



QAD Enterprise Applications
Enterprise Edition

Training Guide Quick Start

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QAD 2013.1 Enterprise Edition
Workspace: 10USA > 10USACO
October 2013

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QAD Inc.

100 Innovation Place
Santa Barbara, California 93108
Phone (805) 566-6000
<http://www.qad.com>

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Change Summary

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

Date/Version	Description	Reference
October 2013/2013.1 EE	Numerous revisions	---
	Added What is Enterprise Edition? chapter	page 5
March 2013/2013 EE	Rebranded for QAD 2013 EE	---
March 2012/2012 EE	Rebranded for QAD 2012 EE, edited for clarity and consistency, minor content updates	---
Sept 2011/2011.1 EE	Rebranded for QAD 2011.1 EE	---

About This Course

This section introduced the content and requirements of the Quick Start Training.

Course Description

This course provides quick start training on QAD Enterprise Edition (QAD EE) by offering a high-level overview of most of the core features of the QAD system. The quick start is for students who want to rapidly begin using the application software. This accelerated course provides a focused introduction to the fundamentals of the system and demonstrates how features apply to critical business processes.

The focus on basic operational tasks lays a foundation for further training in more advanced functions. Training guides for the individual modules provide much deeper training with a narrower scope.

Course Objectives

The overall objective of the course is to provide a basic background in setup concepts and the processing of core business functions in QAD EE, such as:

- Basic Setup
- Purchasing
- Sales Orders
- Manufacturing
- Planning

Each chapter includes a list of learning objectives for the topics covered in that chapter.

This course is not intended to take the place of implementation training or consulting. The complete body of knowledge necessary to make the business decisions required for system setup and implementation are beyond the scope of this course.

The format for this course is designed for the classroom with each student completing their own hands-on activities that simulate how to use QAD Enterprise Edition to run a business.

Course Benefits

The student obtains an overview of core QAD Enterprise Edition functionality.

Audience

This course is intended for first-time users.

Prerequisites

An understanding of basic manufacturing principles is beneficial.

Course Credit

This course is valid for 30 credit hours and is typically taught in 4 days.

Organization of Training Guide

This training guide has the following chapters:

- Preface
- QAD EE User Interface
- System Structure
- Product Definition
- Manufacturing Environment Set Up
- Cost Calculations
- Purchasing
- Work Orders
- Sales Orders/Invoices
- Planning

Each chapter in these sections is divided into these subsections:

- Overview and learning objectives
- Key concepts
- Example
- Review
- Exercise

Key concepts are discussed at the beginning of each chapter to familiarize you with processes, work flows, and terminology. For example, the chapter on Manufacturing Environment Setup discusses concepts related to work centers and routings.

Note Throughout this course, screens may not display the exact data that is mentioned in the text. The content of the transaction detail is correct. In the exercises, always follow the printed text.

Virtual Environment Information

Use the hands-on exercises in this book 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 have questions or encounter problems with 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.

To find a resource, you can use the navigation tree on the left or use a powerful cross-document search. A cross-document search 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 tools include the Knowledgebase and QAD Forums, where you can post questions and search for topics of interest. To access these tools, choose Visit Online Support Center under the Support tab.

Chapter 1

What is QAD Enterprise Edition?

Overview

This chapter provides an introduction to QAD Enterprise Edition.

Topics

Topics

- What is Enterprise Edition?
- What does Enterprise Edition do?
- How does Enterprise Edition differ from Standard Edition?

Learning Objectives

Objectives

When you finish this section, you should be able to describe:

- What Enterprise Edition is
- What Enterprise Edition does
- The difference between Enterprise Edition and Standard Edition



02-05-000

What is Enterprise Edition?

What is Enterprise Edition?

- QAD Enterprise Edition is a software package that allows manufacturing firms to better manage the various areas of their business
- It is suited for a wide variety of industries including
 - Automotive
 - Life Sciences
 - Food and Beverage



02-05-040

What Does Enterprise Edition Do?

What Does Enterprise Edition Do?

QAD Enterprise Edition allows users to

- Plan how much of a product to make, when to make it, how to make it, and what to do with it
- Identify, order, and track the components used to make a product
- Manage payments to suppliers
- Manage payments from customers
- Perform numerous other tasks



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Enterprise Edition versus Standard Edition

Enterprise Edition versus Standard Edition

- Standard Edition was QAD's original product
- Enterprise Edition provides the core capabilities of Standard Edition, but offers
 - A wider range of capabilities and features
 - A greatly expanded and more powerful Financials package

Chapter 2

QAD EE User Interface

Overview

This chapter provides information on the features of the QAD Enterprise Application user interface and how to navigate in the system.

Topics

Topics

- Overview of .NET UI
- Modules and Menus
- Program and Data Types

Learning Objectives

Objectives

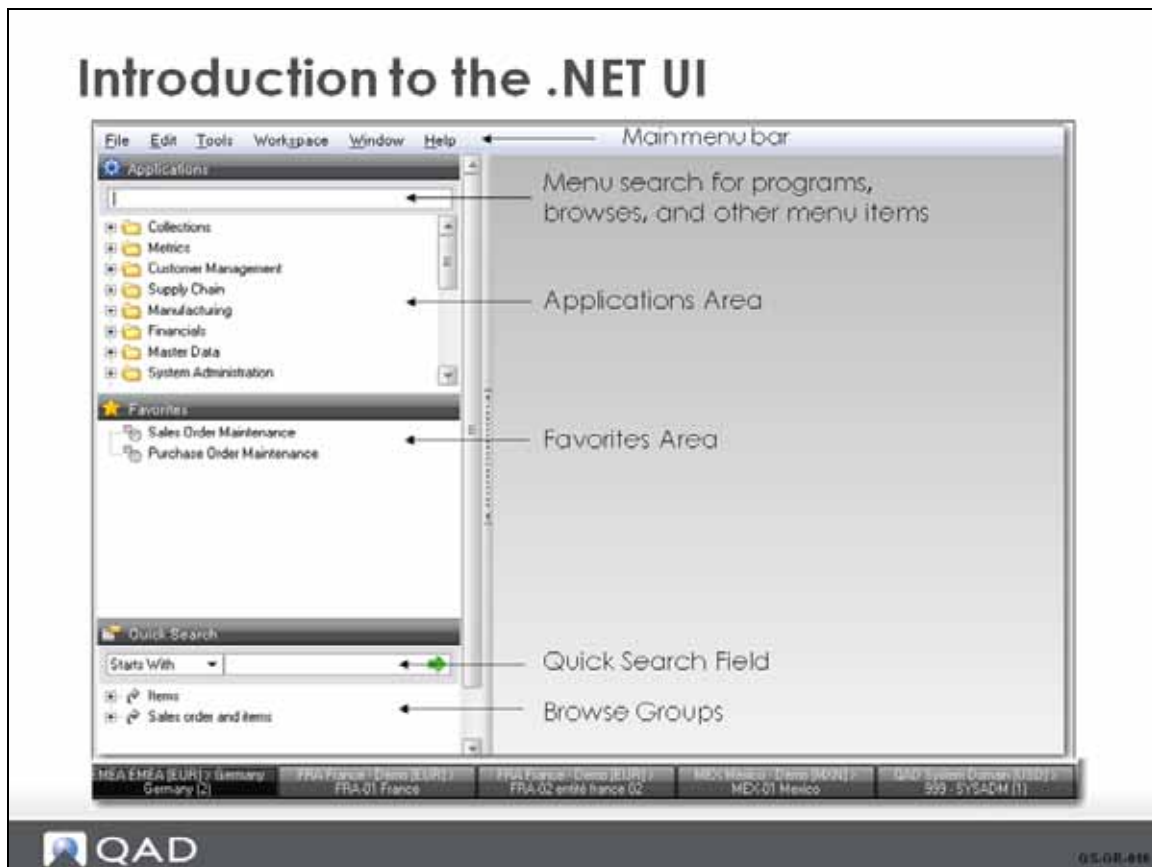
When you finish this section, you should be able to:

- Navigate the UI
- Change workspaces and domains
- Navigate using process maps
- Navigate and select UI menus



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Introduction to the .NET UI



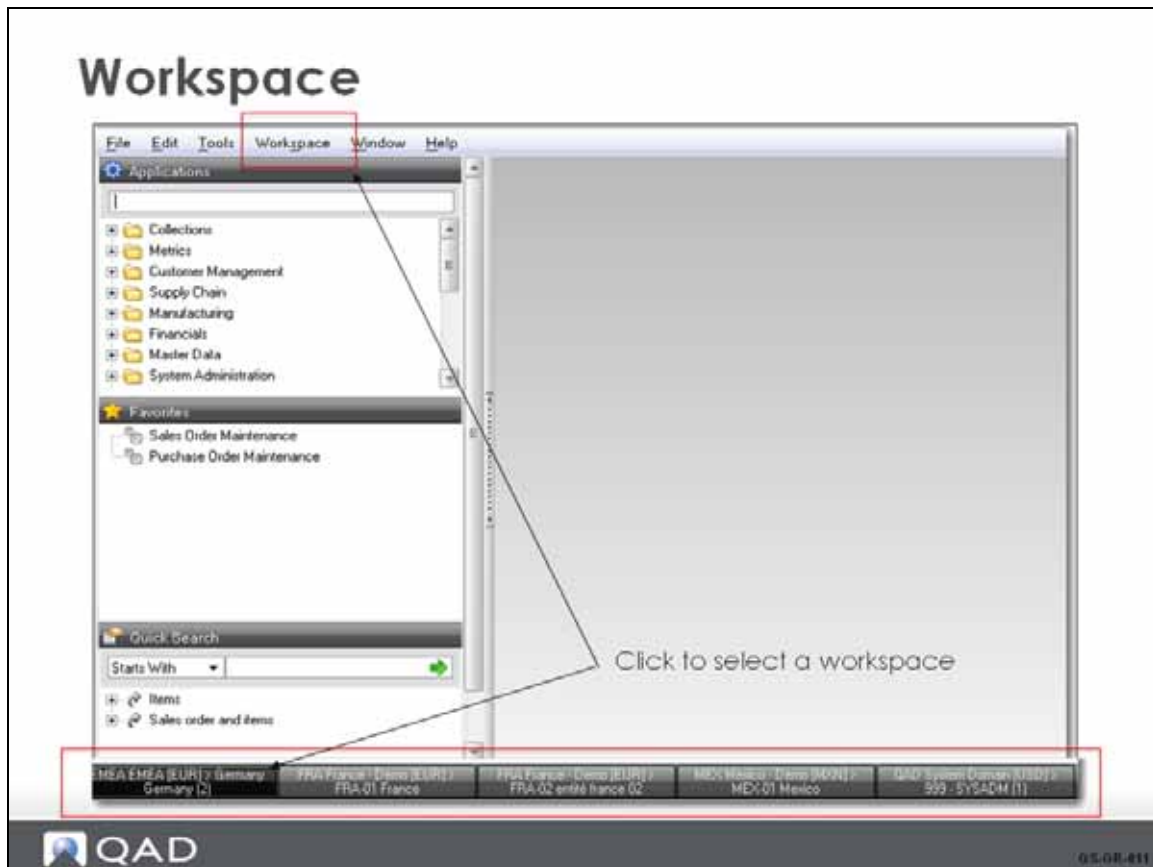
The QAD .NET User Interface (UI) provides a common framework for multiple QAD applications. This framework, based on Microsoft .NET technology, has excellent performance and provides best-practice usability and deployment features. It also offers numerous ways for users to adapt the UI to their preferred work style.

When you first log in to the .NET UI, you see a screen like the illustration.

- The Main menu bar includes selections for file, edit, tools, workspace, window, and help.
- The Menu search helps you locate programs to run.
- The Application area displays the application programs that are running in the QAD .NET UI.
- Each user can customize the Favorites area to list frequently used screens.
- Quick Search area lets you search for a value across all of the fields in a browse.
- Browse groups are user created to support quick searches.

Note Review the *Training Guide: .NET User Interface* if you are not familiar with the .NET UI.

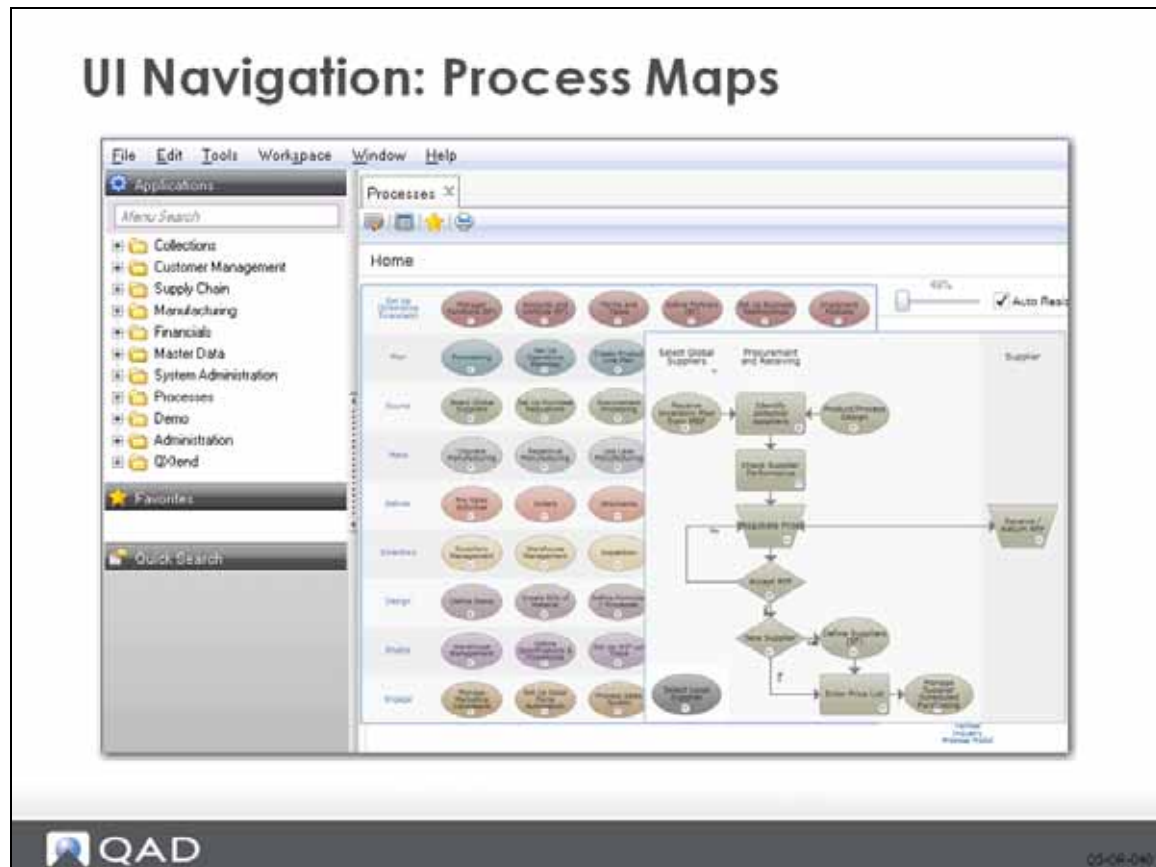
Workspace



A combination of domain and entity, called a workspace, determine your application context in the .NET UI. The next chapter introduces the business model concepts, including domains and entities, in more detail. They basically represent the area of your business where you are working. Most users only use one workspace. Once selected, it is always active by default.

With the workspace selector toolbar along the bottom of the screen, you can quickly change workspaces and domains.

UI Navigation: Process Maps



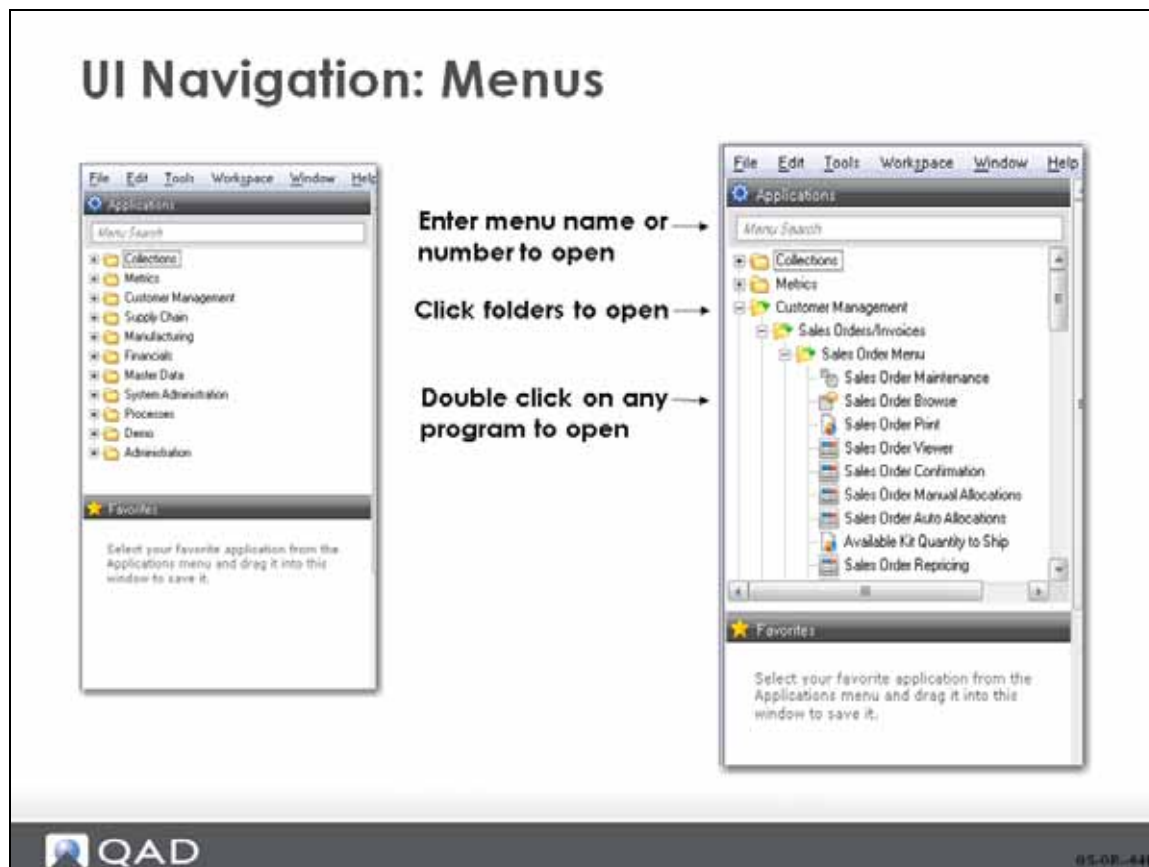
The .NET UI provides many ways to navigate and find programs you are interested in.

This screen shows how to use process maps, which are graphical models of workflows that link to programs, browses, and other process maps using advanced features of .NET technology.

Process map nodes provide drill-down navigation to individual programs within process flows.

You can also select programs from the menu on the left or enter a program name or number in the search field.

UI Navigation: Menus



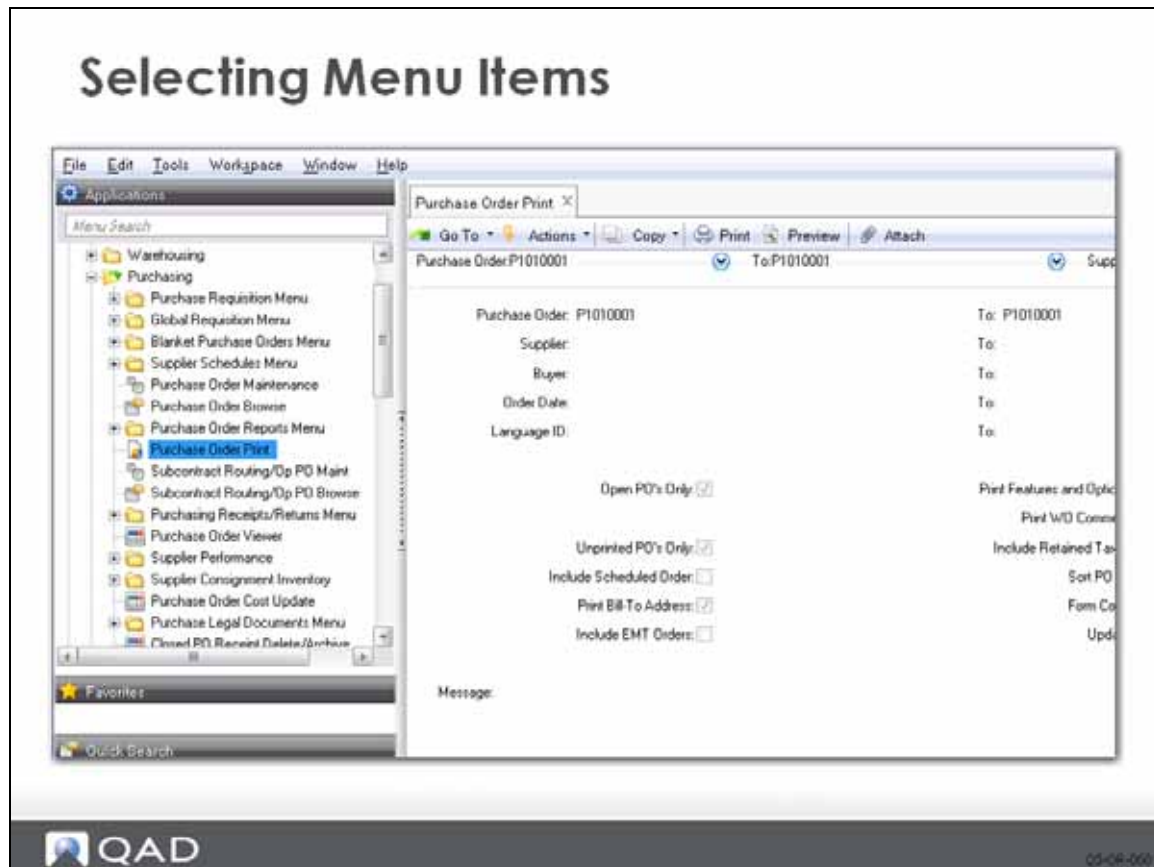
When the system is installed, the default menu organization is automatically loaded. The first menu in QAD EE is the main menu, which groups functions into application-related sections. Each menu folder contains other folders or menus of related business activities called modules.

This example of the menu structure shows the indented format of subfolders and items. Under the Customer Management folder is the Sales Orders/Invoices folder. It contains other folders for various functions required to manage sales orders and related functions such as Customer Schedules and Shipment Processing.

Note The menu structure for QAD EE was revised from the QAD Standard Edition. If you are upgrading from Standard Edition, you want to familiarize yourself with the new menu structure. Enterprise Financials were revised from previous releases. User guides and training guides exist for Enterprise Financials for students who require in-depth knowledge of the new financial functionality.

In order to provide enhanced separation of activities, most of the financial control settings are now updated separately from operational controls. For example, Sales Order Control (7.1.24) under the Sales Order menu in Customer Management now has only the operational control settings for sales orders. All of the financial control settings for sales orders are in Sales Order Accounting Control (36.9.6) under the Operational Acct Controls Menu in System Administration.

Selecting Menu Items



You use the mouse to select menu items. You can execute a program by:

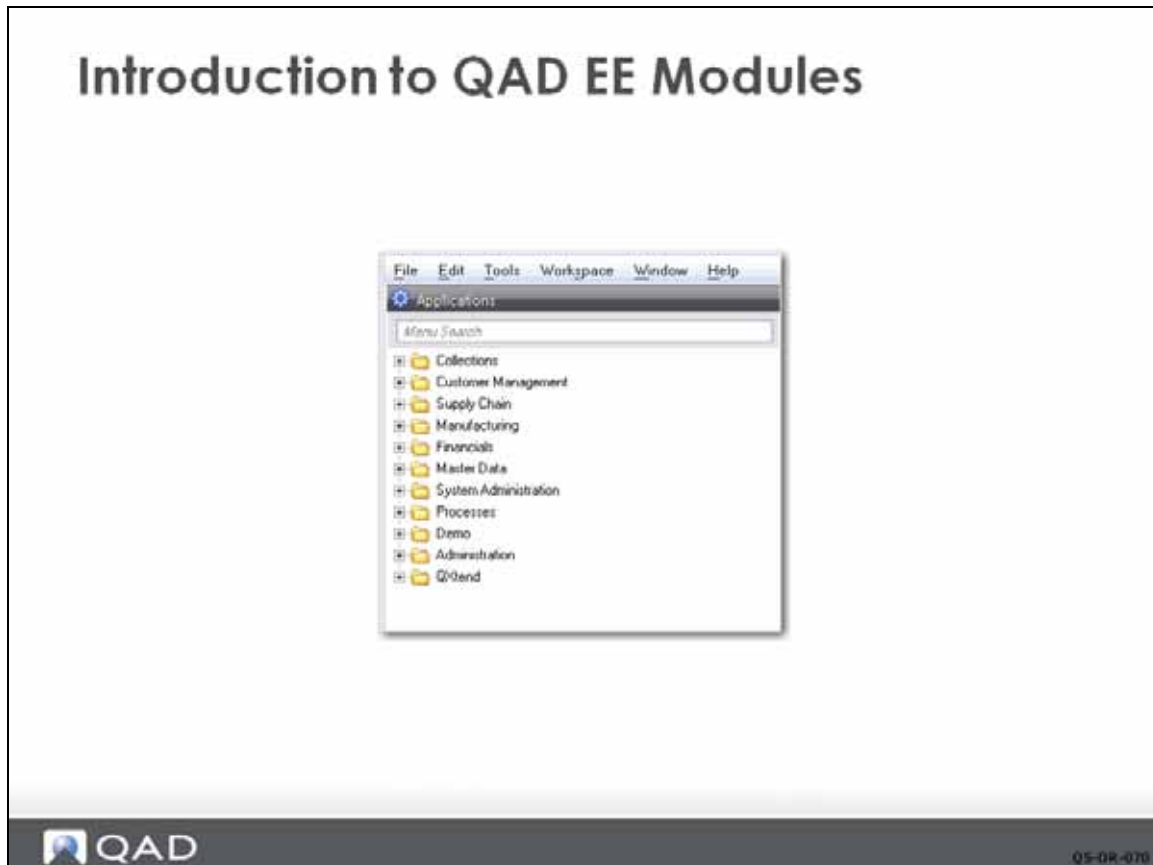
- Clicking the menu folders until you find the program in the menu and then double-clicking its name. You can single-click the plus or minus sign to toggle the folder open or closed or double-click the folder icon directly.
- Double-clicking on a discrete function, such as Purchase Order Maintenance to open the functional screen in the main window.
- Entering part of its name in the Menu Search field. For example, enter sales to display all menu labels that include the word sales.

Experienced users can also find menus by number and program name, but most users find the search easiest. This guide assumes that you are using menu names but menu numbers are provided when a function is first introduced. When typing in the menu search area, different screens appear as the typing continues until the proper screen is located. This feature is called predictive text.

The window uses tabs and lets you open multiple functions at one time. You can toggle between the functions by clicking the tabs. Close a tab by clicking the X in the tab corner.

Note the Favorites section below the menu listing. You can create your own unique menu of frequently used functions by dragging the icon of a menu item from the main list into the Favorites section.

Introduction to QAD EE Modules



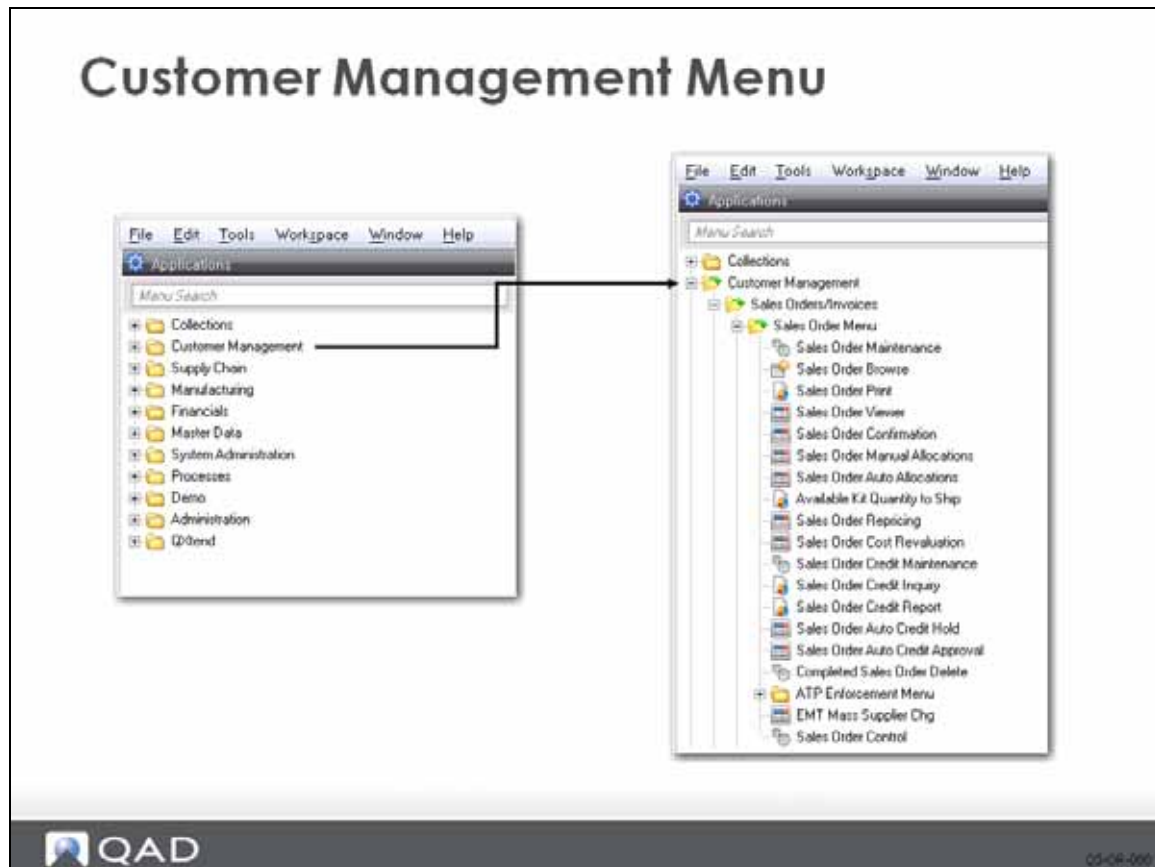
The main menu in QAD EE has seven application-related sections: Customer Management, Supply Chain, Manufacturing, Financials, Master Data, System Administration, and Administration. The figure shows this top-level menu in the .NET user interface.

