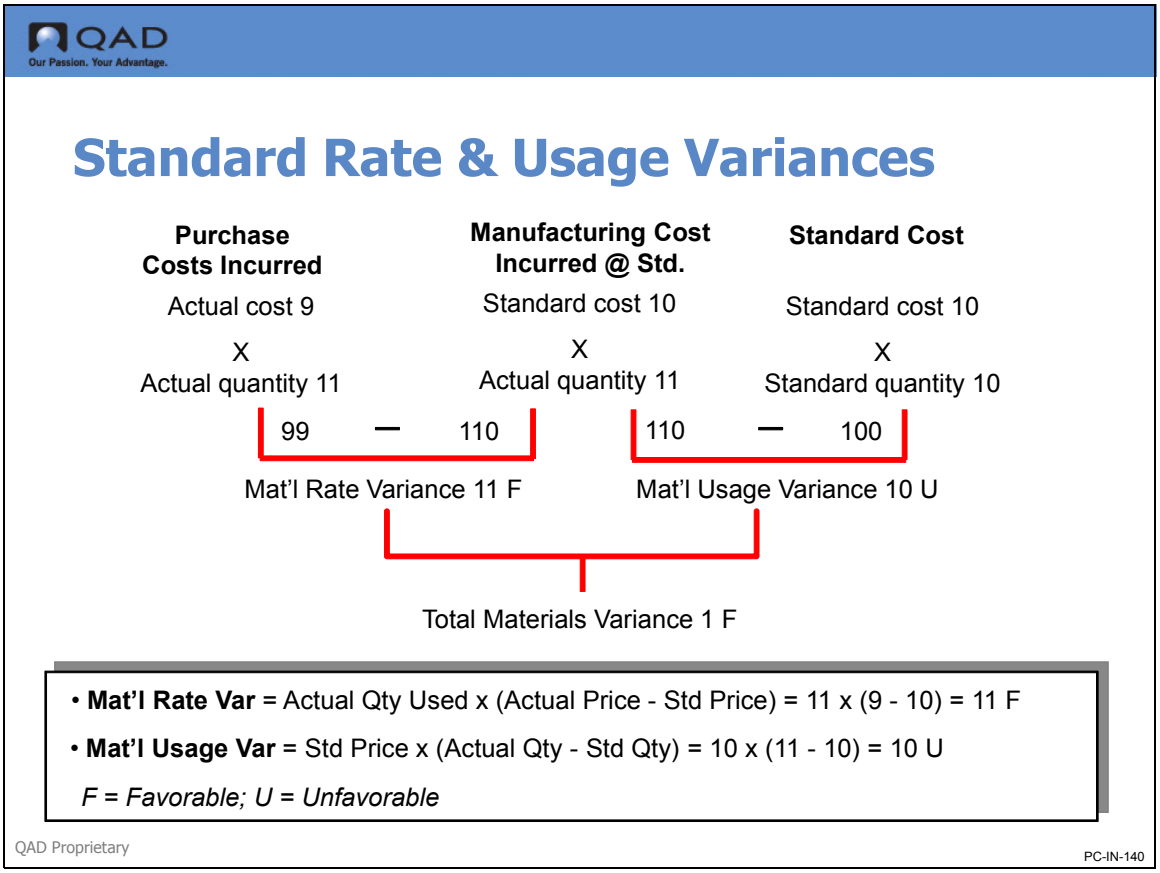


A standard cost for a product consists of a price standard (price for material; rate for labor and manufacturing burden) and a quantity standard (quantity for material; time for labor; quantity or volume for manufacturing burden). The combination of price and quantity yields what is planned or expected for a specific interval of time and set of conditions. Cost for Overhead and Sub-Contract costs are set up and included in the Inventory value.

- Setting standards for price and quantity involves management judgements, industrial engineering studies, work measurement studies, vendor analyses, as well as a number of other techniques

Once set, the standard cost of an item is used as the basis for all accounting entries for inventory related transactions (see figure above). Standard costs cover a specific period, usually a year. They can evaluated and changed at any time.

Standard Cost—Variances



Because the standard is only a target or estimate of what an item will cost, the costs incurred rarely match the standard exactly. In order to account for the difference between standard costs and actual costs, variances are calculated and recorded.

- Variances are calculated as the difference between Standard and Actual costs and are defined as Total Variance

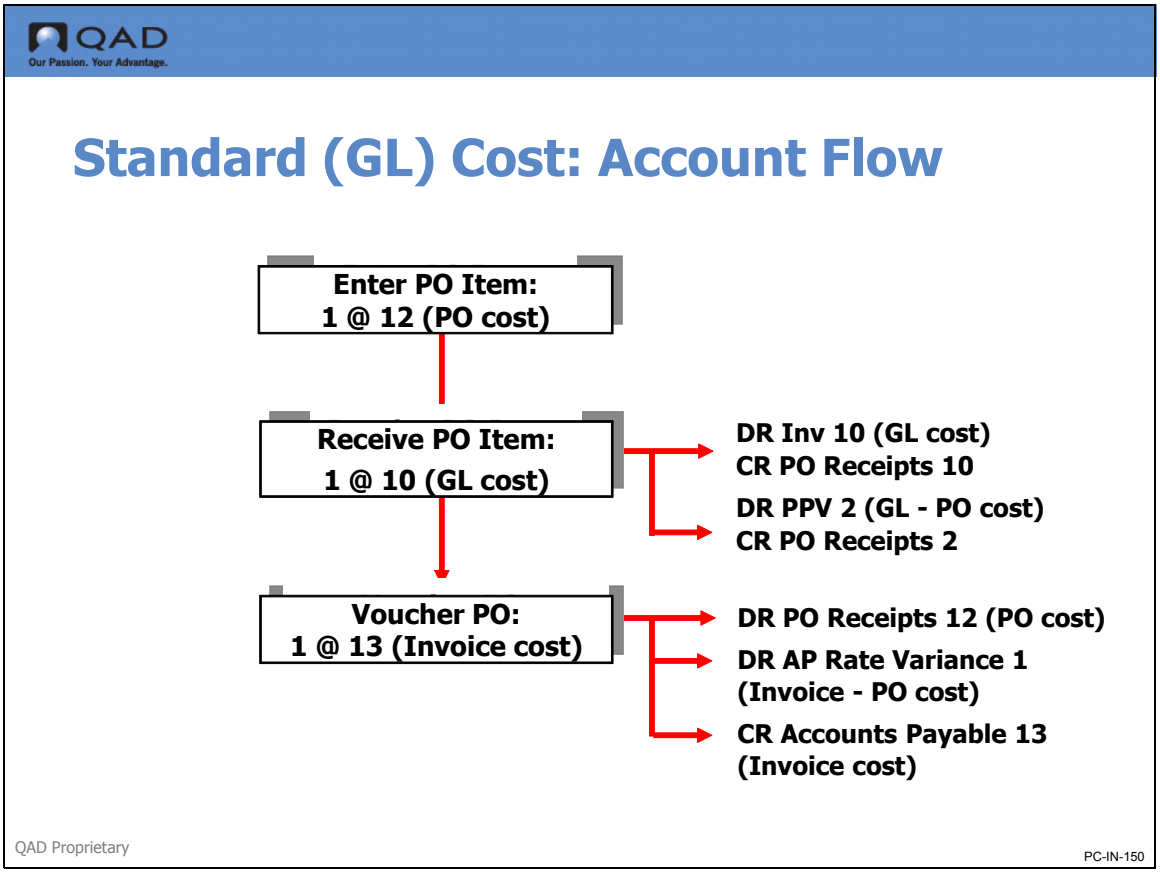
  Total Variance can be subdivided into Price and Efficiency components called Rate and Usage in QAD Enterprise Applications (see figure above)

- Price or rate variance occurs when the actual purchase cost of a resource differs from the standard rate and is calculated based on the actual quantity purchased
- Usage or efficiency variance occurs when the actual quantity transacted is different than the standard quantity that was defined and calculated using the standard cost

  For example, if quantities of components issued are different than those defined and calculated using the standard BOM, or additional non-standard components are issued

Note An adverse variance is not necessarily an indication of underachievement. For example, a corporation may make allowances in its operating budget for unfavorable variances if standard costs cover a long period of time. Conversely, a purchasing department may be sent a budgeted favorable price variance to achieve when operating in a "cost down" environment with its customers and suppliers

Standard Cost—Account Flow



Example The example in the figure above shows how the general ledger uses variances to balance standard and actual costs. An item has a GL cost of 10. A purchase order is issued to purchase one for 12—its PO cost. When the invoice arrives, the supplier has charged 13.

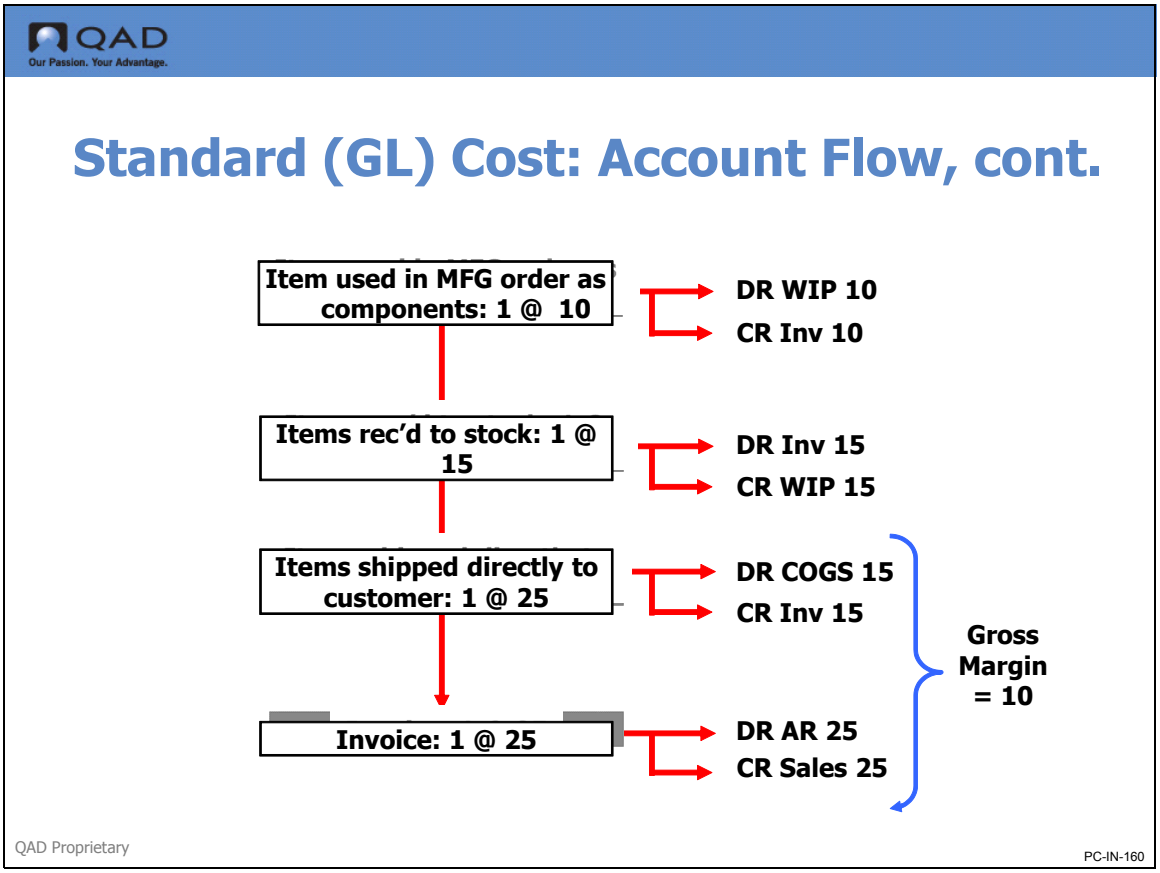
- PO Receipt

  When the item arrives, the Inventory account is debited for the 10 GL cost and the PO Receipts account is credited 10. The Purchase Price Variance account is debited 2 (the difference between the item's PO cost and its GL cost) and the PO Receipts account is credited 2.

- Voucher Maintenance

  An invoice is received and the supplier has charged 13 (1 over the PO cost) for the item. If it is decided to accept this increase and continue vouchering, the PO Receipts account is debited 12 (PO cost). The Accounts Payable account is credited 13 (invoice cost) and the Accounts Payable Rate Variance account is debited 1 (the difference between the PO cost and invoice cost).

Standard Cost—Account Flow, cont.



When items are taken from inventory and issued to manufacturing or shipped to a customer, the value of inventory is decreased at GL cost. Let's see what happens when the purchased pens are issued.

- Manufacturing

  The item is issued to the work order. Inventory is credited 10 (issued to the work order). Work in Process (WIP) is debited 10. The cost of the process of 5 is added to component cost so that the end item cost is 15. WIP is debited and a recovery account (Labor/Burden/Overhead Absorption) is credited with 5. Inventory is debited and WIP is credited 15 at Work Order receipt time.

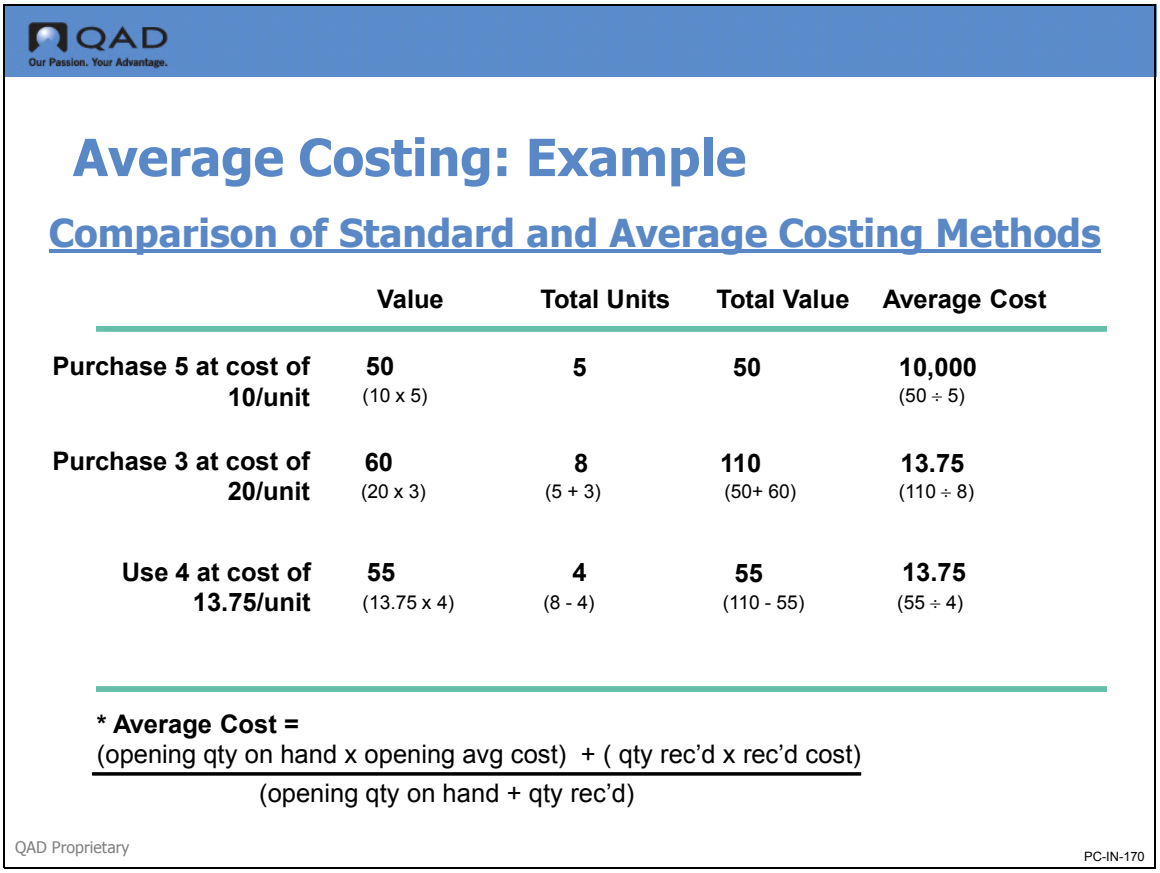
- Sales shipment

  Items shipped from stock decrease (credit) the inventory value by 15. Cost of goods is debited 15. The actual selling price of 25 is not recorded until the invoice is created. The difference of 10 is the gross margin.

- Invoice

  When you print and then post the invoice, you debit Accounts Receivable 25 and credit Sales 25

Average Costs



The average cost method simply keeps a running average of what an item is costing rather than estimate what an item should cost as standard costing does.

Average Costing Defined

With the average costing method, the average cost of goods available for sale is not predefined by you; rather it is computed and the units in both the cost of goods sold and ending inventory are costed at this average cost. It is a weighted average. That is, each unit cost is weighted by the number of units with that cost. In QAD Enterprise Applications, a new average unit cost is calculated after each receipt and optionally by AP vouchers.

Note Only receipts update the average cost.

How Average Costing Works

For purchased items, the quantity received is multiplied by the purchase order price and added to the quantity on-hand multiplied by the current average material cost. This sum is divided by the new quantity on-hand to determine the new average material cost. The value of inventory is adjusted to reflect this new average cost. (See example in figure.)

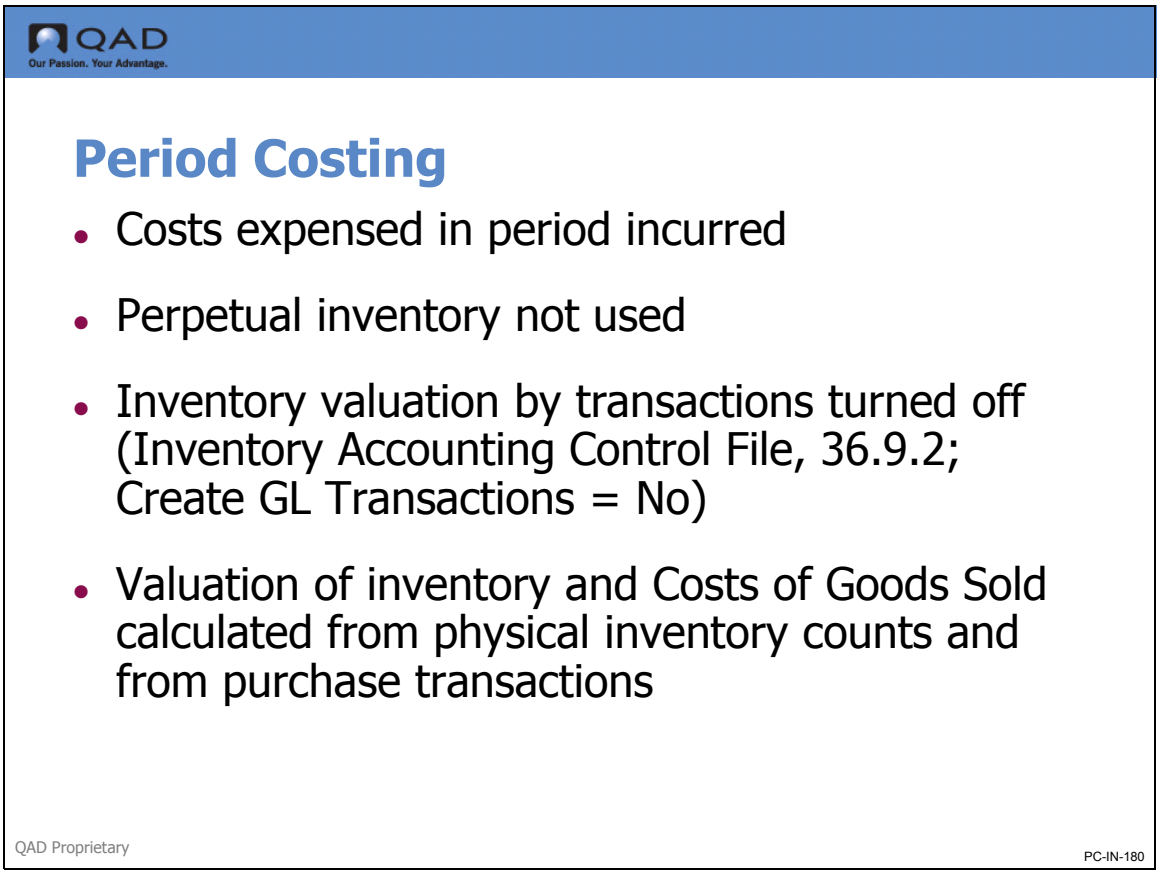
- Each time an item is received, the average cost is recalculated as:

  [(opening qty on hand x opening avg cost) + (qty rec'd x rec'd cost)] / (opening qty on hand + qty rec'd)

Note If you wish to use the average costing method for GL costs, you must use the Cost Management module.

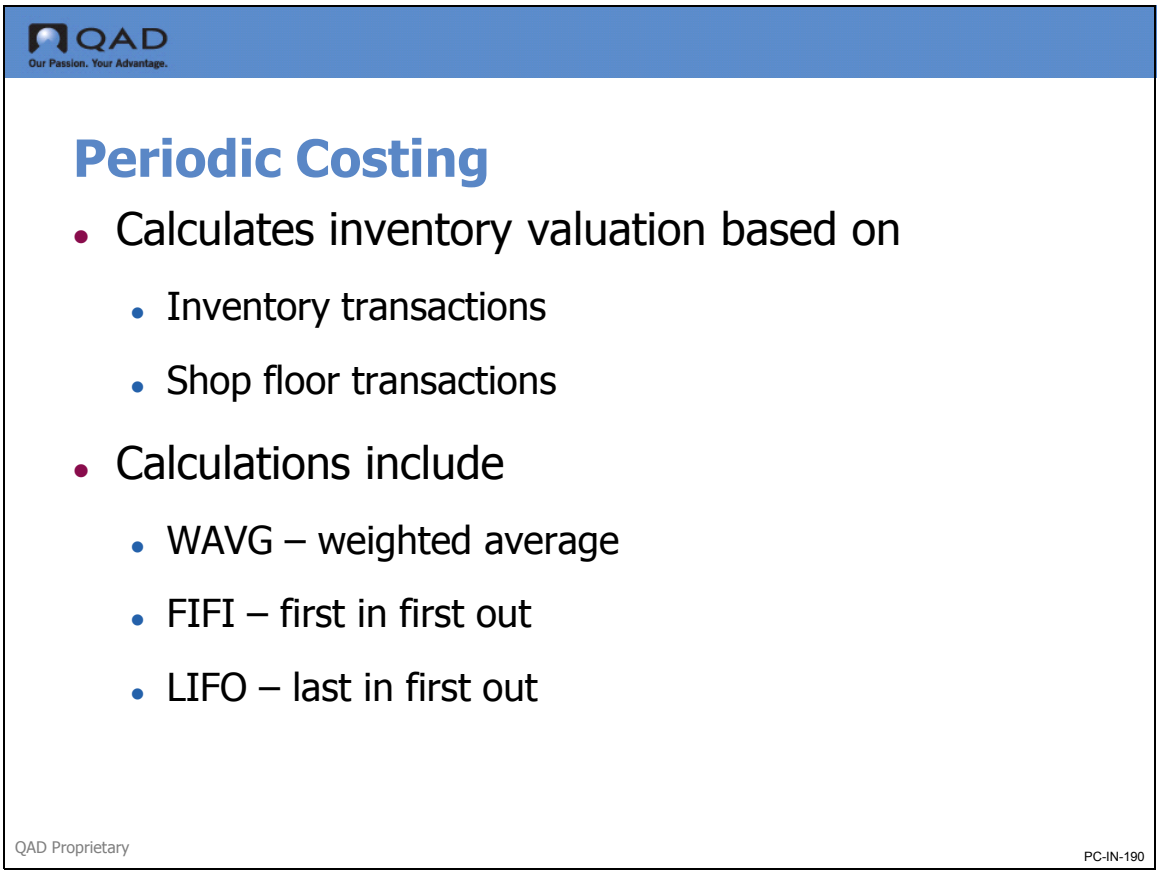
Average Costing is described in more detail in the Average Costing Training Guide.

Period Costs



Period costs are determined by tracking the beginning inventory balance, adding purchased material and value added to inventory (labor costs), and then deducting the ending inventory. No perpetual inventory records are maintained; the GL handles tracking and reporting. Accounting records are updated periodically.

To use QAD Enterprise Applications for period costing, all inventory-related transactions are turned off in the Inventory Accounting Control (36.9.2), so that all issues, transfers, and receipt transactions do not create GL transactions. The valuation of inventory and cost of goods sold is calculated from physical inventory counts, and purchase and sales transactions from Accounts Payable. Period costing is a method usually not used by QAD Enterprise Applications customers for financial valuation.



Periodic costing is a cost method for inventory valuation that calculates periodic item unit costs based on inventory and shop floor transactions. Periodic costing uses cost-calculation formulas such as weighted average (WAVG), first in first out (FIFO), and last in first out (LIFO) that support:

- Local legal requirements for certain countries
- International financial Reporting Standards (IFRS) guidelines
- Business practices in corporations with regards to inventory valuations

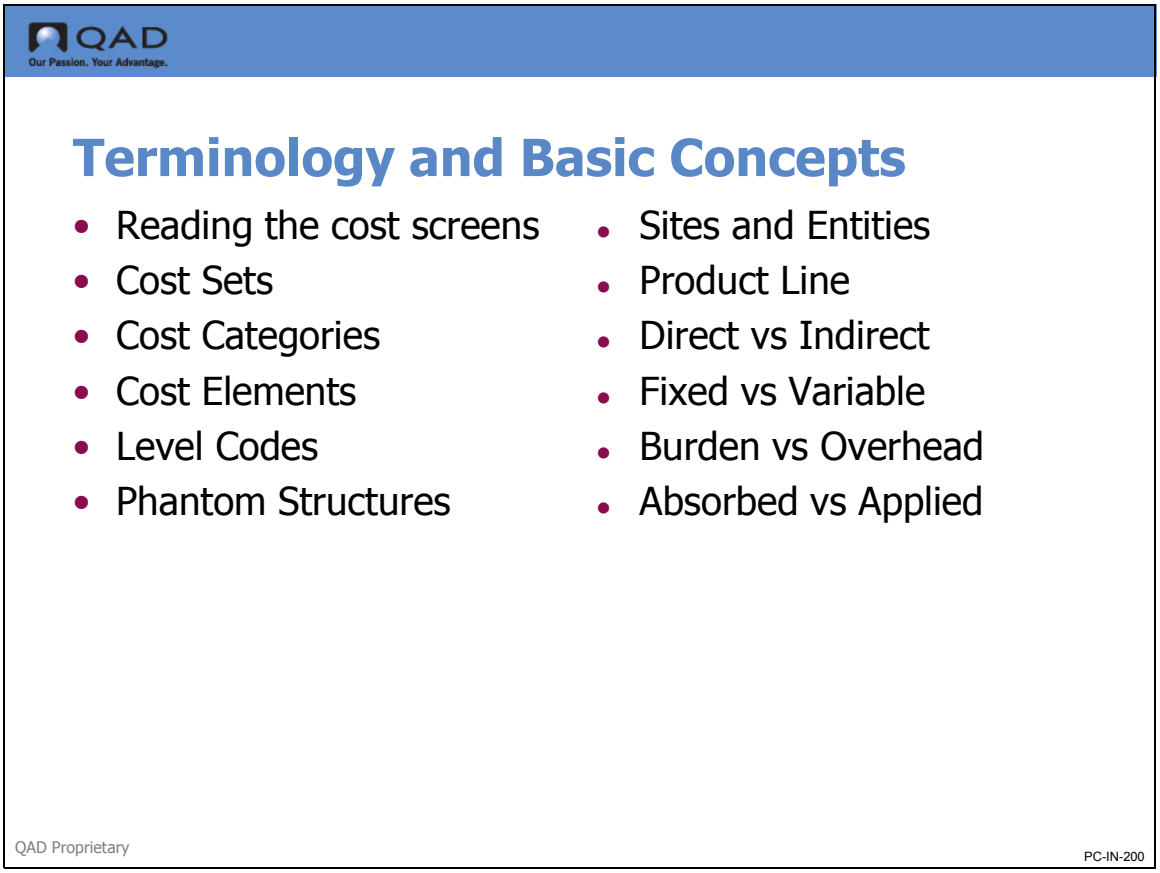
Programs on the Periodic Costing menu (30.5) optionally calculate the cost of an item based on recorded data, such as inventory transactions, BOMs, routings, purchase prices, and labor/burden expenses over a certain user-defined period. The period can be any length, up to an entire GL period. Under most circumstances, periodic costing considers the beginning balance of the item while it is performing calculations. It then batch generates GL transactions based on the calculations.

Study Questions

What are the three cost methods supported by QAD?

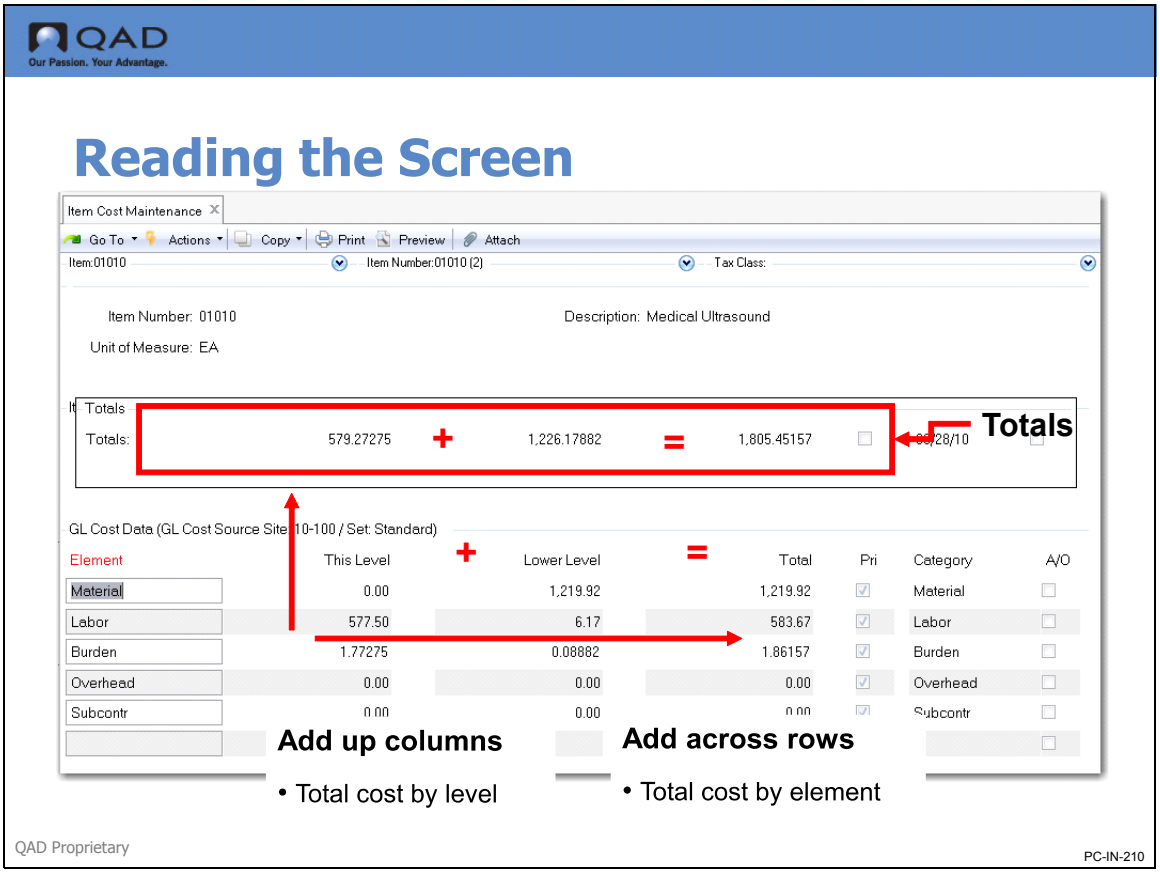
What is a major difference between standard and average costing?

Terminology and Basic Concepts



A few key terms are defined and concepts described in this section.

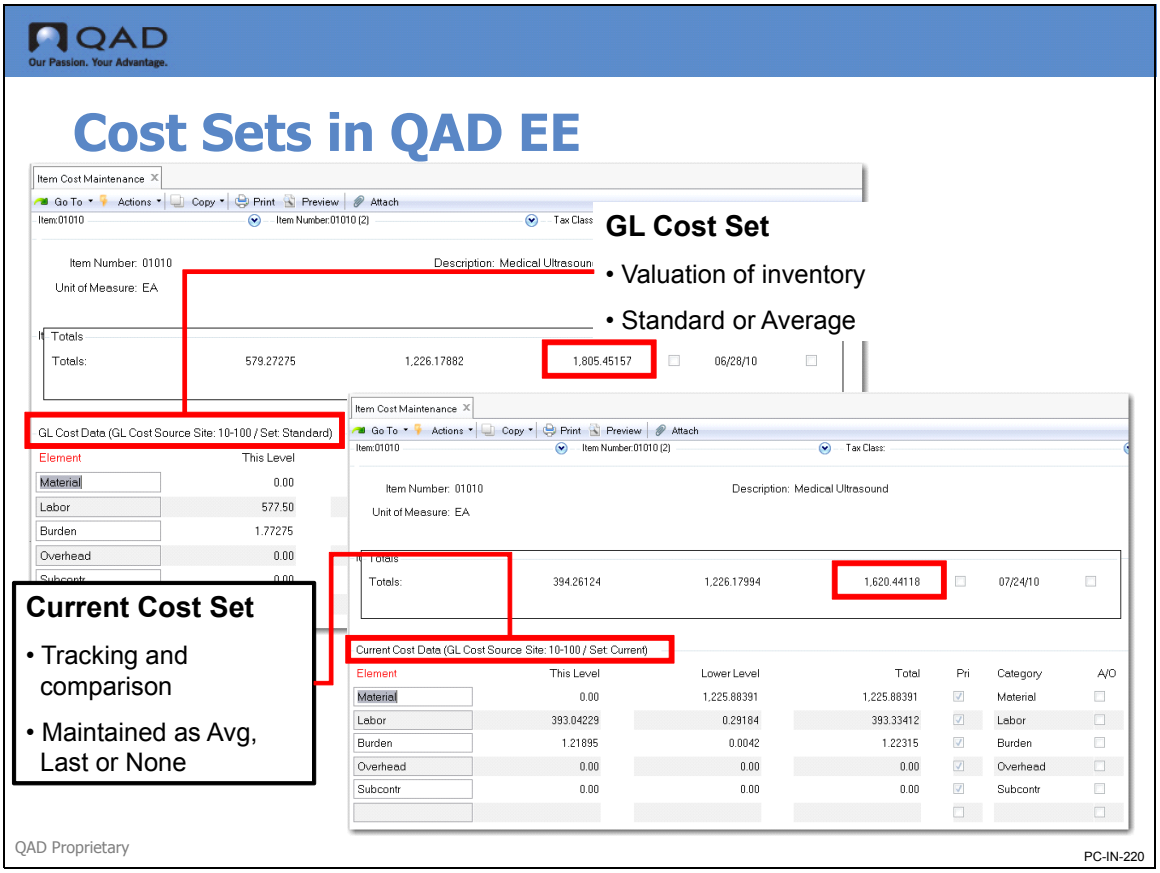
Reading the Screen



The figure above provides a quick orientation to reading the cost information in item maintenance screens, Item Master Maintenance (1.4.1), Item Cost Maintenance (1.4.9) and Item Site-Cost Maintenance (1.4.18).

Note The A/O (Add On) column is not currently in use. It is a placeholder for future costing enhancements.

Cost Sets



The term cost set is used to identify cost files in the system. QAD Enterprise Applications has two default cost sets—GL and Current—that are available for each site, but it can have additional cost sets, too.

Cost sets are used to:

Maintain General Ledger Item Costs (GL Cost Set)

GL cost is a term that distinguishes costs used for valuing inventory and for determining cost of goods sold from other costs such as current costs. GL costs can be based on either a standard or an average cost method.

Maintain Current Item Costs (Current Cost Set)

The current cost of an item is normally based upon recent production and/or purchases. Current costs are the actual costs from inventory receipts and work order labor transactions.

- When the method used for the GL cost set is standard costing, the current cost set can be used to track the running average or last cost for use in determining next year's standard cost or for providing a record of recent actual costs
- Methods that can be used with current are Last, Average or None

  Last: Each receipt sets the current cost to the last cost of that item. In the case of purchased material, this is the purchase or invoice price.

Average: Whenever an item is received, the new average cost is calculated and stored in the cost set

None: Current costs are maintained manually in the system or not used

Maintain Historical Item Costs

Historical costs (standard or current) are costs from prior periods that are used for comparison purposes. These costs are stored in one of the additional cost sets of the Cost Management module.

Develop Simulated Item Costs

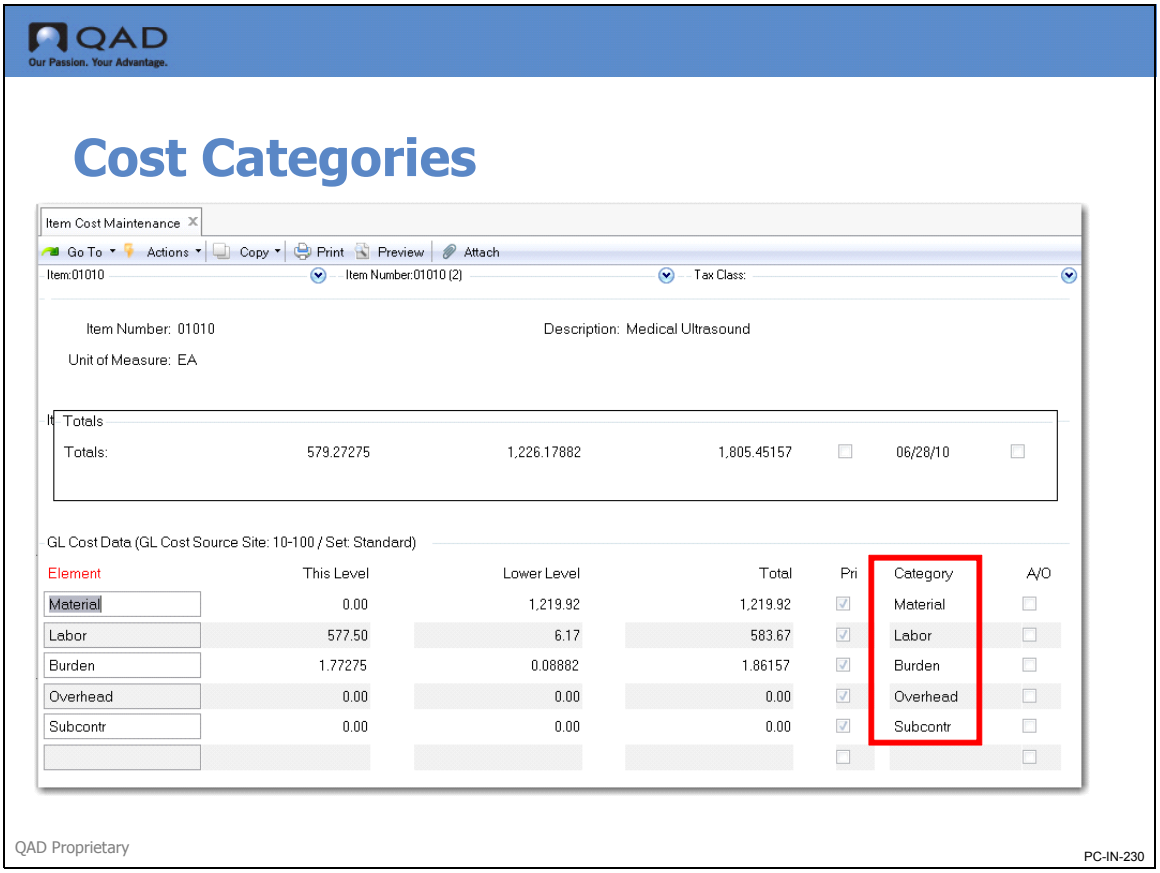
Simulated costs are costs used for planning purposes to evaluate the effects of differing scenarios of, for example, material price inflation, or batch size, labor and burden rate changes. These costs are stored in one of the additional cost sets of the Cost Management module.

Maintain Frozen Standard Costs

Once standard costs are established, you may wish to freeze them to prevent costs from being recalculated. Any cost set can be frozen. Running the Cost Roll-Up Freeze/Unfreeze (13.12.1), flags item costs for this cost set and site as frozen. When QAD Enterprise Applications routing and product structure cost roll-up functions see that an item cost has been frozen, the roll-up simply uses the existing frozen cost; it does not recalculate it.

Note Only one set of GL and Current costs are allowed per site.

Cost Categories



There are five categories of costs tracked for each cost set. These categories, described below, are tracked for both this-level and lower-level costs in QAD Enterprise Applications and contain cost elements that, by default, have the same name as the category. (“This level” refers to costs incurred at the level at which you define the item; “lower level” refers to costs associated with the item’s components or manufactured items in the BOM.)

Material

Represents the cost of purchased materials.

For purchased items, the material cost is maintained in the This Level Material field by manually entering the data in the item cost maintenance screens, Item Master Maintenance (1.4.1), Item Cost Maintenance (1.4.9), or Item Site Cost Maintenance (1.4.18)

For manufactured items, the material cost is maintained in the Lower Level Material field by rolling up the product structure costs (Product Structure Cost Roll-Up (13.12.13)).

Labor

Represents the direct labor cost applied to this product, including set-up labor. Labor cost is calculated from labor rates and run/set-up hours at each operation in a product’s routing.

It is updated at This Level by running a Routing Cost Roll-Up (14.13.13), and updated for Lower Levels by running a Product Structure Cost Roll Up (13.12.13). You would not expect to have labor costs for purchased items.

Burden

Represents the variable overhead cost applied to this product, based on labor and/or machine burden rates.

As with labor, burden cost is maintained for This Level through Routing Cost Roll-Up (14.13.13). Burden cost is updated for Lower Levels by running a Product Structure Cost Roll-Up (13.12.13). You would not expect to have burden costs for purchased items. Burden costs may also be updated by using Item Burden Cost Update (1.4.20).

Overhead

Represents the fixed overhead cost for this item—for example, utilities. Another example would be the expense of operating purchase or supplier logistics functions, which could be recovered as fixed overhead on all purchased items based on a percentage of their cost. This is often a better solution than the arbitrary addition of such costs to general burden.

Overhead cost is maintained manually for each item in item cost maintenance screens, Item Master Maintenance (1.4.1), Item Cost Maintenance (1.4.9), or Item Site Cost (1.4.18), or can be maintained by assigning it as a percentage of other cost categories in Item Overhead Cost Update (1.4.21).

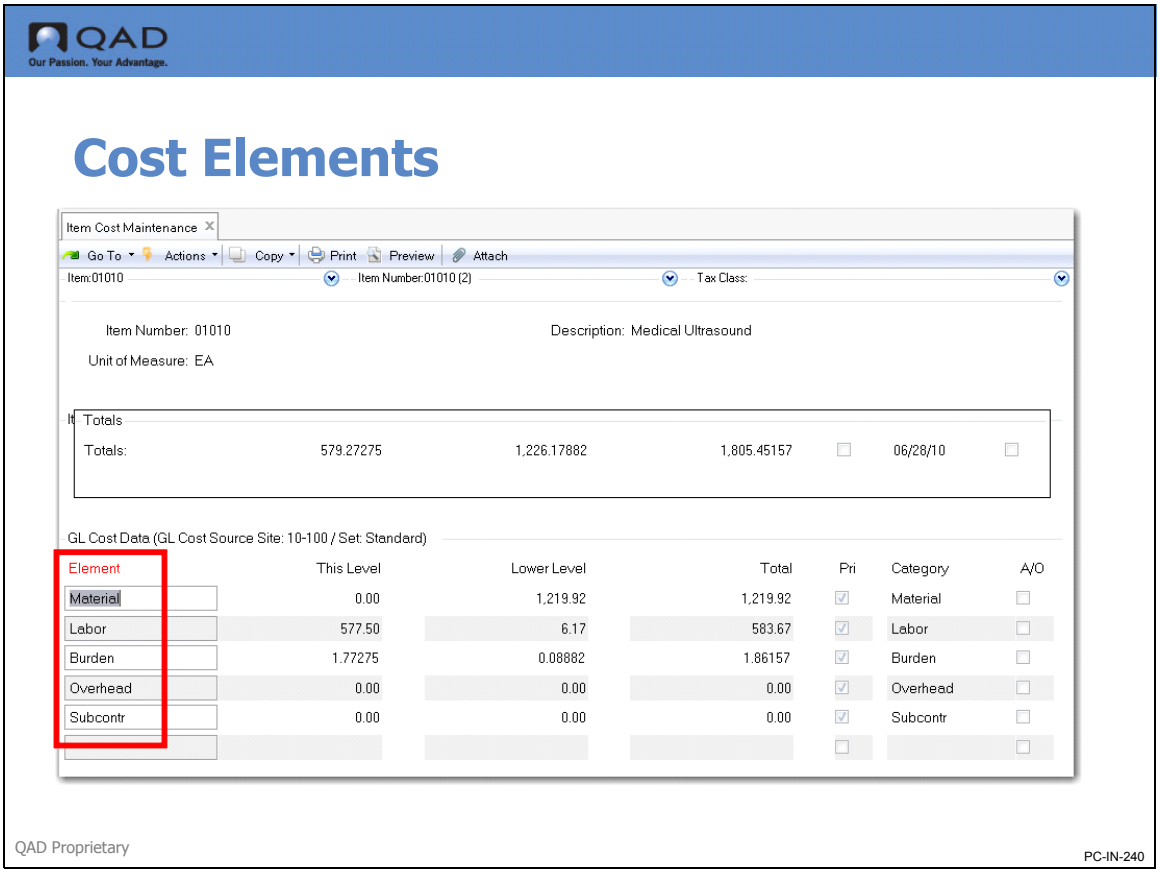
For purchased materials, you would normally see only This Level overhead costs, but for manufactured items, you might have both This Level and Lower Level overhead costs. Overhead cost is updated for lower levels by running a Product Structure Cost Roll-Up.