Each folder contains groups of related business activities called modules and individual programs.

The next few pages provide a quick look at these seven main menus and the modules each contains. This course covers only a small portion of QAD EE application functionality. The system includes many more capabilities than can be covered here. Other QAD classes provide in-depth, module-based training. You can access information and schedules on the QAD Web site.

Within each of the seven sections of the main menu are several top-level menu items. Each of these menu items represents a module.

Customer Management Menu

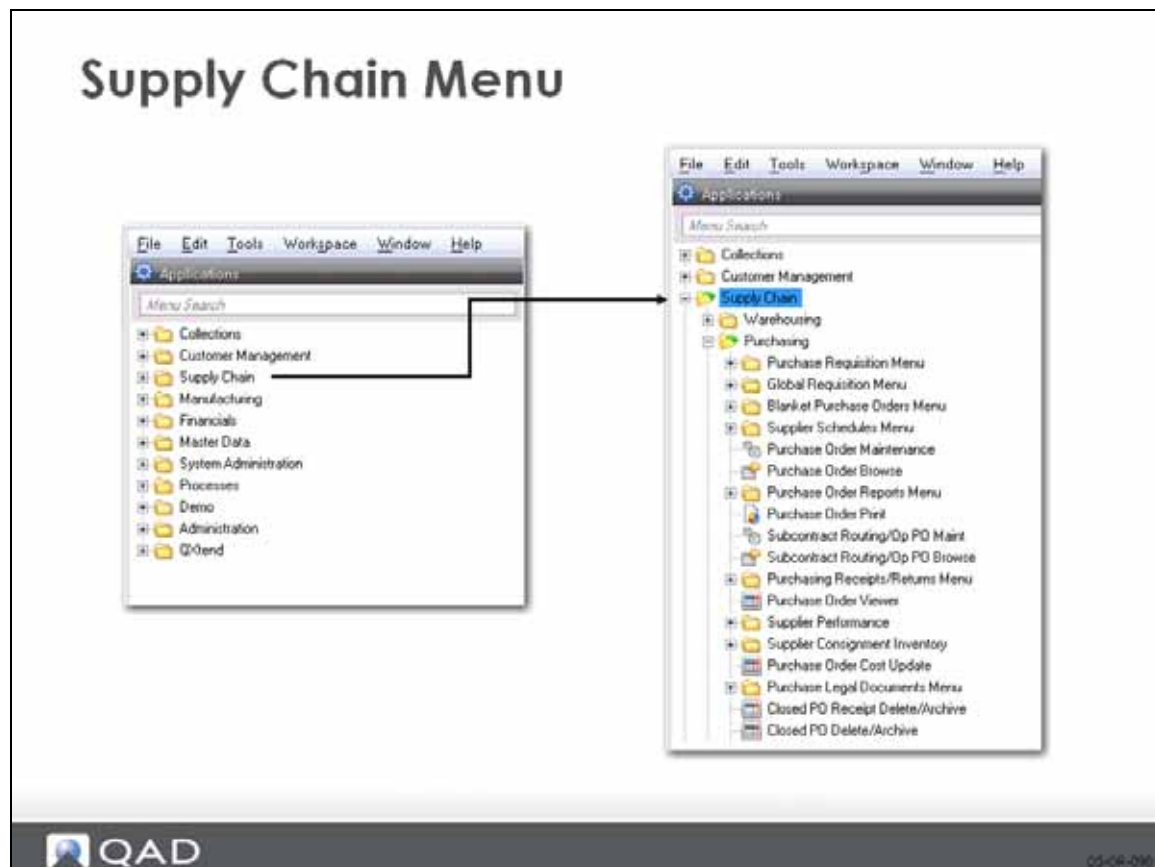


The Customer Management menu contains the menu folders required to manage all aspects of your customer relations.

The three major subdivisions under Customer Management are Sales Orders/Invoices, Configured Products, and Service/Support. As shown, both Sales Orders/Invoices and Service/Support have many subfolders or menus under them.

This course covers an overview of the Sales Order and Invoicing functions and a simplified shipment process. Other functions such as Sales Quotes, Customer Schedules, Containerization, Consignment Inventory, Configured Products, and Service/Support are covered in detail in their respective training guides. While these topics are not included in this course, a good understanding of the information presented here is a prerequisite to learning to use these more advanced functions.

Supply Chain Menu



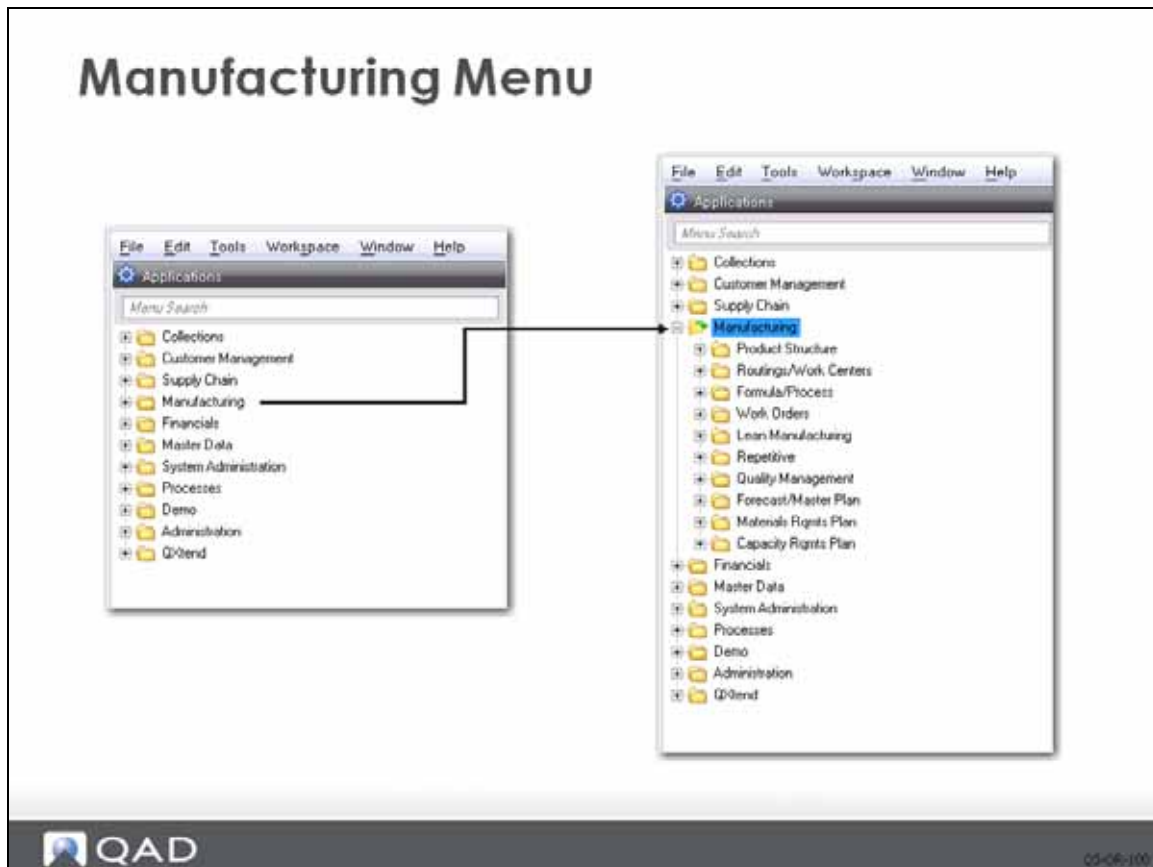
Supply chain management is the process of planning and controlling the movement of goods and information from suppliers and multiple company sites through the manufacturing and distribution processes to the customer.

Modules in the Supply Chain menu are: Warehousing, Purchasing, Distribution Plan, Product Line Plan, Resource Plan, Operations Plan, and EDI eCommerce. The activities in these modules are focused on planning so they have significant system-wide impact.

Modules in this section support traditional purchasing functions and supply chain planning practices (distribution, product line, resource, and operations). The modules also support electronic data interchange (EDI) transactions using EDI eCommerce, which is typically used to support supplier schedules as well as other functions.

This course covers basic purchasing activities. Separate courseware covers other supply chain functions.

Manufacturing Menu

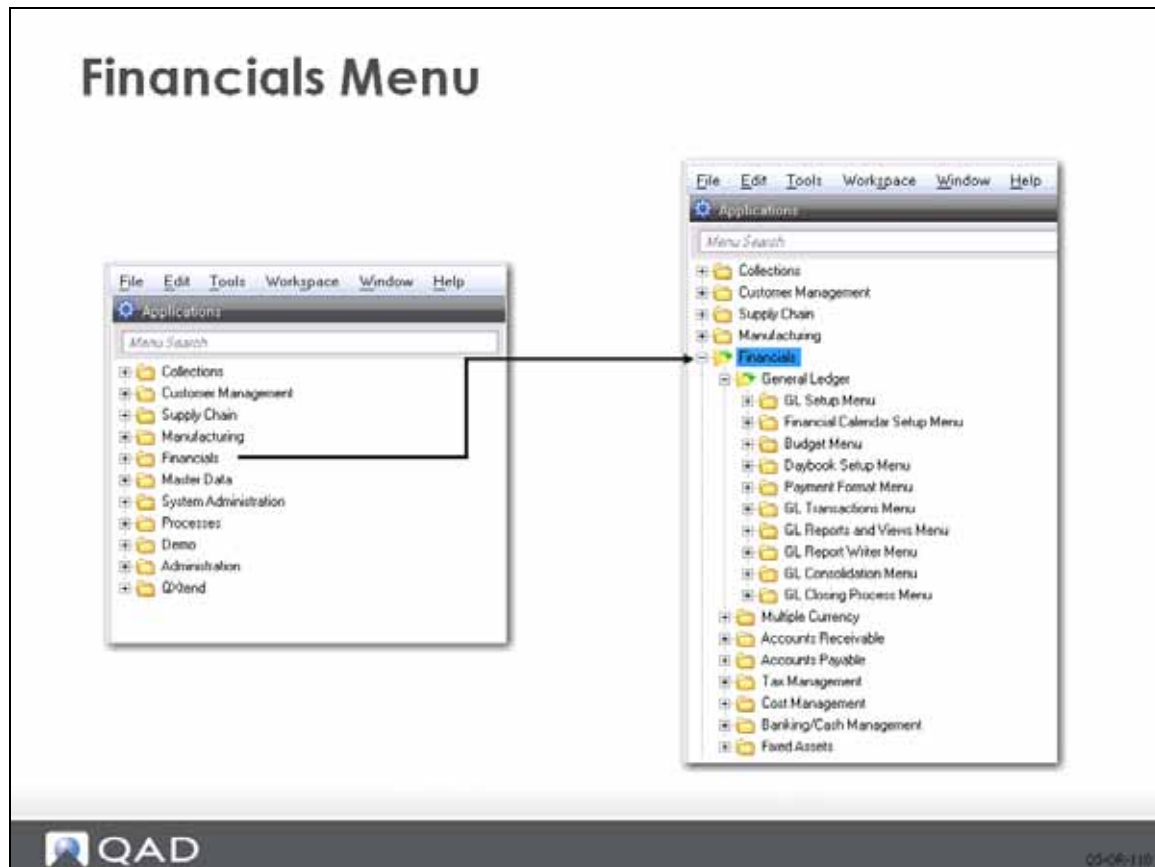


Manufacturing modules manage internal supply and demand. Components and raw materials are moved out of inventory into production (WIP). Work orders process these materials and return them to stores or finished goods inventory locations, or components are moved from production into inventory.

Modules in Manufacturing are: Product Structures, Routings/Work Centers, Formula/Process, Work Orders, Shop Floor Control (which includes Flow Scheduling and Kanban), Repetitive, Quality Management, Forecasting/Master Schedule Planning, Material Requirements Planning (MRP), and Capacity Requirements Planning (CRP).

This course provides an overview of activities in the Product Structures, Routings/Work Centers, Work Orders, Shop Floor Control, Forecasting/Master Schedule Planning, and MRP modules.

Financials Menu



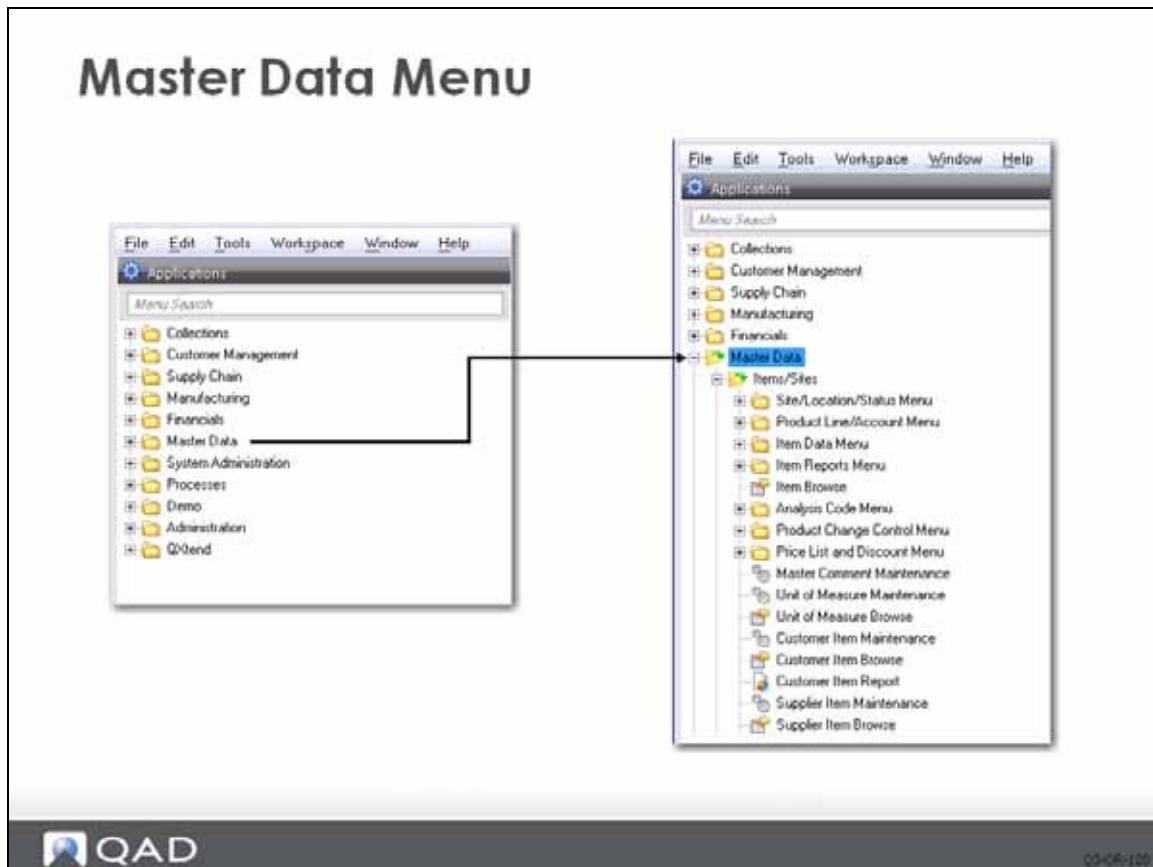
The introduction of Enterprise Financials with QAD Enterprise Edition enhanced the functionality of the QAD financial modules and has had some impact on system setup. While this course does not deal with the financial aspects of the system directly, it does reflect the differences in setup procedures.

Financial modules support financial activities of the business and set up the financial aspects of system administration:

- General Ledger, Accounts Receivable, and Accounts Payable track the financial effects of activities in other modules.
- Multiple Currency, Tax Management, Banking, and Cash Management are used primarily to set up financial data used during financial transactions.
- Cost Management, while having some setup features, is used primarily for cost planning and tracking.
- The Fixed Assets module manages the company's fixed assets from acquisition to retirement.

This course discusses various aspects of the General Ledger, Accounts Receivable, and Accounts Payable modules, generally as they relate to sales and manufacturing activities. Only broad concepts and tasks needed for system setup are covered. Detailed courses are provided on Enterprise Financials, as well as some of the specific modules such as Fixed Assets and Cost Management.

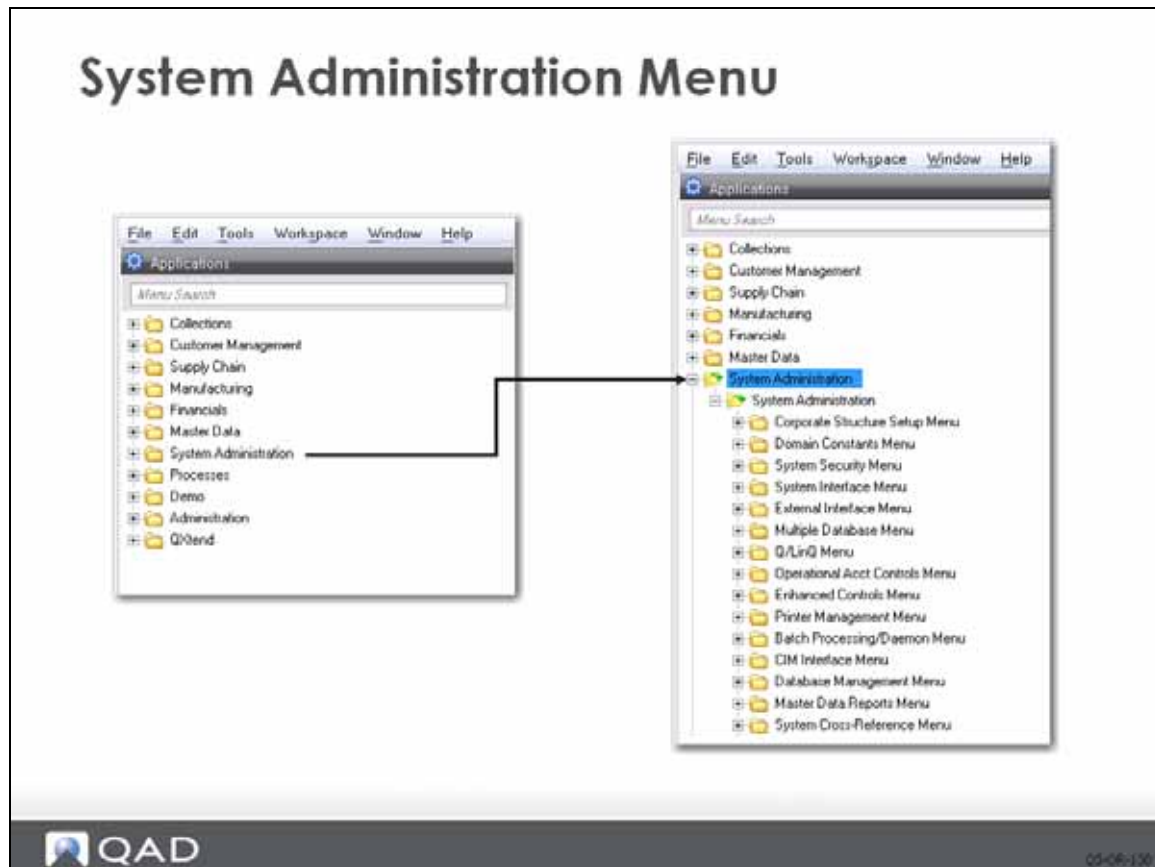
Master Data Menu



Use the modules in Master Data to set up basic business information including item codes, site codes, and inventory control information. Basic address information is defined in Financial setup activities. You use the Master Data Addresses module to define additional operational information about customers, suppliers, and salespersons used during sales and purchasing activities. You also define codes associated with these activities such as country codes and freight charges.

This course covers activities in the Items/Sites, Addresses, and Inventory Control modules.

System Administration Menu

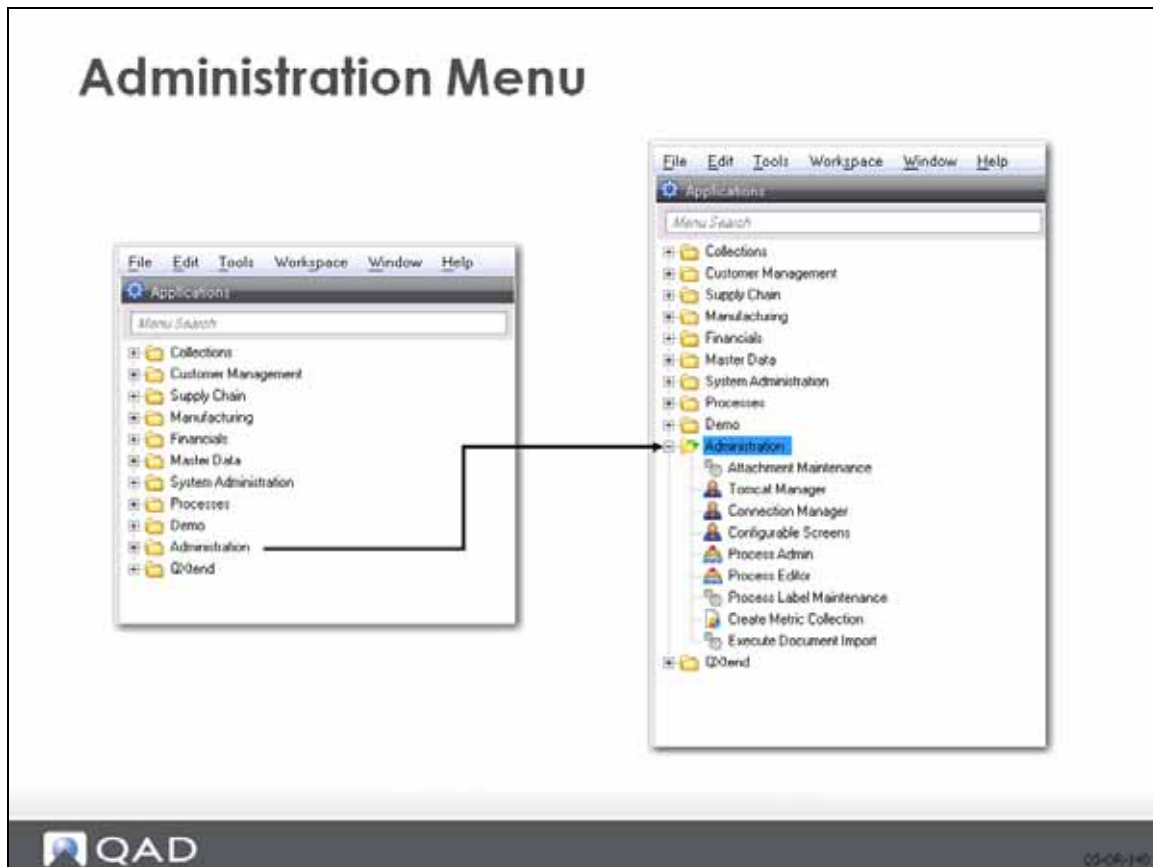


The System Administration menu contains many submenus or folders. Most of these submenus or folders are related to the technical administration and setup of the system hardware, software, security, and communications. These activities are beyond the scope of this course. Most users cannot access these modules.

The Domain Constants menu does have several user-defined functions that are discussed in this course. Even if a user does not have access to these functions, it is important for the user to understand the concepts behind them. This module contains the work day and holiday calendars, reason codes, generalized code validation tables, and sequenced number ranges for various documents.

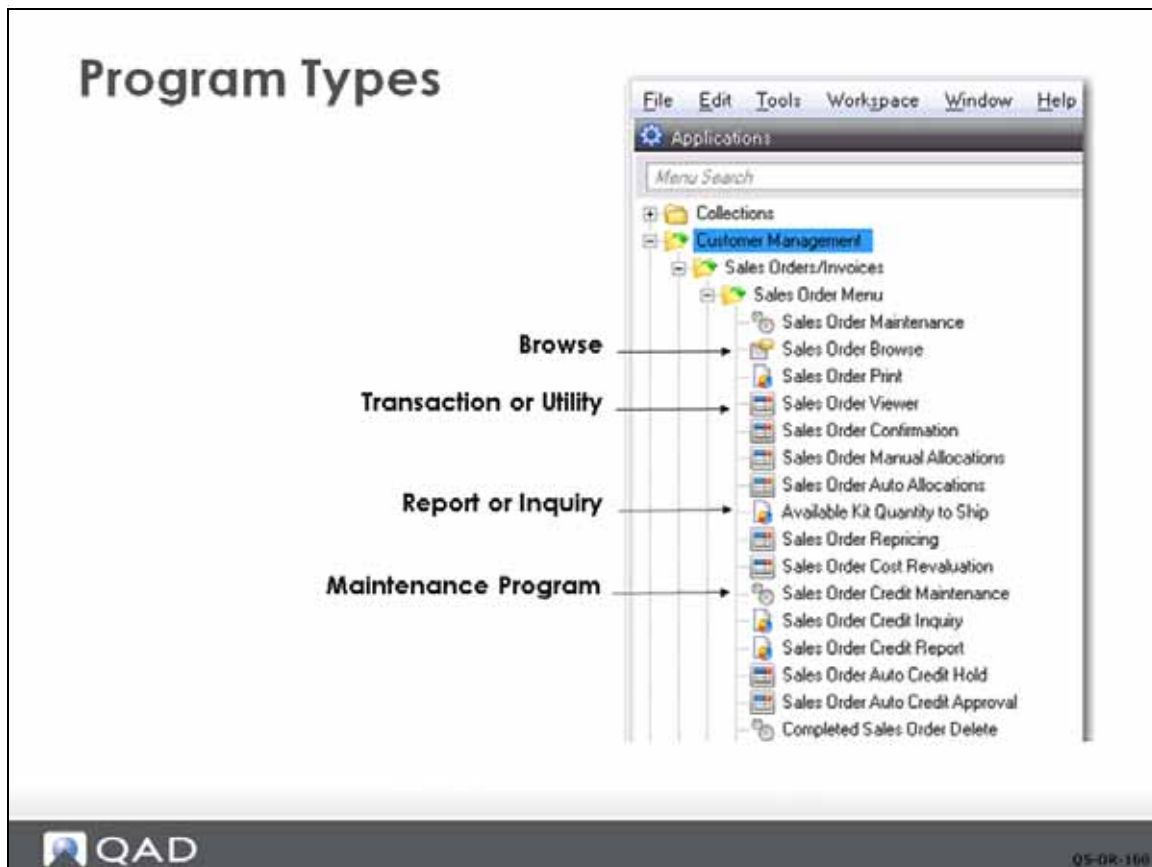
In addition, the concepts underlying the Corporate Structure Setup module are essential to a high-level understanding of the system as a whole. These concepts, as well as a brief overview of system security, are introduced in the next chapter.

Administration Menu



This section can be used for organizing miscellaneous applications and customized programs that your company creates and uses. These topics are not covered in this course. If used, your in-house technical support staff sets up these miscellaneous applications and customized programs.

Types of Programs and Data in QAD EE



On the menu, a distinct icon indicates the type of program:

- Maintenance programs
- Transactions and utilities
- Reports and inquiries
- Browsers

Each type of program maintains a specific type of data within the database.

The following pages illustrate the types of programs that you encounter as you use the product during this course. However, be aware that there is an additional distinction.

Component and Non-Component Programs

Component and Non-Component Based Programs

Component Based: Enterprise Financials and System Administration programs only

All other programs are non-component based

QAD

QAD-155

A subset of programs within the .NET UI uses a component-based architecture that changes their appearance and supports some extra features. Within QAD EE, only Financials and some system administration programs are component-based. Component-based programs have individual maintenance programs for Create, Modify, and Delete.

The following slides illustrate both a non-component and a component-based example of each type of program.

Maintenance Programs

The screenshot displays the QAD Item Master Maintenance interface. The main window has a title bar 'Item Master Maintenance' and a menu bar with 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. Below the menu bar is a 'Product Line: (1)' field. The left sidebar contains a tree view with 'Item' selected, and sub-items like 'Item Number', 'Unit of Measure', 'Item Data', 'Prod Line', 'Status', 'Design Group', 'Added', and 'Item Inventory Data'. The main area shows the 'GL Account Create' sub-window. This sub-window has its own menu bar with 'Go To', 'Actions', 'Tools', 'Attach', 'Print', and 'Preview'. It contains fields for 'GL Account', 'Description', 'GL Type' (set to 'Standard Account'), 'Active' (checked), 'Referenced' (checkbox), 'In Posting' (checkbox), 'System Type', 'Budget Group', 'Budget Enabled' (checked), and 'Category' (set to 'Asset'). At the bottom, there are tabs for 'Posting', 'Currency', 'Analysis', 'Report Link', 'Posting', 'Cash', and 'Defaults'. The 'Posting' tab is active, showing fields for 'Balance/PL', 'Auto/Manual' (set to 'Manual'), 'Intercompany Account', 'Feed Intercompany', 'Debit/Credit' (set to 'Debit'), and 'Default Intercompany'.