Subcontract

Represents the cost of outside processing as entered in each routing operation for manufactured items in Routing Maintenance (14.13.1).

Subcontract cost is updated by Routing Cost Roll-Up (14.13.13), for This Level, and Product Structure Cost Roll-Up (13.12.13), for Lower Level costs.

Cost Elements



Cost elements group different types of costs within a single cost category.

- All costs are associated with a cost category: material, labor, burden, overhead, or subcontract. When item costs are rolled up, totals are maintained for each category. Each cost category must have at least one cost element.
- The default cost elements—material, labor, burden, overhead, and subcontract—are created whenever costs are copied from a current or GL cost set

Note Other cost elements can be added by using the Cost Management module. The additional cost elements may record different types of costs or further subdivide these categories. For example, if material costs include purchasing unit cost, purchase overhead, and transportation charges, a separate cost element can be set up for transportation charges, allowing you to track costs and simulate the effect of changes. (See Cost Management Course.) These new cost elements still belong to one of the five cost categories, which control posting to the GL.

Study Questions

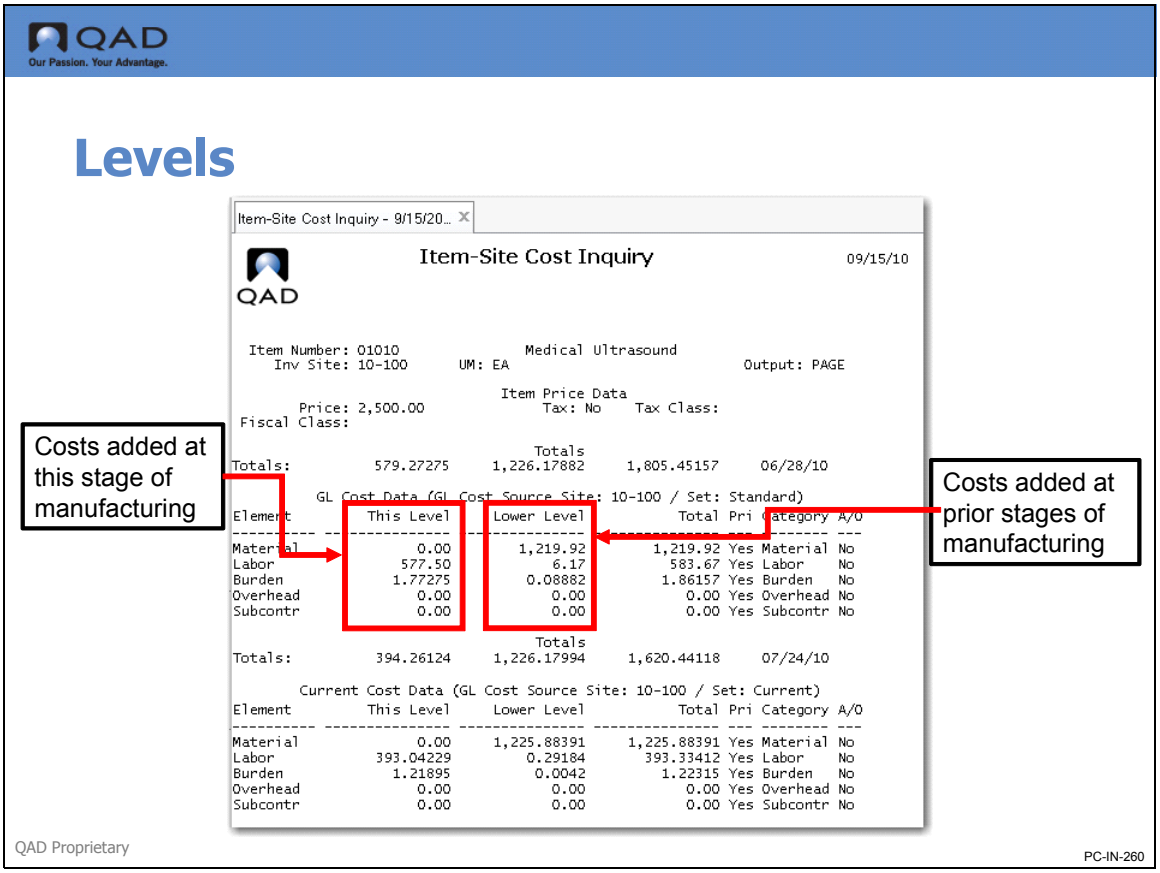
What are the five cost categories in QAD applications?

What are the two default cost set names in QAD applications?

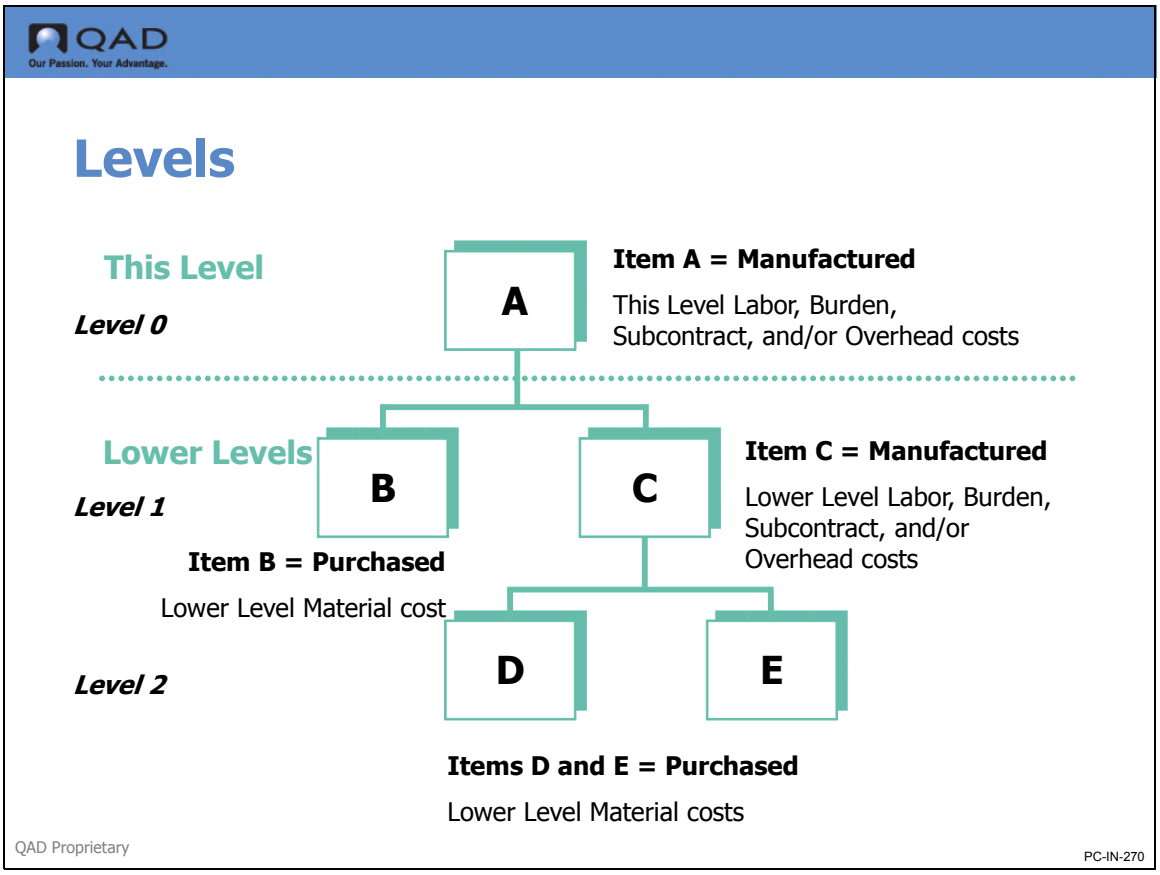
What is the point of the two cost sets in a standard cost system?

If you wish to retain a cost set reflecting the prior years ending cost what module would you use?

Levels



Costs added at the current stage of manufacturing are called This Level costs (level 0); costs added at prior stages of manufacturing are called Lower Level costs (levels 1 through 99). These are discussed in more detail on the following page.



This Level

This Level costs are the costs to either obtain or produce an item. Thus, a purchased item has This Level material (and optionally material overhead) cost, but it has no Lower Level costs. Likewise, a manufactured part has This Level labor, subcontract, burden, and overhead cost, but normally no This Level material cost. The manufactured item will, however, have Lower Level material cost for components and possibly Lower Level labor, material, subcontract, burden and overhead if the structure has more than two levels.

Lower Level

Lower Level costs represent costs that are added at prior stages of manufacturing. Lower Level material costs are the costs of all purchased materials used in the final manufactured product and any subassemblies. Lower Level labor, burden, and subcontract costs are developed from the cost of making any lower-level subassemblies.

Phantom

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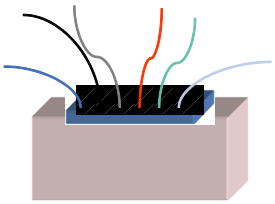
Phantom Structures

Phantom: A non-stocked sub-assembly

What?

Example 1
A wire harness that exists only briefly on the assembly line as a separate sub-assembly



Also called
•Pseudo Part
•Transient Part
•Blow-Through Part

Why?

1. **Engineering needs to isolate this sub-assembly in their plans**
2. **The service department may need to issue work orders to make some for repairs**

QAD Proprietary

PC-IN-280

Phantom items are used in manufacturing to define items that are made and consumed in the production process without being inventoried. They represent a method of defining bills of material and formulas to satisfy design/engineering, cost, and production. They can be set as Local phantoms, Global phantoms, or both.

Global Phantoms

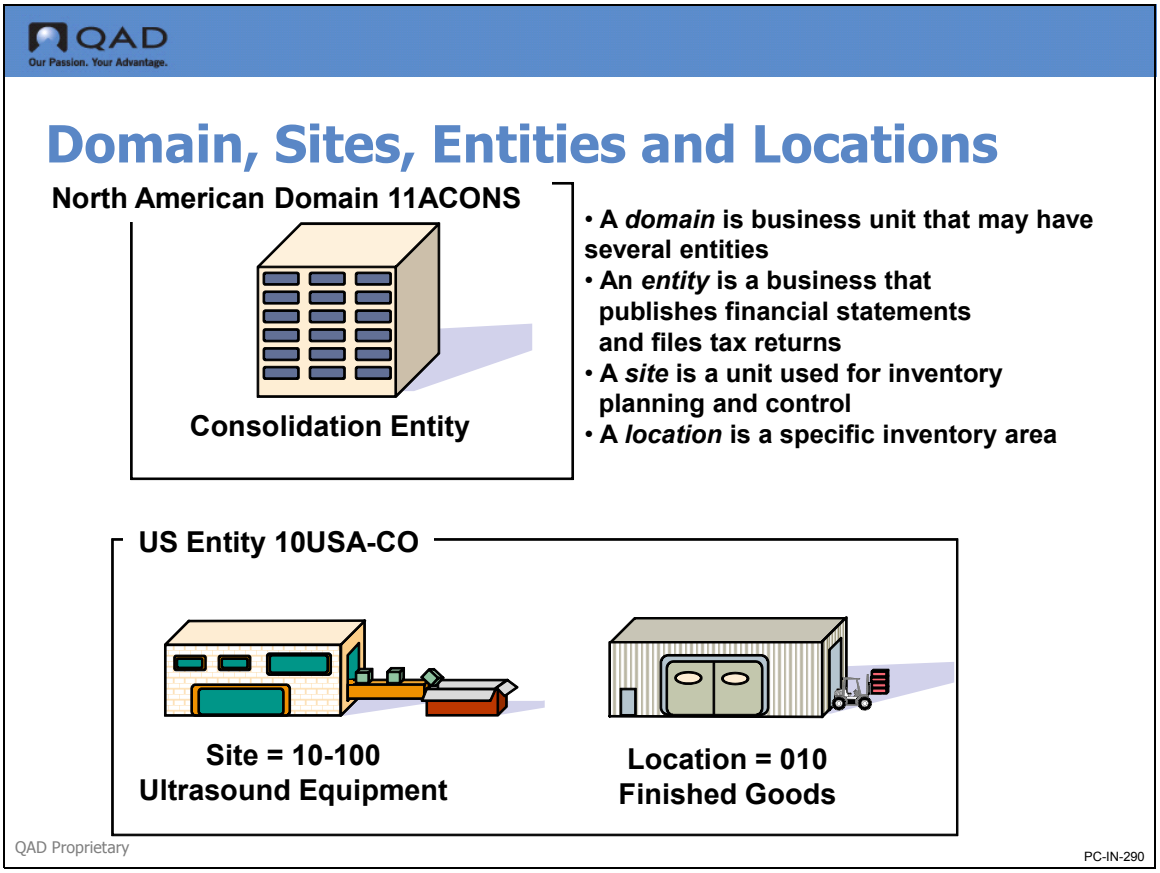
Global Phantoms are defined in Item Master Maintenance (1.4.1), Item Planning Maintenance (1.4.7), or Item-Site Planning Maintenance (1.4.17), and identify this item as a phantom on all bills of material.

Local Phantoms

Local phantoms are defined by an X in the Product Structure code field in Product Structure Maintenance (13.5), for each bill of material where this item is to be considered a phantom. Local phantoms can cause manufacturing variances if they have This Level costs.

Phantoms are discussed in more detail later in the course.

Entity vs Site



Domain

A domain is a high level corporate structure that may have many entities. It can be used to provide an accounting template for the entities.

Entity

An entity is an independent unit for financial reporting purposes, a separate balance sheet and income statement are generated by entity, budgets are planned by entity, and taxes are assessed by entity. All GL transactions are posted by entity.

Site

A site is an inventory and planning concept. All inventory is stored by site and all planning is done by site. Each site belongs to one and only one entity, but each entity can have more than one site. Site 10-100 is an examples of a site.

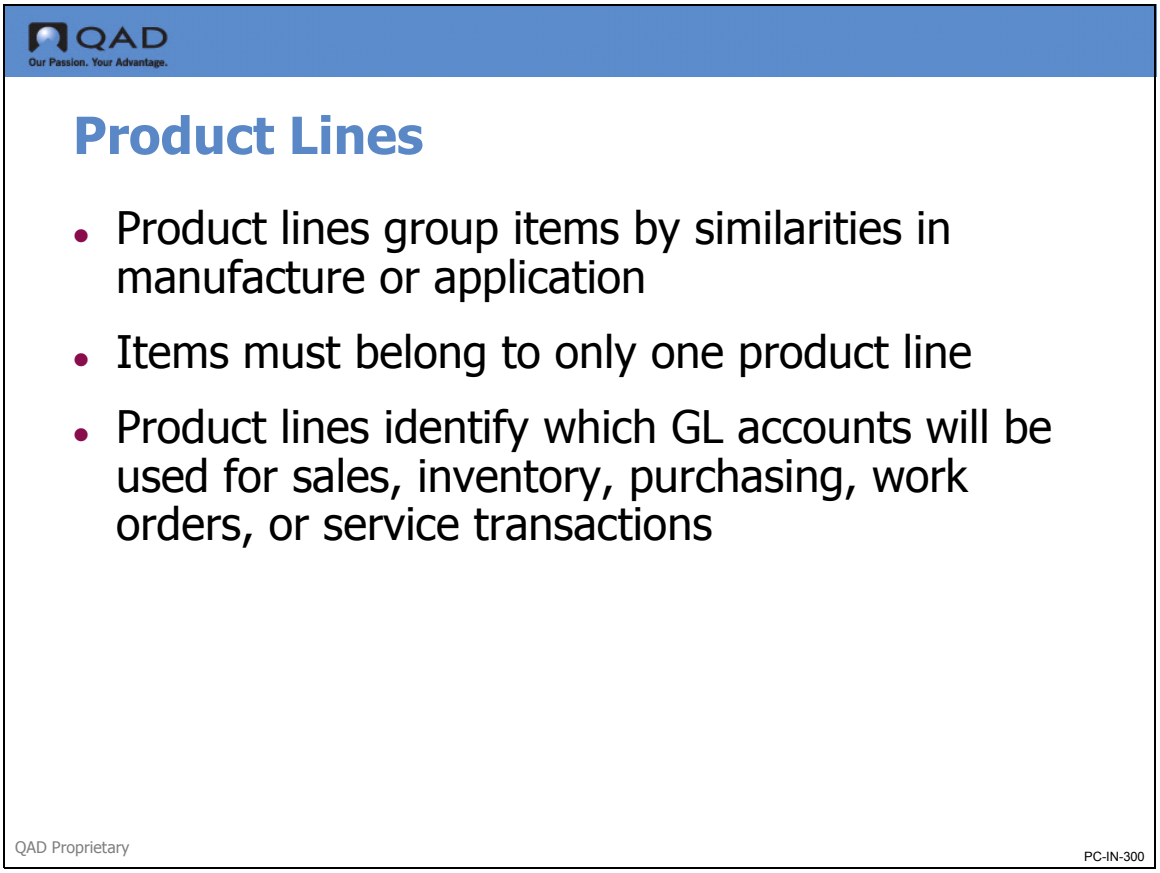
Because each site is attached to an entity, the site on any transaction is used to determine which entity to post the inventory transaction to in the GL.

Location

A location is a specific inventory storage area. Each site may have a many locations as needed. Location 010 is an example

Note Balance sheets cannot be produced by site, only by entity unless you have a single entity for each site in the system. However, you can use sub-accounts or cost centers to get profit/loss statements and activity reports by site. If you have multiple sites in a single entity, you cannot generate a balance sheet by site, because retained earnings and year-to-date profit/loss are only maintained in aggregate by entity.

Product Line



Product lines group items for reporting, planning, and accounting purposes:

- Reports can be selected and sorted by product line
- Product Line Planning and MRP/DRP can plan by product line
- You can track sales, costs, inventory values and variances in the general ledger by product line

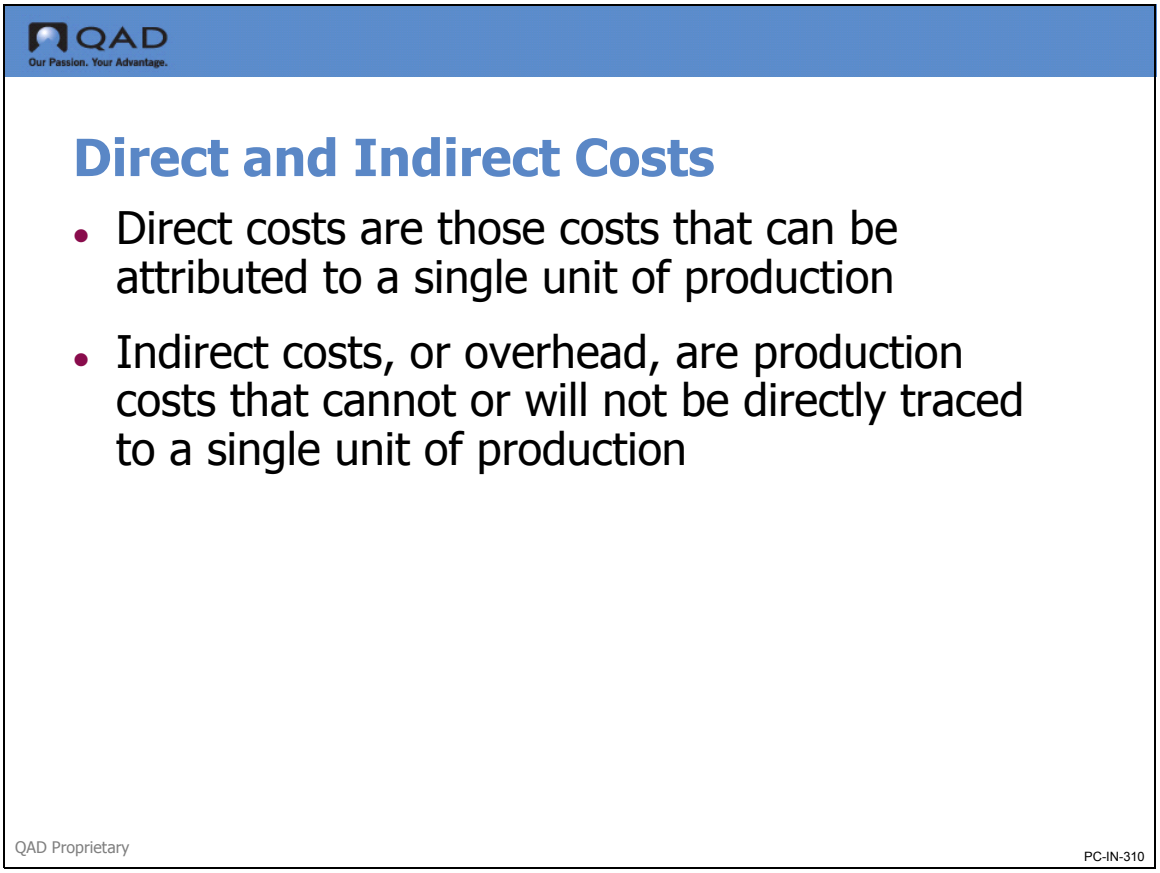
Every item belongs to only one product line. The item's product line determines whether it is included on a report, or in calculations, and which GL accounts to post to. (Some GL accounts may be taken from the product line file or further specified by site, location, or customer type.)

Different departments may have different criteria for grouping items—marketing may want product lines to reflect target markets, manufacturing to reflect production method. Or you may want to establish different product lines for not easily grouped items like raw materials or common components to separate them from finished goods.

Product Line accounts are discussed in more detail in Chapter 2, Account Structures.

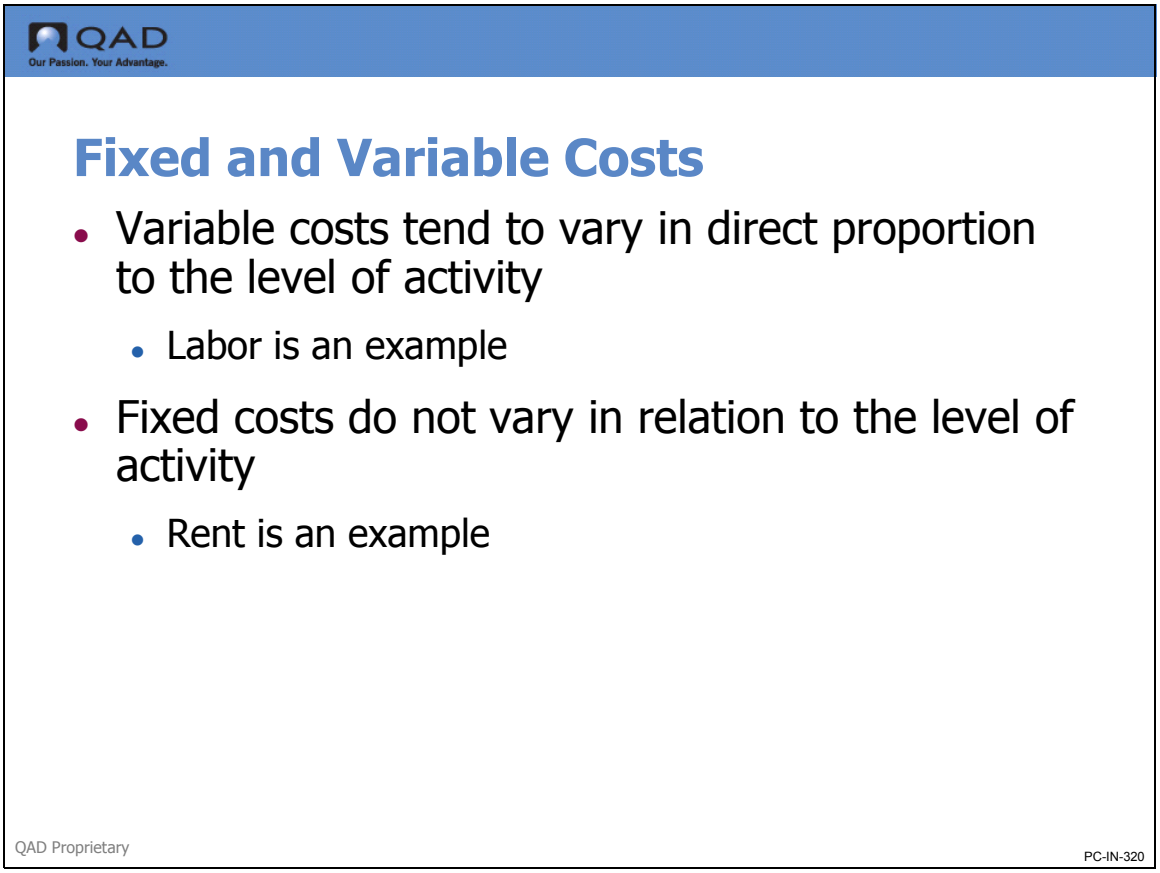
Note Think of Product Lines as "Product Codes"

Direct vs. Indirect



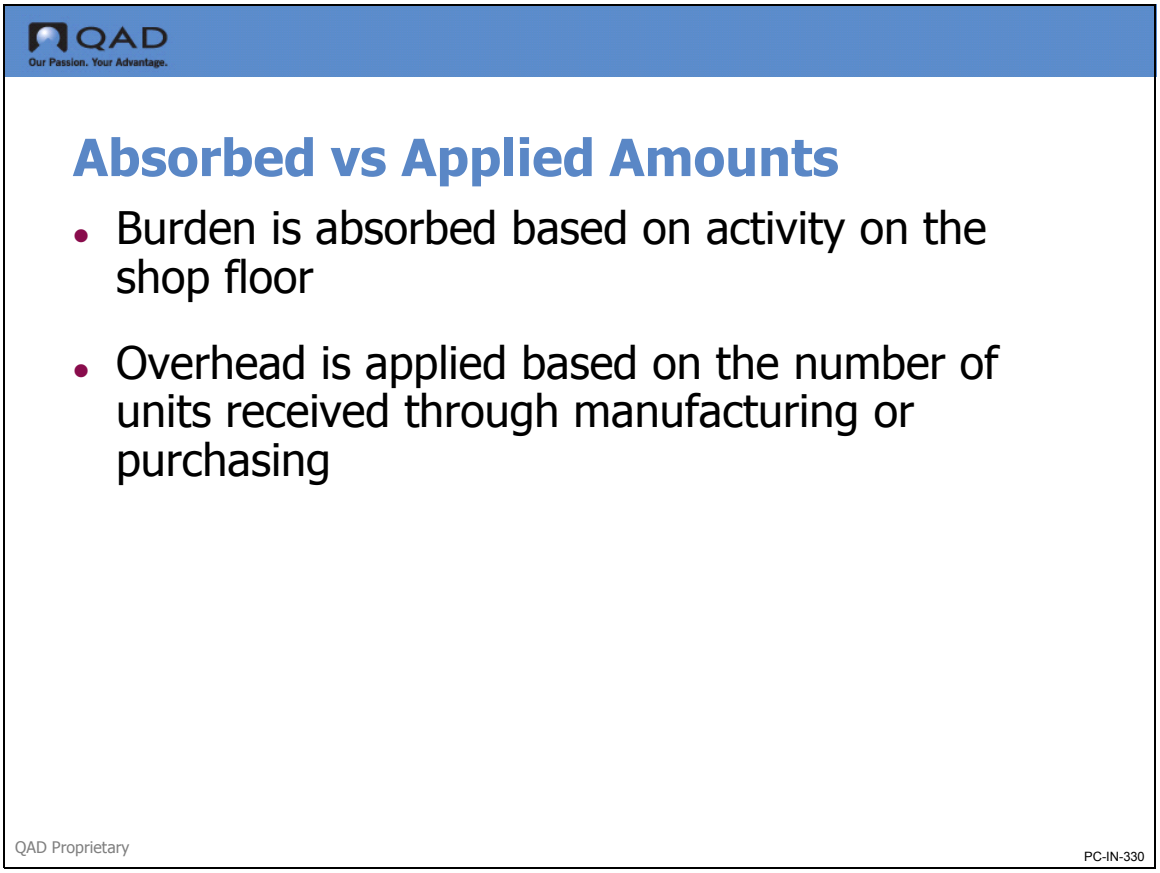
The terms “direct” and “indirect” relate to the traceability of costs. Conceptually, any cost that can be traced to a single product is a direct cost of that product. This includes the cost of all material and labor that goes into making the product, as well as the cost of any subcontract operations. All production costs other than direct costs are considered indirect, or an overhead.

Fixed vs. Variable Costs



The terms “fixed” and “variable” relate to the behavior of costs as production volume fluctuates. Variable costs increase directly with increase in volume. Fixed costs, such as rent and utilities costs, do not change, at least in the short term. For example, you still have to pay to heat and light your factory, regardless of the volume of production.

Absorbed vs. Applied Amount

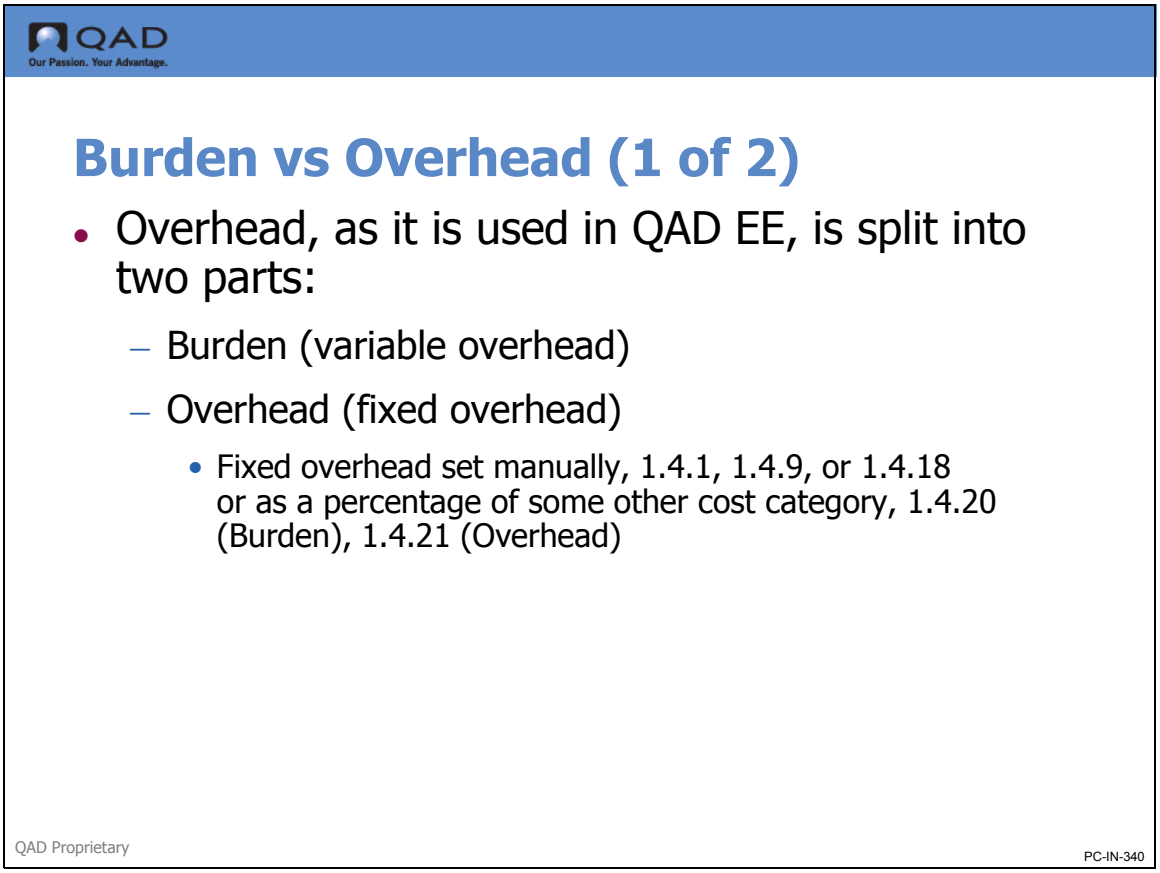


As production is reported, burden costs are absorbed; that is, the standard per unit costs are credited to the burden absorption account based on actual shop floor activity.

When finished items are received, the standard per unit overhead cost is credited to the Applied Overhead account.

When predetermined burden and overhead rates are used, the actual amount absorbed to production in a given month is likely to differ from the total amount of overhead cost actually incurred. This is because production volumes vary from the volume estimates used to determine these rates.

Burden vs. Overhead



Burden is the variable portion of overhead cost. In a standard cost system, standard burden per unit is usually calculated based on predetermined burden rates, typically based on labor or machine hours and/or labor cost.

Overhead is the fixed portion of overhead cost. In a standard cost system, a portion of fixed overhead cost per unit is usually allocated to each item, either manually or as a percentage of some other cost category. For example, fixed overhead may be set to a percentage of material cost.

Characteristics of fixed overhead:

- Fixed amount within a relevant product output range
- Manually calculated by dividing the annual expected overhead costs by the annual expected number of units to be produced. Because total overhead is fixed, as output increases, the cost per unit must decrease.
- Management-level decision on incurrence starts at executive level vs. operating supervisors

Example Depreciation, rent, insurance, real property taxes, patent amortization, wages for production executives, watchmen, firemen, janitors, maintenance and repairs, insurance, rent

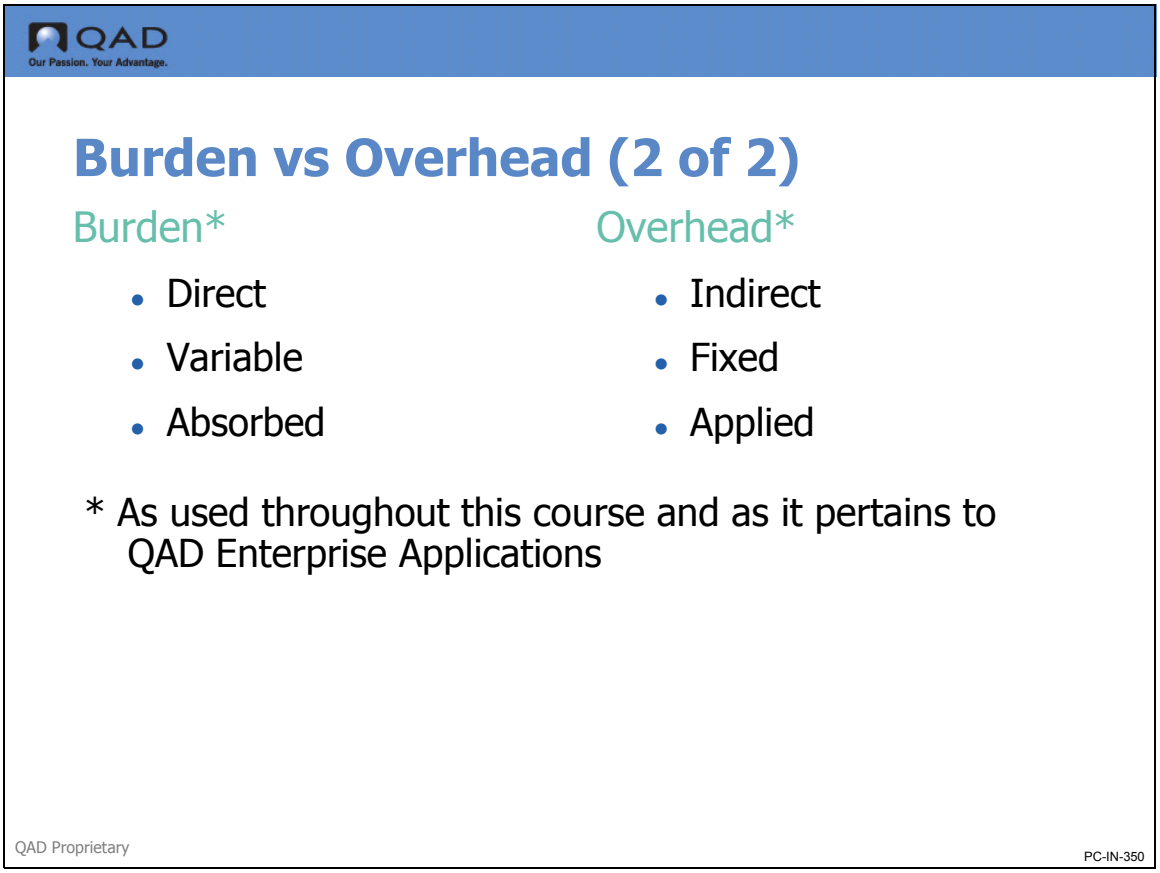
Characteristics of variable overhead:

Variable amount in direct proportion to output

- Calculated by QAD Enterprise Applications by multiplying the actual number of units produced by a pre-determined burden rate. Because total burden is variable, as output increases, cost per unit is constant.
- Easily assignable to operating departments
- Incurrence decision rests at department level

Example Supplies, fuel, power, small tools, spoilage/salvage/reclamation expense, receiving costs, royalties, factory travel costs

Burden vs. Overhead, cont.



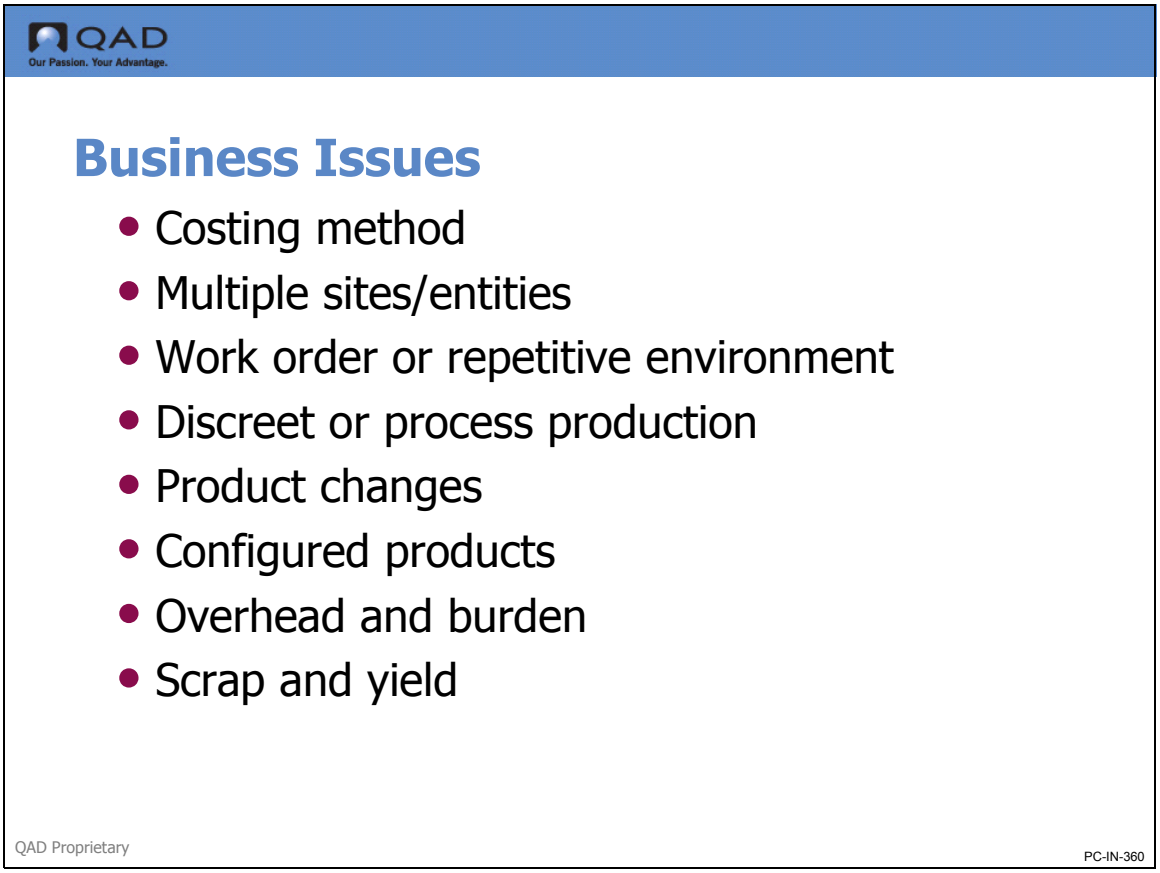
A summary of key differences between Burden and Overhead is shown in the figure above.

Study Questions

What are some examples of an indirect fixed cost?

Is the maintenance cost of a machine that must be serviced every 5,000 parts, burden or overhead? Fixed or variable?

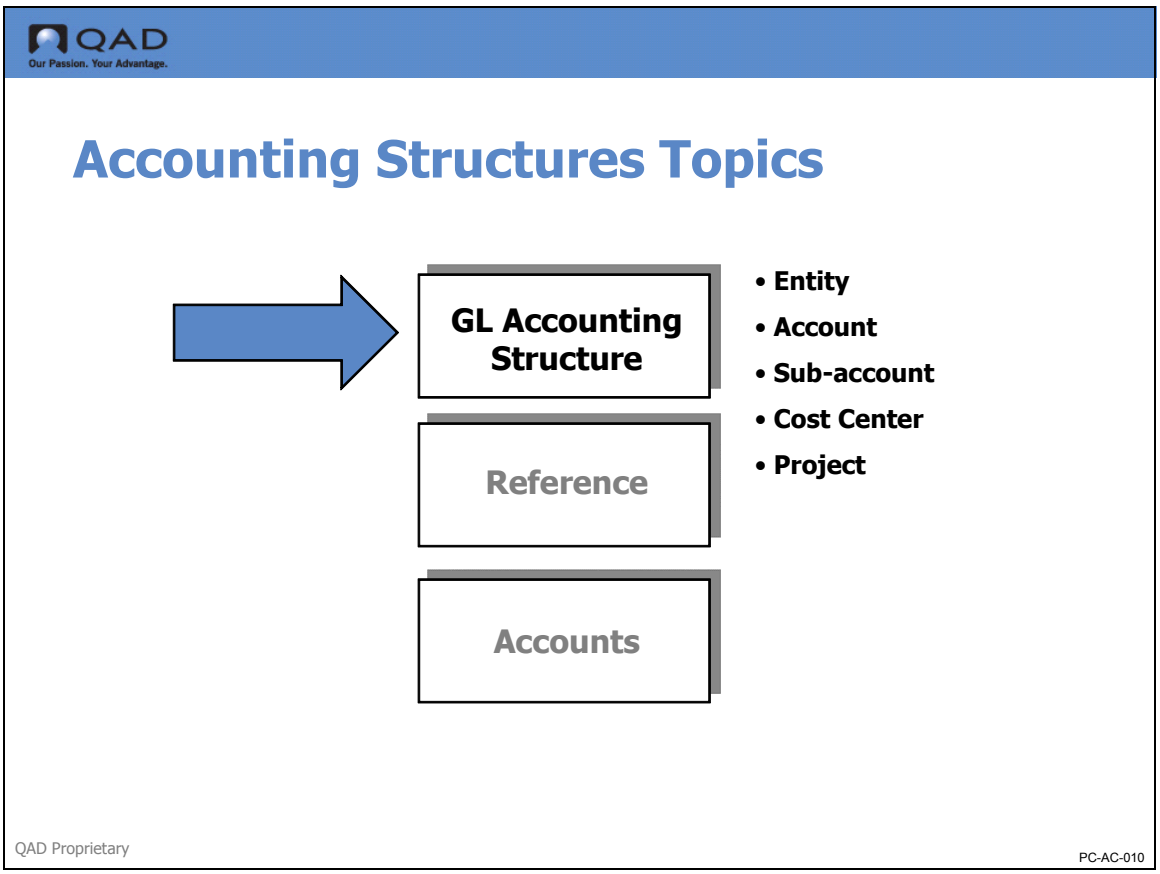
Business Issues



Chapter 2

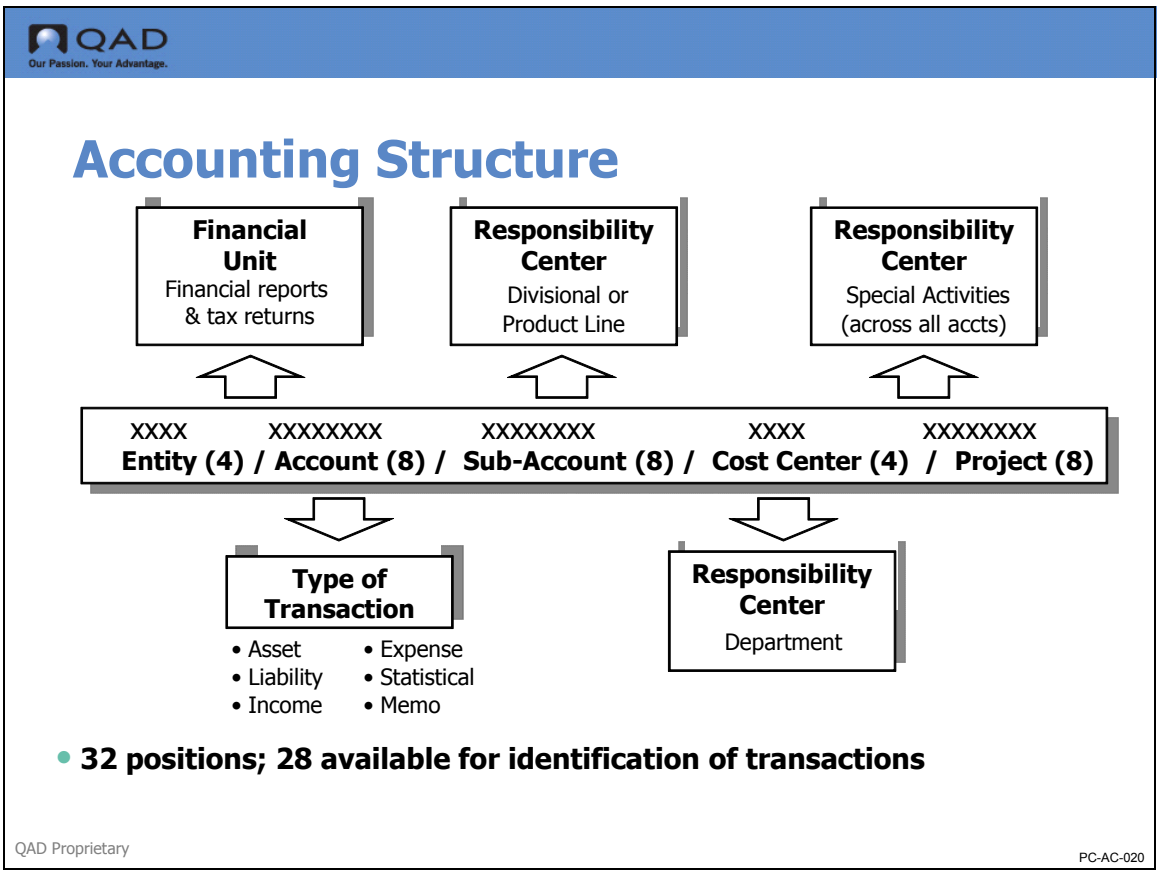
Account Structures

Accounting Structures Topics



The components of the accounting structure—entity, account, sub-account, cost center, and project—are discussed in this section.