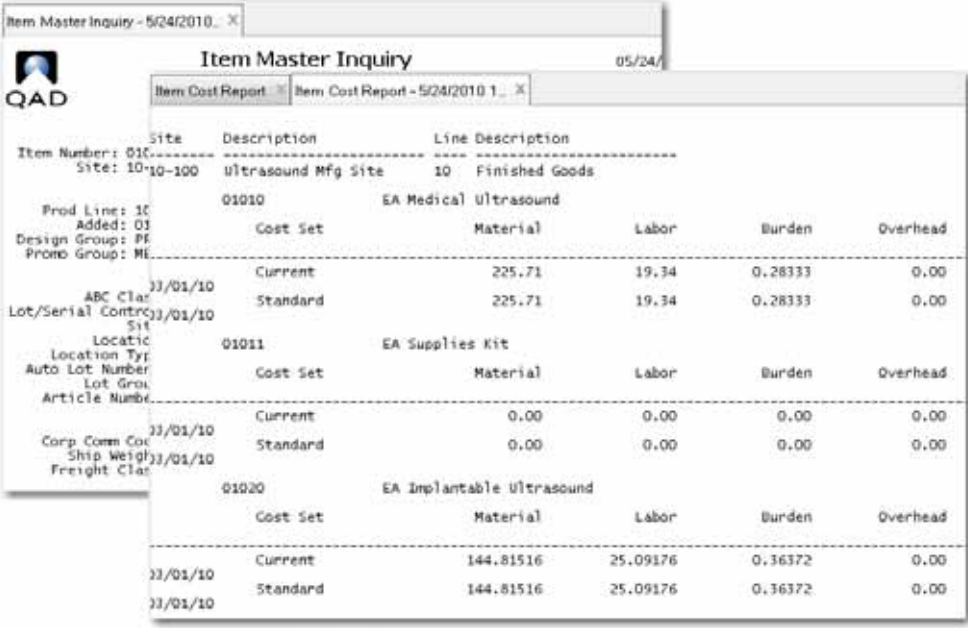
Maintenance programs create and maintain basic codes such as customers, inventory items, GL accounts, currencies, and other data. They are also used to record data that initializes business activity in a module such as sales orders and purchase orders. Most maintenance programs update static data, which is changed infrequently.

Entering data in a maintenance program creates a record in one or more tables that the maintenance program controls. For example, item records are stored in the Item Master table that Item Master Maintenance controls.

With non-component maintenance programs, all changes to the record are made in the same maintenance screen. In component-based maintenance programs, changes are made in separate Create, Modify, or Delete functions.

Inquiry and Report Programs

Inquiry and Report Programs



The screenshot displays the 'Item Master Inquiry' window in QAD. It shows a table with columns for Site, Description, Line Description, Cost Set, Material, Labor, Burden, and Overhead. The data is organized by item number (010, 011, 020) and date (03/01/10). The table includes details for 'Ultrasound Mfg Site', 'EA Medical Ultrasound', 'EA Supplies Kit', and 'EA Implantable Ultrasound'.

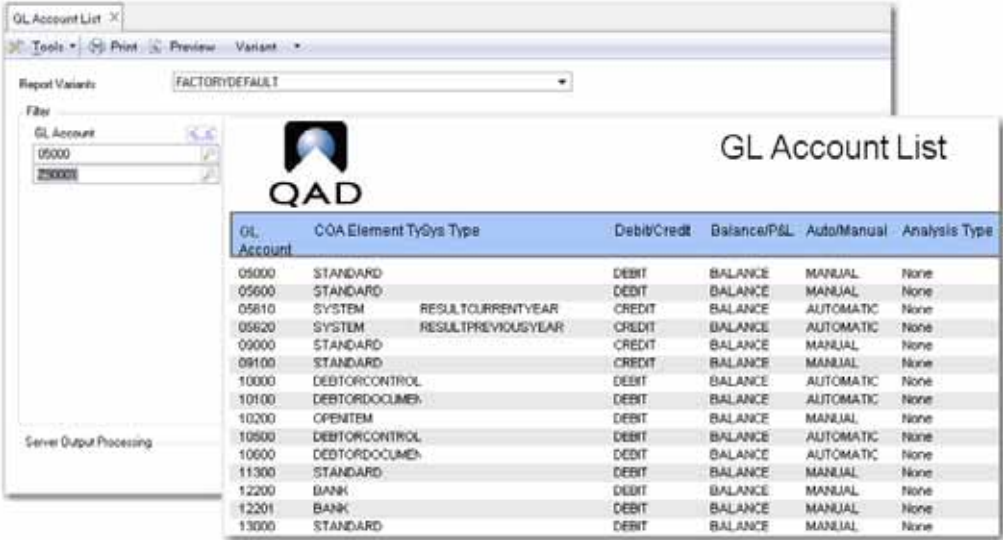
Item Number: 010	Site	Description	Line Description	Cost Set	Material	Labor	Burden	Overhead
Site: 10-10-100	01010	Ultrasound Mfg Site	10 Finished Goods					
Prod Line: 10			EA Medical Ultrasound					
Added: 03								
Design Group: PE								
Promo Group: ME								
ABC Class	03/01/10	Current			225.71	19.34	0.28333	0.00
Lot/Serial Control	03/01/10	Standard			225.71	19.34	0.28333	0.00
Location			EA Supplies Kit					
Location Type								
Auto Lot Number								
Lot Group								
Article Number								
Corp Comm Cost	03/01/10	Current			0.00	0.00	0.00	0.00
Ship Weight	03/01/10	Standard			0.00	0.00	0.00	0.00
Freight Class			EA Implantable Ultrasound					
	03/01/10	Current			144.81516	25.09176	0.36372	0.00
	03/01/10	Standard			144.81516	25.09176	0.36372	0.00

Inquiries and reports retrieve and display database records.

- Inquiries are primarily used to answer specific questions and are typically viewed online, although they can be printed.
- Reports usually provide more detail and are printed for a range of data records. You select data by entering a specific range of criteria, such as item number or date. Reports are often sent to a printer or file. Other output options, such as e-mail, are available.

Component-Based Reports

Component-Based Reports



The screenshot displays the 'GL Account List' report window in QAD. The window has a title bar 'GL Account List' and a menu bar with 'Tools', 'Print', 'Preview', and 'Variant'. Below the menu bar is a 'Report Variants' dropdown set to 'FACTORYDEFAULT'. A 'Filter' section on the left shows 'GL Account' with '05000' entered. The main area displays a table of GL accounts.

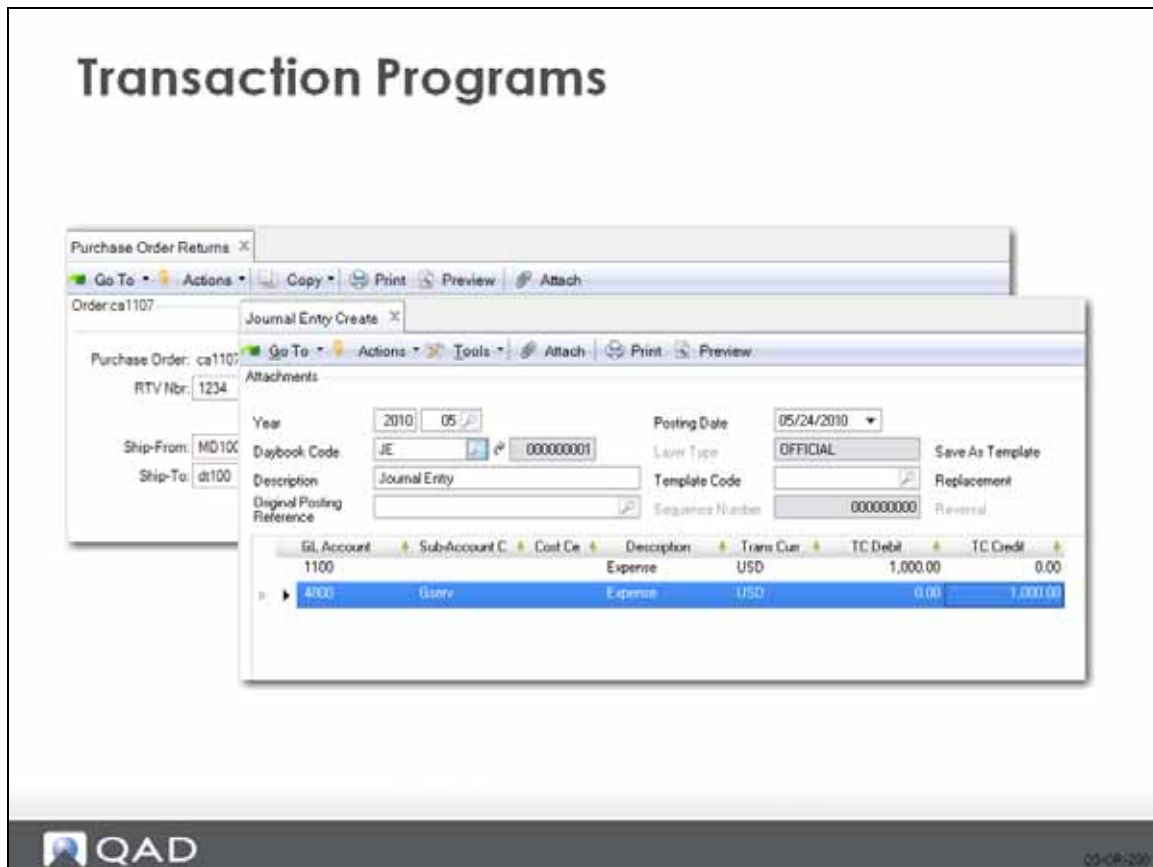
GL Account	COA Element TySys Type	Debit/Credit	Balance/P&L	Auto/Manual	Analysis Type
05000	STANDARD	DEBIT	BALANCE	MANUAL	None
05600	STANDARD	DEBIT	BALANCE	MANUAL	None
05610	SYSTEM RESULTCURRENTYEAR	CREDIT	BALANCE	AUTOMATIC	None
05620	SYSTEM RESULTPREVIOUSYEAR	CREDIT	BALANCE	AUTOMATIC	None
09000	STANDARD	CREDIT	BALANCE	MANUAL	None
09100	STANDARD	CREDIT	BALANCE	MANUAL	None
10000	DEBTORCONTROL	DEBIT	BALANCE	AUTOMATIC	None
10100	DEBTORDOCUMENT	DEBIT	BALANCE	AUTOMATIC	None
10200	OPENITEM	DEBIT	BALANCE	MANUAL	None
10500	DEBTORCONTROL	DEBIT	BALANCE	AUTOMATIC	None
10600	DEBTORDOCUMENT	DEBIT	BALANCE	AUTOMATIC	None
11300	STANDARD	DEBIT	BALANCE	MANUAL	None
12200	BANK	DEBIT	BALANCE	MANUAL	None
12201	BANK	DEBIT	BALANCE	MANUAL	None
13000	STANDARD	DEBIT	BALANCE	MANUAL	None

QAD logo is visible in the bottom left corner of the window. The status bar at the bottom of the window shows 'QAD' and '05-06-130'.

Component-based reports have multiple output options, including viewer, printer, and export to PDF, XLS, and DOC standards. The report output is easy to customize, and you can create an extensive set of reports with unlimited report variants for many output types.

You can run a report immediately, or choose to schedule it to run later. In this case, a pop-up window opens to let you enter details for running the report at a later date.

Transaction Programs



Transactions express the core business activities of a company. They control and record activities related to business documents such as sales orders and invoices. Examples of a transaction are shipping a sales order or receipt of a shipment for a purchase order. Enterprise Financials transactions programs include Customer and Supplier Invoice Create and Journal Entry.

Most data in the database is transaction data. Every day, sales orders come in, purchase orders go out, and work orders make demands on and create material for inventory. These events result in transactions, which are stored in transaction tables. In contrast to control programs, system users constantly update.

Transaction programs often update multiple database records and generate general ledger account transactions. Shipping a sales order and posting the invoice, for example, updates the on-hand inventory balance for the items shipped, charges the value to the cost of goods sold, updates the sales ledger for the value of the sale, and updates the customer's accounts receivable record. It also books charges to appropriate freight accounts, tax accounts, sales commission accounts, updates the inventory allocations, and updates the inventory quantities available to promise.

Utilities are a special type of transaction that is often designed to be used only once or under special circumstances. For example, many utilities perform one-time data conversions following system upgrades. Other utility programs enable you to manage and perform calculations in internal databases. In Purchasing, Closed PO Delete/Archive is a database management utility, and in MRP, Net Change Materials Plan causes the system to run net change MRP calculations.

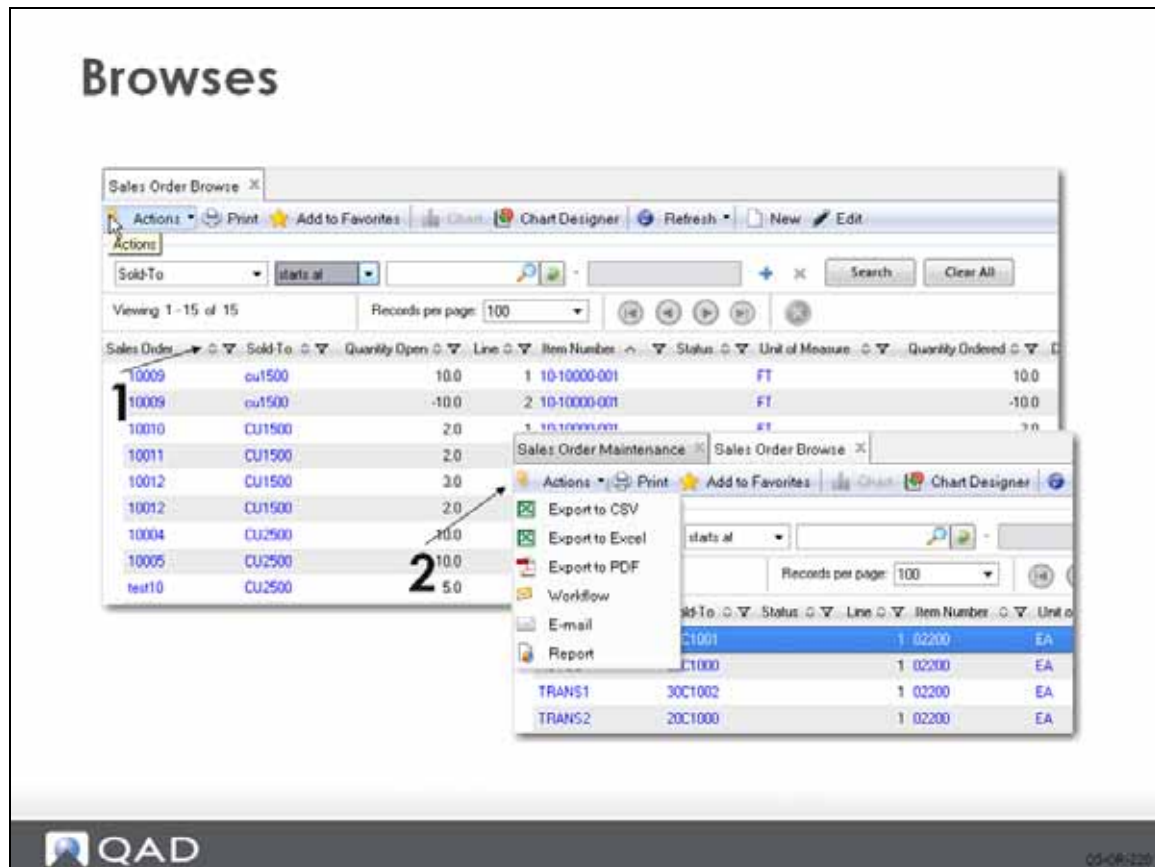
Control Programs



When you implement a module, you enter data that the system uses later to control the interactions with users and with the database. This data is stored in control tables.

Control tables enable you to adapt QAD EE to your environment. The data and settings in these tables determine how certain programs are displayed, the numbers assigned to transactions, the GL accounts for particular transactions, and so on. When you can manage a typical manufacturing function in more than one way, control settings enable you to establish a preference.

Browuses



Browuses are inquiry programs with advanced features such as filtering, sorting, and printing. The system supports several types of browuses. Complex browuses, such as the one in this slide (sometimes called power browuses) are listed on the menu. They can also be used as drilldown browuses within programs.

Power browuses provide tools (2 in the slide) that let you display browse data in graphical form such as pie charts and bar charts, export data to .csv or Excel for further processing, generate and e-mail a PDF or report, or include the output in a workflow.

Navigation features (1) of browuses include:

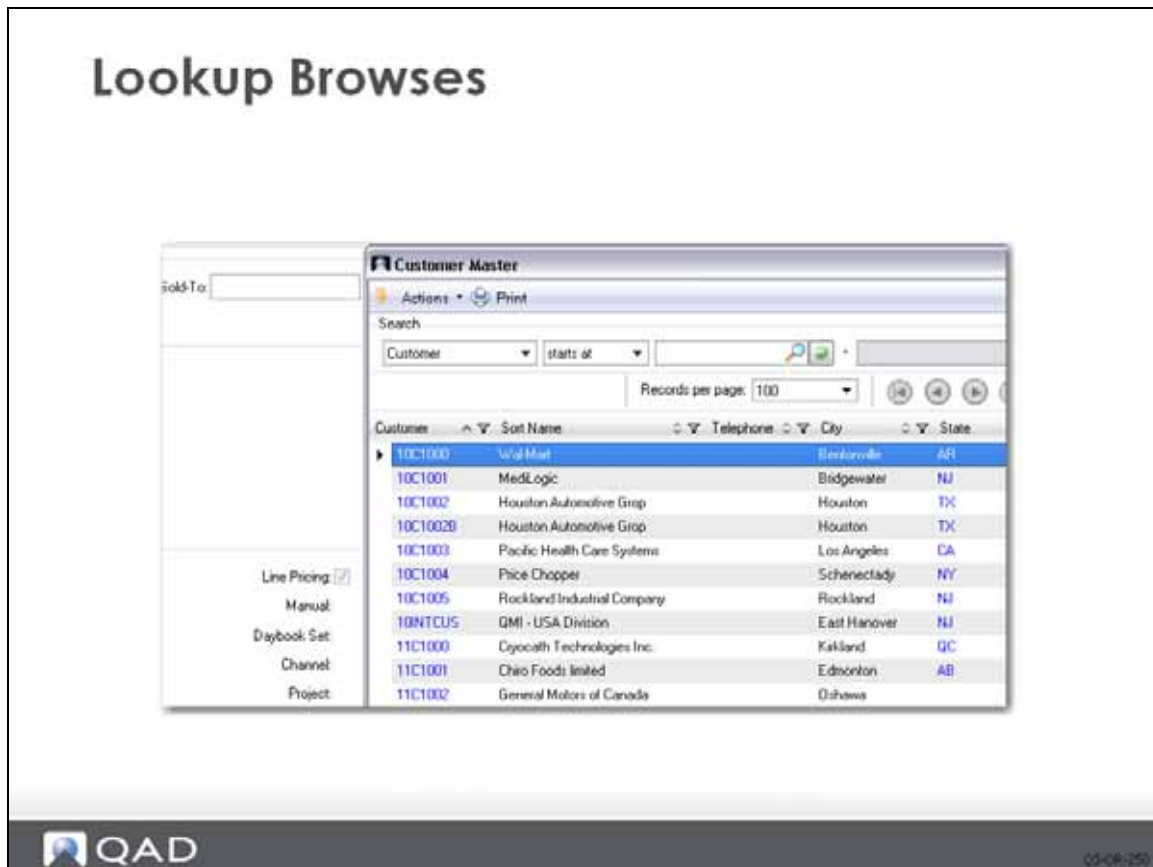
- Click Clear All to clear browse results.
- Use the navigation buttons to move through the records. The buttons from left to right move to the first set, previous set, next set, last set.
- Use the Records per page drop-down to determine how many records display at one time in the browse. The default value can be set using the Rows Per Page setting in Tools|Options.
- Drag columns by their headings to rearrange the display or click any column heading to sort in ascending order; click again to sort in descending order.
- Blue underlined text indicates values for which you can drill down. Right-click any value to display associated links: either a more detailed browse, a related program, or an external Web page.

Filters and Operators



- 1 The search fields display with a default configuration but you can also define and save your own.
- 2 The various search operators include equals, not equals, contains, range, starts at, greater than, less than, is null, and is not null. When an equal sign is displayed next to the field, you enter an exact matching value.
- 3 To refine your search further, click the plus (+) icon to add another search row. You can add as many rows as needed, each with different search values and operators. If you choose the range search operator, the second search box is enabled for the ending value of the range.

Lookup Browsers



Lookup browsers are much simpler than the browses on the menu. They are a form of on-line help and are attached to various fields in programs. You can use them to display all of the valid choices for the current field.

In the example, selecting the Sold-To lookup in Sales Order Maintenance launched a lookup browse of all customers.

Exercise 1

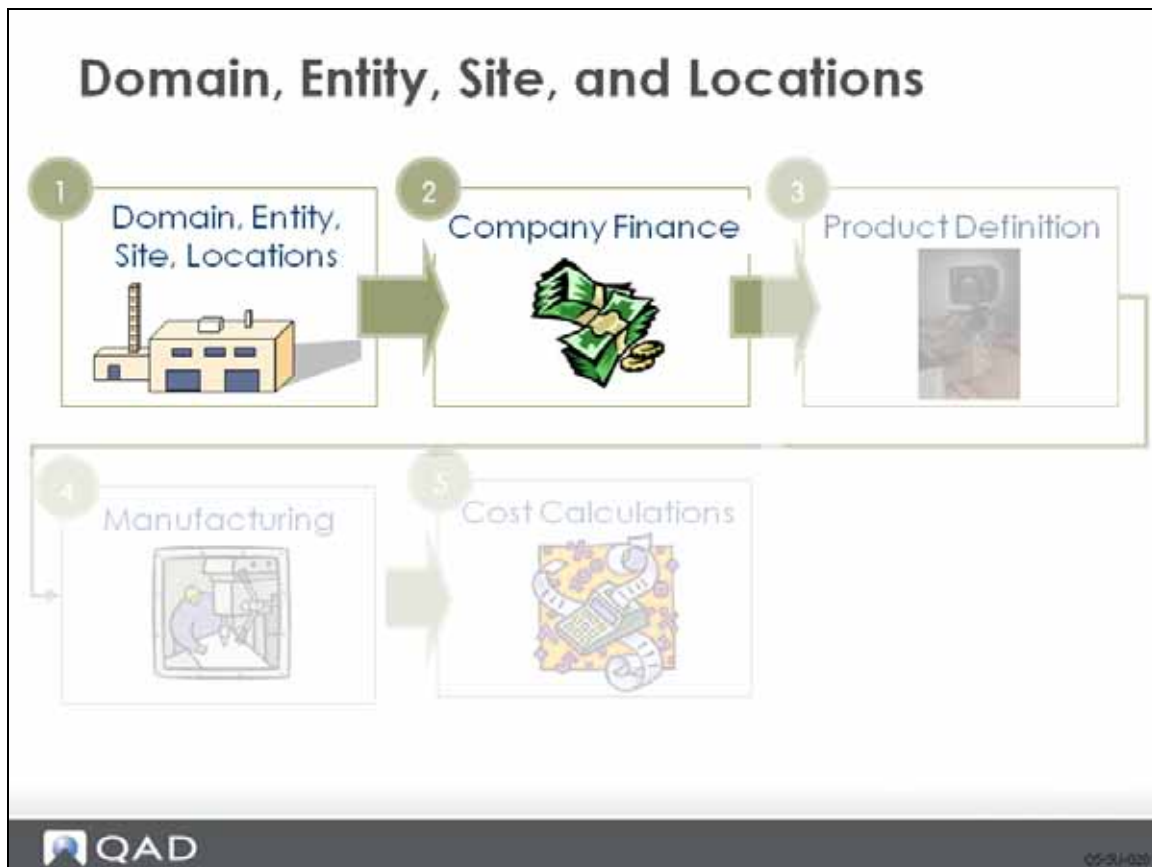
These exercises and discussion questions help you become familiar with using QAD EE and navigating the user interface.

- 1 Sales Order Control (7.1.24) is an example of what type of program?
- 2 Create a custom menu by dragging several programs into the Favorites section of the UI.
- 3 Display an existing sales order in Sales Order Maintenance and send the sales order to your user ID by using the workflow. Click Actions and select Workflow. Enter your class login. You should see the message appear in the Inbox area of the UI.
- 4 Create a document in Microsoft Word. Save it to the c:\ drive and attach the document to a purchase order.
- 5 Open up Sales Order Browse (7.1.2). Highlight any order and drill down by double-clicking a sales order number. In the Sales Order Maintenance screen that appears, click the Sold-To lookup.
- 6 Use Sales Order Browse and limit the output of the browse to orders for one specific customer. What filter did you use? What operator did you use? Send the output to an Excel sheet.
- 7 Run Sales Order Browse and rearrange the columns. Group the results by Sold-To.
- 8 Go to Supplier Invoice View (28.1.1.3) and display a component-based browse. Try rearranging the columns by dragging them to new positions. Click the up or down arrow in the column heading to resort the browse.
- 9 Select GL Account List (25.15.1.10), run the report, and send the output to a printer. If you don't have access to a printer, you can view the output on your monitor.

Chapter 3

Set Up Domain, Entities, Sites, and Locations

Overview



This chapter provides information on the basic building blocks of the system that form the foundation for other activities.

In QAD EE, you can view a company from either a financial or operational perspective. In financial terms, a company is an entity that publishes financial statements and files tax returns. In terms of other activities, combined operations, such as sales order entry, purchasing, manufacturing, and general accounting, can define a company.

Business Model

The following pages discuss the most basic pieces used to support financial and operational activities. First, is the environment itself, the database. The following pieces are added to the database:

- Domains, which can be thought of as templates for businesses that use the same base currency, chart of accounts, and GL calendar.
- Entities, which are used to identify business units for reporting and tax purposes, and their GL transactions and financial reports including Income Statements and Balance Sheets.
- Shared data sets with information about customers, suppliers, employees, and other data used throughout the system.

This chapter begins with a discussion of databases, domains, and the types of data they contain and share. This discussion includes an overview of some of the basic financial information that forms part of the domain template for business activities.

Security

Protecting valuable company resources and ensuring proper separation of responsibility is a basic requirement for any business. The next topic covered is a high-level overview of how to manage who is able to complete various activities in the system by setting up users, roles, and access.

Operational Structure

Sites and locations comprise the basic structure required for managing inventory in the system, and how the inventory transactions affect the GL. Inventory status codes are an essential part of this key area of control.

Chapter Topics

Topics

- Databases and System-Wide Data
- Domains, Entities, Shared Data Sets
- Security Setup (roles, users, access)
- Operational Structure (Sites, Locations, Inventory Status Codes)



02-50-000

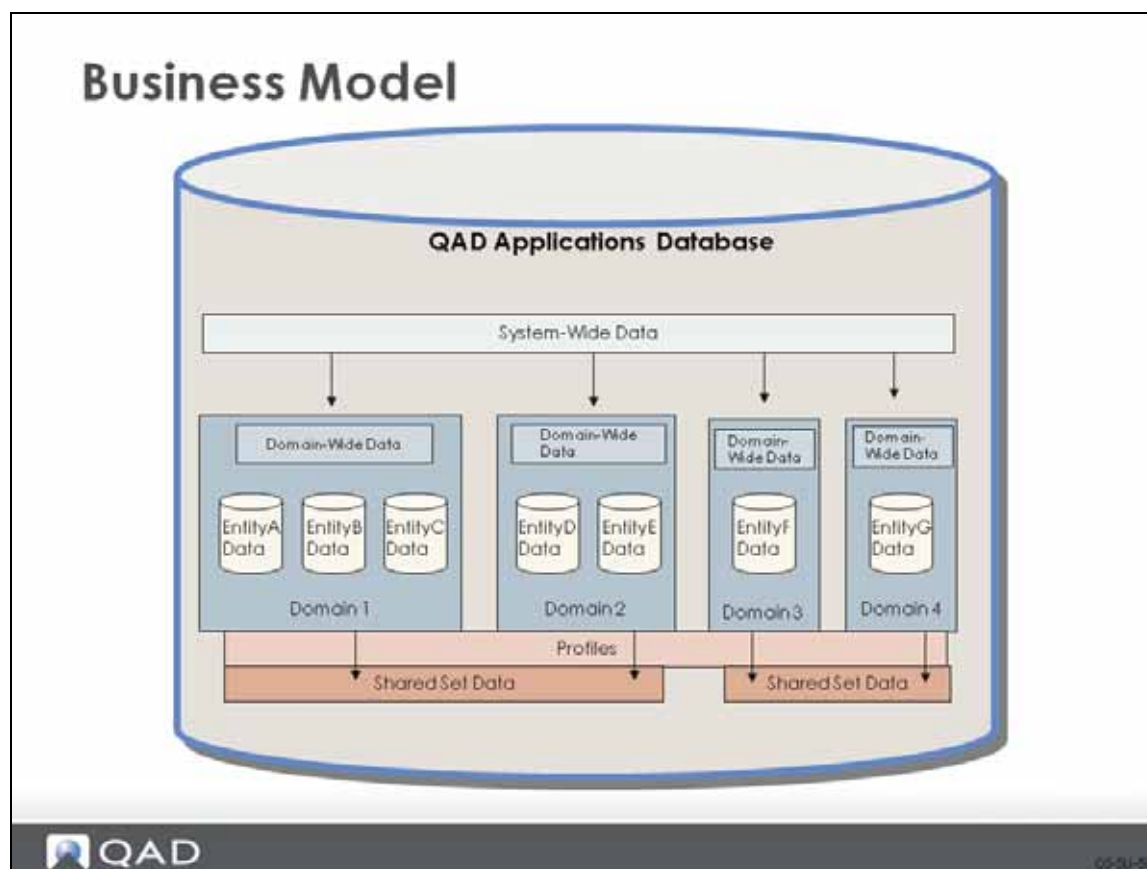
Learning Objectives

Objectives

When you finish this section, you should be able to:

- Describe what a database is and list the data it contains
- Describe and understand how domains and shared sets are used
- Distinguish between the role of domains and entities
- Describe what business relations are and how they are used
- Describe how users and roles control access to system functions
- Distinguish between the kind of information sites and locations
- Describe the role of inventory status codes in the system

Business Model: Four Kinds of Data



System Wide. Some data is shared throughout the system, such as currency, country codes, and tax data. This data never differs from one business unit (entity or domain) to another, so it makes sense to share it across all business organizations. System-wide data includes administrative data related to security, user interface, and technical setup.

Shared Sets. Shared sets group data that can be shared across domains. A single domain can have an independent chart of accounts or several domains can have a chart of accounts, streamlining setup and maintenance. Other types of data that can be shared are customers, suppliers, and exchange rates.