GL Accounting Structure



In the general ledger (GL), you have a 32-position coding structure for use in tracking financial information.

Entity

Defined with up to four positions, the term “entity” identifies a legal financial unit of a company. This unit of the company normally publishes separate financial reports and files separate tax returns.

Account

Defined with up to eight positions, the term “account” identifies types of financial holdings and obligations. When accounts are entered into the system, they must be defined as either an asset, expense, income, liability, memo, or statistical account type. They are also associated to format positions that define how these accounts will be presented on the financial reports.

Sub-Account

Sub-accounts are used to develop more detailed financial information within an account code. For example, sub-accounts might be used to break inventory accounts down by type of inventory—raw material and finished goods. Or they might be used to break inventory out by product line. All financial reports can be selected and sorted by sub-account.

Cost Center

Defined with up to four positions, cost centers are typically used to track departmental expenses. They are usually departments or groups that incur expenses and may or may not generate revenue. Cost centers provide additional detail on GL reports. They may also be used to subdivide accounts by product line (such as sales or WIP).

Project

Defined with up to eight positions, project codes are used to track activity that is not part of the normal routine. Examples of what you may wish to track with project codes include new product development and engineering, capital improvement activities, or marketing promotional activities. Often, a characteristic of these activities is that they will cross organizational boundaries and be comprised of a variety of cost types. The project codes allow you to track costs across these boundaries. Project codes can be entered on all GL, sales, AR, purchasing, AP, and manufacturing transactions. Project amounts do not appear itemized on financial statements, but can be reviewed on special project activity reports.

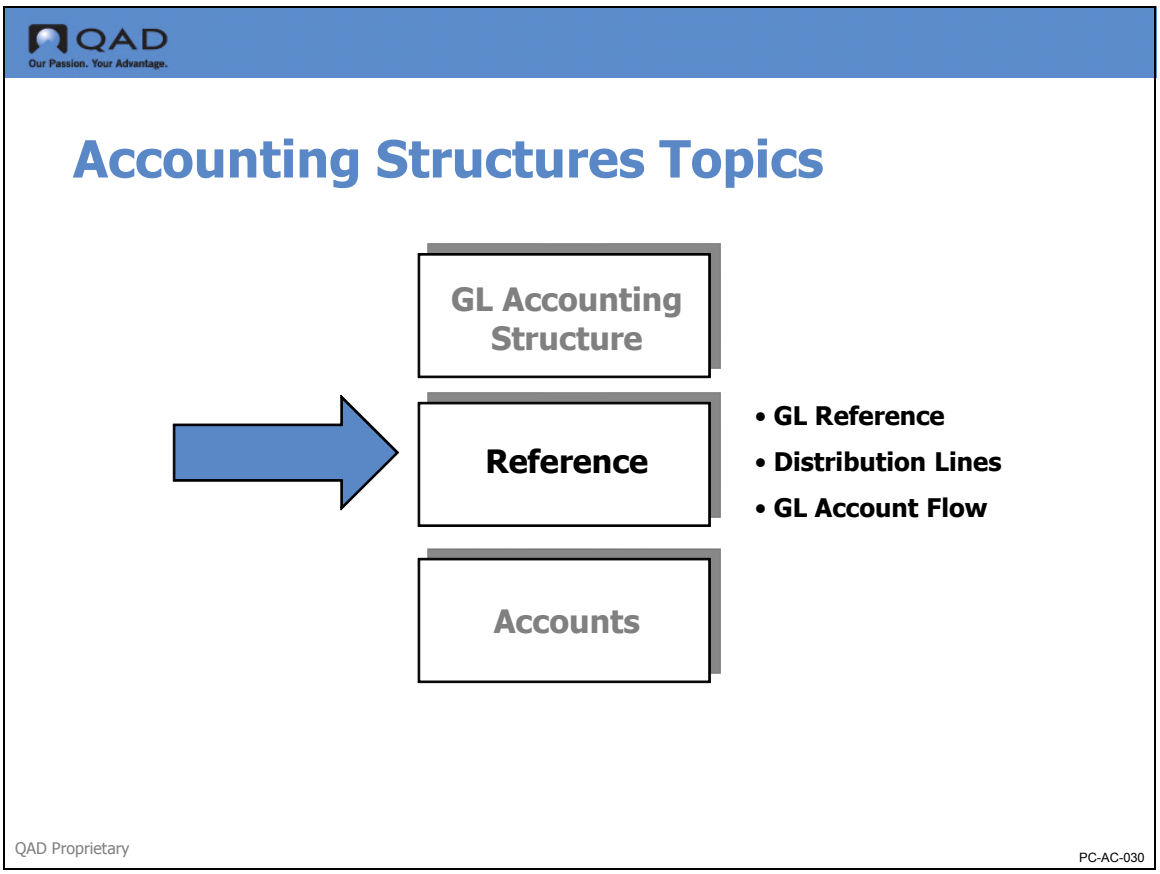
Accounts Separated by Dashes

On inquiries and reports, the system separates accounts, sub-accounts, and cost centers by dashes. For example, account 2100, sub-account 10, and cost center 1000 appears as 2100-10-1000. If there were no sub-account, you would only see 2100--1000.

Study Question

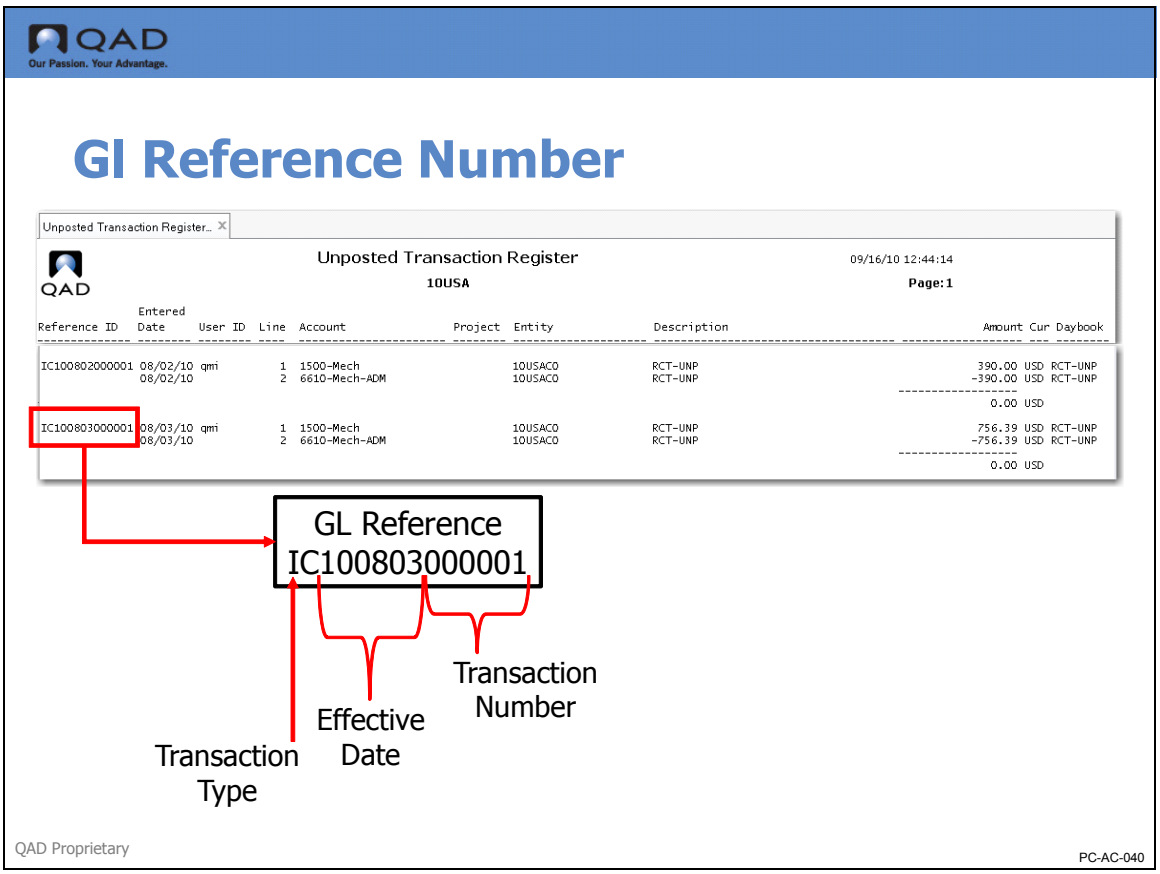
List each of the five elements of the account code structure shown here.

Reference



In this section, we will look at how to read the GL Reference and Distribution lines, followed by a discussion of account defaults and where accounts are set up.

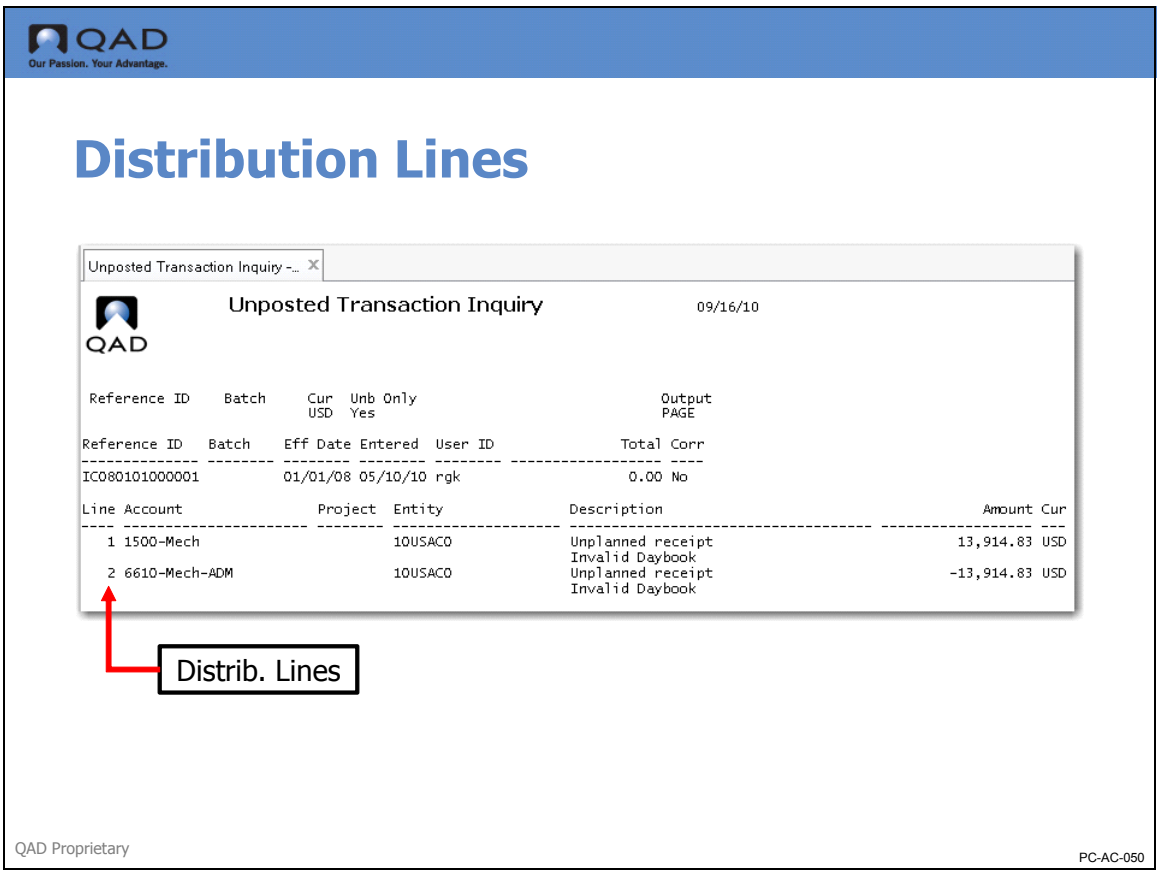
GL Reference



Every transaction is identified by a GL reference code consisting of the GL transaction type, the date that the transaction should update the GL, and the transaction number.

The transaction type indicates the module or activity (for example, IC stands for Inventory Control) that originated the transaction.

Distribution Lines



In addition to the information used to identify the transaction, the transaction record consists of one or more distribution lines—debit and credit amounts that you will post to GL accounts at period-end.

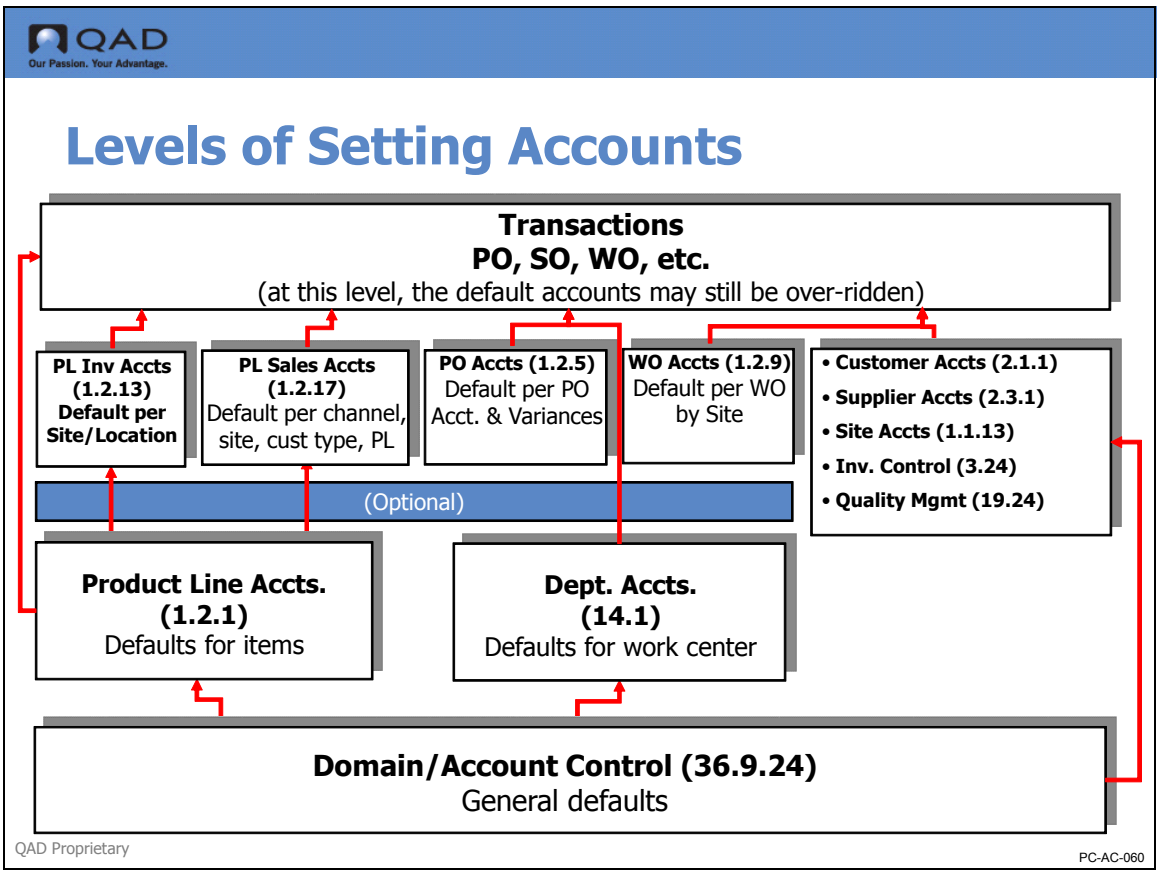
- In QAD Enterprise Applications all GL distribution lines are created for a specific entity and account combination

  The entity indicates which business the transaction affected, and the account indicates which assets, liabilities, income or expenses were changed

In the example above, account and cost center are shown. Sub-account and project can also be included.

A more complex transaction, a sales order invoice for example, may have many distribution lines. A credit to sales a debit to accounts receivable, a credit to sales discount, a credit to sales commissions, a credit to tax liability, etc. The distribution lines should balance.

General Ledger Account Flow



General ledger accounts occur in a variety of places. If set up correctly, you will not have to enter the GL accounts on most transactions; the correct ones are brought in as defaults, speeding up data entry and minimizing errors.

Domain/Account Control (36.9.24)

System-wide defaults are set up in the Domain/Account Control (36.9.24). A few accounts are used directly, but most account defaults flow through the system as shown above.

Department Accounts (14.1)

Manufacturing costs are grouped by departments. When you create department records, the accounts to be used for transactions associated to this department default from the Domain/Account Control (36.1) but can be changed to any other valid account in Department Maintenance (14.1).

Product Line Accounts (1.2.1)

Each item record must be associated to a product line, which is then used to determine the default accounts for transactions of this item. When you create a product line, the account information defaults from the Domain/Account Control and then can be modified to any other valid account in Product Line Maintenance (1.2.1). Product line accounts include sales, work order, inventory, and

purchasing accounts. For closer tracking of inventory and sales, purchase and work orders accounts, you may use Inventory Account Maintenance (1.2.13), Sales Account Maintenance (1.2.17), Purchasing Account Maintenance (1.2.5) and Work Order Account Maintenance (1.2.9), which are described below.

Inventory Account Maintenance (1.2.13)

You may wish to specify inventory accounts in more detail than the product lines allow. If so, then you can set them by Product Line, Site and Location to obtain the level of detail you want. Location is optional and allows you to set inventory accounts differently for multiple sites within a product line.

Sales Account Maintenance (1.2.17)

In some cases, you may wish to break sales information down into more detail than is available through product lines alone. In that case, if you additionally define sales accounts for a product line by site, customer type, and/or channel, you can use different accounts in sales transactions. In this function, you must specify Product Line and Site, but only need to use Customer Type and Channel if you need more levels of detail.

Note The Customer Type is associated to the customer record and the system will look it up during sales account assignment in sales order processing; however, channel must be entered manually on each sales order.

Purchasing Account Maintenance (1.2.5)

In some reporting, you may need Purchasing account breakdown by Site or Supplier Type. Purchase accounts, receipt accounts, OH applied accounts and AP variances can be set up specific to the breakdown. The supplier type is set up in the system and identified to the Supplier in the Supplier Maintenance.

Work Order Account Maintenance (1.2.9)

Work Order accounts specific to variances, Floor Stock, WIP and Cost of Production can be set up specific to a site for each Product Line.

Customer Accounts (2.1.1)

When you create a new customer record in Customer Maintenance (2.1.1), the Accounts Receivable (AR) account will default based on the Domain/Account Control (36.9.24). If you assign a site to the customer, that site will default to a sales order header where you can override it. The header site may or may not be used on the order lines, where you can use different sites. The site controls the entity for transactions of sales data and cost of goods sold, so it is important to review this when planning your implementation in a multiple-entity environment.

Supplier Accounts (2.3.1)

When you create a new supplier record in Supplier Maintenance (2.3.1), the purchase account for expense transactions and the AP account will default from the Domain/Account Control (36.9.24). You may change them to any valid account. Note also that you can assign a bank code to each supplier, and the bank code defines the entity to be used in payables transactions. In a multiple-site, multiple-entity environment, this can raise issues, and so it will be important to evaluate this in your implementation planning.

Site Accounts (1.1.13)

When sites are created in Site Maintenance (1.1.13), the Transfer Variance account will default from the Domain/Account Control (36.9.24). If you will be transferring materials between sites, you may want to define different account combinations for each site. If you will be using DRP to transact materials between sites, you may also wish to define these accounts by site.

Inventory Accounting Control (36.9.2)

The Transfer Clearing account is used to track transfers within a site or between two sites within the same entity. The Intercompany account is used when transferring between two sites that are in separate entities in a single database. The system will automatically generate the transactions required to balance between the entities. They will be entity specific, though, based on the entity associated to the sites transferring the inventory.

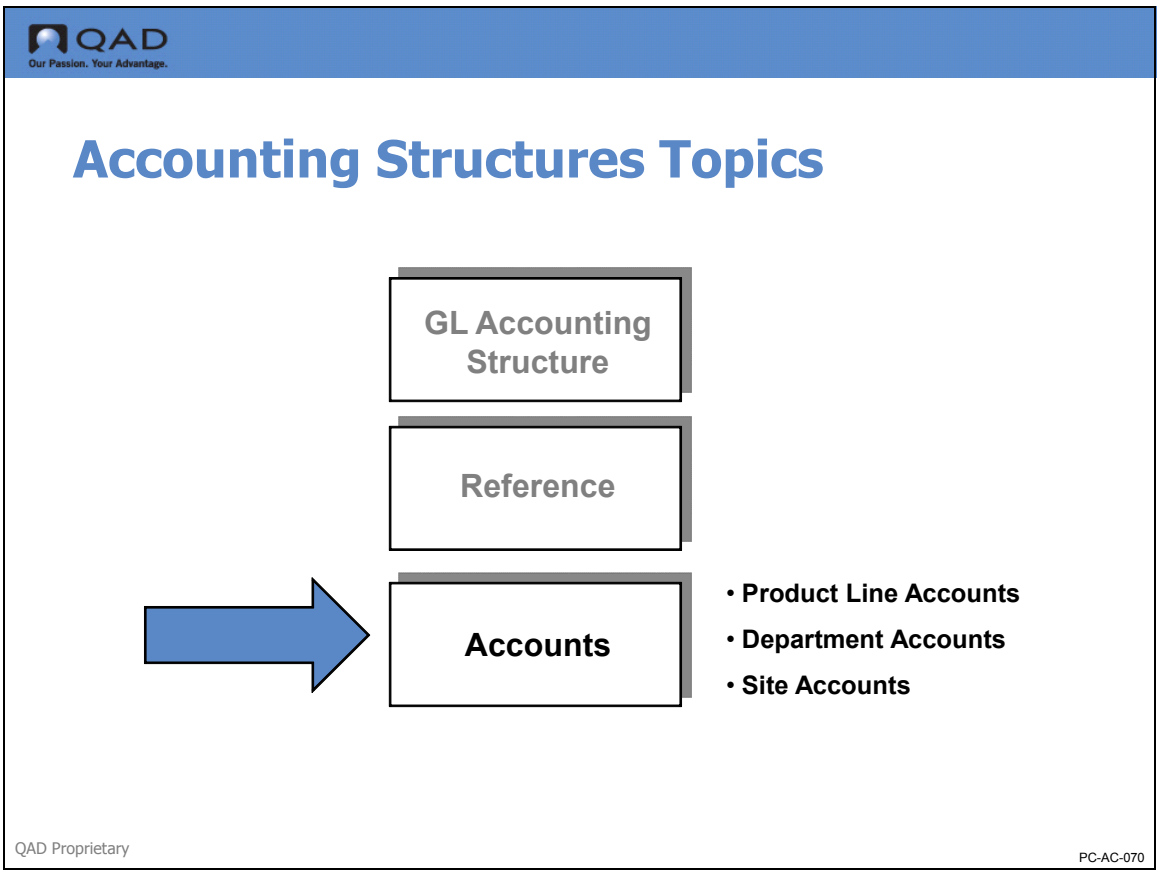
Quality Management Control (19.24)

The inspection site specified in this control file will be used to set the entity for any inventory related transactions. Additionally, the inspection location specified may also affect accounts used for inventory transactions.

Transaction-Level Defaults

Most transaction maintenance functions, such as work orders, purchase orders, sales orders, and miscellaneous inventory transactions, allow you to override the default accounts with any other valid account.

Accounts



In this section, we will review each of the QAD Enterprise Applications costing accounts in detail.

Product Line and Department Accounts: Overview

QAD
Our Passion. Your Advantage.

Product Line and Department Accounts

Product Line Accounts

Sales	Work Order	Inventory	Purchasing
Sales	Floor Stock	Inventory	Purchases
Sales Discount	Material Usage Variance	Inventory Discrepancy	PO Receipts
Exempt Sales	Material Rate Variance	Scrap	Overhead Applied
COGS Material	Mix Variance	WIP	PO Price Variance
COGS Labor	Cost of Production	Method Variance	AP Usage Variance
COGS Burden	Subcontract Usage Variance	Cost Revalue	AP Rate Variance
COGS Overhead	Subcontract Rate Variance		
COGS Subcontract			

Dept. Accounts

Department
Cost of Production
Labor Absorbed
Burden Absorbed
Labor Usage Variance
Labor Rate Variance
Burden Usage Variance
Burden Rate Variance

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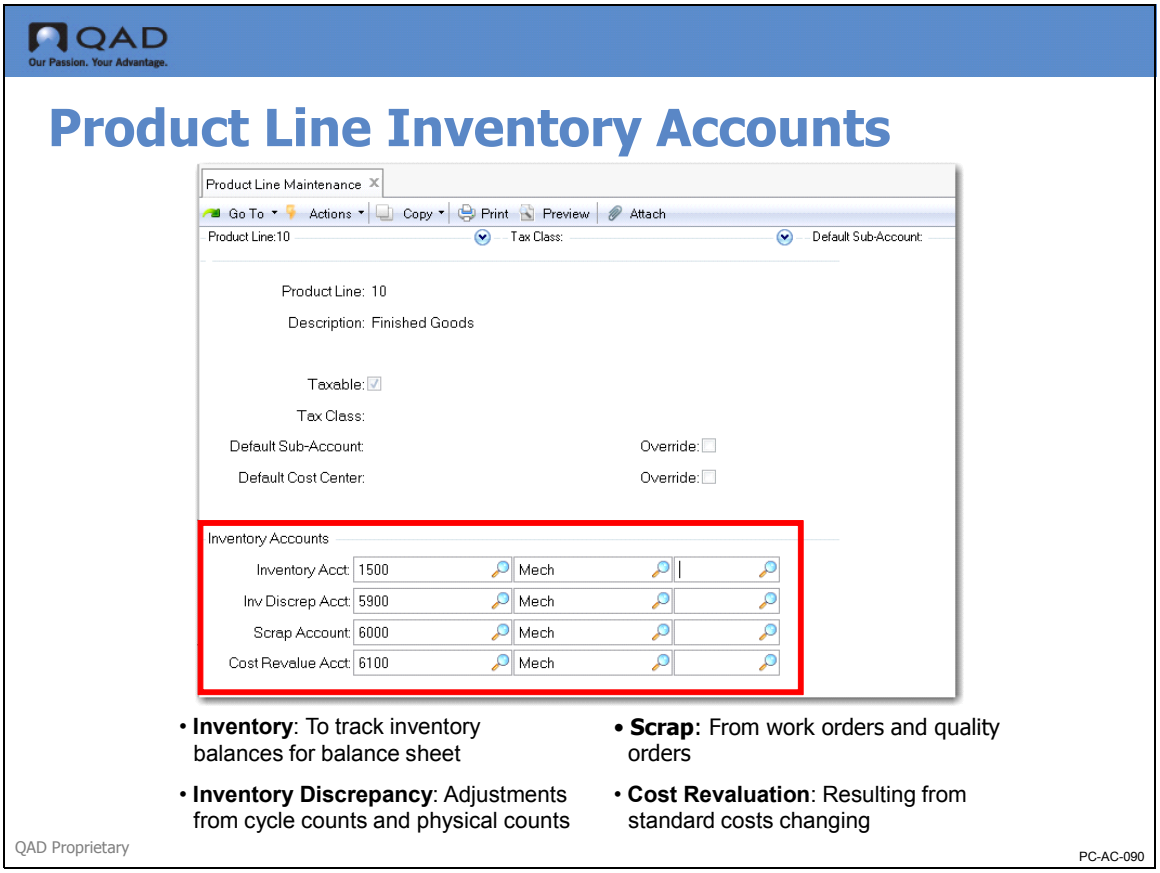
Inventory Accounts



In a perpetual inventory system such as QAD Enterprise Applications, every inventory receipt, issue, count, or transfer updates the Inventory account (at GL cost). The following are the specific inventory accounts set up in QAD Enterprise Applications, with information on the account type and the QAD Enterprise Applications functions that use the accounts.

Inventory

Tracks inventory value. Transactions affecting Inventory accounts include purchase order receipts, work order issues/receipts, sales order shipments, physical inventory counts, as well as manual inventory transactions. Each of these transactions affects inventory by creating a GL transaction which either debits (increases) or credits (decreases) the account value. If site/location inventory accounts are specified in Inventory Account Maintenance (1.2.13), all inventory transactions will use them. Otherwise, the product line inventory account associated to the item will default.

Inventory Discrepancy

Tracks inventory discrepancies due to cycle count or physical inventory adjustments. Positive count adjustments debit (increase) the Inventory account and credit (decrease) the Inventory Discrepancy account. Negative count adjustments do the reverse.

Inventory Discrepancy = Quantity change x total GL cost

Scrap

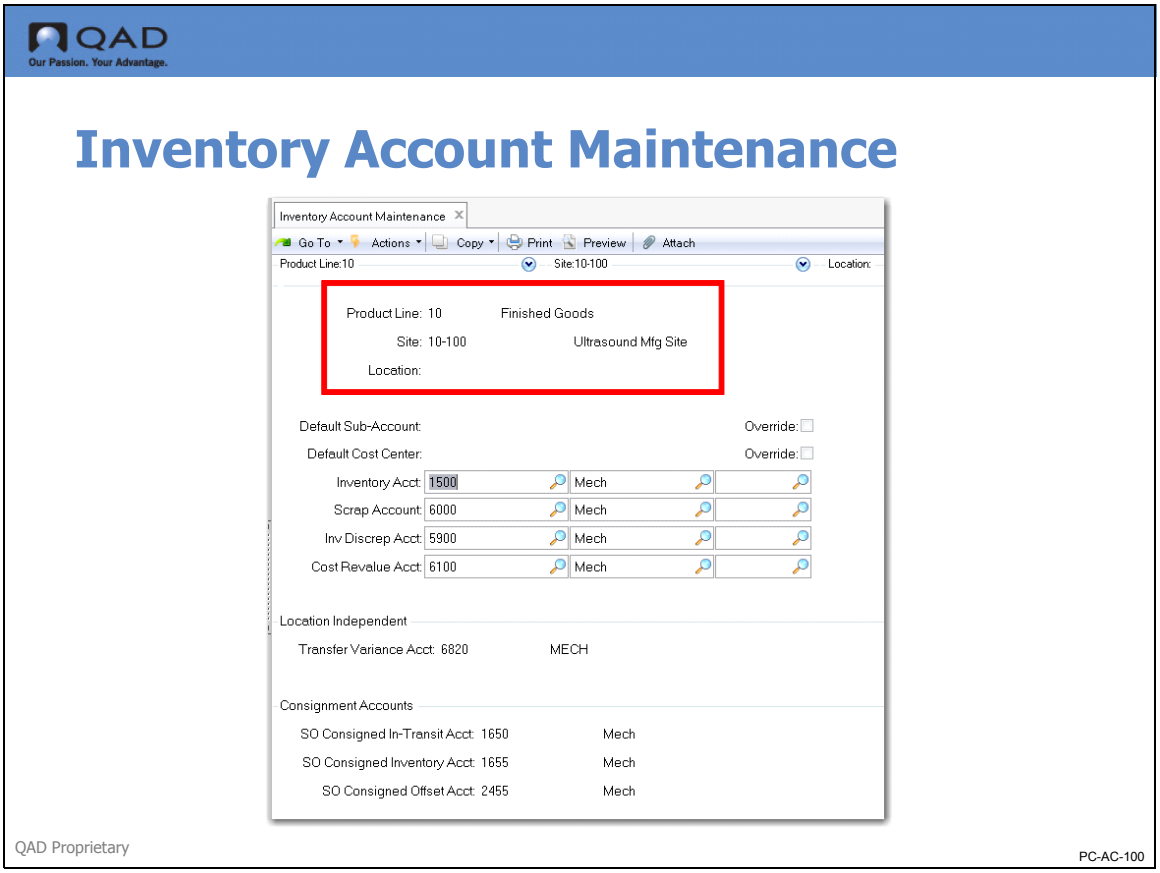
Records scrap amounts from work orders or quality orders.

Cost Revalue

Records the GL impact of item cost changes on inventory. Whenever the GL costs for items are changed using either Item Cost Maintenance, Item-Site Cost Maintenance, Cost Roll-Ups in the GL cost set, or Current Cost Set Move to GL Set, the system automatically creates revaluation postings in the GL. An increase in cost will cause a debit to the Inventory account and a credit to the Cost Revalue account. Note that GL item cost changes do not automatically revalue material in WIP. This material can be revalued by using WIP Material Cost Revaluation (16.22).

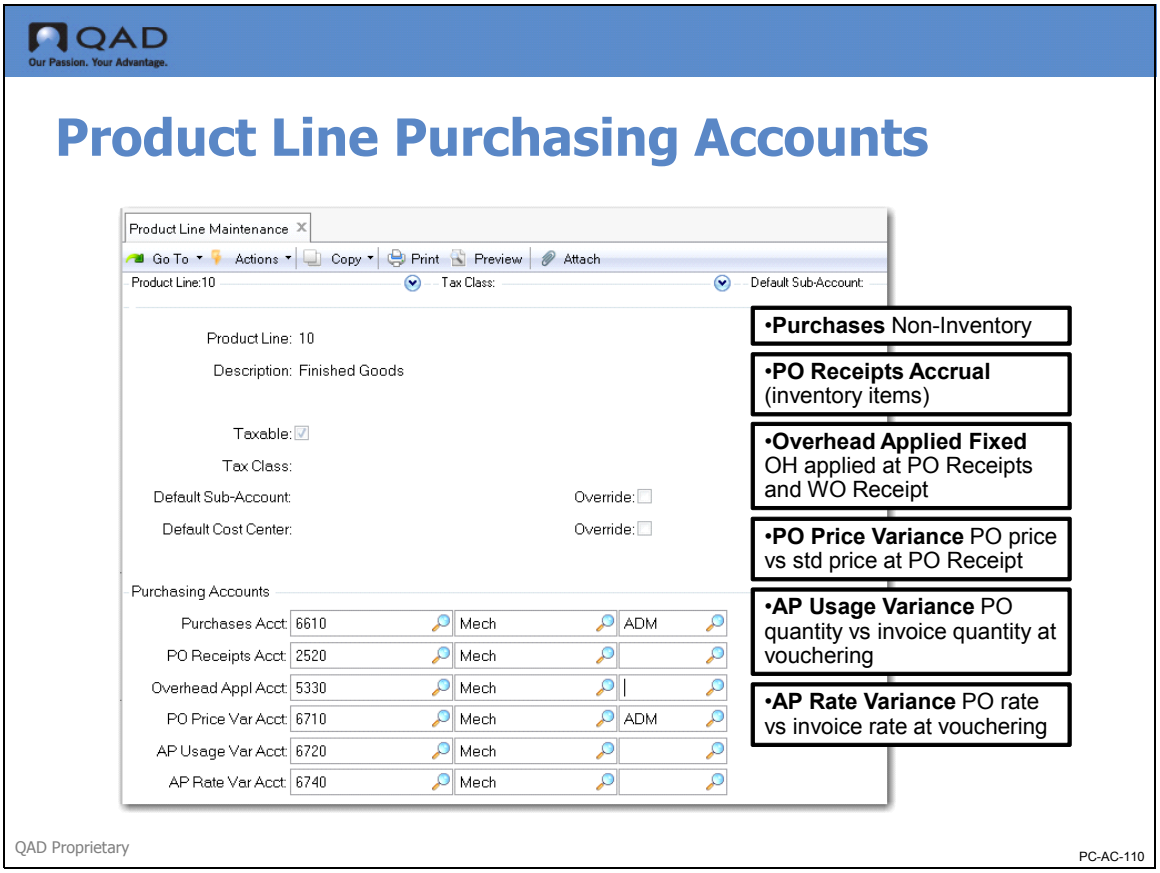
Cost Revalue = Cost change x total quantity on hand

Inventory Account Maintenance Screen



Usually inventory balances are maintained by product line, but you may wish to specify inventory accounts in more detail than Product Line Maintenance (1.2.1), allows. If so, you can set inventory accounts by product line, site, and location in Inventory Account Maintenance (1.2.13), to obtain the level of detail that you want. Location is optional and allows you to set inventory accounts differently for multiple sites within a product line.

Purchasing Accounts



Another group of accounts is used to monitor Purchasing and Accounts Payable activities. These purchasing accounts include variance accounts, which are used to evaluate your internal performance and that of your suppliers.

Purchases

Records purchases of non-inventory (expense) items that exist in the Item Master. Default account usually amended.

PO Receipts (accrued AP) for Inventory Items

Accrues purchase order receipts prior to receipt of supplier invoices. The Inventory account is debited for the GL cost of the item less any overhead amount multiplied by the quantity received. The Purchase Order Receipts account is credited for the purchase order price times the quantity received.

PO unit price x PO qty received

Overhead Applied

Tracks fixed overhead amounts applied at purchase and manufacturing item receipts. When receipt transactions are made, the system credits the Overhead Applied account and debits Inventory for this-level overhead amount.

PO Price Variance

Tracks the difference between the PO price for an item and the total standard cost of the item at the time the PO is received (less any overhead amount).

[PO unit price - (total GL unit cost - overhead)] x PO qty received

When a purchase order item is received, the system creates a debit to Purchase Price Variance in addition to a debit to Inventory in the event the PO price is higher. It does so in order to balance the credit to Purchase Order Receipts.

AP Usage Variance

Tracks the difference between PO quantity received and supplier invoice quantity when receipts are vouchered.

(Invoice qty - PO receipt qty) x PO unit cost

A positive variance (invoice quantity larger than received quantity multiplied by the PO unit price) is debited to the Accounts Payable Usage Variance account and credited to the PO Receipts account, which now contains both the original receipt value plus the value of the discrepancy between the original receipt quantity and the quantity that was vouchered.

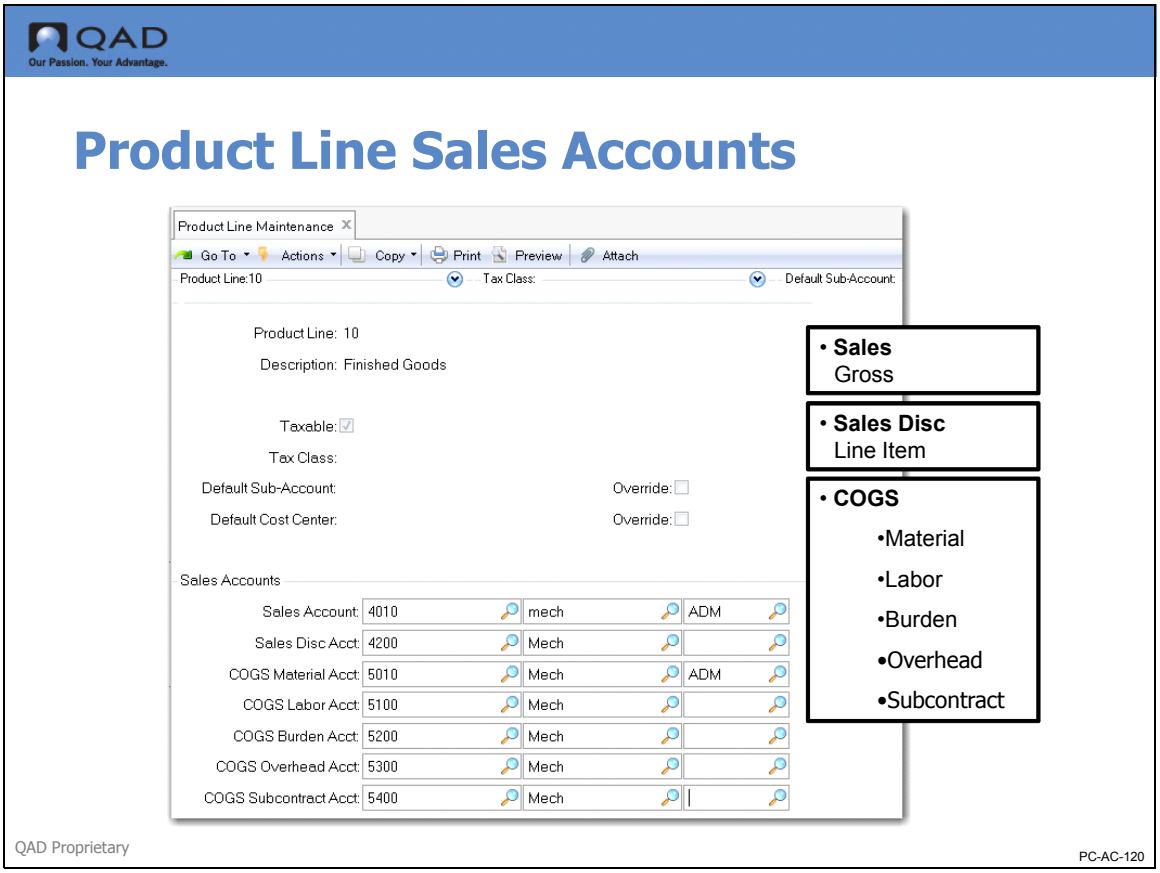
AP Rate Variance

Tracks the difference between PO price and supplier invoice price when receipts are vouchered.

(Invoice unit cost- PO unit cost) x invoice qty

In the case of a higher price, the Accounts Payable Rate Variance account is debited and the PO Receipts account is credited. The PO Receipts account contains the original receipt value plus the AP Usage Variance and the value of the discrepancy between the original PO cost and the cost that was vouchered.

Sales Accounts



Sales and cost of sales amounts are tracked by product line. The GL accounts for Sales and Sales Discounts default from the sales accounts if defined in Sales Account Maintenance (1.2.17); otherwise, from the item product line (Product Line Maintenance (1.2.1)).

Sales

Tracks gross revenue from sales

Sales Disc

Tracks sales order line discount amounts

Note Price List Maintenance (1.10.1.1), Discount Account field: If a discount account, cost center, or project is specified in Price List Maintenance, then any discounts arising from the selected price list are posted to that account, cost center, or project. If no account, cost center, or project is specified, the discount amounts are posted to the Discount account specified in Sales Account Maintenance (1.2.17), or Product Line Maintenance (1.2.1). If you want to segregate discount postings based on sales order information, such as product line or sales channel, then you should leave the Disc Acct and Accrual fields blank in Price List Maintenance.

The item's GL cost is used to post Cost of Goods Sold (COGS). This amount is split into the five major cost categories of material, labor, burden, overhead, and subcontract.

COGS Material

Tracks the material portion of cost of sales. Each time a shipment occurs, a credit is made to the Inventory account for the total GL cost of the item times the quantity shipped and a debit for the COGS material portion.

COGS Labor

Tracks the labor portion of cost of sales. Each time a shipment occurs, a credit is made to the Inventory account for the total GL cost of the item times the quantity shipped and a debit for the COGS labor portion.

COGS Burden

Tracks the variable overhead portion of cost of sales. Each time a shipment occurs, a credit is made to the Inventory account for the total GL cost of the item times the quantity shipped and a debit for the COGS burden portion.