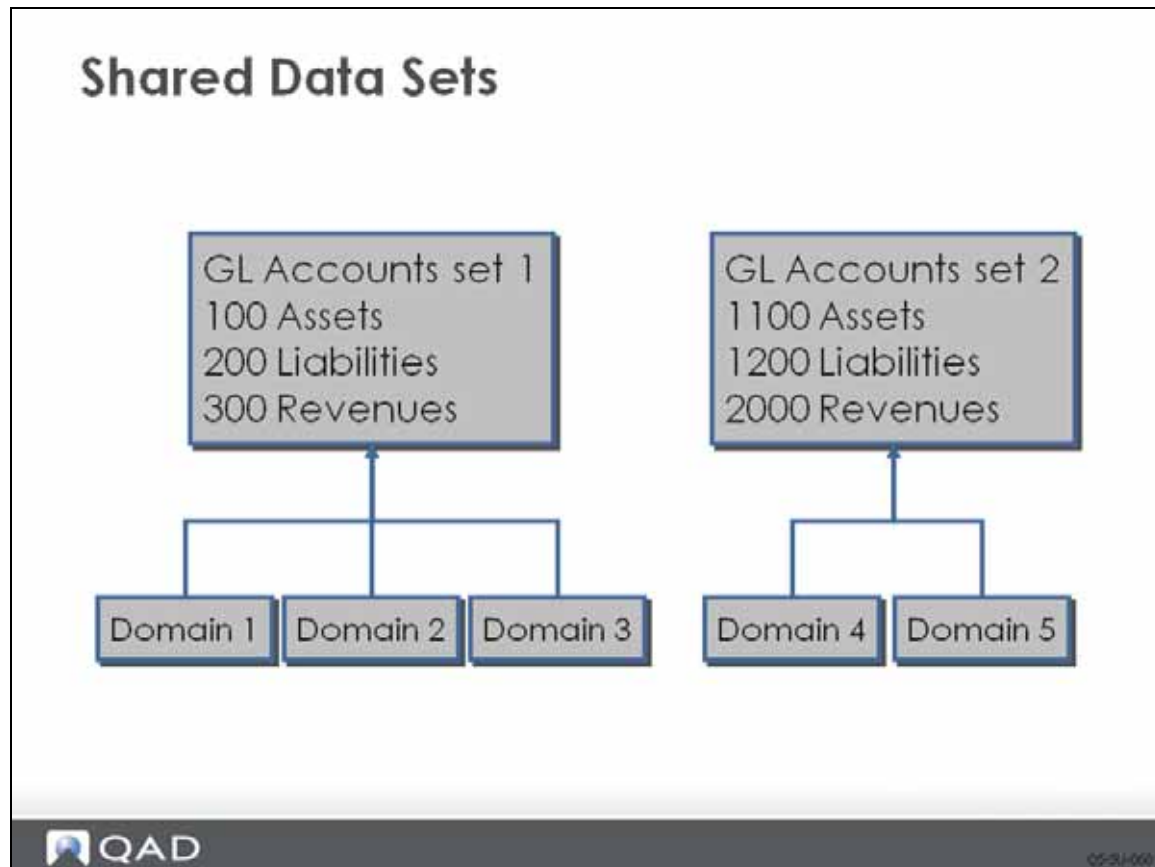
Domain. A domain represents the base unit of the system and includes one or more entities. Each domain has its own base currency, and, optionally, statutory currency, which the entities within the domain then share. Domains derive some data from shared sets and also use system-wide data. However, most operational data is domain specific. So for example, all the item data and order transactions take place within a specific domain.

Entity. An entity exists within a domain and inherits the domain attributes, such as base currency. Entity-specific data is limited, for example, to the organization's own bank account number. General ledger transactions are associated with specific entities.

The following table summarizes the kinds of data found at each level of the business model.

Level	Category	Detailed Data Types
System wide (database)	Business relations and address related data	Address types, corporate groups, currencies, rounding methods, languages, counties, countries, states
	Address-related tax data	Tax zones, tax environments, tax classes, tax usage codes, tax types
	Financial codes	Shared set codes, credit terms, invoice statuses, profiles, and Supplementary Analysis Fields (SAFs)
	Security data	Users, roles
	Administrative data	E-mail definitions, printers, some EDI and eCommerce setup data
	User interface data	Labels, menus, messages, lookup definitions
Shared sets	Financial data	Accounts, sub-accounts, cost centers, projects, daybooks, exchange rates
	Business relations	Customers, suppliers
Domain	Financial data	GL mask (combination acct/sub-acct/cc/project), accounting periods
	Operational data	Sites, locations, items, default accounts, generalized codes
	Orders	Purchase orders, sales orders, work orders, distribution orders, service calls
Entity	Financial data	Employees, bank account numbers, period closing status, general ledger and sub-ledger transactions and balances, transaction numbering

Shared Data Sets



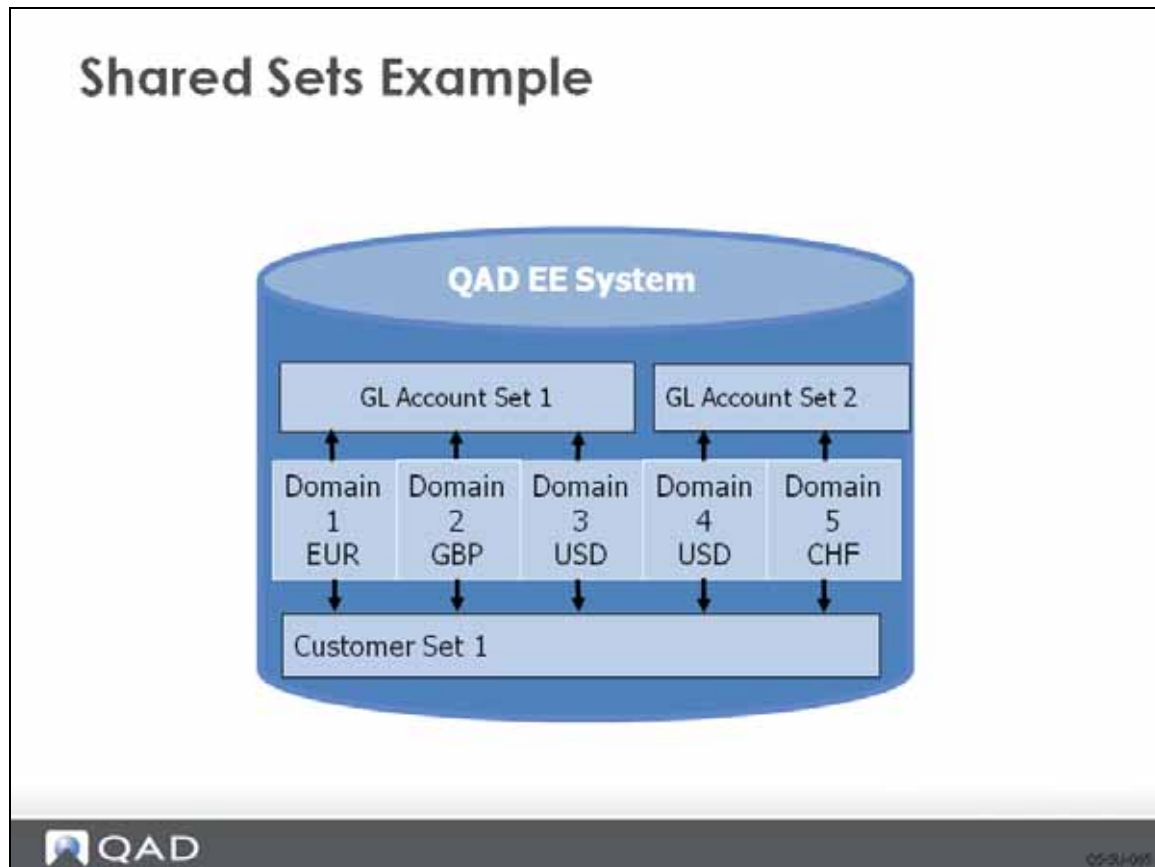
Shared sets provide great flexibility in how a system can be set up. A default set of shared set codes is supplied with the system. However, as many shared sets as necessary can be created.

The following types of data can be shared:

- Customers
- Suppliers
- Accounts
- Sub-accounts
- Sub-account COA mask
- Cost centers
- Cost center COA masks
- Projects
- Project COA masks
- Exchange rates
- Daybooks

Example Three US domains can use the same chart of accounts, while two other domains in Japan can use another accounts shared set. This streamlines and standardizes the use of accounts across the enterprise.

Shared Sets Example



To determine how many shared sets you need, create a table like the one below. Down the side is a list of types of data that can be shared. List the domains you plan to use on the top. Then consider what information is shared and what is different among domains.

Shared Set Type	US - Domain	EMEA - Domain
Customer	AllCustomers	AllCustomers
Supplier	AllSuppliers	AllSuppliers
Account	US_Accounts	EUR_Accounts
Sub-Account	US_Sub	EUR_SubMask
Sub-Account COA Mask	US_SubMask	EUR_Sub
Cost Center	US_CC	EUR_CC
Cost Center COA Mask	US_CCMask	EUR_CCMask
Project	US_Project	EUR_Project
Project COA Mask	US_ProjMask	EUR_ProjMask
Exchange Rate	SystemExRate	SystemExRate
Daybook	US_Daybook	EUR_Daybook

Discussion

A customer references an AR account. What if the same customer set is used by domains that point to different GL account sets?

Business Relation

Business Relation

Business Relation Modify

Go To

Actions

Tools

Attach

Print

Preview

Attachments

Business Relation

10-C1003

Name

Pacific Health Care Systems

Search Name

Pacific Health Care Systems

Second Name

Third Name

Group Name

Active

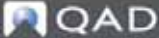
☒

Address Info

General

Defaults

Address	Address	Address	Zip Code	City	Name	Search Name	Telephone
500 Calle de Los			90012	Los Angeles	Pacific Health Care	Pacific Health Care	
250 Carpenteria B			93031	Carpenteria	IMCC	Pacific Health Care	

 QAD

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Business Relations

Business Relations

Business relations are defined at the database level, and are a prerequisite to creating entity, employee, customer, and supplier records.

One business relation can have multiple address types:

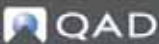
- Head office (mandatory, only 1)
- Ship-to
- Reminder (only 1)
- Remittance (only 1)
- Dock
- Enduser

When you create a customer or supplier, you can create the business relation at the same time.

Three Accounting Layers

Three Accounting Layers

- **Official Layer** (primary)
 - For daily transactions and statutory reporting
 - Required layer
 - Only one Official layer
- **Management Layers** (secondary)
 - Additional transactions for management purposes
 - To translate to a different set of accounting standards, GAAP adjustments, IFRS
 - Optional, may have none, one, or more layers
- **Transient Layers**
 - Create temporary postings
 - Useful for what-if simulations or prior to management approval
 - Optional, may have none, one, or more layers

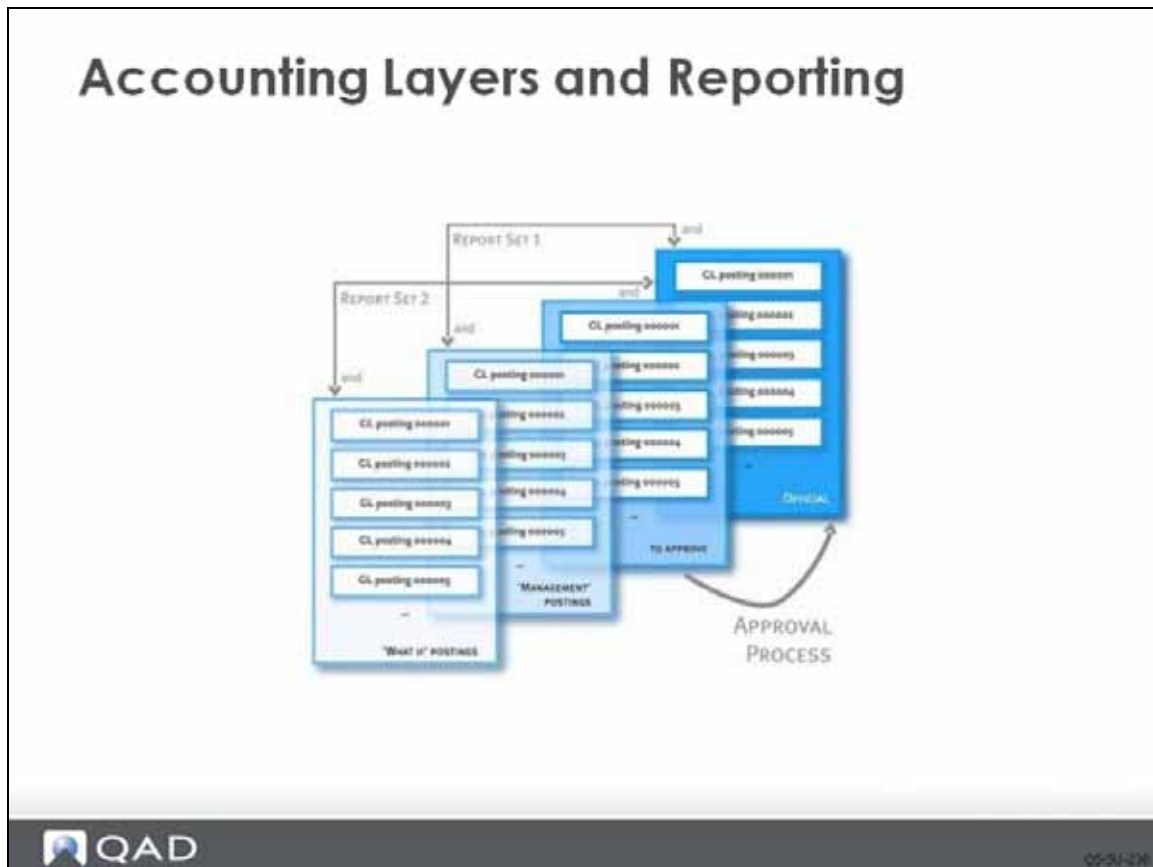

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Accounting layers provide different ways of segregating transactions within a single GL account to satisfy reporting requirements. The posting of transactions is controlled by associating daybook types with one of the three system-defined accounting layers: primary (labelled official in the system), secondary (labelled management in the system), and transient.

- The primary layer is used for daily transaction posting.
- Define one or more secondary layers to allow for adjustments required to meet different GAAP or IFRS requirements, or for management reporting.
- The transient layer is used to temporarily post transactions pending approval, or to simulate postings.

GL entries can be moved from layer to layer by changing the daybook. You can use Mass Layer Transfer to change many transactions at one time. In reporting, multiple layers can be selected.

Accounting Layers and Reporting



Financial reports let you select multiple layers at a time; for example, you can select both the primary and secondary layers to include management adjustments. Any combination is possible, as shown in the slide.

- Layer combinations for reporting can be stored as user preferences.
- An account can have a balance for each layer.

Dual Base Currency

Dual Base Currency

- **Transaction currency**
 - The currency the transaction is recorded in.
- **Base currency**
 - The currency of the entity in which the transaction is recorded.
- **Management currency**
 - The currency used for corporate-wide management reporting.

The diagram shows a sample customer invoice with three callouts: 'In GBP (transaction)' pointing to the 'Tr Balance' field, 'In EUR (base)' pointing to the 'Bt Balance' field, and 'In USD (management)' pointing to the 'M Balance' field.

Type	Inv Date	Da	Voucher	Business Relation Code	Tr Balance	Cu	Due Date	Bt Balance	M Balance	SubAmt	CI Text
Invoice	13-06-06	01	000000001	Essent	1,231.00	GBP	22-06-06	1,773.01	2,000.00		Various

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Each domain has a primary base currency at the domain level, and optionally define a second management currency for reporting purposes. This currency is known as the statutory currency, and is normally the local currency of the country in which the organization must produce its declarations and financial reports.

The need for a statutory currency is most likely to arise in a country that is geographically close to a strong currency zone (for example, Mexico and Poland), where the country itself has another local currency. Companies operating in countries close to strong currency zones, such as the Euro and US dollar, might use the stronger currency as their base currency (functional currency). However, local auditors and tax controllers can mandate that companies submit their declarations and financial reports in the local currency of the country. In these cases, the local country currency becomes the organizations' statutory currency.

Definitions

- **Transaction currency:** The functional currency of the transaction that is recorded.
- **Base currency:** The functional currency of the entity in which the transaction is recorded.
- **Management currency:** The currency used for corporate-wide management reporting.

The system stores all three currency amounts: Transaction, base, and management. Transactions are always posted in transaction and base currency using the exchange rate in place at the time of the transaction.

Currency Example

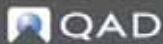
Currency Example

A US Company in Mexico

- Keeps its accounting records in USD
- Submits reports to the Mexican government in MXN
- Receives a supplier invoice from a UK supplier in GBP



Transaction Currency	= GBP
Base Currency	= USD
Statutory Currency	= MXN

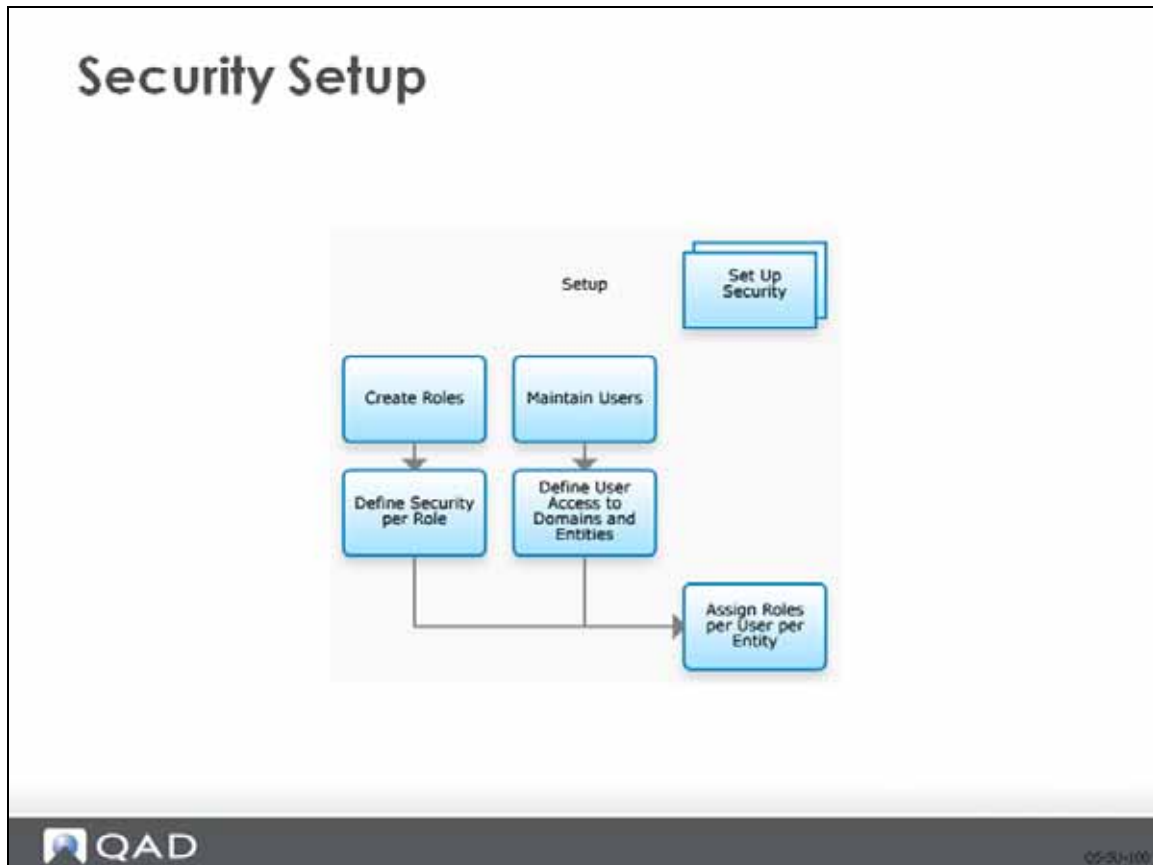


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Example A multinational corporation has a subsidiary in Mexico. In the Mexican subsidiary, most business transactions are conducted in USD, the base currency. However, all reports that the subsidiary must produce for the Mexican government are in Mexican pesos, which is the statutory currency.

- Transaction currency = GBP
- Base currency = USD
- Management currency = MXN

Security Setup



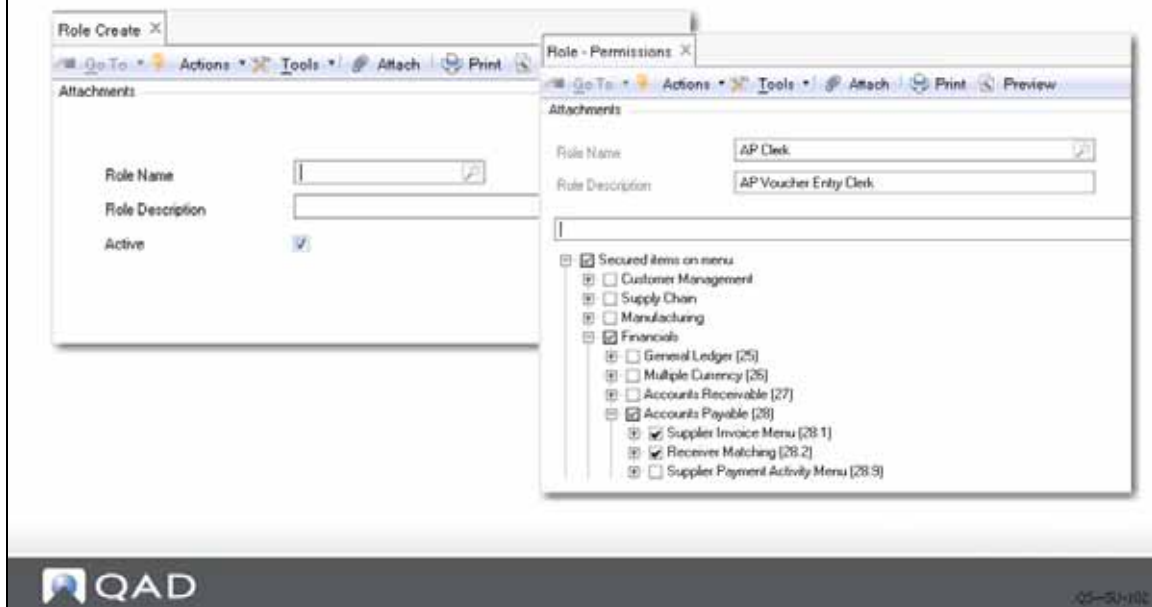
After defining a new domain, you must define user security and access. To set up security, you must define three main elements:

- Roles
- Users
- Permissions

The configuration for the three areas is linked in a fourth step.

Set Up Roles

- Set up role
- Add permissions to the role



In Role Create (36.3.6.1), enter a name and description to create a new role. During implementation, you can create inactive roles by clearing the Active field. An inactive role cannot be referenced in any functions other than Role Create.

A number of default roles are supplied with the system. Members of these roles are notified by the system when new records are created in finance (customer, employee, end users, suppliers), since additional operation data needs to be specified for these records:

- CustomerNotify
- EmployeeNotify
- EndUserNotify
- SupplierNotify

Two other special roles are supplied with the system:

- qadadmin
- SuperUser

After defining the role names, go to Role Permissions Maintain (36.3.6.5) and associate the system activities that you want members of each role to be able to complete.

Set Up Users

Set Up Users

User Maintenance X

Go To Actions Copy Print Preview Attach

E-mail Del

User ID: ACCT User Name: Alan Cutin

Language: us Variant:

Country Code: usa Restricted: ☐

User Type: Employee Access Location: Primary

Time Zone: PST/PDT Initial:

E-mail Del: Active: ☒

E-mail Address:

Menu Substitution: ☒

Remark:

System Access

Enabled: ☒ Last Login: 3/19/2008 00:54

Enabled Reason: QAD_DEF QAD DEFINITION

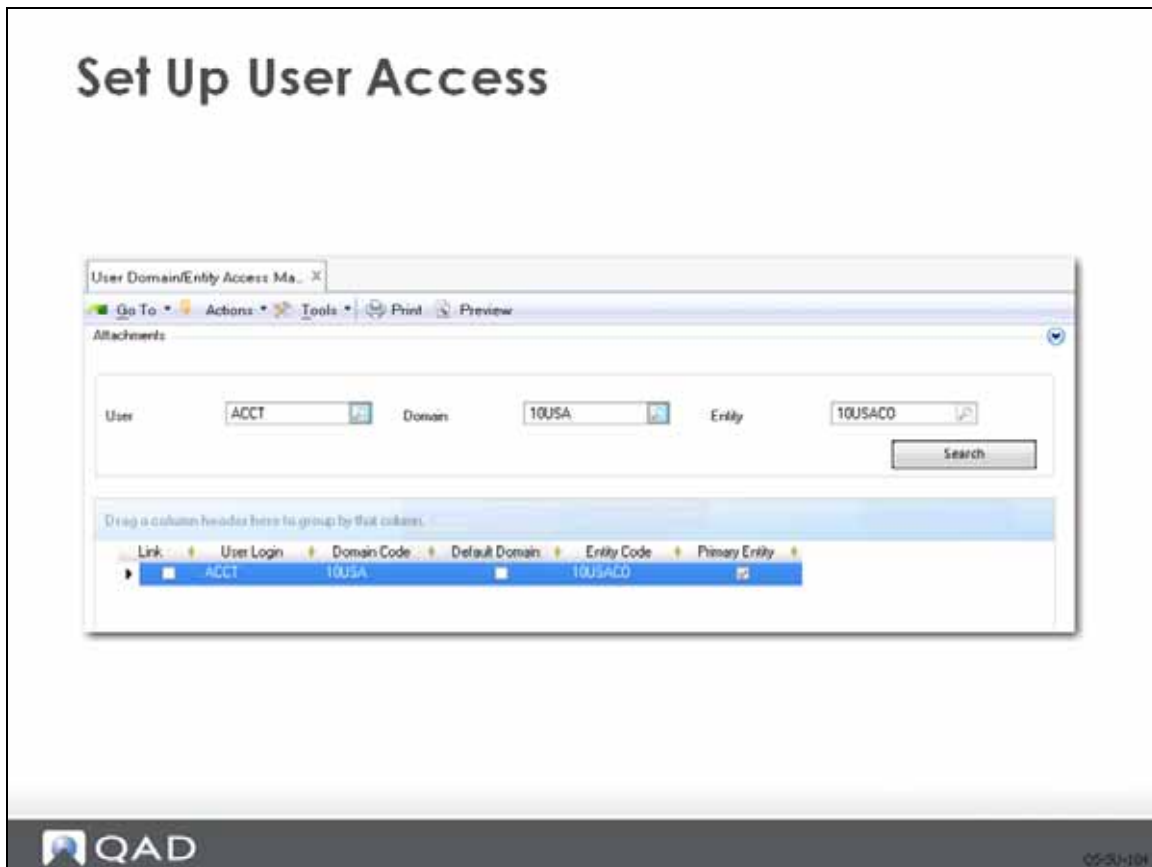
Force Password Change: ☒

Update Password: ☐ Last Password Change: 3/18/2008

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In User Maintenance (36.3.1), define the IDs for the users in your system and associate other data with them such as an e-mail address, language, country, and type.

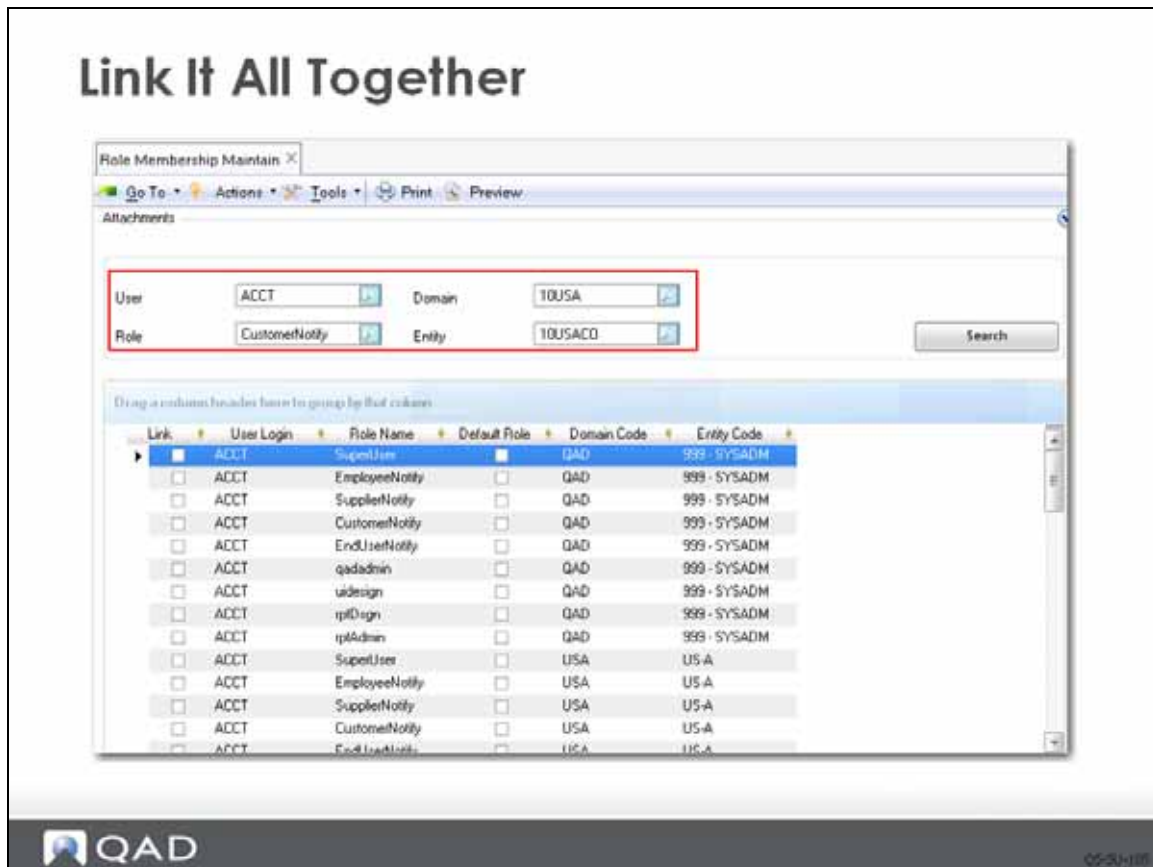
Set Up User Access



Go to User Domain/Entity Access Maintain (36.3.4) to set up the user access.