COGS Overhead

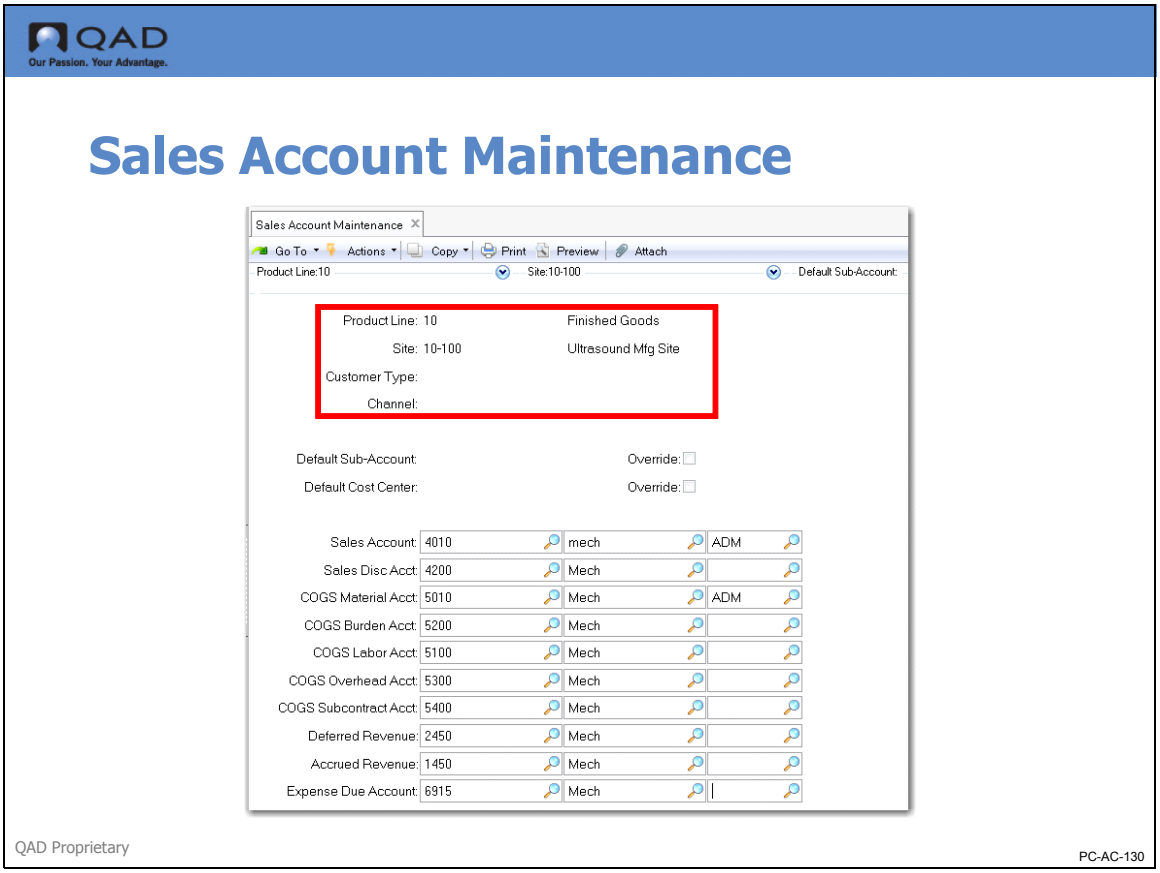
Tracks the fixed overhead portion of cost of sales. Each time a shipment occurs, a credit is made to the Inventory account for the total GL cost of the item times the quantity shipped and a debit for the COGS overhead portion.

COGS Subcontract

Tracks the subcontract portion of cost of sales. Each time a shipment occurs, a credit is made to the Inventory account for the total GL cost of the item times the quantity shipped and a debit for the COGS subcontract portion.

Note If you do not wish to track the COGS costs by cost category, then you can set the accounts to be the same for all five categories.

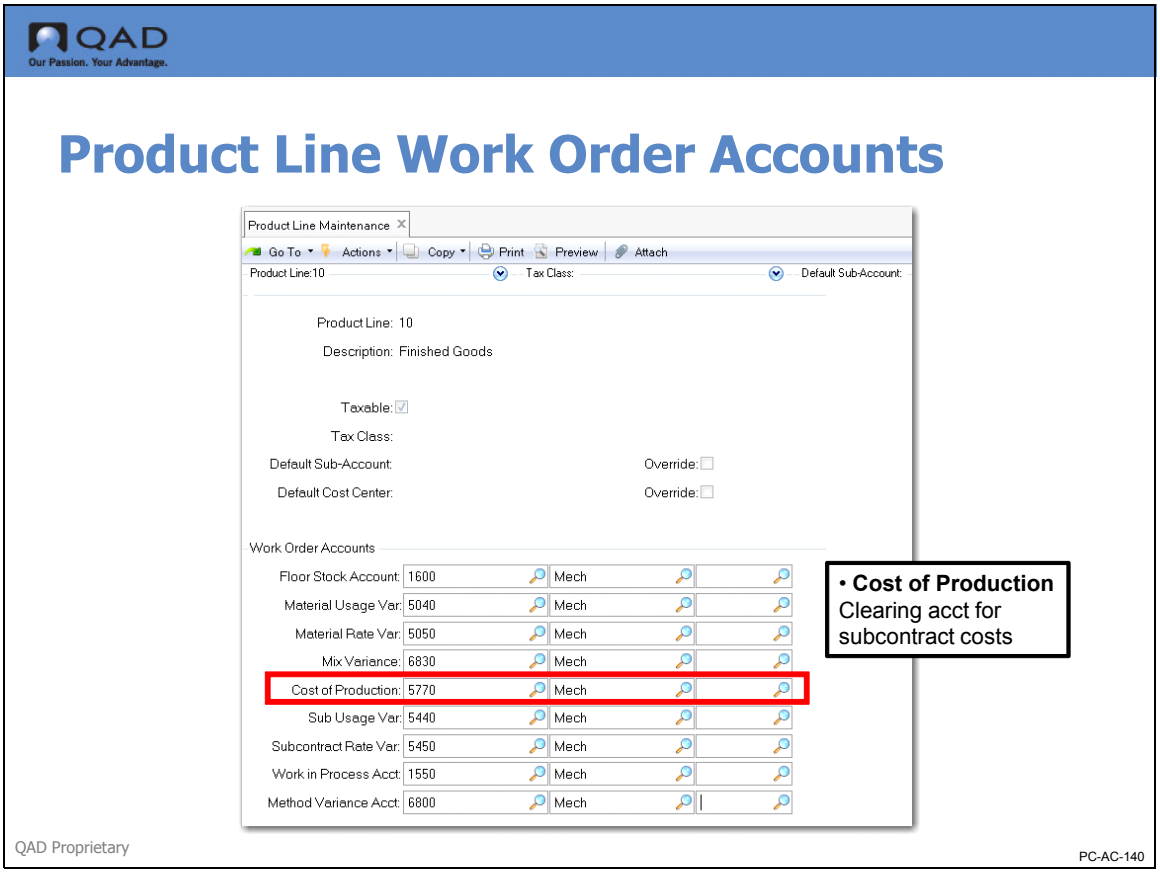
Sales Account Maintenance, 1.2.17



In some cases, you may wish to break sales information down into more detail than is available through product lines. In that case, if you additionally define sales accounts for a product line by site, customer type (hospitals, doctors' offices) and/or channel (direct, OEM) in Sales Account Maintenance (1.2.17), you can use different accounts in sales transactions. In this function, you must specify product line and site, but only need to use customer type and channel if you want more levels of detail.

Note The Customer Type is associated with the customer record, and the system will look it up during sales account assignment in sales order processing. But Channel must be entered manually on each sales order. A blank Channel code is valid if accounts are assigned strictly by Customer Type.

Work Order Accounts



These product line accounts are used in manufacturing to track the cost of floor stock, miscellaneous production costs, and work order variances. They appear on each manufacturing order as the defaults, but can be changed on any order.

Floor Stock

This is an Inventory clearing account for bulk issue items (for example, nails or nuts and bolts) that are part of the product structure, but which are not issued in the normal manner. Such items, coded in Item Master Maintenance (1.4.1) (or Item Planning Maintenance (1.4.7) or Item Site Planning Maintenance(1.4.17)), with an Issue Policy = No, are issued to the floor using an unplanned issue transaction (Issues, Unplanned, (3.7)). The system uses the Floor Stock account rather than the Cost of Production account, though, so that the material is not expensed. The issue transaction creates a debit to Floor Stock and a credit to Inventory.

Material Usage Variance

Tracks the difference between actual quantity issued and the standard quantity required in work orders. Since the standard cost of the item is inflated for yield losses, differences due to yield are reflected here. This variance is calculated and posted when the manufacturing order is accounting closed. Usage variance will also be calculated for substitute materials issued to work orders, work order bill modifications that add materials, phantom use-up logic under some conditions, component issues to rework jobs, and for any materials issued to an expense job that is accounting closed.

{actual qty issued - [qty per x (qty complete + qty reject)]} x GL cost

Material Rate Variance

Tracks 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. You get this difference when you issue material from a different site and it has a different cost or when you change GL costs without updating WIP.

(WO BOM unit cost at issue - GL unit cost) x actual qty issued

Mix Variance

This is the GL account code normally used to track the mix variance. The product line Mix Variance account is used as a default on all manufacturing orders for Co-Products/By-Products in the product line.

[order qty - (receipt qty + scrap qty)] x GL cost

Cost of Production

Miscellaneous production costs that cannot be tracked to a specific work order, such as unplanned issues. Also serves as the clearing account for subcontract purchase transactions on work orders. When a subcontract purchase order is received, the cost of the subcontract item will remain in the Cost of Production account if no work order was linked to the subcontract purchase order.

Subcontract Usage Variance

Tracks the difference between the quantity received on a subcontract PO and the quantity completed in work in process.

This variance can be due to yield differences and rework, for example. It is calculated and posted by Work Order Accounting Close (16.21). A positive quantity multiplied by the subcontract operation cost is debited to Subcontract Usage and credited to WIP.

Subcontract Usage Var =

[qty rcv'd - (qty complete + qty reject)] x subcontract frozen WO BOM unit cost

Subcontract Rate Variance

Tracks the difference between the subcontract PO price and the standard subcontract cost in the routing for an item. This is calculated and posted at the time the PO Receipt is processed. A positive rate difference multiplied by the quantity received at purchase order receipt is credited to WIP and debited to the Subcontract Rate Variance account.

Subcontract Rate Variance =
(subcontract PO unit cost - subcontract frozen WO BOM unit cost) x qty rcv'd

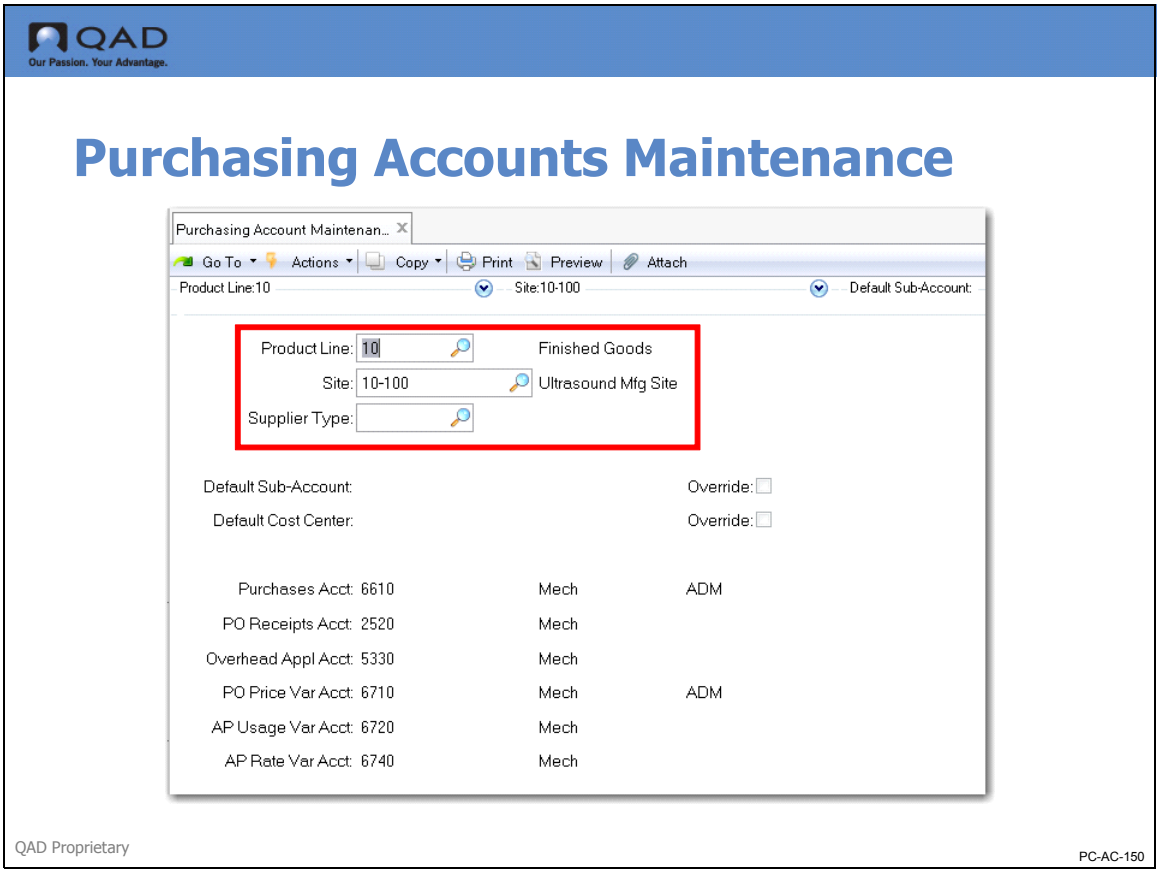
Work in Process (WIP)

Tracks work-in-process inventory value.

Method Variance

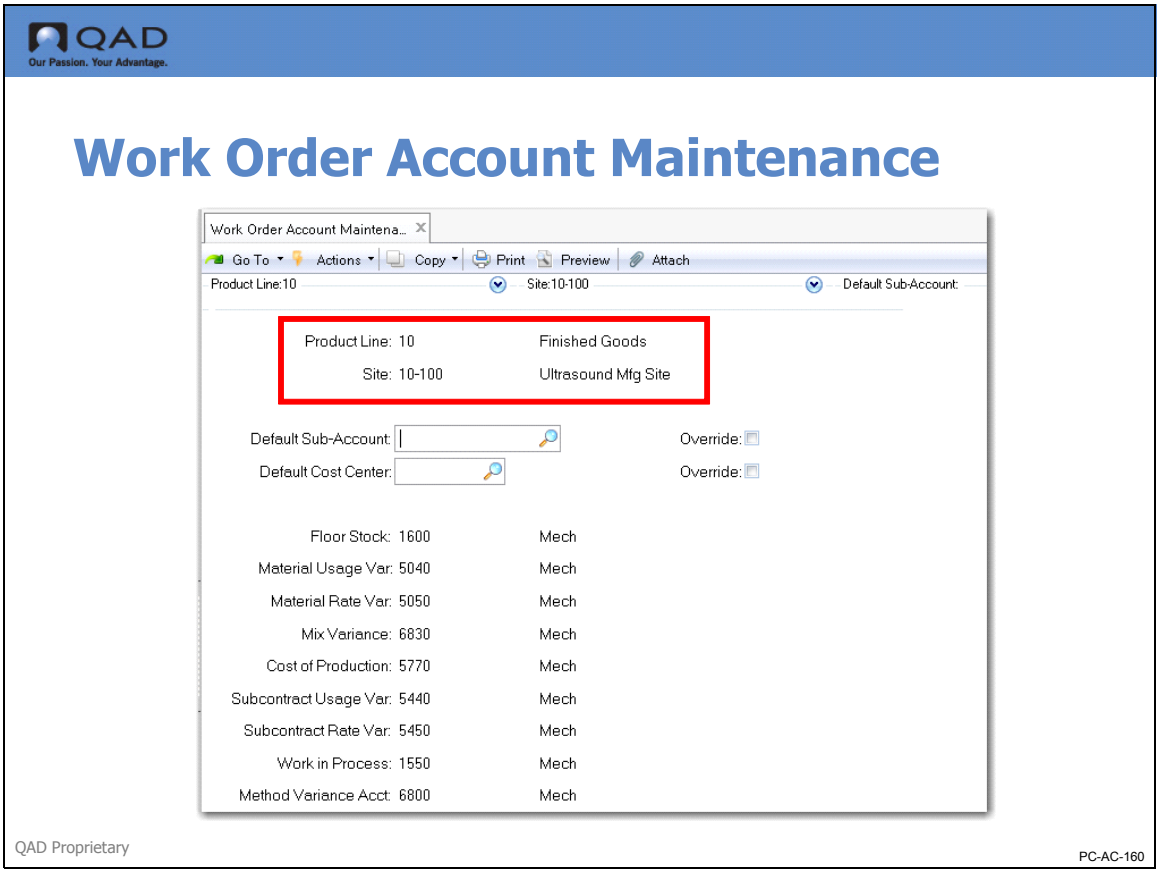
Tracks any unexplained manufacturing variances at work order or cumulative order accounting close. Method variance may be due to alternate routings, alternate product structures, timing of changes to item cost standards, lot size variance, or a rounding remainder.

Purchasing Accounts Maintenance



Purchase Accounts may be defined by Site and Supplier type.

Work Order Account Maintenance



Work Order Accounts may be defined by Site.

Product Line Service Accounts

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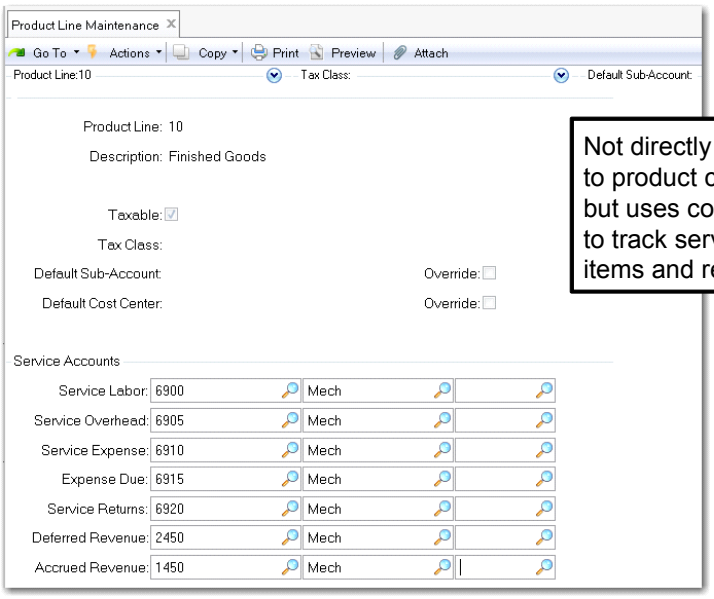
Product Line Service Accounts



Not directly related to product costing but uses cost data to track service items and returns

PC-AC-170

Product Line Consignment Accounts

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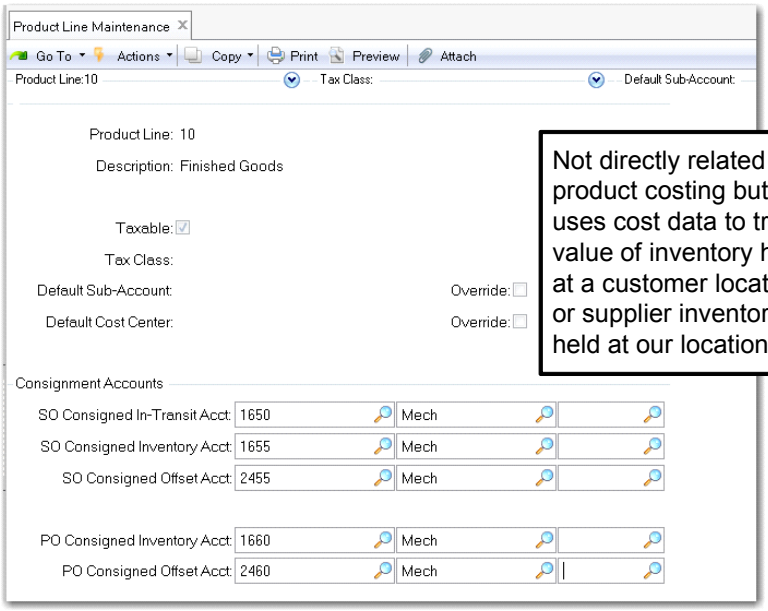
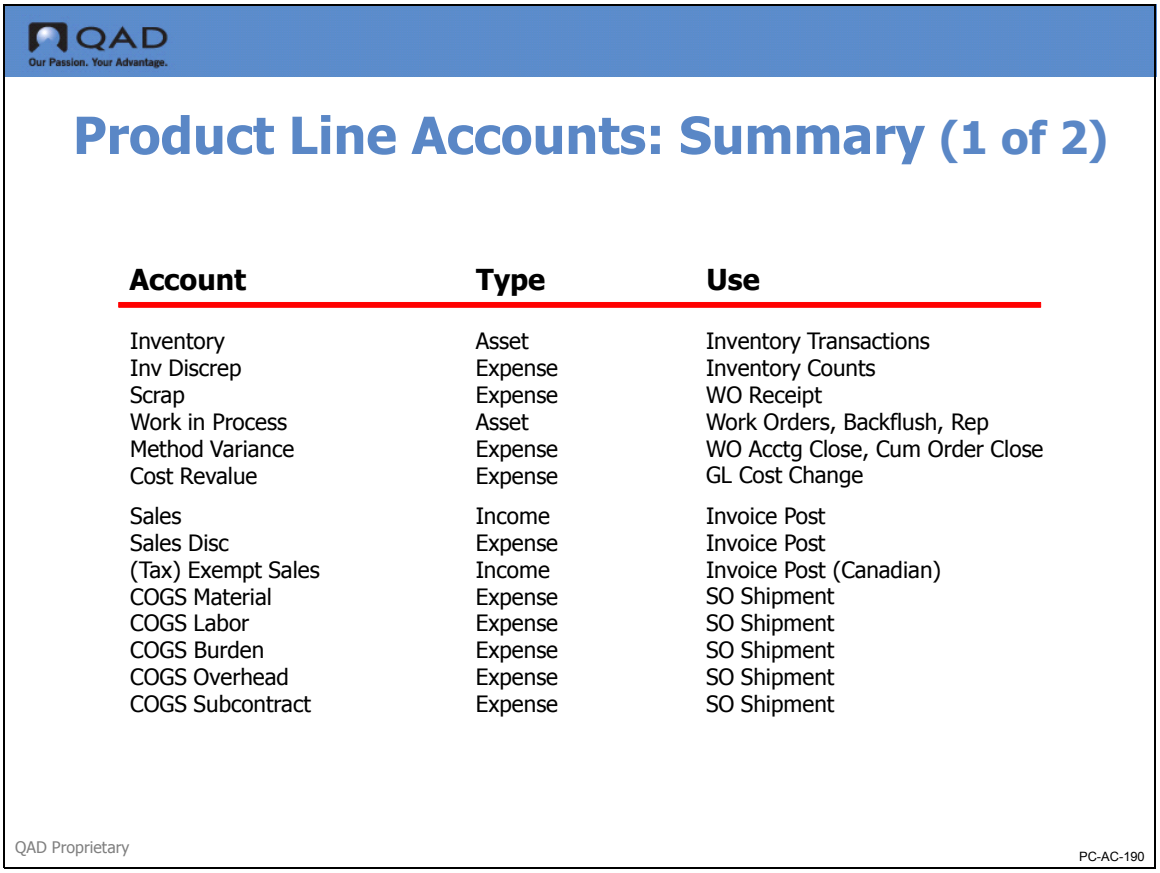
Product Line Consignment Accounts



Not directly related to product costing but uses cost data to track value of inventory held at a customer location or supplier inventory held at our location

PC-AC-180

Summary of Product Line Accounts



The figure above and on the following page is a summary of the product line accounts, the account type, and the kinds of transactions the accounts may appear on.

Summary of Product Line Accounts, cont.