Select the user and click Apply. A new window will display. Link a user to an entity by selecting the field in the Link column.

Link It All Together

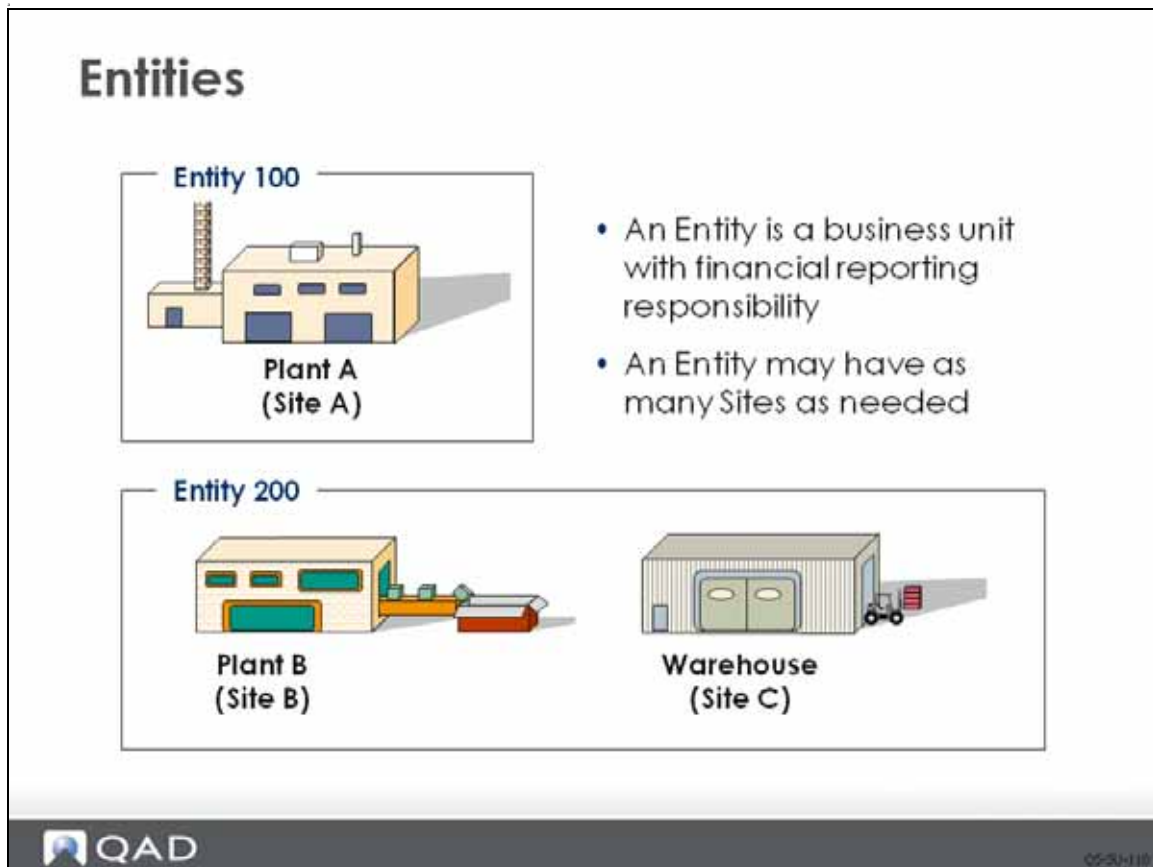


In the final security setup step, you link users, roles, entities, and domains.

Go to Role Membership Maintain (36.3.6.6). Select a user, role, domain, entity, or a combination of these, then click Apply. Link a user to a role for the entities that the user has access to (entity by entity).

A user can have different roles in each entity.

Operational Structure

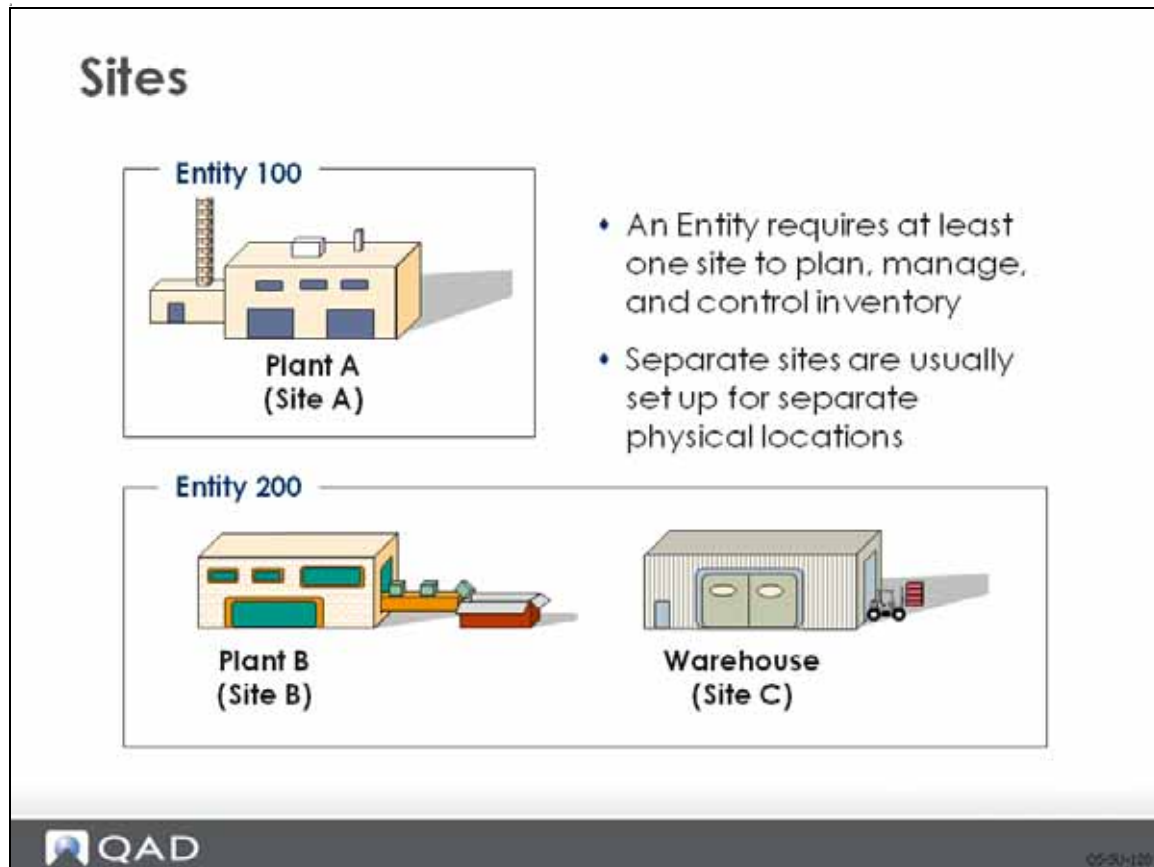


An entity is a subset of the business that does financial reporting. In QAD EE, balance sheets and income statements are prepared by entity.

Other structures are used within a QAD EE database to manage inventory and execute planning functions. The next section introduces these elements:

- Sites
- Locations
- Inventory status codes

Sites



A site is an inventory planning and control concept. Inventory control and planning information is maintained by site, including inventory availability, manufacturing methods and costs, sales and purchasing data, manufacturing plans and orders, and forecasts. Each site is associated with a physical address. However, each physical address can have several sites.

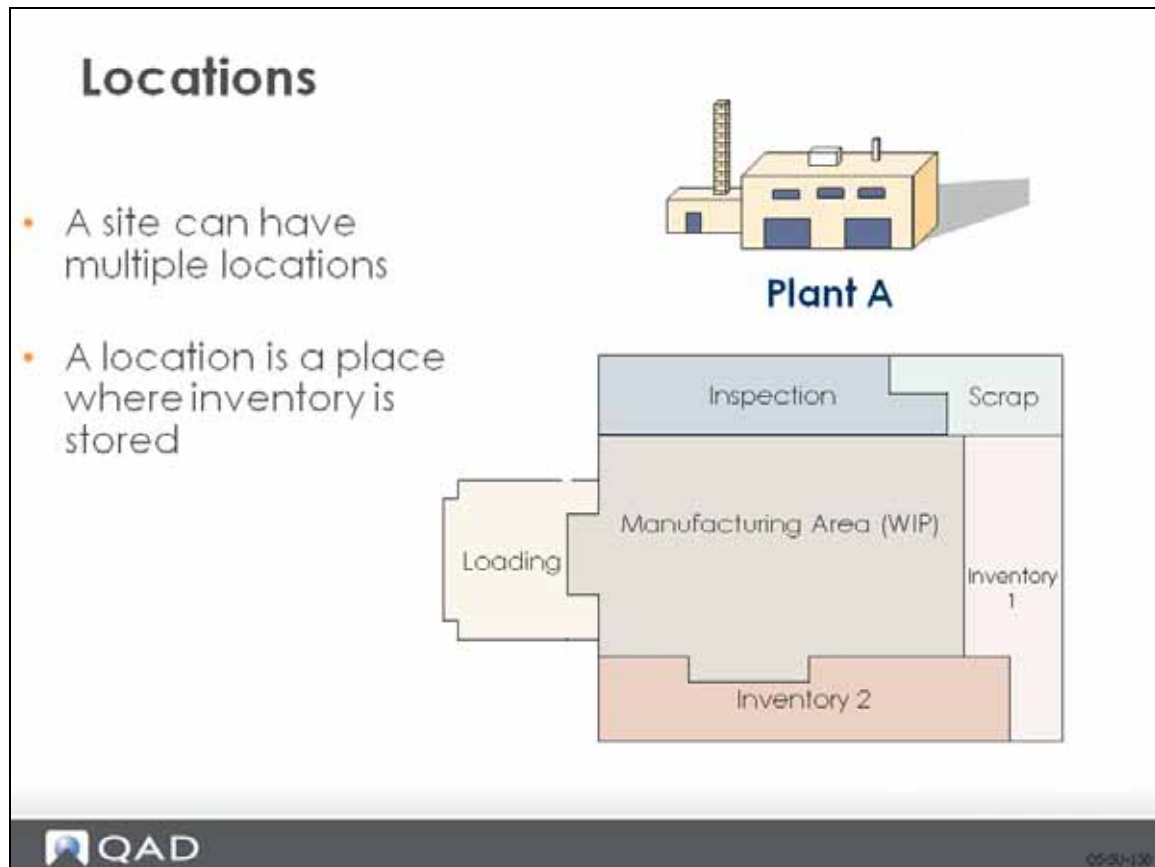
For example, you can set up separate sites for manufacturing, finished goods inventory, and field service in one physical location. There are no limitations on how many sites you have under one entity. Each site belongs to one (and only one) entity, but each entity can have more than one site. A site can be, for example, a distribution center, a warehouse, a manufacturing plant, or a combination of these.

Site Maintenance defines several attributes that default into inventory locations including a default inventory status code, whether or not automatic locations are allowed, and a transfer variance account.

Most planning and control functions work within one site. The system expects to find all the components for a manufacturing order at the same site (with a few exceptions); MRP and DRP calculate requirements one site at a time.

A few functions deal with multiple sites, such as multi-site purchase or sales orders, distribution orders, and distributed inventory inquiries.

Locations



Every inventory transaction must have a site and location. Both can default from the item master. In QAD EE, each site can have a variety of locations where inventory is stored. Locations can include shelves, bins, tanks, silos, refrigerators, freezers, humidity and or temperature controlled rooms, segregated quarantine or material review areas, or other storage areas. Each location's parameters identify what can be stored there and how that inventory can be used.

Predefined Locations

Most businesses will have several predefined inventory locations such as raw material and or component inventory, finished goods inventory, and perhaps other locations for sales returns, scrap, quality control quarantine, or material review board. In general the more carefully defined locations you use, the higher level of inventory control you will obtain.

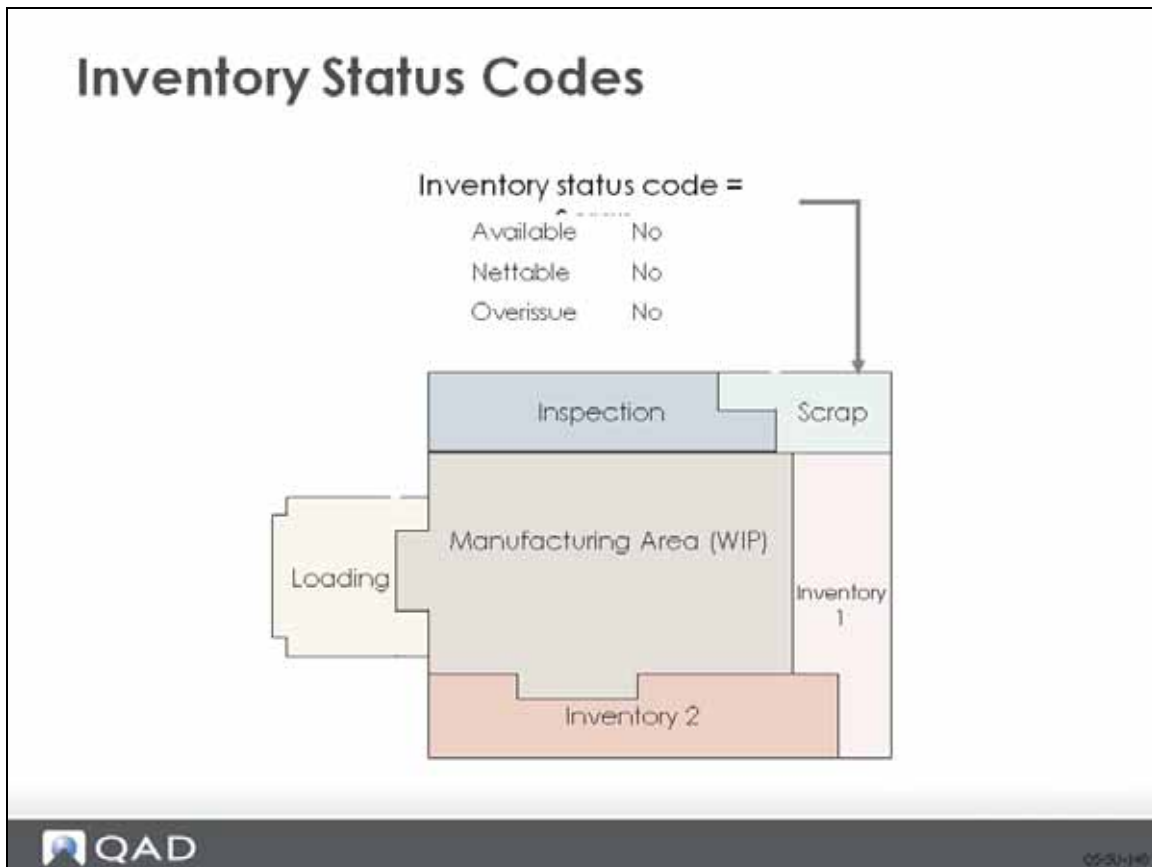
Locations do not have to be predefined. The system can automatically create location codes whenever you enter an undefined value by setting Automatic Locations to Yes in Site Maintenance. While useful in some situations, this offers a very low level of control since anyone with access to inventory transactions can create new locations, possibly as a result of an error.

Inventory location attributes include:

- Description
- A default inventory status code (available, nettable, overissue)
- Whether it is permanent

- A location type code such as tank, silo, freezer
- Restricted to single item (liquid tanks are usually restricted to a single item, for example)
- Restricted to a single lot of a single item (lot-controlled liquids)
- Certain items are assigned to certain locations (location type code associated with the item is matched to location type code of the location)

Inventory Status Codes



Inventory status codes control your inventory and manage how that inventory is used. Think about how your scrap is managed differently than finished goods inventory or spares. In QAD EE, these different types of inventory are identified by their status codes.

Generic inventory status codes are set up for each type of inventory you have. These identify whether inventory balances of this type are:

- Available to allocate to sales orders and manufacturing orders
- Nettable, to be considered by MRP when calculating net quantity on hand
- Overissue, to denote if this inventory balance is allowed to go negative

Some general guidelines on how status codes are used:

- Scrap inventory would not be available or nettable.
- Material in receiving quarantine is usually not available, but is nettable since it is expected to be good.
- Material in material review board is usually not available, but can be nettable or not based on the likelihood of its being approved for use.
- Consignment inventory held for a specific customer is not normally available.
- Negative inventory balances are always errors and should not be allowed.

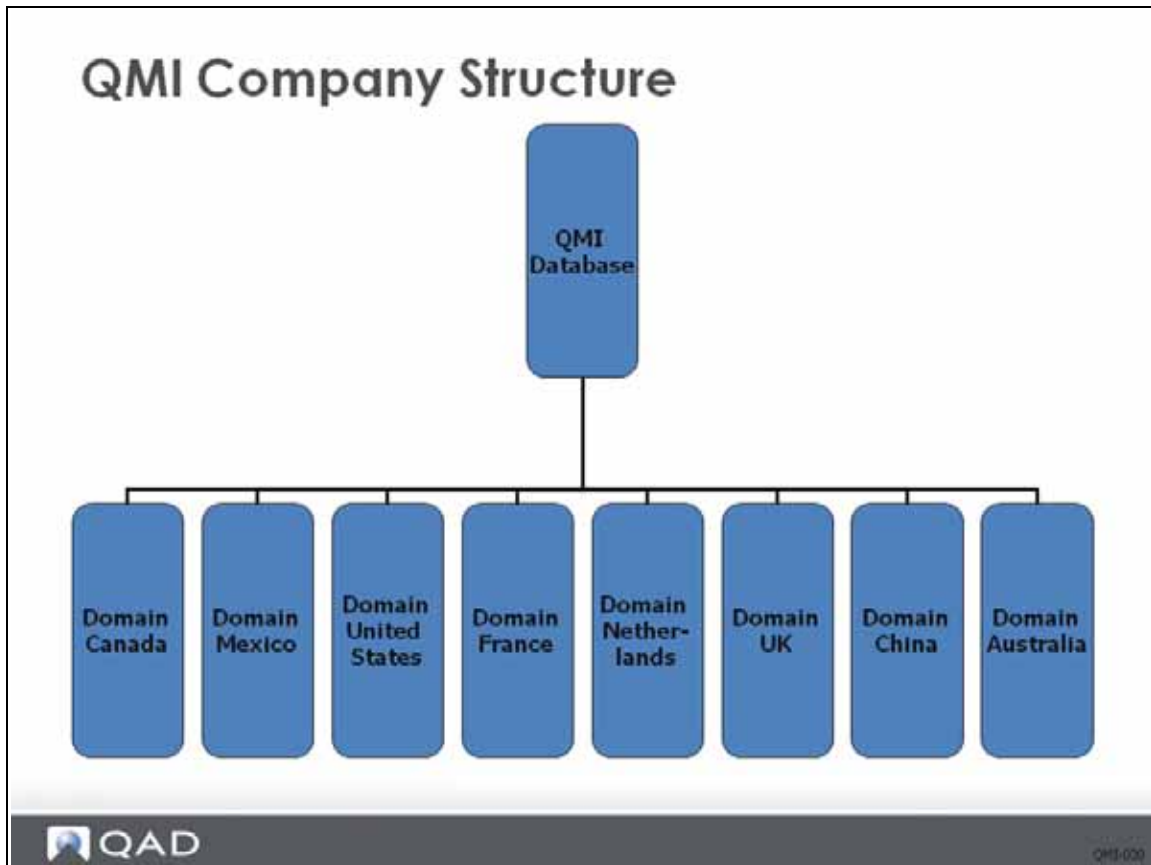
Note: Not allowing negative balances forces the user to fix the error at its source.

- Inventory in transit is usually not available.

In addition, certain transactions can be restricted. Each inventory status code can have a list of restricted transactions attached. For example, access to sales order issues can be restricted from a Quality Control Hold location.

Whenever items are received into inventory, a status code is associated with that inventory. This defaults to the status code entered for the location, but can be changed using Inventory Detail Maintenance. Whenever you attempt to do something with this inventory (allocate it, issue it, move it) the system checks its status code and makes sure that this is a valid action.

Example: QMI Business Structure



Quality Manufacturing International (QMI) is a multinational company with its headquarters located in New York, NY.

- QMI has eight divisions located in USA, Canada, Mexico, France, UK, Netherlands, China, and Australia.
- QMI produces a wide range of products that cover Electrical and Industrial, Life Sciences, Consumer Products, and Automotive industries.
- These products are produced at all of the eight company divisions around the world.
- QMI uses shared services to manage their customers and suppliers. Customers and suppliers are also located in each of the countries where a QMI division is located.

The example on the following pages shows how QMI sets up the foundations of its business structure. The domain and entity structure have been previously set up by corporate headquarters in preparation for the startup of the new business unit. This process included the setup of the accounting structure and GL calendars to ensure the new unit correctly integrates with corporate financial reporting requirements.

This course will focus on setting up:

- Sites
- Locations
- Inventory Status Codes

Set Up Domain and Entity

Set Up Domain and Entity

Entity View X

Go To Actions Tools Attach Print Preview

Attachments

Entity Code: 10USACO Active: ☒

Entity Description: USA DIVISION Domain: 10USA

Business Relation: 10-USA-CD

Localization Code:

General Shared Sets Additional GL Numbering

Shared Set Code	Shared Set Type
QMS-CostCenter	Cost Center
QMI-SUP	Supplier
QMI-CUST	Customer
QMS-SubAccount	Sub Account
QMS-ExRate-US	Exchange Rate
QMS-GL-US	General Ledger
QMS-DB-US	Daybook
QMS-Project	Project
Sub-Account COA Mask	Sub-Account COA Mask
Cost Center COA Mask	Cost Center COA Mask
Project COA Mask	Project COA Mask

QAD

CS-30-170

As part of the expansion of its current businesses, basic setup has been completed by the staff of the parent company, QMI. This ensures that all accounting and financial reporting functions are set up in accordance with corporate procedures.

All of the system-wide data is already available to QMI. Images of the domain and entity setup are shown here. Note that QMI has several shared sets that are common with other QMI divisions and two (customers and suppliers) that are unique to QMI.

This course uses a domain already set up with a base currency of US dollars (USD), a general ledger chart of accounts, and a GL calendar with periods that correspond to the standard 12-month calendar.

Set Up Company Business Relation

The screenshot shows the 'Business Relation Modify' window in QAD. The window has a title bar with 'Business Relation Browse for...' and 'Business Relation Modify'. Below the title bar is a menu bar with 'Go To', 'Actions', 'Tools', 'Attach', 'Print', and 'Preview'. The main area is divided into two sections: 'Attachments' and 'Address Info'.

Attachments Section:

- Business Relation: 10 CORP-CONS
- Name: Quality Manufacturing International
- Search Name: Quality Mfg Int
- Second Name:
- Third Name:
- Group Name:
- Active: ☒

Address Info Section:

The 'Address Info' section has two tabs: 'General' and 'Defaults'. The 'General' tab is selected. It contains a table with the following data:

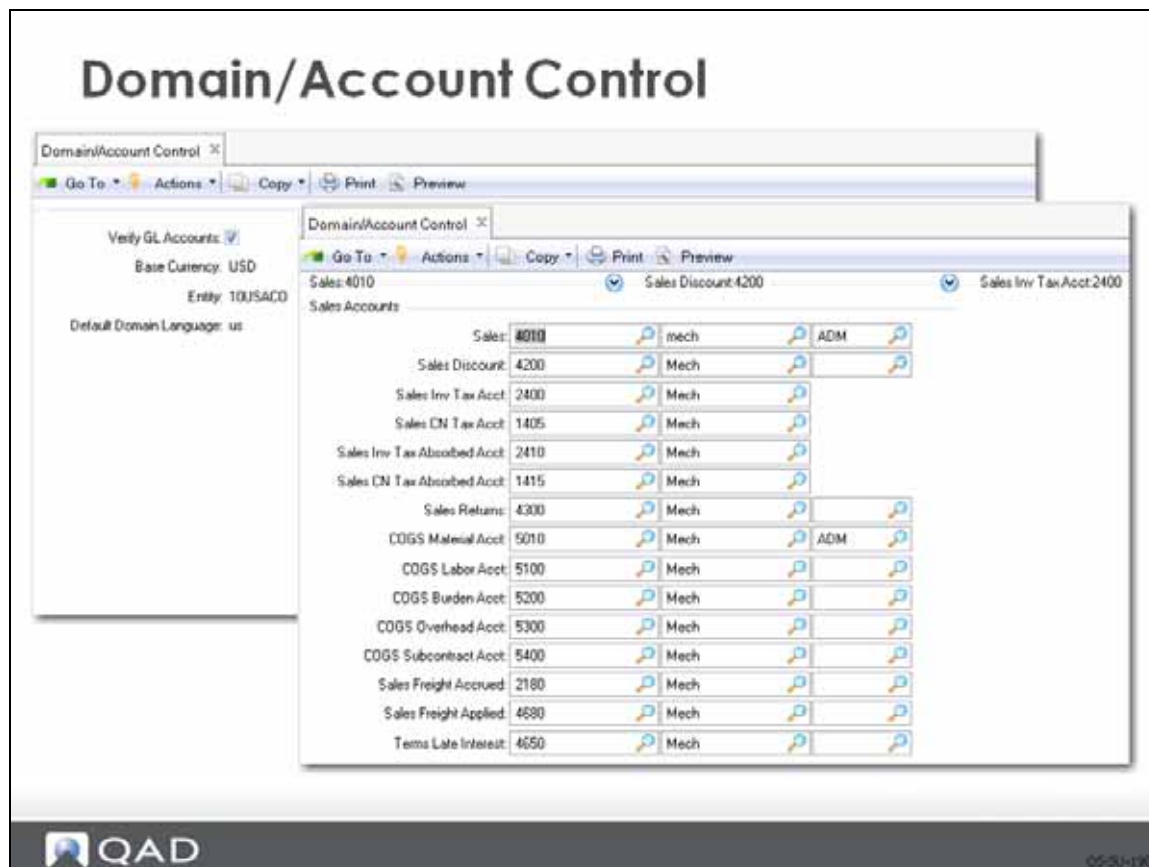
Address	Address	Address	Zip Code	City	Name	Search Name	Telephone
15 Avenue of the			10065	New York	Quality Manufactu	Quality Mfg Int	

The QAD logo is visible in the bottom left corner, and the version number 'Q5-31-180' is in the bottom right corner.

QMI's New York address has been set up in Business Relation Create (36.1.4.3.1).

All addresses for customers, suppliers, and employees are set up as business relationships.

Review Domain/Account Control



Domain Account Control (36.9.24) is used to set up default account codes, subaccounts, and cost centers. These are system-required accounts from the general ledger chart of accounts. Setting them up here ensures that any transaction the system can process are booked to a valid general ledger account.

The first frame in Domain/Account Control shows that GL accounts are verified, the base currency for the entity is USD, and audit trails are maintained.

The default accounts are organized by the type; Sales Accounts are shown in this image.

The following slides show the remaining default accounts organized by the type of account.

AP, Department, Product Line Accounts

AP, Department, Product Line

Domain/Account Control

Go To Actions Copy Print Preview

AP Inv Tax Acct:1400 AP CN Tax Acct:2405 AP Inv Tax Retained Acct:1420

Accounts Payable

AP Inv Tax Acct:1400 Mech

AP CN Tax Acct:2405 Mech

AP Inv Tax Retained Acct:1420

AP CN Tax Retained Acct:1420

Expensed Item Receipts

Expensed Item Usage

Expensed Item Rate

Department

Cost of Production:5770 Mech

Labor:5

Burden:5

Domain/Account Control

Go To Actions Copy Print Preview

Inventory Acct:1500 PO Receipts Acct:2520 Purchases:6610

Product Line

Inventory Acct:1500 Mech

PO Receipts Acct:2520 Mech

Purchases:6610 Mech ADM

Overhead Appl Acct:5330 Mech

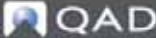
Scrap:6000 Mech

Work in Process:1550 Mech

Inv Discrep Acct:5900 Mech

Cost Reserve Acct:6100 Mech

Floor Stock Account:1600 Mech

 QAD

CS-31-181

Variances, Service Accounts

Variances, Service Accounts

Domain/Account Control

Go To Actions Copy Print Preview

PO Price Var Acct: 6710 AP Usage Variance: 6720 AP Rate Variance: 6740

Variances

PO Price Var Acct:	6710	Mech	ADM
AP Usage Variance:	6720	Mech	
AP Rate Variance:	6740	Mech	
Method Variance Acct:	6800	Mech	
Transfer Variance:	6820	Mech	
Material Usage Var:	5040	Mech	
Material Rate Var:	5050		
Labor Usage Variance Acct:	5140		
Labor Rate Variance Acct:	5150		
Burden Usage Variance:	5240		
Burden Rate Variance:	5250		
Subcontract Usage Variance:	5440		
Subcontract Rate Var:	5450		
Max Variance:	6830		

Domain/Account Control

Go To Actions Copy Print Preview

Service Labor: 6900 Service Overhead: 6905 Service Expense: 6910

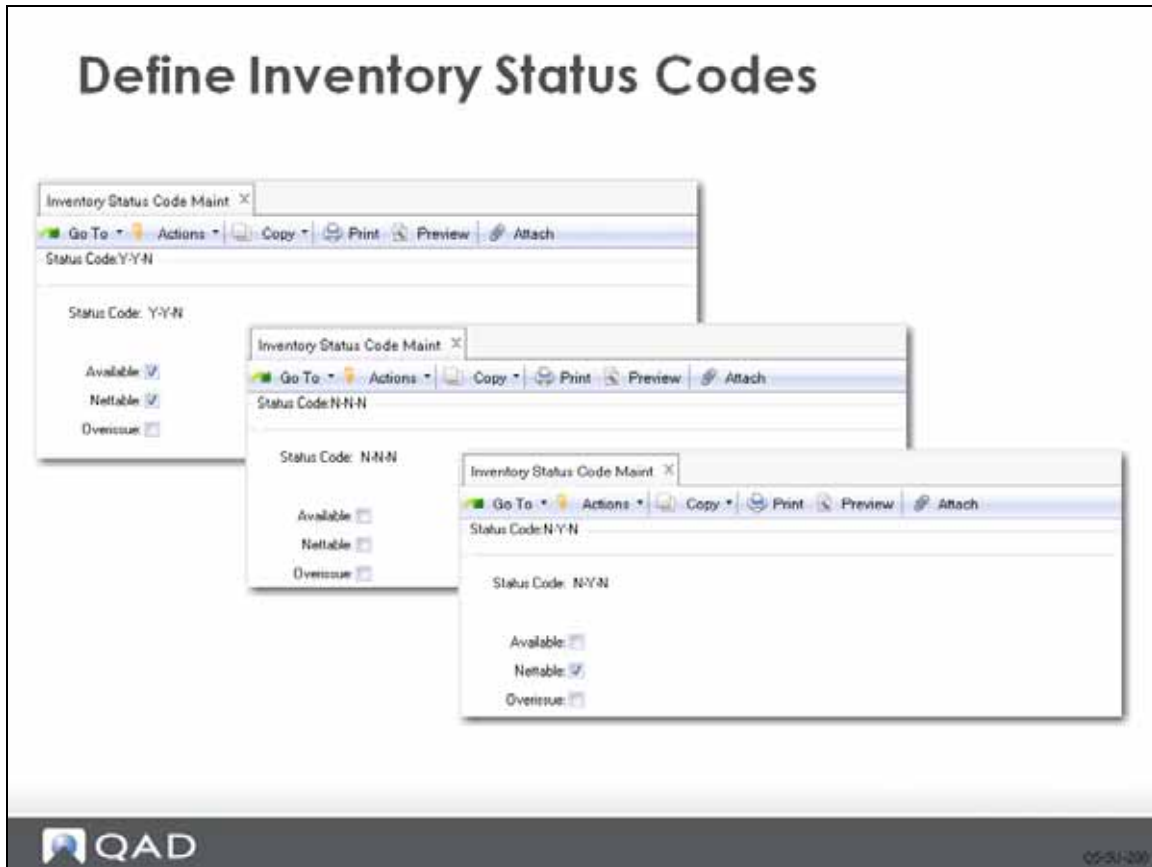
Service Accounts

Service Labor:	6900	Mech	
Service Overhead:	6905	Mech	
Service Expense:	6910	Mech	
Expense Due:	6915	Mech	
Service Returns:	6920	Mech	
Deferred Revenue:	2450	Mech	
Accrued Revenue:	1450	Mech	

QAD

CS-30-130

Define Inventory Status Codes



Before QMI can enter a site or items, it needs to define at least one inventory status code. These codes have a significant effect on how inventory can be managed.

In Inventory Status Code Maintenance (1.1.1), QMI can indicate if the inventory is available to be allocated to sales orders and/or work orders, nettable for MRP planning purposes, and whether overissues (items can be issued even if the current computer balance is insufficient to meet the demand) are permitted from the locations identified with this code.

QMI defines all its status codes to not allow overissues by leaving the Overissue box unchecked. This prevents inventory transactions that would result in a negative balance.

- QMI used code Y-Y-N to indicate parts and items that are OK to use and indicates they are available to issue and nettable for MRP planning purposes.
- QMI uses the code N-N-N to indicate items that are known to be unusable. They cannot be issued or used for planning.
- QMI uses the code N-Y-N to indicate items that require review upon receipt or that are suspected of being unusable. These items require further review and are normally sent to an inspection area for disposition. They cannot be issued but can be used for planning.

Note It is highly recommended to not use blank code fields.

Set Up Site

The screenshot shows the 'Set Up Site' window in QAD. The window title is 'Site Maintenance'. The menu bar includes 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. The breadcrumb trail shows 'Site: 10-100' and 'Domain: 10USA'. The form fields are as follows:

- Site: 10-100
- Description: Ultrasound Mlg Site
- Domain: 10USA
- Entity: 10USACO
- Declariant:
- Default Inventory Status: Y-Y-N
- Automatic Locations: ☐
- Inspection Location: 030
- EMT Supplier: 10-300
- External Supplier: ☐
- Transfer Variance Acct: 6820
- MECH:
- Transfer Ownership: ☒
- PD Transit Location:

The QAD logo is in the bottom left corner, and the version number 'Q5-31-210' is in the bottom right corner.

QMI has multiple sites that can be viewed in Site Maintenance (1.1.13). This example focuses on site 10-100, assigned to domain 10USA and entity 10USACO. Site 10-100 has a default inventory status code of Y-Y-N, which was defined earlier. This code will default to inventory locations created in this site.

Automatic Locations is left unchecked, which requires that new inventory locations be set up in Location Maintenance prior to use. If the field is checked, then inventory transactions can be processed for locations that do not exist, and the system creates them as part of the transaction. Some companies like this because it lets users create new locations as required. The new locations use all defaults from the site record. However, since the input is not verified, locations can be created that are in effect typographical errors.

To calculate taxes, you must set up a corresponding address code for each site in Company Address Maintenance. On taxable transactions, the system uses the site address to select the correct line-item tax environment. On purchase orders, the system retrieves the ship-to address code from the line item site code.

Set Up Inventory Locations

The image displays two overlapping screenshots of the QAD Location Maintenance window. The left window shows the setup for Location 010, and the right window shows the setup for Location 020. Both windows are for Site 10-100.

Location 010 Setup:

- Site: 10-100
- Location: 010
- Description: Finished Goods
- Inventory Status: Y-Y-N
- Project: (empty)
- Date Created: 1/1/2008
- Permanent: ☒
- Type: SR
- Single Item: ☐
- Single Lot/Reference: ☐
- Capacity: 0.0
- Reserved Locations: ☐
- Transfer Ownership: ☒
- Physical Address: (empty)

Location 020 Setup:

- Site: 10-100
- Location: 020
- Description: Components
- Inventory Status: Y-Y-Y
- Project: (empty)
- Date Created: 1/1/2008
- Permanent: ☒
- Type: SR
- Single Item: ☐
- Single Lot/Reference: ☐
- Capacity: 0.0
- Reserved Locations: ☐
- Transfer Ownership: ☒
- Physical Address: (empty)
- UM: (empty)

The QAD logo is visible in the bottom left corner of the slide, and the code CS-SU-220 is in the bottom right corner.

QMI has set up three locations in Location Maintenance (1.1.18) to subdivide site 10-100, two shown in this slide and one in the following:

- 010 is for storage of finished goods, The Finished Goods location uses the default inventory status code Y-Y-N from the site record.
- 020 is for components. Its inventory status is Y-Y-Y.

Check the Permanent field to ensure your locations do not disappear from the records when they are empty.

Location Maintenance

An additional location is set up called Inspection to be used for material that is of questionable quality and requires further evaluation. This location has the status code N-Y-N.

Define an inventory location for every place your business stores inventory items. If you store pallets, or drums of raw material in the parking lot, the parking lot needs to be a location. If the supervisor keeps a safety stock of small items in a desk drawer, the drawer needs to be an inventory location.

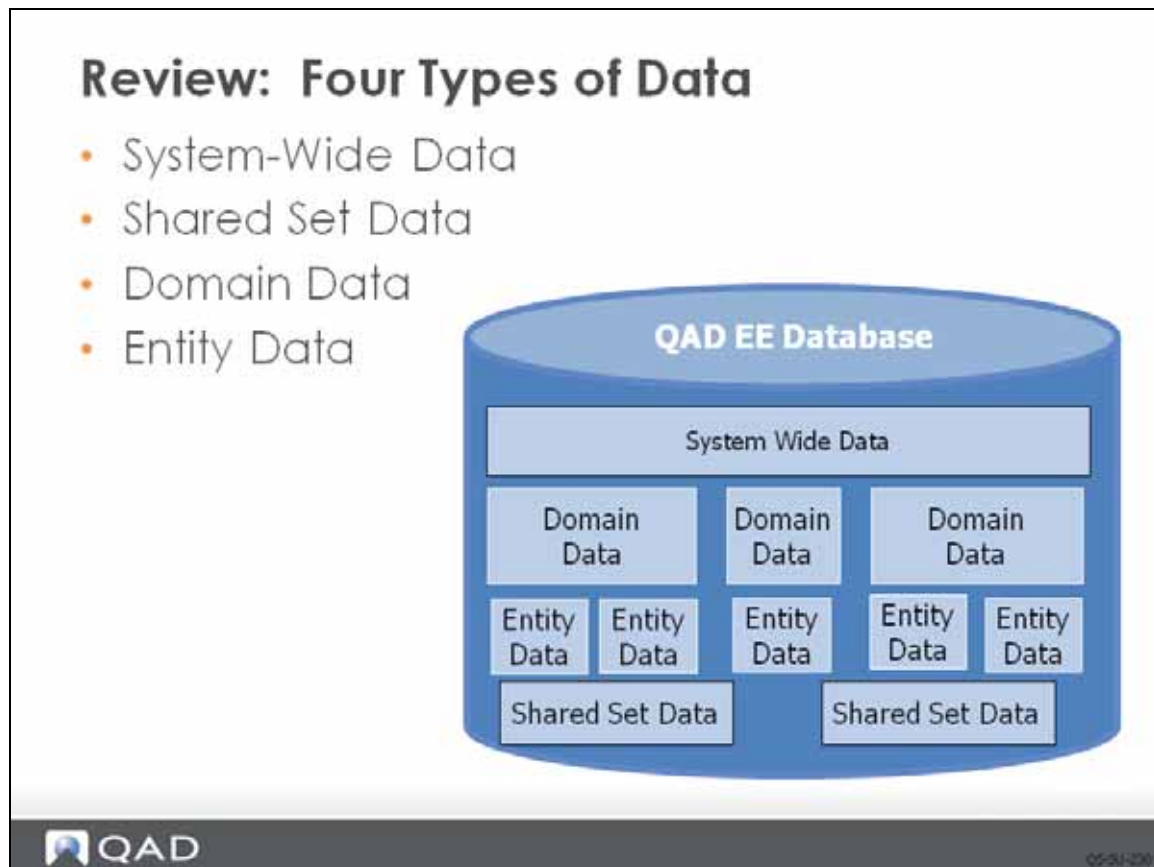
Additional Notes

You must associate an inventory status code with every location. By default, this is the inventory status from the site record.

In this course, the other location attributes are left blank, but their usefulness is evident.

- The Type code lets you indicate unique storage locations such as tanks, silos, and refrigerators. The item master can specify a location type for an item. During inventory transaction, the system ensures that the type of the receiving location matches the type of the item.
- Checking Single Item prevents the user from adding a different item to a location that already has an item in it. For example you cannot add olive oil to a tank that currently has vinegar in it.
- Checking Single Lot/Reference prevents adding a different lot number of an item to a location that already has a lot of material in it. For example you cannot add lot 3 olive oil to a tank that already has lot 2 olive oil in it.

Review



Database. To summarize, a database is a physical set of tables. All users who have access to that database have access to the data in those tables (subject to security restrictions).

Domain. A domain is a template for several entities that share the same base currency, general ledger chart of accounts, and calendar. A domain requires at least one entity.

Entity. An entity is a financial reporting concept. Balance sheets and income statements are produced by entity. A domain can have multiple entities. Consolidated reports can be focused by selecting a range of entities to report. At least one entity is required.

Site. A site is an inventory planning and control 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. Almost all reports produced in the system are selected and sorted by site. To manage inventory, at least one site is required.

Location. A site can have multiple inventory locations used to physically identify and control individual items in stock. Inventory reports normally are selected and sorted by location. To manage inventory, at least one location is required.

Review

Review

```
graph TD; Entity[Entity] --> Site[Site]; Site --> Location[Location];
```

Entity	• Financial Reporting
Site	• Planning • Inventory Control • Reporting
Location	• Physical Location • Control and Audit

Note: The financial setup in QAD EE is covered in detail in the Financial Class. In this course we will review the setup that has already been done.

QAD

02-50-240

Exercise 2

In this exercise, you will set up a brand new site. In later exercises you will use a site prepared for you. Before beginning, you need to verify a setting.

- 1 Go to Requisition Control (5.2.1.24) and make sure that Using GRS is NOT checked.
- 2 Use Inventory Status Code Maintenance (1.1.1) to add a new status code.

Field	Data
Status Code	Y-Y-N; click Next
Available	Checked (yes)
Nettable	Checked (yes)
Overissue	Unchecked (no)

Click Next three times until you come to the Restricted Transaction field, then click Back to complete the update transaction.

- 3 Use Site Maintenance (1.1.13) to enter a record for your manufacturing/distribution site.

Field	Data
Site Code	10-101; click Next
Description	Ultrasound Mfg Site
Domain	10USA
Entity	10USACO
Default Inventory Status	Y-Y-N

Click Next 3 times, then Back.

Set Up Inventory Locations

Add three inventory locations, Finished Goods, Components, and Pending Inspection), to site 10-101. The inventory status code of Y-Y-N should default from the site code.

- 4 Open Location Maintenance (1.1.18) to add three inventory locations.
 - a Create the first inventory location by making the following entries (accept the defaults for all other values).

Field	Data
Site	10-101
Location	010; click Next
Description	Finished Goods Inventory
Inventory Status	Y-Y-N; click Next

- b Create the second inventory location.

Field	Data
Site	10-101
Location	020; click Next

Field	Data
Description	Components
Inventory Status	Y-Y-N; click Next

- c Create the third inventory location by making the following entries (accept the default values for all other entries).

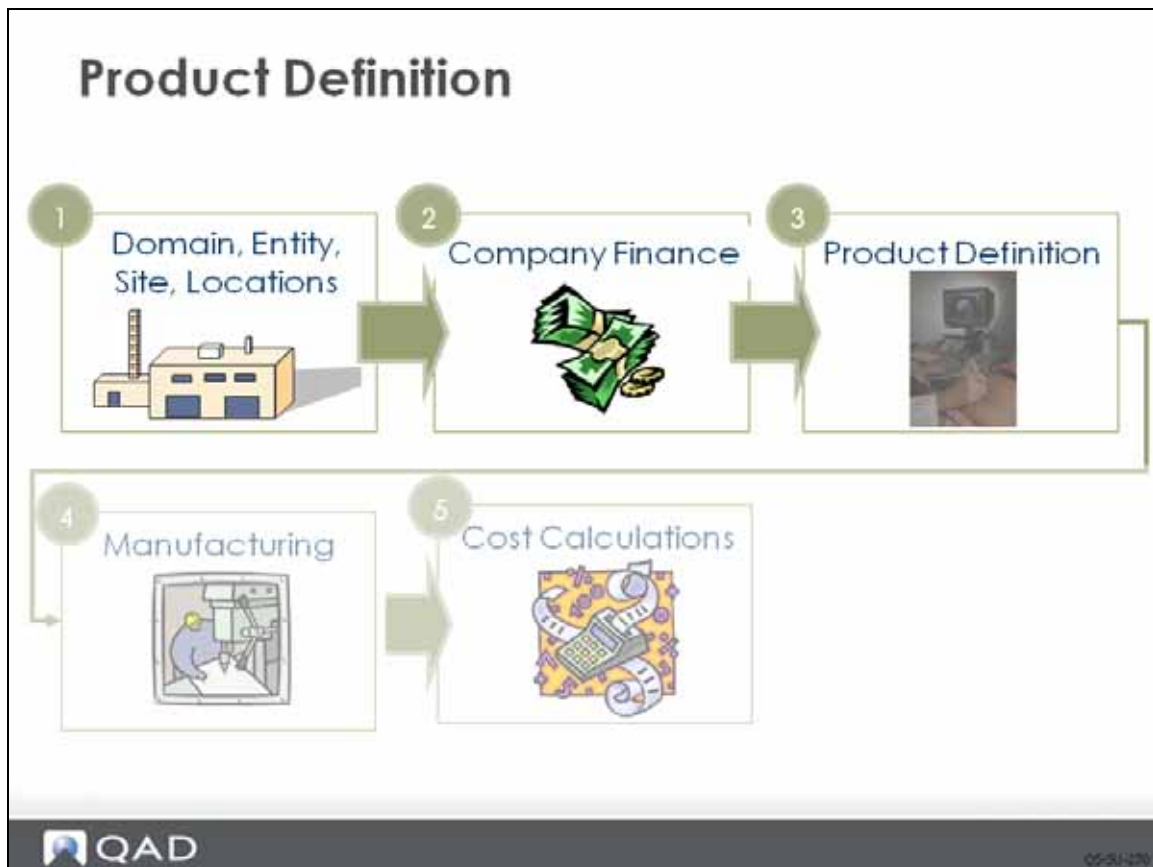
Field	Data
Site	10-101
Location	030; click Next
Description	Pending Inspection
Inventory Status	Y-Y-N; click Next

- 5 Close Location Maintenance (1.1.18).

Chapter 4

Product Definition

Overview



After setting up the basic company structure, you can enter information about company products and how they are made. This chapter provides information on setting up items and defining the components that are used to build them.

Chapter Topics

Topics

- Product Lines
- Current Costs
- Item Information
- Product Structure

Learning Objectives

Objectives

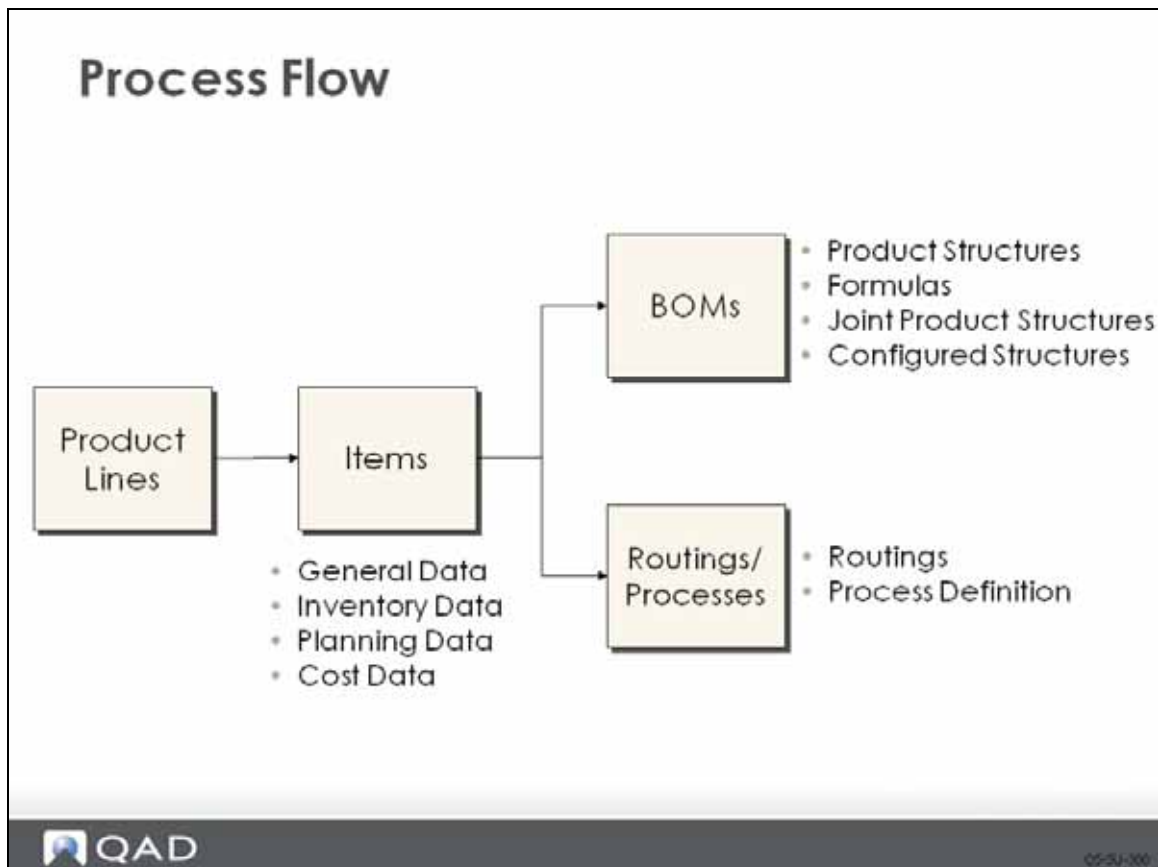
When you finish this section, you should be able to:

- Explain the importance of a product line
- Explain the difference between current costs and GL costs
- Provide examples of order policies and order modifiers
- List an item's five cost elements
- Describe the information contained in a product structure
- Set up a product line
- Enter an item
- Define an item's product structure



02-50-290

Key Concepts



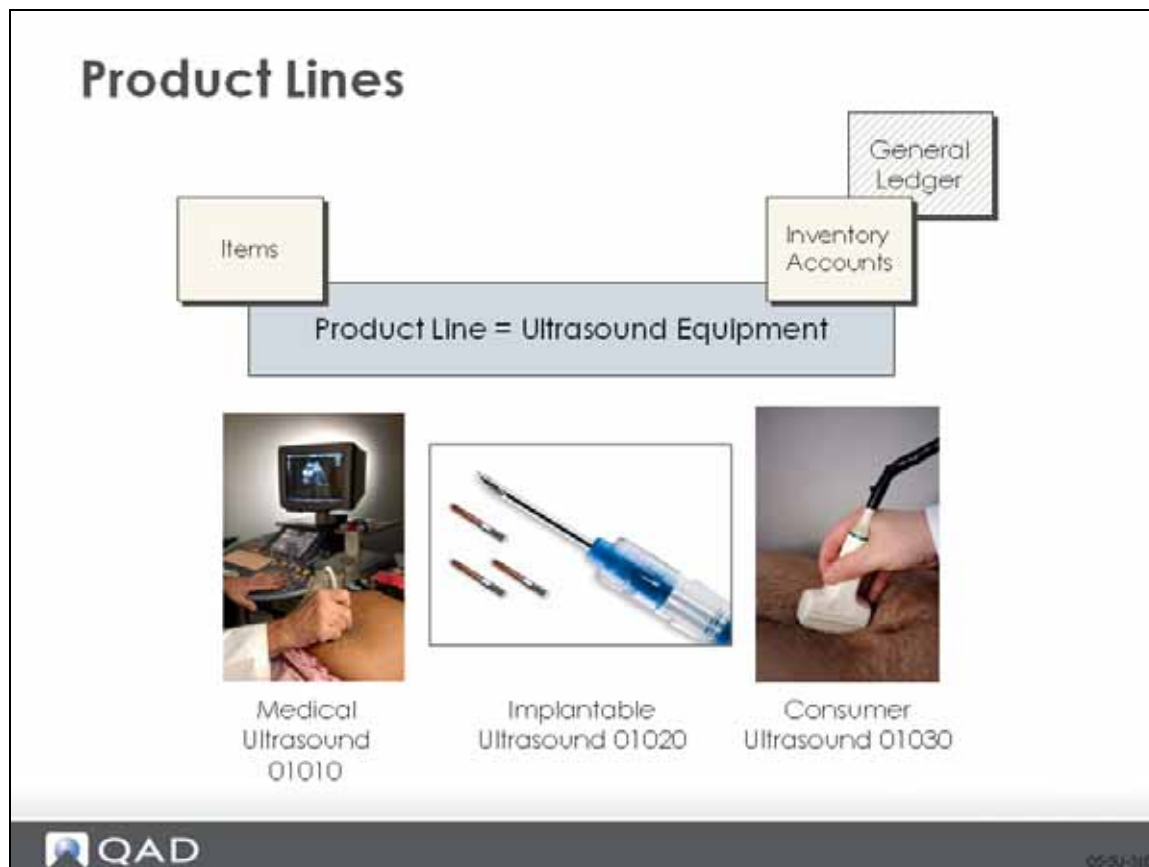
As shown in this slide, to establish a product definition, you first establish product lines, then assign items to them. Although each item needs an associated product line to capture inventory costs and movement, each item does not necessarily have a bill of material (BOM) or routing associated with it. This chapter discusses bills of material; routings are presented later in the course.

- Bills of material specify how much of each component item are required to produce a parent item.
- Routings quantify where and how the product is made and provide the steps used in the process of putting the materials together.

In common terms, bills of material and routings are like a recipe. Most recipes have a list of ingredients (the bill of material) and a list of steps telling you how to combine the ingredients and how to process them (the routing).

The next few pages describe each step in the process flow shown in the figure, beginning with product lines. The guide then describes items and bills of material (product structures). Routings are discussed in the chapter on setting up a manufacturing environment.

Product Lines



In QAD EE, a product line is a group of items or products with similarities in manufacture or application. While product line codes can be related to a marketing concept, they are more accurately considered an accounting concept since the product line code links items to GL accounts. This link is the way the system ensures that all transactions for an item have GL consequences. All items must belong to a product line; otherwise, no GL transactions associated with them could be recorded.

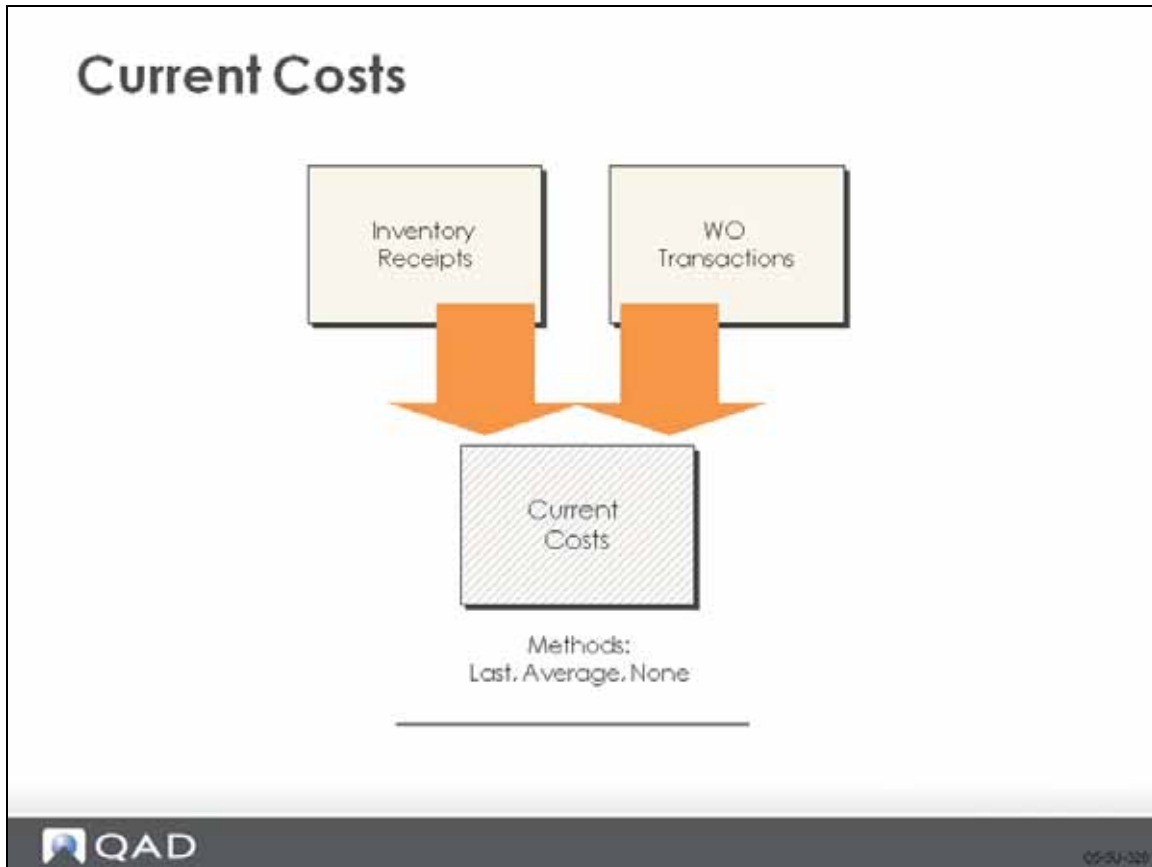
While product lines are primarily a financial construct, do not assign them by finance. While finance plays a role in defining product lines, both manufacturing and marketing want to understand the structure and the ability to track costs and revenues for their items.

Note Many browses, inquiries, and reports in QAD can be sorted on product line. So give some thought to how you want to organize various reports.

The example in the slide shows three different types of ultrasound devices in one product line. All costs and revenues for these items is collected in the same set of GL accounts. Your company could decide that the nature of the materials and the manufacturing processes used for these items are different enough to require three product lines. Then you could use different accounts or sub-accounts to track costs and revenues.

Some companies would want different product lines for purchased materials or manufactured components. You must have at least one product line code, but you can have as many as you need. After the product line is set up, you select the method for updating the current costs of items.

Current Costs



Current costs represent the costs for producing your products based on inventory receipts and work order labor transactions. These costs reflect what you are currently paying your suppliers for purchased materials and the current labor hours being consumed in producing the items at the work center labor rates.

When you have a standard costing system, 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 the current cost set are Last, Average, or None.

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

Average. Whenever an item is received, a new weighted average cost is calculated and stored in the cost set, this values all inventory at the new weighted average cost.

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

The method to use is selected in Inventory Accounting Control (36.9.2).

Costing is covered in more detail in Chapter 6, "Cost Calculations," on page 141.

Terminology

Cost Set

QAD EE has two default cost sets, GL and current, that are available for each site. A site can have additional cost sets set up in the Cost Management module, such as historical costs from prior periods and simulated costs for planning purposes.

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.

The use of the term actual is a cost accounting convention. It is not necessarily an actual cost in the strict sense of the word. For example, the labor cost of an item is the hours charged multiplied by the work center labor rate. The work center labor rate usually reflects an average rate for all workers in the work center, rather than the actual rate of the person who worked on a specific work order.