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Product Line Accounts: Summary (2 of 2)

Account	Type	Use
Purchases	Expense	PO Receipt (Non-Inventory)
PO Receipts (Accrued AP)	Liability	PO Receipt, Voucher
Overhead Applied	Expense	PO Receipt, WO Receipt
PO Price Variance	Expense	PO Receipt
AP Usage Variance	Expense	Voucher
AP Rate Variance	Expense	Voucher
Floor Stock	Asset	WO Close, Cum Order Acctg Close
Material Usage Variance	Expense	WO Close, Cum Order Acctg Close
Material Rate Variance	Expense	WO Issue, WO Close, Repetitive Backflush, Rework
Cost of Production	Expense	Unplanned Issues
Subcontract Usage Var	Expense	WO Close, Cum Order Acctg Close
Subcontract Rate Var	Expense	WO Close, PO Receipt

PC-AC-200

Study Questions

List the three elements of the GL Reference Number.

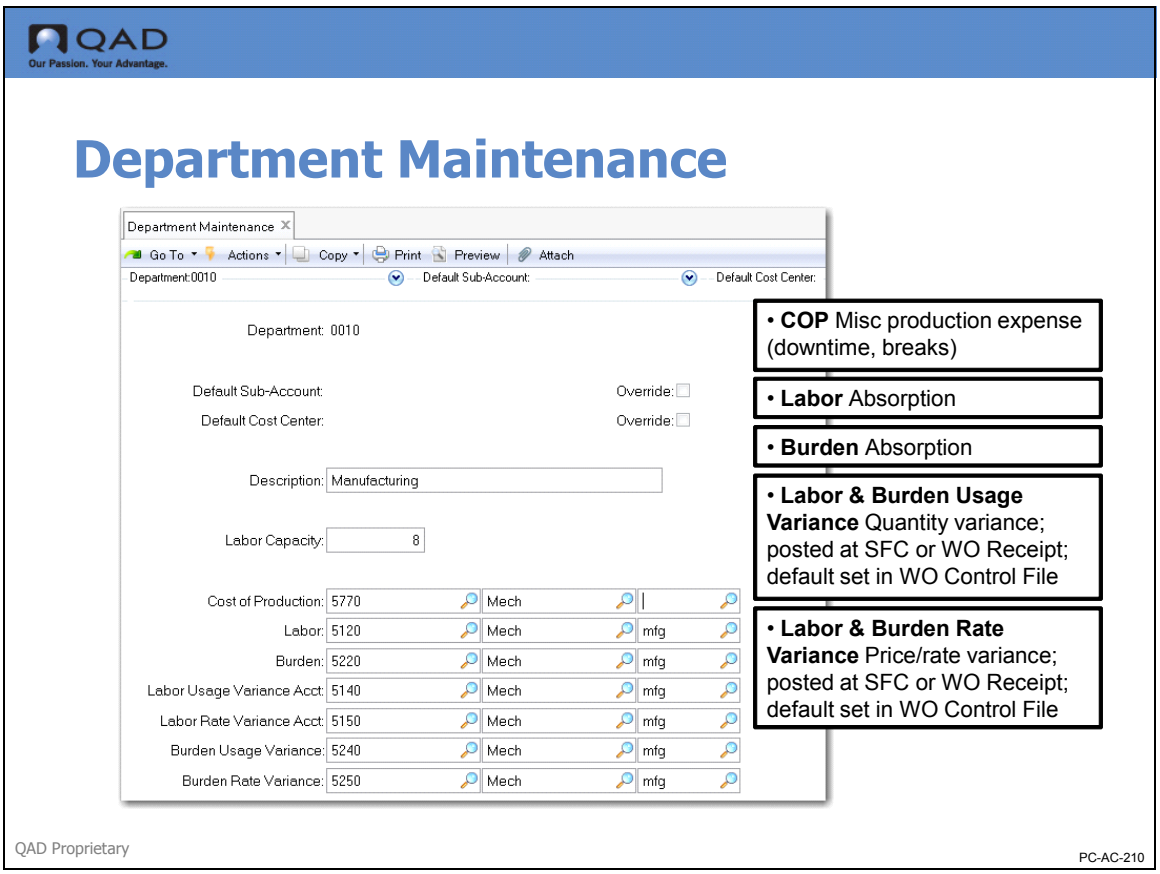
Product Lines define the default account codes for which of the following?

- **a** Inventory Accounts
- **b** Purchasing Accounts
- **c** Sales Accounts
- **d** Work Order Accounts
- **e** None of the above
- **f** All of the above

The debits and credits on a multiple line GL distribution must balance. True or False?

In planning for next year QMI wants to add an allowance for fixed overhead to each finished good item. The production plan calls for 3500 units of production. The annual rent on the production facility is 120,000; the umbrella insurance policy is 25,000; the general maintenance budget is 200,000; management salaries are 300,000. What value should be put in the Overhead Cost field of the GL cost set for each finished good item?

Department Accounts



Manufacturing costs are grouped by department. When you create department records, the accounts to be used for transactions associated to this department default from the Domain/Account Control (36.1), and can be changed to any other valid account.

The department account codes are similar to the GL account codes for product lines. They are used when reporting labor and downtime in the Shop Floor Control and Advanced Repetitive/Repetitive modules, and when backflushing inventory and closing the accounting for completed work orders. More detailed information about these accounts follows.

Cost of Production

Used for indirect labor using non-productive labor reporting, or for downtime reporting.

Labor (absorption)

Used to accumulate the labor cost for a department. The standard hours at the standard rate are debited to WIP and credited to the Labor and Burden accounts. Labor usage and burden usage variances are calculated and credited to the Labor and Burden accounts, respectively. And labor rate variances are calculated and credited to the Labor and Burden accounts.

Burden (absorption)

Burden is the variable overhead associated with production operations, and the burden account is used to accumulate accrued burden for a department. It is used in conjunction with labor reporting and the backflushing of standard labor. Both direct and downtime hours (if employee and work center are specified in Downtime Transaction) will be burdened, while non-productive hours reported will not be.

Labor Usage Variance

For standard cost, labor usage variance is used to track the difference between the actual time reported and the standard time set for both set-up and run labor. Since standard hours are inflated to cover yield losses, differences due to yield will be reflected in labor usage variance.

Labor Usage Variance =
[(actual set-up hrs - std set-up hrs) x std set-up rate] + [actual run hrs - std run hrs) x std run rate]

Std run hrs = std run hrs/unit x (qty completed + qty rejected)

Labor Rate Variance

Tracks the difference between the actual employee pay rate (including overtime and shift differential) and the work center standard labor rate.

Labor Rate Variance =
[(actual set-up rate - std set-up rate) x actual set-up hrs] +
[(actual run rate - std run rate) x actual run hrs]

Burden Usage Variance

Tracks the difference in burden costs due to the actual hours reported varying from the standard hours required on the routing.

Burden Usage Variance =
[(actual set-up hrs - std set-up hrs) x std set-up burden] + [(actual run hrs - std run hrs) x std run burden]

where:

Std set-up burden = (std set-up rate x bdn%) + lbr bdn rate + (mach bdn rate x mach/op)

Std run burden = (std run rate x bdn%) + lbr bdn rate + mach bdn rate

Burden can be a percentage of labor, a fixed rate per labor hour for machine, or the sum of these.

Burden Rate Variance

Tracks the difference in burden costs due to the employee's actual pay rate varying from the work center standard labor rate. This applies only if burden is calculated as a percentage of labor cost and the employee's pay rate is different than the work center standard.

Burden Rate Variance =
[(actual set-up bdn - std set-up bdn) x actual set-up hrs] +
[(actual run bdn - std run bdn) x actual run hrs]

where

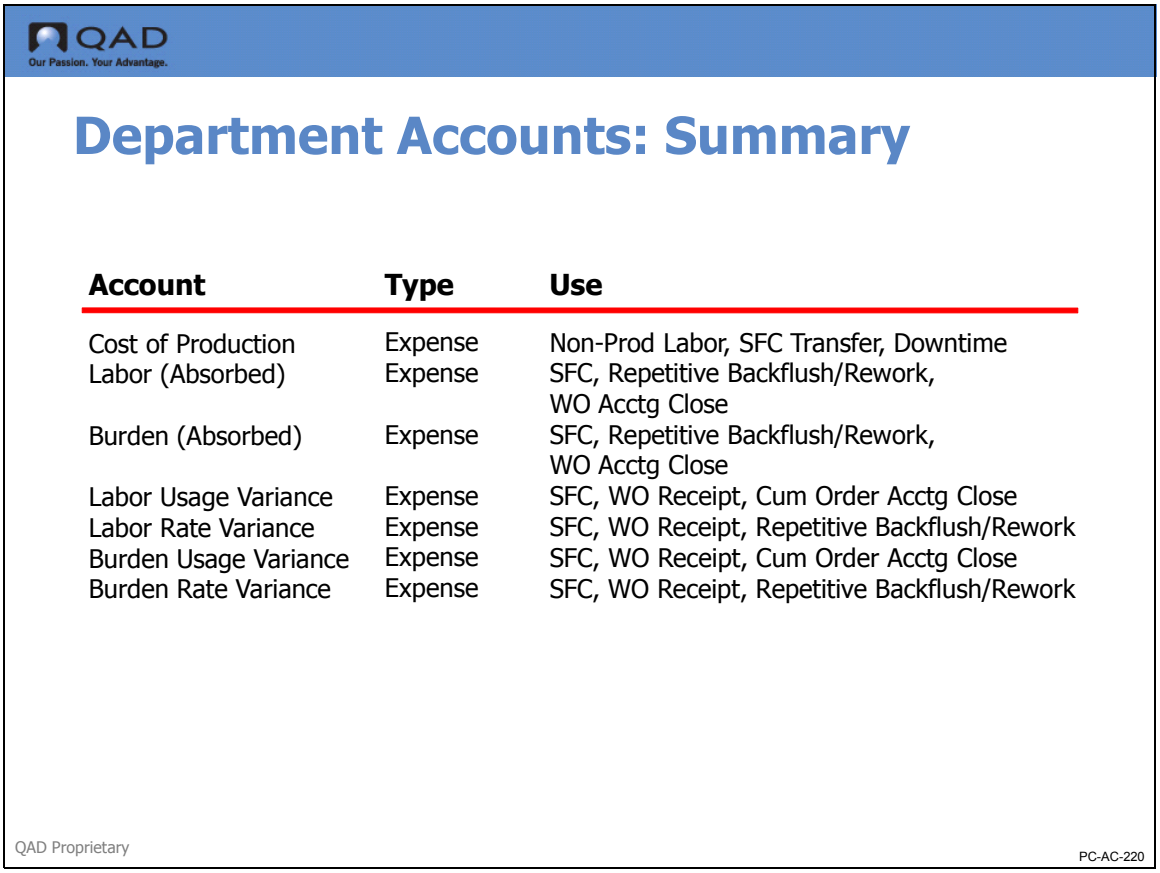
Actual set-up burden = (actual set-up rate x bdn%) + lbr bdn rate + (mach bdn rate x mach/op)

Std set-up burden = (std set-up rate x bdn%) + lbr bdn rate + (mach bdn rate x mach/op)

Actual run burden = (actual run rate x bdn%) + lbr bdn rate + mach bdn rate

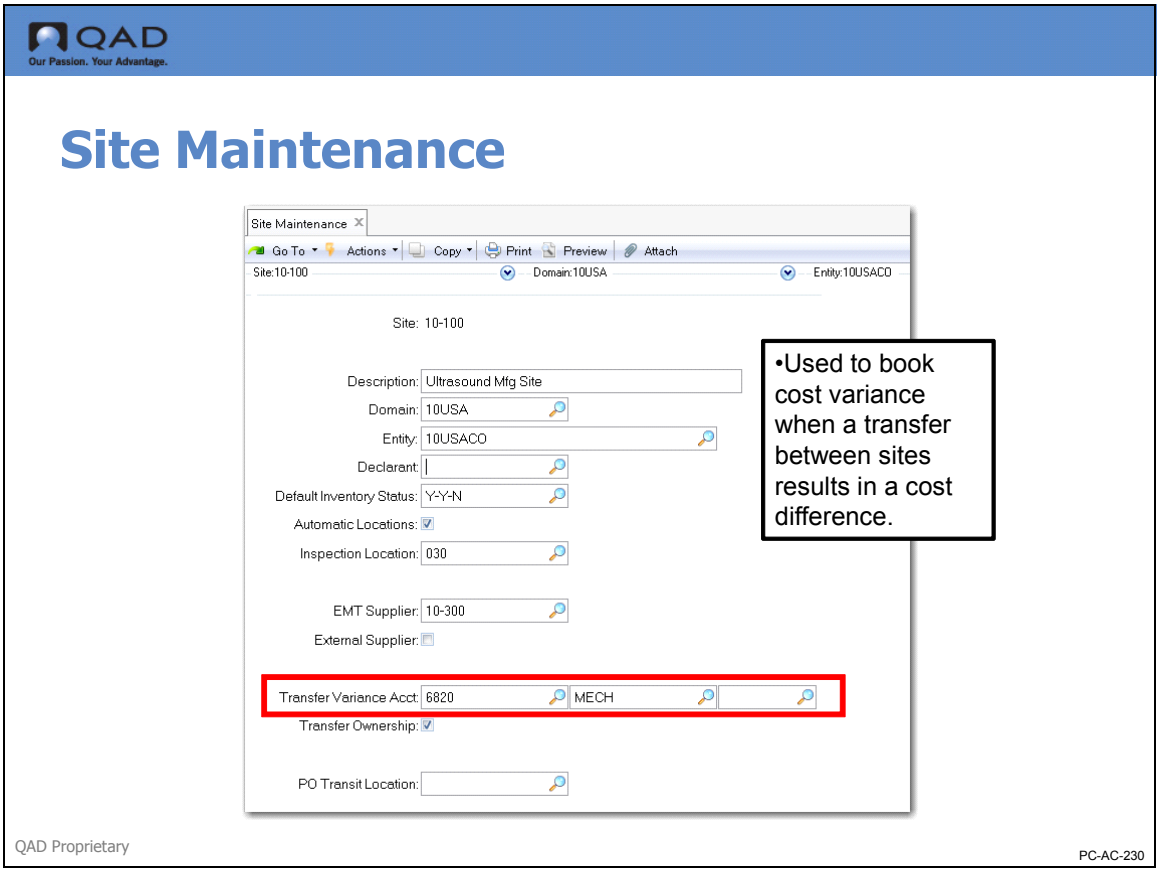
Std run burden = (std run rate x bdn%) + lbr bdn rate + mach bdn rate

Summary of Department Accounts



The figure above is a summary of the accounts for a department, the account type, and the kinds of transactions on which the accounts may appear.

Site Accounts



For each site in the database, you can establish a Transfer Variance account. At the time you create the site, the accounts will default from the Domain/Account Control (36.1), but you may modify them. (See Chapter 6, “Intersite Transfers and Multi-Site Component Issues Variances” for more information on multi-site component issues.)

Quality Transactions

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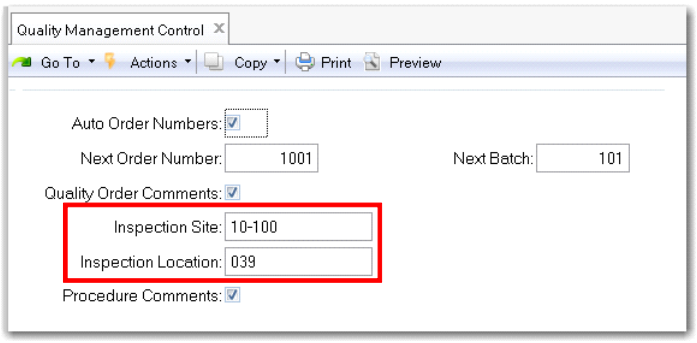
Quality Management Control File



PC-AC-240

You can specify sites in the Quality Management Control (19.24), for inspection activities related to quality orders and testing. These sites will be used to set the entity for any inventory related transactions. Additionally, you can specify a location that would affect accounts used for inventory transactions if you had inventory accounts specified by location.

Appendix A

Variances and Components Reference

Purchase-Related Variances	
Purchase Price	
Calculated at PO Receipts, 5.13.1	[PO Unit Cost - (GL Unit Cost - OH)] x PO Qty Rcv'd
Reports: Transaction Receipts Report, 5.9.14; Transactions Detail Inquiry, 3.21.1	
AP Rate	
Calculated at Supplier Invoce Create, 28.1.1.1	(Invoice Unit Cost - PO Unit Cost) x Invoice Qty
Reports: Matching Variance Rpt. 28.2.7 Transactions Detail Inquiry, 3.21.1	
AP Usage	
Calculated at Supplier Invoce Create, 28.1.1.1	(Invoice Qty - PO Receipt Qty) x PO Unit Cost
Reports: Matching Variance Rpt. 28.2.7; Transactions Detail Inquiry, 3.21.1	
Manufacturing-Related Variances	
Material Rate	
Calculated at WO Component Issue, 16.10; WO Receipt Backflush, 16.12; Repetitive Backflush, 18.22.13	(WO BOM Unit Cost at Issue - GL Unit Cost) x Actual Qty Iss'd
Reports: Work Order Cost Report, 16.3.4; Transactions Detail Inquiry, 3.21.1	
Material Usage	
Calculated at WO Accounting Close, 16.21; Cum Order Close, 18.22.10; Post Accumulated Usage Var, 18.22.9	{Actual Qty Issued - [qty per x (qty completed + qty rejected)]} x GL Unit Cost
Reports: Work Order Cost Report, 16.3.4; Transactions Detail Inquiry, 3.21.1; Repetitive Operations Accounting Report, 18.22.4.9	
Labor Rate	
Calculated at SFC feedback, 16.20.1, 16.20.2, 16.20.3; can be deferred until WO Receipt, 16.11, 16.12; Repetitive Backflush, 18.22.13	Per Operation: [(Actual Set-Up Rate - Std Set-Up Rate) x Actual Set-Up Hrs] + [(Actual Run Rate - Std Run Rate) x Actual Run Hrs] Set-up and run rates are equal to the payroll rate (defined in 14.13.21) or the work center rate if payroll is not set up No variances if no labor reporting
Reports: Work Order Cost Report, 16.3.4; Operations Accounting Rpt, 16.20.13.10; Rep Ops Accounting Rpt, 18.22.4.9	
Labor Usage	
Calculated at SFC feedback, 16.20.1, 16.20.2, 16.20.3; can be deferred until WO Receipt, 16.11, 16.12; Post Accumulated Usage Var, 18.22.9; Cum Accounting Close, 18.22.10	Per Operation: [(Actual Set-Up Hrs - Std Set-Up Hrs) x Std Set-Up Rate] + [(Actual Run Hrs - *Std Run Hrs) x Std Run Rate] *Std Run Hrs = Std Run Hrs x (Qty Completed + Qty Rejected)
Reports: WO Cost Report, 16.3.4; Operations Accounting Rpt, 16.20.13.10; Rep Ops Accounting Rpt, 18.22.4.9	

Burden Rate	
Calculated at SFC feedback, 16.20.1, 16.20.2, 16.20.3; WO Receipt, 16.11, 16.12; Repetitive Backflush, 18.22.13 *Reports:* WO Cost Report, 16.3.4; Operations Accounting Rpt, 16.20.13.10; Rep Ops Accounting Rpt, 18.22.4.9	Per Operation: [(Actual Set-Up Bdn - Std Set-Up Bdn) x Actual Set-Up Hrs] + [(Actual Run Bdn - Std Run Bdn) x Actual Run Hrs] Actual Set-Up Bdn = (Actual Set-Up Rate x Lbr Bdn %) + Lbr Bdn Rate + (Mach Bdn Rate x Mach/Op) Std Set-Up Bdn = (Std Set-Up Rate x Lbr Bdn %) + Lbr Bdn Rate + (Mach Bdn Rate x Mach/Op) Actual Run Bdn = (Actual Run Rate x Lbr Bdn %) + Lbr Bdn Rate + Mach Bdn Rate Std Run Bdn = (Std Run Rate x Lbr Bdn %) + Lbr Bdn Rate + Mach Bdn Rate
Burden Usage	
Calculated at SFC feedback, 16.20.1, 16.20.2, 16.20.3; can be deferred until WO Receipt, 16.11, 16.12; Post Accumulated Usage Var, 18.22.9; Cum Order Close, 18.22.10; *Reports:* WO Cost Report, 16.3.4; Operations Accounting Rpt, 16.20.13.10; Rep Ops Accounting Rpt, 18.22.4.9	Per Operation: [(Act Set-Up Hrs - Std Set-Up Hrs) x Std Set-Up Bdn] + [(Act Run Hrs - Std Run Hrs) x Std Run Bdn] Std Set-Up Bdn = (Std Set-Up Rate x Lbr Bdn %) + Lbr Bdn Rate + (Mach Bdn Rate x Mach/Op) Std Run Bdn = (Std Run Rate x Lbr Bdn %) + Lbr Bdn Rate + Mach Bdn Rate
Subcontract Rate	
Calculated at PO Receipt, 5.13.1	(Subcontract PO Unit Cost - Subcontract Unit Cost from Routing) x Qty Received
Subcontract Usage	
Calculated at WO Accounting Close, 16.21; Post Accumulated Usage Var, 18.22.9; Cum Order Close, 18.22.10	[Qty Received - (Op Qty Completed + Op Qty Rejected)] x Subcontract Unit Cost from Routing
Method	
Calculated at WO Accounting Close, 16.21; Cum Accounting Close, 18.22.10	Balance of WO/ID value remaining
Mix (Co/By-Products)	
Calculated at WO Accounting Close, 16.21	[Order Qty - (Receipt Qty + Scrap Qty)] x GL Unit Cost

Variances by Transaction Flow

PO Receipts

Purchase Price Variance

[PO Unit Cost - (GL Unit Cost - OH)] x PO Qty Rcv'd

Subcontract Rate Variance

(Subcontract PO Unit Cost - Subcontract Unit Cost from Routing) x Qty Received

Voucher Maintenance

Accounts Payable Rate Variance

(Invoice Unit Cost - PO Unit Cost) x Invoice Qt

Accounts Payable Usage Variance

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

Work Order Component Issue

Material Rate Variance

(WO BOM Unit Cost at Issue - GL Unit Cost) x Actual Qty Iss'd

Labor Feedback

Labor Rate Variance

[(Actual Set-Up Rate - Std Set-Up Rate) x Actual Set-Up Hrs] + [(Actual Run Rate - Std Run Rate) x Actual Run Hrs]

Labor Usage Variance

[(Actual Set-Up Hrs - Std Set-Up Hrs) x Std Set-Up Rate] + [(Actual Run Hrs - *Std Run Hrs) x Std Run Rate]

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

Burden Rate Variance

[(Actual Set-Up Bdn - Std Set-Up Bdn) x Actual Set-Up Hrs] +
[(Actual Run Bdn - Std Run Bdn) x Actual Run Hrs]

Burden Usage Variance

[(Act Set-Up Hrs - Std Set-Up Hrs) x Set-Up Bdn] + [(Act Run Hrs - Std Run Hrs) x Run Bdn]

Work Order Accounting Close

Subcontract Usage Variance

[Qty Received - (Op Qty Completed + Op Qty Rejected)] x Subcontract Unit Cost from Routing

Material Usage Variance

{Actual Qty Issued - [qty per x (qty completed + qty rejected)]} x GL Unit Cost

Method Variance

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