Standard Costing

Costs are established for items and all transactions are valued at that cost as they are processed. Deviations in the costs are reported as variances. Standard costs are established once a year.

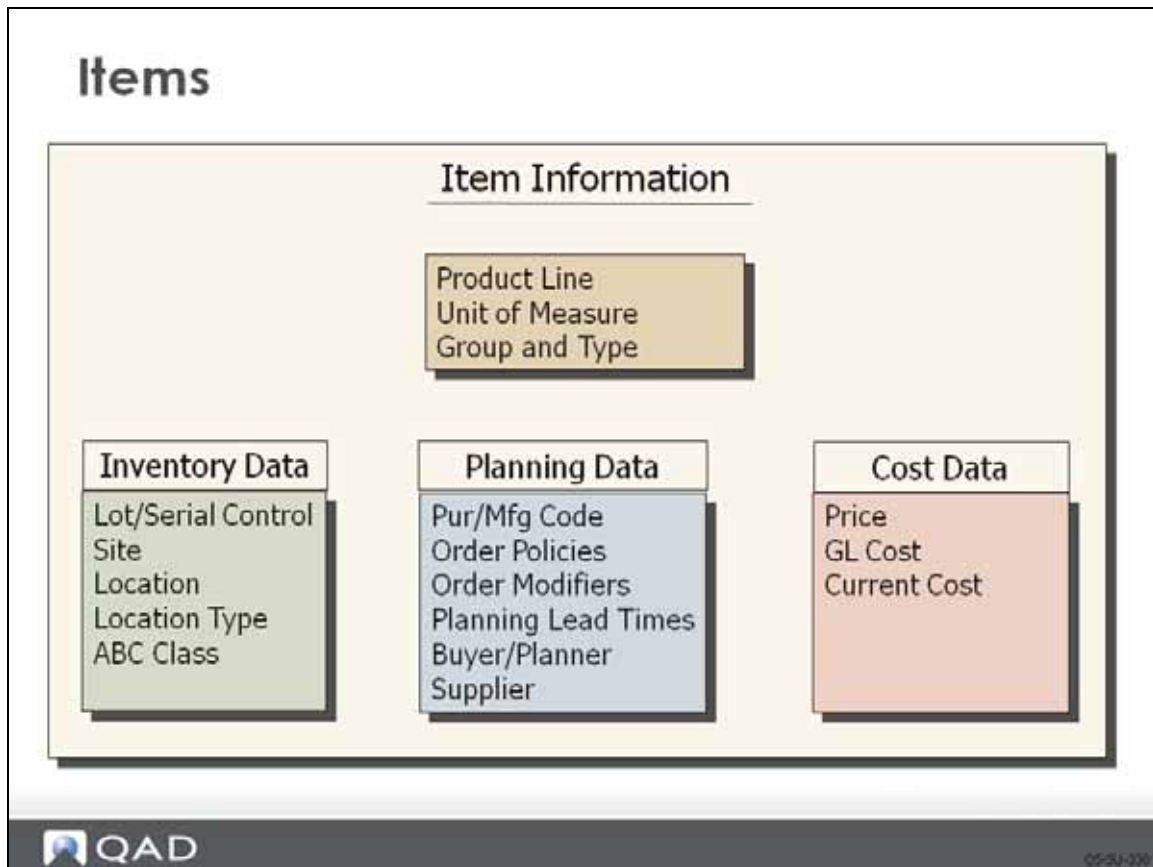
GL Cost Set

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.

Variance

In a standard cost system, the variance is the difference between the standard cost and the current cost. It is reported on a monthly basis.

Item Information



After you set up the product lines and current cost method, you can define more specific information about each item.

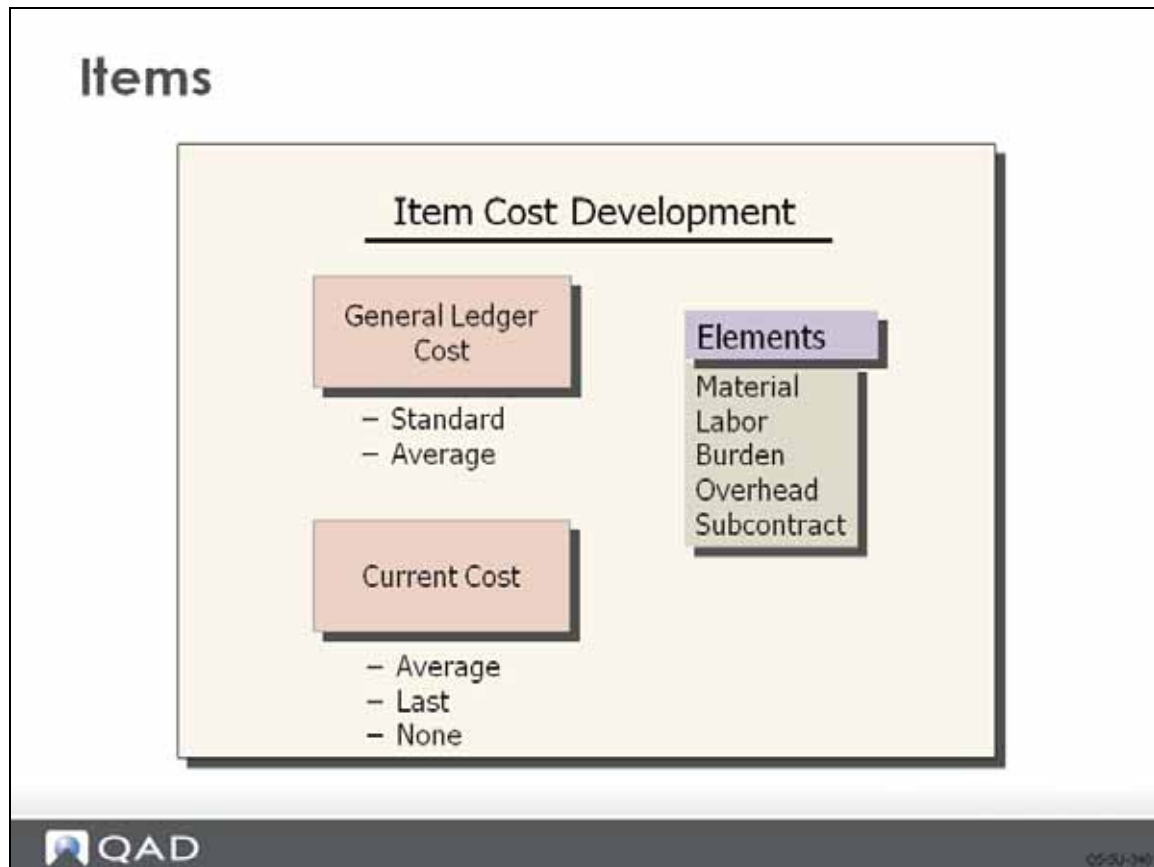
Enter item information for every item you use or produce. Item Master Data defaults to all sites in an entity. Later in the course, you learn that many attributes of an item can be different at each site.

An item number identifies every item. This item number is the same for all sites, as is some of the other identifying information, such as product line, unit of measure, and group and type.

In Item Master Maintenance (1.4.1), you enter inventory, planning, and cost data. The slide shows the basic information recorded in each of these areas.

You can also use separate functions to add or maintain item data, inventory data, planning data, and cost data. This feature lets different functional areas such as production planning and cost accounting to have update access to their data only.

Item Cost Development



The cost of a manufactured item can be calculated based on its standard bill of material and routing. Depending upon the BOM and routing, costs can be both this-level and lower level.

The slide shows that an item has two cost sets: GL and current. The GL cost set has either a standard or average costing method. The current cost set is determined by the average or last cost of the item or it is maintained manually (setting = none). Both the GL and current cost sets are split into five standard cost categories and elements: material, labor, variable burden, fixed overhead, and subcontract.

In the example in this chapter, you see how these cost sets and elements organize item costs.

Terminology

Average Costing

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 can be used for valuation as a GL cost or for information only as a current cost.

Bill of Material (BOM)

A listing of all subassemblies, components, and raw materials of a parent assembly with the quantity of each required to make one parent assembly. A BOM is also called a product structure or formula. The master production schedule uses the BOM to determine items for which purchase requisitions and production orders must be released.

This-Level and Lower-Level Costs

This-level costs are the costs to either obtain or produce an item. Thus, a purchased item has this-level material cost, but it has no lower-level costs. Lower-level costs represent costs that are added at prior stages of manufacturing.

Product Structures

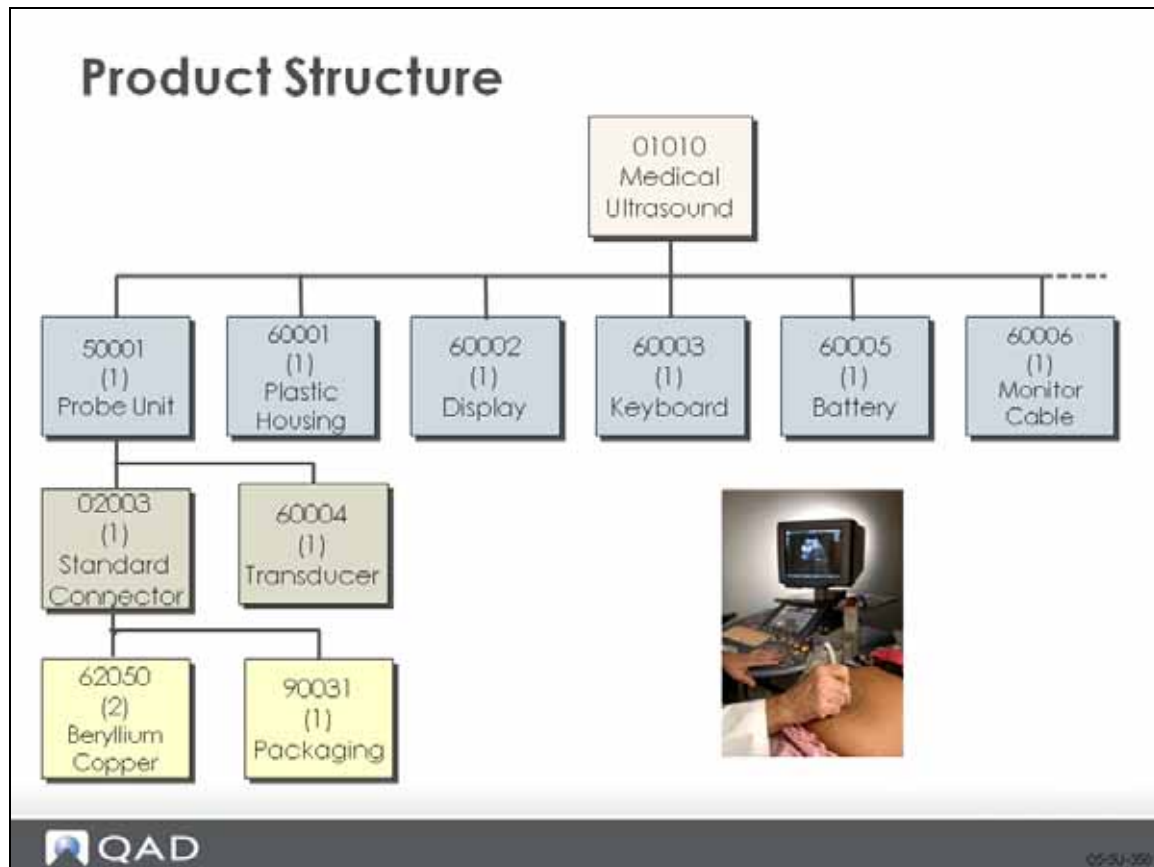
Product structures are associated with discrete items and identify the quantity of each component required to manufacture one unit of an item, expected scrap percentage, and the operation where the item is required. Product structures are often referred to as bills of material.

Formulas

Formulas identify ingredient usage as a quantity per batch or percent of batch. These formulas are vital to the planning process. In QAD EE, you define these relationships in Formula Maintenance. Formulas are sometimes referred to as recipes.

In general, product structures and formulas work in the same way, and both are referred to as bills of material (BOMs).

Parent/Component Relationships



The system uses BOMs, each a collection of parent/component relationships, for the planning and control of manufacturing. This slide illustrates the bill of material for the medical ultrasound (device 01010). The BOM shows three levels in the product structure below the end item 01010, the medical ultrasound.

- Not all level 1 components are shown; several more are required to build the end item.
- The probe unit has two components: a standard connector and a transducer.
- The standard connector also has two components.

Alternate Product Structure or Formula

Different formulas for product different batch sizes or alternate product structures used in different circumstances require multiple BOMs for the same item. To use multiple BOMs for the same item, add a BOM code in Product Structure Code Maintenance or Formula Code Maintenance. Then use this BOM code as the parent in Product Structure Maintenance or Formula Maintenance. A BOM code uniquely identifies a product structure or formula.

The normal situation is to have the BOM code be the same as the item number. When several alternate structures are available, they are given other identifiers. You can link your most frequently used alternate BOM to the item number in Item Planning Data Maintenance.

Example

In this example, QMI's Manufacturing Department:

- Sets up a product line for its ultrasound components
- Selects the current cost method
- Defines several codes to be associated with a defined item
- Defines one of the component items, which is a purchased item
- Defines the product structure of a medical ultrasound unit, which shows the relationship between the parent item and its components (quantity required and routing operation)

Additionally, you see how current costs are calculated at QMI.

Set Up Product Lines

Example: Product Lines

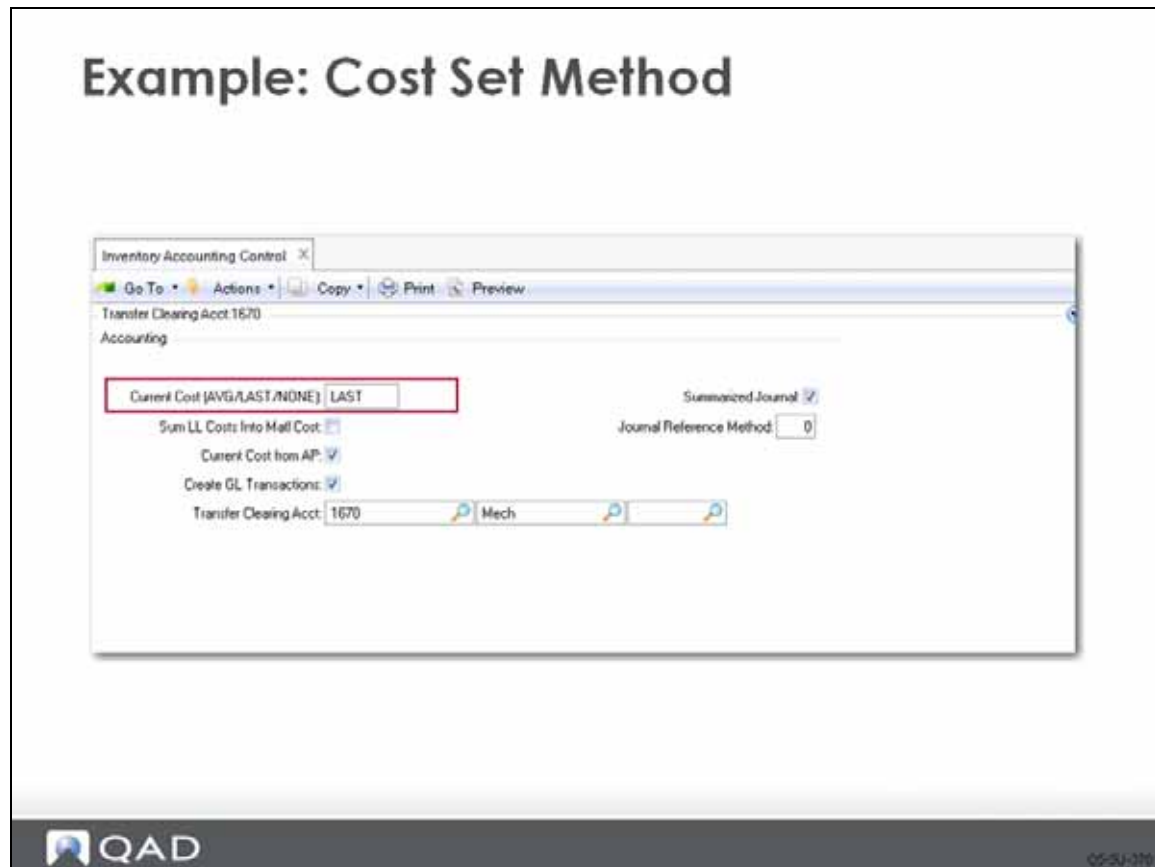
The screenshot shows the 'Product Line Maintenance' window. At the top, there's a title bar and a menu bar with 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. Below the menu bar, 'Product Line: 10' is selected. The 'Tax Class' and 'Default Sub Account' are also visible. The main area shows 'Product Line: 10' and 'Description: Finished Goods'. Below this, 'Taxable' is checked. There are input fields for 'Tax Class', 'Default Sub Account', and 'Default Cost Center', each with an 'Override' button. At the bottom, there's a section for 'Inventory Accounts' with a table of account codes and descriptions.

Inventory Accounts	
Inventory Acct: 1500	Mech
Inv Discrep Acct: 5900	Mech
Scrap Account: 6000	Mech
Cost Revalue Acct: 6100	Mech

QMI's Manufacturing Department has set up a product line 10 with the description Finished Goods. The sales and operations of all ultrasound components are planned, reported, and analyzed based on this product line. Additionally, the inventory accounts set up in Product Line Maintenance (1.2.1) track costs.

Note Once your cursor is in the bottom frame (Inventory Accounts) if you continue to click Next, the system displays four more frames of account code data. These accounts default from Domain/Account Control (36.9.24) and are accepted as is.

Select Current Cost Method



QMI uses a standard cost method for the GL cost set, and it tracks its actual costs in the current cost set. The method of updating the current cost set is selected in Inventory Accounting Control (36.9.2). QMI uses the method Last, so that the last or most recent cost of an item becomes the current cost.

Additional Notes

Current Cost from AP

Optionally, you can also update the current cost each time an AP voucher transaction is completed for the item. This feature uses the supplier invoice amount to update the current cost.

Create GL Transactions

Create GL Transactions is selected unless you are using the periodic method of inventory accounting. In periodic inventory accounting, the period ending inventory is based on the cost of beginning inventory plus purchases minus sales. If inventory is manually created, you do not have to create GL entries.

Note Periodic inventory accounting is essentially an obsolete concept. Only the smallest business could manage with this technique. This financial inventory method gives only the value of the inventory, and only at period end. If you wanted to know how much of an item you had on hand, you would need to do a physical inventory count.

Update Inventory Control

The screenshot shows the 'Inventory Control' window with the following fields and options:

- Inventory Control** (Window Title)
- Go To**, **Actions**, **Copy**, **Print**, **Preview**, **Attach** (Menu Bar)
- Default Site:** 10-100
- Inventory Count Parameters** (Section Header)
- Tolerance From Qty On Hand or Annual Usage:** Qoh (Dropdown)
- Issue Days:** 5 (Text Field)
- Default Site:** 10-100 (Text Field with Search Icon)
- Item Tolerances:** (Section Header)
- Class A:** 3.00% (Text Field), 0.00 (Text Field)
- Class B:** 4.00% (Text Field), 0.00 (Text Field)
- Class C:** 5.00% (Text Field), 0.00 (Text Field)
- All Others:** 5.00% (Text Field), 0.00 (Text Field)

The QAD logo is visible in the bottom left corner, and the text 'CS-SU-371' is in the bottom right corner.

Use Inventory Control (3.24) to set other non-financial inventory parameters. Use it to set the default site to 10-100. This action fills the site field on many transactions and saves you some effort.

Set Up Item Status Codes

The image displays two overlapping screenshots of the 'Item Status Code Maintenance' window in QAD software.

Left Screenshot (ACTIVE):

- Window Title: Item Status Code Maintenance X
- Buttons: Go To, Actions, Copy, Print, Preview, Attach
- Item Status: ACTIVE
- Description: ACTIVE
- Restricted Transactions: A vertical list of 10 empty dropdown menus.

Right Screenshot (OBS):

- Window Title: Item Status Code Maintenance X
- Buttons: Go To, Actions, Copy, Print, Preview, Attach
- Item Status: OBS
- Description: Obsolete
- Restricted Transactions: A vertical list of 10 dropdown menus. The first four are populated with the following values:
 - ADD-FC
 - ADD-PO
 - ADD-WO
 - ADD-SO
 The remaining six dropdowns are empty.

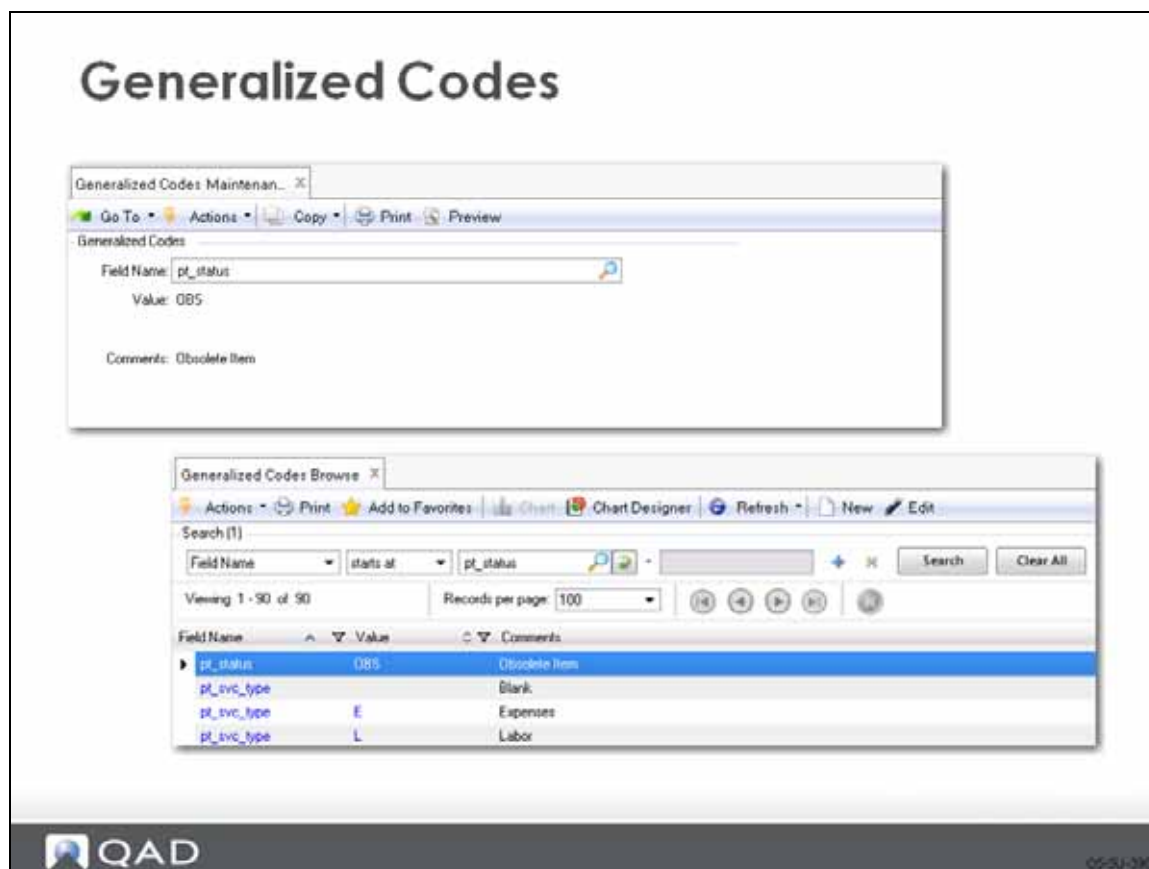
The QAD logo is visible in the bottom left corner of the interface, and the text 'CS-SU-300' is in the bottom right corner.

Item status codes are an optional, but useful feature. The codes are designed to relate to an item's life cycle. This example shows two codes: one for active items and one for obsolete items.

The first image displays the Active code and the second displays the code OBS for obsolete items. For the obsolete item status, several inventory transaction codes are prohibited. The codes are selected by clicking the lookup icon. The selections in the example prevent users from adding a forecast, a purchase order, sales order, or work order for any item with the status code OBS.

Item status codes are user-defined and you can set up as many as needed. Used with inventory status codes, they offer powerful control for your items.

Set Up Generalized Codes



After you create item status codes, you can choose to enforce the use of only those codes that you created. This selection is done using Generalized Codes Maintenance (36.2.13), which lets you control the values that can be specified in fields with user-defined codes.

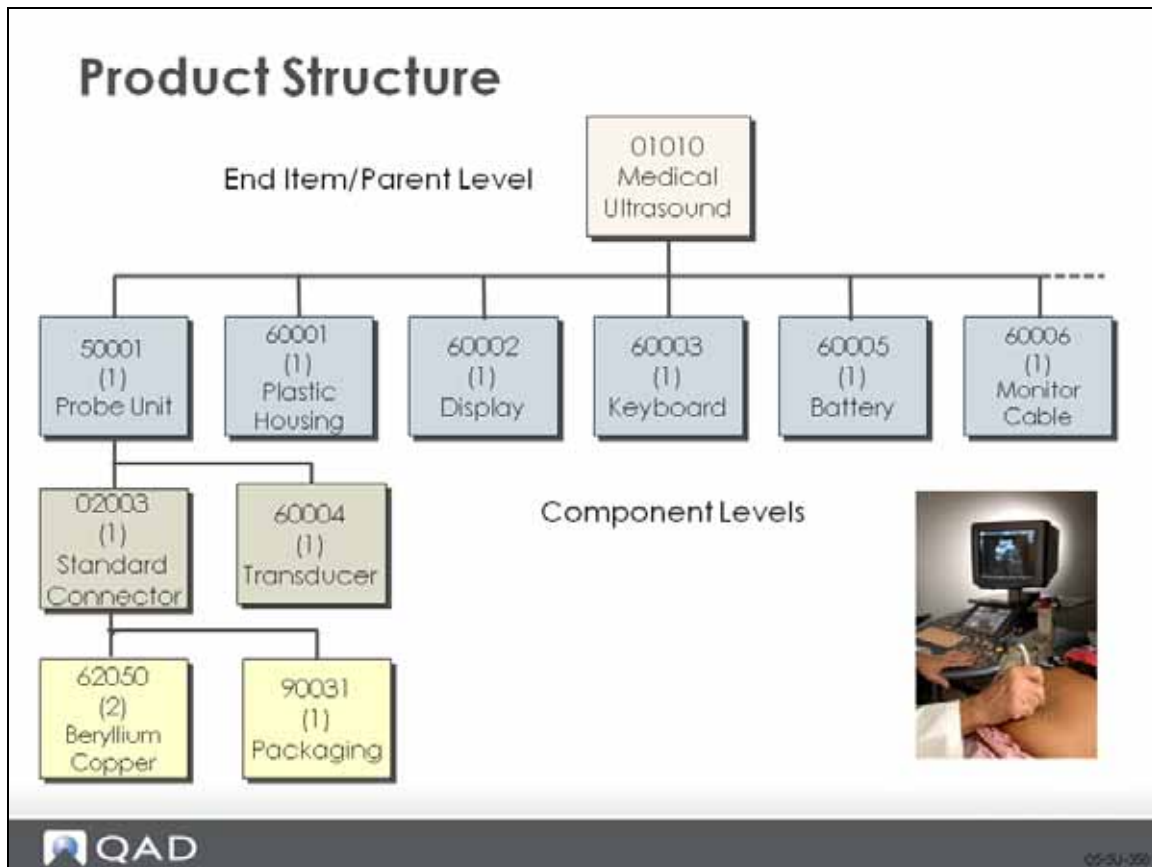
To set up code validation, you need the name of the field where you want the validation to occur. To find out its name, go to the program where it is used and press Next through a record until your cursor is in the field. Then press the key combination of Ctrl+F. A window displays all the information about your current context, including the technical field and program name.

In this example, you would go to Item Master Maintenance (1.4.1), click Next until your cursor is in the Item Status field, and then press Ctrl+F. A window displays information including the name for that field: pt_status. You can find the name of any active field in the same way.

Create the list of acceptable codes for Item Status by entering the pt_status for Field Name in Generalized Codes Maintenance; then click Next. In the field labeled Value, enter the acceptable code value and click Next. Then enter a description for the code and click Next. You can enter as many codes as you want. When done, you can check your work by using the browse.

Users can see the codes that have been set up by using the lookup on the Status field in Item Master Maintenance.

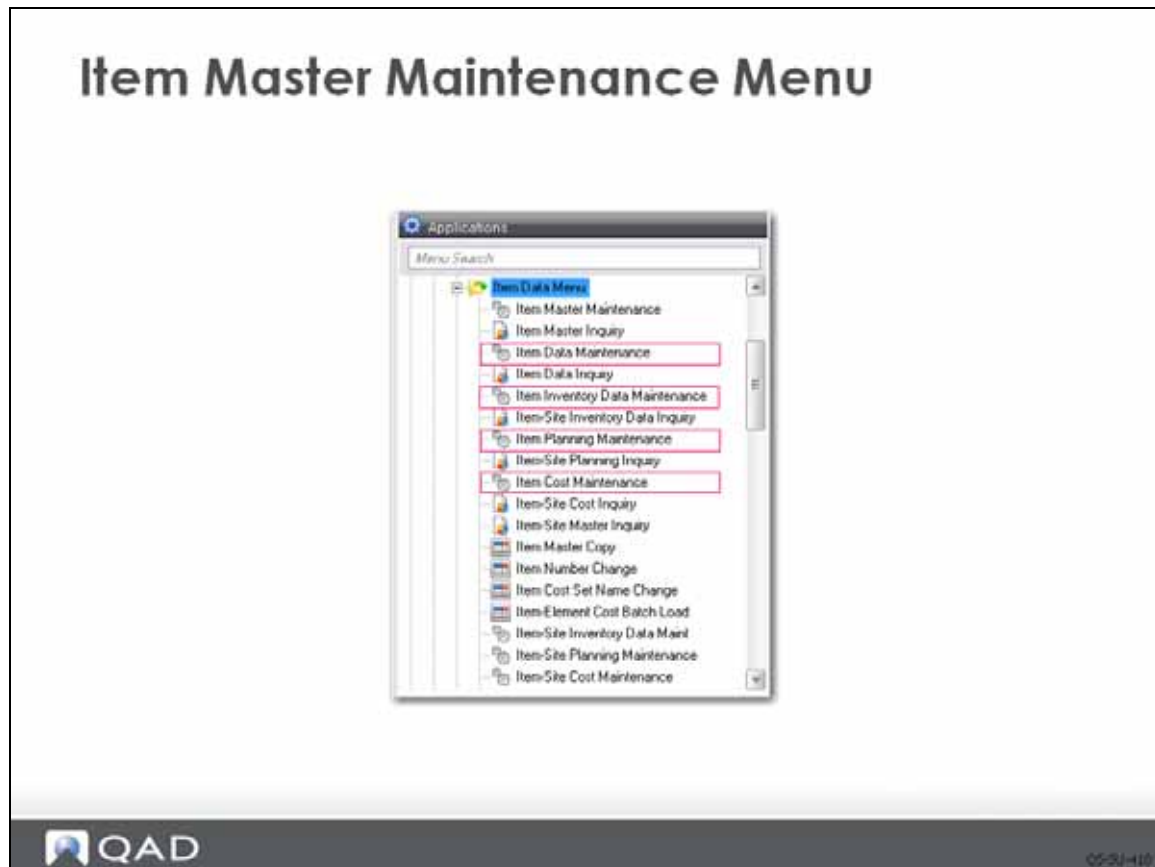
Example: Item Information



The product structure of the medical ultrasound is shown again in this slide. In this example, you see how QMI placed the parent item in the product structure.

Note In the exercise, you set up two additional items. All the items belong to product line 10.

Item Master Maintenance Menu



You use Item Master Maintenance (1.4.1) to add the information for QMI's medical ultrasound and its components. This function, at the top of the menu shown in the slide, is a series of linked frames labeled:

- Item Data
- Item Inventory Data
- Item Planning Data
- Item Cost Data

As highlighted in the menu, each of these frames can be accessed with its own separate menu selection. This functionality is often useful for job separation. You can use system security to limit access to a particular function to those users authorized to add or maintain that specific data.

Note In the exercise, it may be more convenient to use one of the separate functions.

The menu also has separate functions for the same data at different sites. This training guide uses only one site, 10-100. If additional sites are used, each item can have different data at each site.

Example: Item Data and Inventory

The screenshot displays the QAD Item Master Maintenance window. The 'Item' tab is selected, showing the 'Item Data' and 'Item Inventory Data' frames. The 'Item Data' frame contains fields for Item Number (01010), Description (Medical Ultrasound), Unit of Measure (EA), Product Line (10), Item Type (FINGOOD), Status (ACTIVE), Design Group (PRODMGMT), Group (Medical), Drawing (F-10000A23), Revision (D), Drawing Loc (B2-1), Size (10), and Price Break Category. The 'Item Inventory Data' frame contains fields for ABC Class (A), Lot/Serial Control (S), Site (10-100), Location (010), Location Type, Auto Lot Numbers, Lot Group, Article Number (F10000-0123), Average Interval (90), Cycle Count Interval (90), Shelf Life, Allocate Single Lot, Key Item, PO Receipt Status, W/O Receipt Status (N-Y-N), Active checkboxes, and Memo Order Type.

In Item Master Maintenance, QMI enters item number 01010, a description, and the item unit of measure and in the Item Data frame, product line 10. Remember, each item is assigned to only one product line. Enter the status code Active in the Status field. UoM and product line are the only fields (other than the item number) that the system requires. UoMs are critical to both inventory control and costing. Carefully consider how you plan to use them.

Note Other fields may be required when generalized codes validation has been added and blank is not an allowed value.

Important Item Type, Item Status, and Item Group are optional and user defined. If you choose to use them, plan carefully since these codes offer additional capability in sorting browses, reports, and inquiries.

In the Item Inventory Data frame, enter site 10-100; this site appears as the default. In the Location field, enter 010, which appears as the default inventory location for this item. The default site and location can be overridden on any transaction by the user by simply typing over the default value and entering the site and or location to use for the current transaction.

Set the ABC Class code to A. This code is used for ABC analysis of inventory, managing inventory count tolerances, and cycle counting. After the system has some data and history to work from, it can compute the ABC class code.

When you click Next on the Item Inventory Data frame, the Shipping Data frame appears. Leave this data blank for the time being and click Next to advance to the Item Planning Data frame.

Item Shipping Data

Item Shipping Data

Corp Comm Code:		
Ship Weight:	5.61	KG
Freight Class:		
Net Weight:	5.58	KG
Volume:	9.00	CF

02-20-421

Example: Item Planning

Example: Item Planning

Item Master Maintenance

Go To Actions Copy Print Preview Attach

Item Planning Price

Planning

Item

Item Number: 01010 Description: Medical Ultrasound

Unit of Measure: EA

Item Planning Data

Mstr Sched ☒

Plan Orders ☒

Time Fence: 0

MRP Required ☐

Order Policy: POQ

Order Qty: 0

Batch Qty: 0

Order Period: 7

Safety Stock: 0

Safety Time: 0

Reorder Point: 0

Revision: 0

Issue Policy: ☒

Buyer/Planner: 1-01

Supplier:

PO Site:

Purchase/Manufacture: M

Configuration Type:

Inspect:

1.0 Ins LT: 0 Cum LT: 0

Mfg LT: 4 Pur LT: 0

ATP Enforcement: NONE

Family ATP:

ATP Horizon: 0

Run Seq 1:

2:

Phantom: ☐

Minimum Order: 1

Maximum Order: 5

Order Multiple: 1

Op Based Yield:

Yield Percent: 100.00%

Run Time: 17.000

Setup Time: 7.500

EMT Type: NON-EMT

Auto EMT Processing:

Network Code:

Routing Code: U-001

BOM Formula:

Replenishment Method: Orders

QAD

CS-3U-430

QMI's Material Planning Department uses item planning data to determine how and when to replenish inventory. The planners want to let material requirements planning (MRP) automatically create planned orders for this item, based on demand, so the Plan Orders field is selected. When Plan Orders is selected and a value is specified in the Order Policy field, as it is in this example, MRP generates planned purchase and work orders to satisfy net requirements for this item. Since this is an end item, Mstr Sched is also checked.

Important The Mstr Sched field is normally checked only for items that need forecasting or other planning. These are usually the end items the company sells. Reports, inquiries, and browses can be selected for master schedule items only, providing an excellent high-level filter.

The Order Policy determines the rules for planning orders. The ordering rule QMI applies to item 01010 is Period Order Quantity (POQ). This means that MRP calculates demand for this item over the number of calendar days specified as the Order Period (7 in this example) and creates one order to satisfy all demands in a seven-day period.

Note Order policies and how they are used to calculate order quantities are covered later.

Another key field is Purchase/Manufacture. Item 01010 is manufactured, indicated by M. The manufacturing lead time is four days, the number of days it takes to complete the manufacturing cycle for this item. The Purchase/Manufacture field defines the source for this item at this site. Its other values and how they work are covered in more detail later in the course.

Example: Item Cost Data Frame

Example: Item Cost Data Frame

Item Master Maintenance

Go To Actions Copy Print Preview Attach

Item: Planning Price

Price Cost

Item

Item Number: 01010 Description: Medical Ultrasound

Unit of Measure: EA

Totals

Totals:	368.41443	1.226.18	1.595.59443	☐	12/02/11	☐

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

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	1.226.18	1.226.18	☒	Material	☐
Labor	368.27404	0.00	368.27404	☒	Labor	☐
Burden	1.14039	0.00	1.14039	☒	Burden	☐
Overhead	0.00	0.00	0.00	☒	Overhead	☐
Subcontr	0.00	0.00	0.00	☒	Subcontr	☐

QAD CS-3U-440

The item cost section is divided into three sections: price, general ledger cost, and current cost. The three frames appear sequentially with repeated clicks of the Next button.

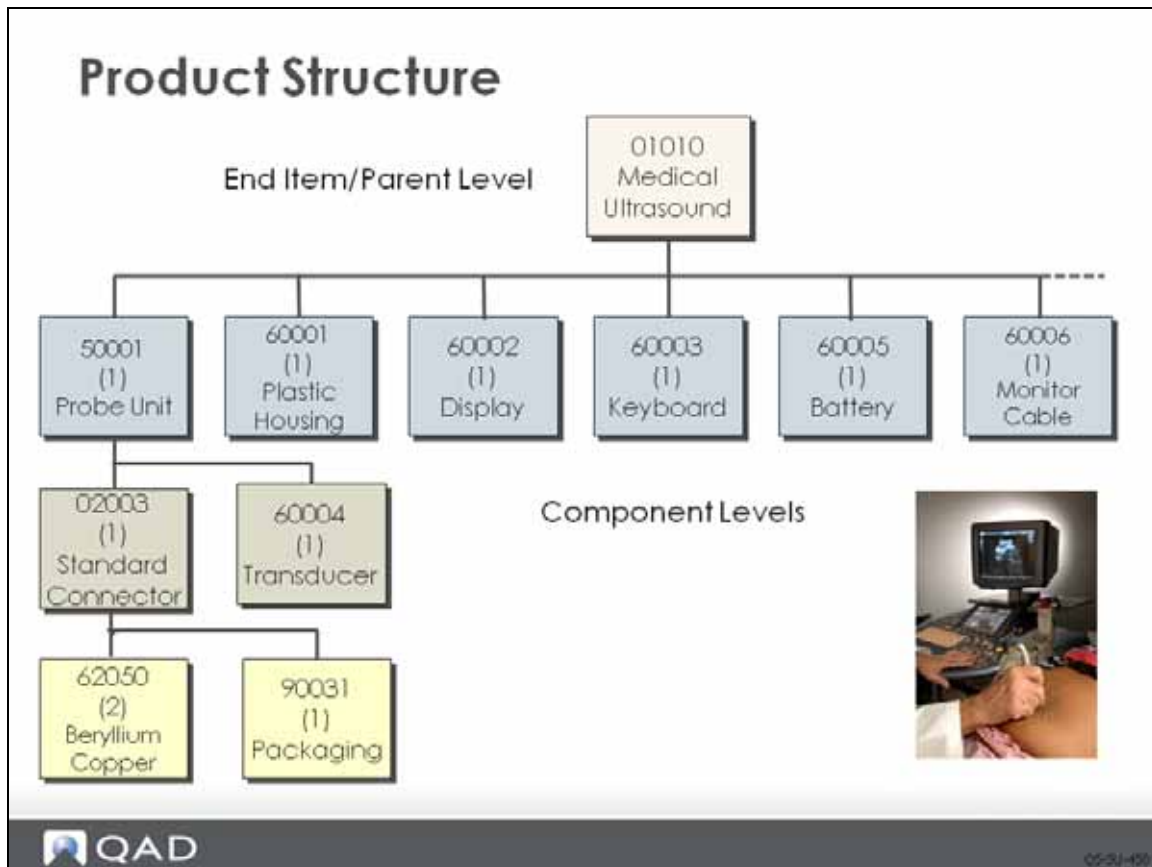
In the first frame, QMI's Marketing Department has determined a price of \$2,500 for each unit.

Two cost frames display: GL costs display first and then current costs. This example focuses on the Current Cost Data frame.

For manufactured items, material costs are calculated based on actual costs recorded in the system. For a purchased item, the material cost is the purchase cost. As a purchased item, it has no lower-level manufacturing-related costs, only this-level costs.

Note Two cost set frames display in Item Master Maintenance. The one shown here is the standard set; another frame displays GL costs. The relationship between cost sets is explored in a later chapter.

Set Up Product Structure



Look at the product structure for 01010 again.

This example continues by showing how QMI added component items to the parent, 01010.

Set Up Product Structure

Example: Set Up Product Structure

Product Structure Maintenance

Top Level Parent: 01010 | New | Save | Product Structure | Component | Delete | Levels: 1

Items | Product Structure Codes | **Product Structure Maintenance**

Parent: 01010 Medical Ultrasound

Component: 50001 Probe Unit - 10 Mhz

Reference:

Start Date: End Date:

Quantity: Unit of Measure: EA

Structure Type: Sequence Number:

Remarks: Forecast Percent:

Scrap: Option Group:

Lead Time Offset: Process:

Operation:

Component	Description	Unit of Measure	Reference	Quantity	Start Date	End Date	BOM Code
01010	Medical Ultrasound	EA		1			01010
50001	Probe Unit - 10 Mhz	EA		1			50001
02003	Standard Connector	EA		1			02003
60004	Transducer - 10 Mhz	EA		1			60004

QAD CS-3U-460

In Product Structure Maintenance (13.5), you click New to begin creating a product structure. After you select the parent item from the list of items by double-clicking, you can begin adding components. You add them the same way by finding them in the list and double-clicking to add them to the structure.

After the item is added, you can double-click again to display the data associated with the component item in the structure (shown in the illustration). You can modify the Quantity Per field by entering the number of the component item required to make one of the parent item. You can also add the operation number from the routing where this component is used. This item is used at operation 10. When data entry is complete for the first component, double-click the next component item you want to modify.

Component Scrap. The field labeled Scrap can be used to account for component scrap. For example, the beryllium copper component in the product structure is a very small item that is easily dropped and lost and is sometimes found to be damaged. In this case, based on actual experience, you can choose to add a small scrap value to the product structure at this operation. Later, you see how the planning systems adjust the purchase requirements (and the item cost) to account for this loss.

Effective Dates. The elements that make up a product structure have a range of effective dates, so new components can be phased in and others phased out. The Start Date defaults to the system date. By leaving the End Date blank, the item remains effective until that date is changed.

Review Product Structure Inquiry

Example: Product Structure Inquiry

Product Structure Inquiry

Go To Actions Copy Print Preview Attach

Parent Item/BOM Code 01010 Output PAGE

Parent Item/BOM Code 01010 Medical Ultrasound EA

As Of: 5/25/2010 Levels: Rev: PCO Number: ID: Domain: Output: PAGE

Level	Component Item	Description	Quantity	Per	UM	Ph	T	Iss
Parent	01010	Medical Ultrasound			EA			
1	50001	Probe Unit - 10 Mhz	1.0		EA			
..2	02003	Standard Connector	1.0		EA			
..1	62050	Beryllium Copper	0.0001		EA			
..3	62050	Discrete PD	0.0001		EA			
..3	90031	Packaging	2.0		EA			
..2	60004	Transducer - 10 Mhz	1.0		EA			
1	60001	Durable Plastic Housing	1.0		EA			
1	60002	Display / Readout	1.0		EA			
1	60003	Keyboard	1.0		EA			
1	60005	Battery	1.0		EA			
1	60006	Monitor Cable	1.0		EA			
1	60007	Movable Cart	1.0		EA			
1	60008	Printer	1.0		EA			
1	60050	Base Unit / CPU	1.0		EA			
1	90093	Shipping Carton	1.0		EA			

13.6 Product Structure Inquiry bmpsinq.p

QAD CS-31-460

Once the product structure is defined, it can be reviewed in Product Structure Inquiry (13.6). The illustration shows the request setup and the inquiry output.

The parent item, the ultrasound, is listed first, and the component items are listed below it using an indented structure that indicates the level of the item in the product structure.

You can quickly see key information, such as unit of measure for each item and the quantity required to make one complete device.

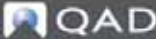
Review

Review

3

Product Definition

- **Product line**
Product Line Maintenance
- **Current cost method**
Inventory Accounting Control
- **Item data**
Item Master Maintenance
- **Product Structure**
Product Structure Maintenance

 QAD

CS-3U-490

In this chapter, you saw how products are defined in QAD EE:

- Product lines are set up in Product Line Maintenance. They provide inventory accounts for an item so that costs can be tracked.
- Current costs for items are calculated based on the setting in Inventory Accounting Control (Last, Average, None).
- Item data is entered by area (general, inventory, planning, and cost data).
- Product structure is defined in Product Structure Maintenance (or Formula Maintenance) indicating the quantity per and routing operation where the item is used.

Exercise 3

Set Up a Product Line

Important Remember to check the screen shots in the example if you are unsure how to fill in the data fields for these activities.

- 1 Use Product Line Maintenance (1.2.1) to create a product line for the medical ultrasound quality check.

Make the following entries (accept all other default values):

Field	Data
Product Line	15; click Next
Description	Quality

Click Next slowly six times.

Review the account numbers. Where did this default data come from?

Accept the default accounts and click Next to update the record.

When the product line is highlighted, click Back. Product Line Maintenance (1.2.1) closes.

Review Control Settings

- 2 Use Inventory Accounting Control (36.9.2). Accept the defaults, but make the following entry:

Field	Data
Current Cost	LAST; click Next

- 3 In Inventory Control (3.24), click Next. Verify the following entry:

Field	Data
Default Site	10-100

Click Back to exit.

Define Item Status Codes

- 4 Use Item Status Code Maintenance (1.1.5) to set up two status codes.
 - a In the Item Status field, enter ACTIVE, and click Next (do not define any restricted transactions for Active).
 - b In the Item Status field, enter OBS, and click Next until the Restricted Transactions fields appear.
 Select ADD-SO from the list of restricted transactions.
 Click Back until you exit Item Status Code Maintenance.
 Why would you want to prevent users from adding an obsolete item to a sales order?

Review Item Data

- 5 Open Item Master Maintenance (1.4.1) to verify that item 01010 was created correctly.

In the Item Number field, enter 01010, and click Next twice.

Verify the following fields in the Item Inventory Data frame:

Field	Data
Site	10-100
Location	010

Click Next until the Item Number is highlighted. Then click Back to exit Open Item Master Maintenance.

6 Open Item Planning Maintenance (1.4.7) to review the planning data for the end item.

In the Item Number field, enter 01010, and click Next.

Verify the following information:

Field	Data
Mstr Sched	Checked (yes)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
Purchase/Manufacture	M
Minimum Order	1
Order Multiple	1

Use default values for all other fields.

Click Next until the Item Number is highlighted. Then click Back to exit Item Planning Maintenance.

Define Component Items

Most of the necessary component items were provided for you. In this exercise, you add two more items that are used in later exercises.

7 Open Item Master Maintenance (1.4.1) to add two component items to your database.

Field	Data
Item Number	60017; click Next
Unit of Measure	EA
Description	Mouse Pad; click Next
Prod Line	10
Item Type	COMP
Status	ACTIVE
Group	Medical; click Next
ABC Code	A
Location	020; click Next twice
Supplier	10S1002
Purchase/Manufacture	P; click Next
Price	3.99; click Next
Material	0.49; click Next twice

Field	Data
Item Number	60018; click Next
Unit of Measure	EA
Description	Dust Cover; click Next
Prod Line	10
Item Type	COMP
Status	ACTIVE
Group	Medical; click Next
ABC Code	A
Location	020; click Next twice
Supplier	10S1002
Purchase/Manufacture	P; click Next
Price	9.99; click Next
Material	2.49; click Next twice

Item Inventory Data

- 8 Open Item Inventory Data Maintenance (1.4.5) to modify the site associated with some of the components of 01010 so that it is the default site 10-100.

Enter 50001 in the Item Number field and click Next.

Field	Data
ABC Class	B
Site	10-100
Location	020

Click Next until the Item Number is highlighted.

Enter 02003 in the Item Number field and click Next.

Field	Data
ABC Class	C
Site	10-100
Location	010

Click Next until the Item Number is highlighted.

Enter 62050 in the Item Number field and click Next.

Field	Data
ABC Class	A
Site	10-100
Location	020

Click Next until the Item Number is highlighted.

Enter 90031 in the Item Number field and click Next.

Field	Data
ABC Class	C
Site	10-100
Location	020

Item Planning Data

- 9 Open Item Planning Maintenance (1.4.7) and quickly scan the data associated with the component items used to produce the medical ultrasound unit (01010).

Note which items are purchased or manufactured.

In the Item Number field, enter 01010 and click Next. Verify the following information:

Field	Data
Mstr Sched	Checked (yes)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	M
Mfg LT	0
Minimum Order	1
Order Multiple	1

Click Next. The Item Number is highlighted.

Repeat the process and validate the information for each of the following item numbers.

Item Number 50001

Field	Data
Mstr Sched	Unchecked (no)
Plan Orders	Yes
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	M
Mfg LT	2
Minimum Order	0
Order Multiple	0

Item Number 02003

Field	Data
Mstr Sched	Checked (yes)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
PO Site	<blank>

Field	Data
Purchase/Manufacture	M
Mfg LT	1
Minimum Order	0
Order Multiple	1000

Item Number 62050

Field	Data
Mstr Sched	Unchecked (no)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	10
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	3
Minimum Order	1
Order Multiple	1

Item Number 90031

Field	Data
Mstr Sched	Unchecked (no)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	2
Minimum Order	1,000
Order Multiple	100

Item Number 60004:

Field	Data
Mstr Sched	Unchecked (no)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	2
Minimum Order	0
Order Multiple	0

Item Number 60001:

Field	Data
Mstr Sched	Unchecked (no)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	5
Minimum Order	0
Order Multiple	0

Item Number 60002:

Field	Data
Mstr Sched	Unchecked (no)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	5
Minimum Order	0
Order Multiple	0

Item Number 60003:

Field	Data
Mstr Sched	Checked (yes0
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	5
Minimum Order	0
Order Multiple	0

Item Number 60005:

Field	Data
Mstr Sched	Unchecked (no)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P

Field	Data
Pur LT	1
Minimum Order	0
Order Multiple	0

Item Number 60006:

Field	Data
Mstr Sched	Unchecked (no)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	2
Minimum Order	0
Order Multiple	0

Item Number 60007:

Field	Data
Mstr Sched	Unchecked (no)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	2
Minimum Order	0
Order Multiple	0

Item Number 60008:

Field	Data
Mstr Sched	Unchecked (no)
Plan Orders	Checked (yes)
Order Policy	POQ
PO Site	<blank>
Order Qty	0
Purchase/Manufacture	P
Pur LT	5
Minimum Order	0
Order Multiple	0

Item Number 60050:

Field	Data
Mstr Sched	Unchecked (no)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	5
Minimum Order	5
Order Multiple	5

Item Number 90093:

Field	Data
Mstr Sched	Unchecked (no)
Plan Orders	Checked (yes)
Order Policy	POQ
Order Qty	0
PO Site	<blank>
Purchase/Manufacture	P
Pur LT	1
Minimum Order	0
Order Multiple	0

Define Parent/Component Relationships for Items

In this exercise, you use Product Structure Maintenance (13.5) to add the two new items to the parent/component relationships for the medical ultrasound.

- 10** Product Structure Maintenance initially displays all items. In the Items tab, double-click item 01010. Drag the lower frame up to view the component items already defined in the product structure. Note that Item 50001 is a parent item to 02003 and 60004.
- 11** Since there are over 200 items in the database, not all are displaying. To add items 60017 and 60018, specify Item Starts at 60017 in the top frame of the Items tab and press Enter.
Double-click item 60017 and it is added to 01010 structure. Do the same for 60018. Then click the Save icon at the top of the screen.
- 12** Double-click item 60017 in the lower frame and note that the upper frame is now showing the Product Structure Maintenance tab. After adding the item to the product structure, you can modify the quantity per and the operation where the item is used
Accept the default values.
- 13** Use Product Structure Inquiry (13.6) to review the product structure. Enter the item number in the Parent Item/BOM Code field. Click Next.
Make sure that the structure looks like the following example with the addition of 60017 and 60018. Note how the items that you added display in numerical order.

Exercise: Product Structure Inquiry

Product Structure Inquiry X

Go To Actions Copy Print Preview Attach

Parent Item/BOM Code: 01010 Medical Ultrasound EA

As Of: 5/25/2010 Levels: Rev: Output: PAGE

PCO Number: ID: Domain: Output: PAGE

Level	Component Item	Description	Quantity	Per	UM	Ph	T	Iss
Parent	01010	Medical Ultrasound			EA			
1	50001	Probe Unit - 10 Mhz	1.0		EA			
2	02003	Standard Connector	1.0		EA			
3	62050	Beryllium Copper Discrete PO	0.0001		r1			
3	62050	Beryllium Copper Discrete PO	0.0001		r1			
3	90031	Packaging	2.0		EA			
2	60004	Transducer - 10 Mhz	1.0		EA			
1	60001	Durable Plastic Housing	1.0		EA			
1	60002	Display / Readout	1.0		EA			
1	60003	Keyboard	1.0		EA			
1	60005	Battery	1.0		EA			
1	60006	Monitor Cable	1.0		EA			
1	60007	Movable Cart	1.0		EA			
1	60008	Printer	1.0		EA			
1	60017	Mouse Pad	1.0		EA			
1	60018	Dust Cover	1.0		EA			
1	60050	Base Unit / LPO	1.0		EA			
1	90093	Shipping Carton	1.0		EA			

13.6 Product Structure Inquiry bmpsiq.p

- 14 You can also use the Product Structure by Item Report (13.8.1) to review your work. Enter the item number in the Parent Item field. Click Next until the Product Structure by Item Report appears.

Product Structure by Item Report

Product Structure by Item Rep. x

QAD

Product Structure by Item Report
1005A

Level	Component Item	Reference	Description	Quantity	Per UM	Op Ph	T Iss	Start	Eff	End	Et
Parent	01010		Medical Ultrasound Rev: D		EA						
1	50001		Probe Unit - 10 MHz Rev: AA	1.0	EA						
.2	02003		Standard Connector	1.0	EA						
.3	62050	Operation 10	Beryllium Copper	0.0001	RL	10					
.3	62050	Operation 30	Beryllium Copper	0.0001	RL	30					
.3	90011		Packaging	2.0	EA						
.2	60004		Transducer - 10 MHz	1.0	EA						
1	60001		Durable Plastic Housing	1.0	EA						
1	60002		Display / Readout	1.0	EA						
1	60003		Keyboard	1.0	EA						
1	60005		Battery	1.0	EA						
1	60006		Monitor Cable	1.0	EA						
1	60007		Movable Cart	1.0	EA						
1	60008		Printer	1.0	EA						
1	60050		Base Unit / CPU	1.0	EA						
1	90093		Shipping Carton	1.0	EA						

End of Report

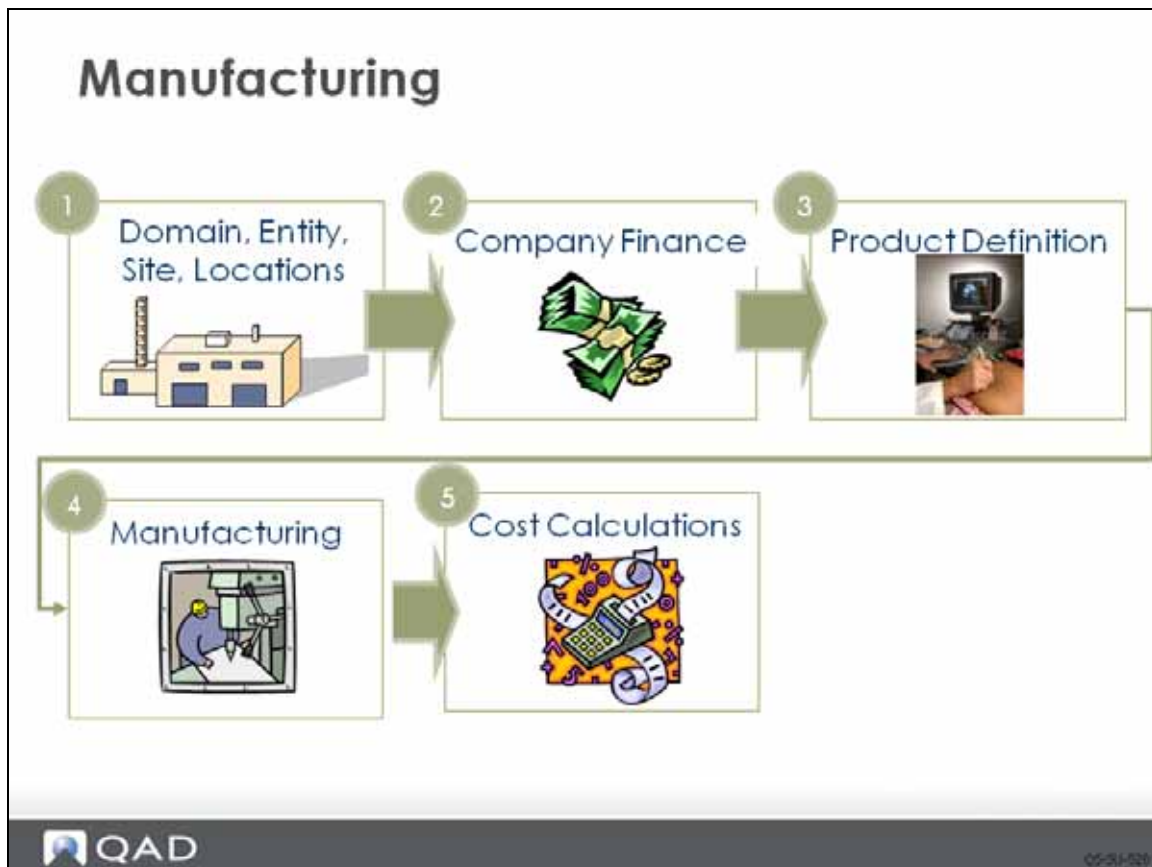
This view of the product structure also displays the operation number where the component is used. You can direct the report to your monitor by selecting PAGE in the Output field.

The operations are set up in the next section. When new items are created in manufacturing, the product structure and routing are developed together, so all the information is available to the person entering item data.

Chapter 5

Set Up Manufacturing Environment

Overview



Now that you have seen how to define a product in QAD EE, you now turn your attention to the manufacturing environment in which a product is built. This chapter describes basic elements required for manufacturing activities to take place, including shop calendars, departments, work center, machines, and routings.

Topics

Topics

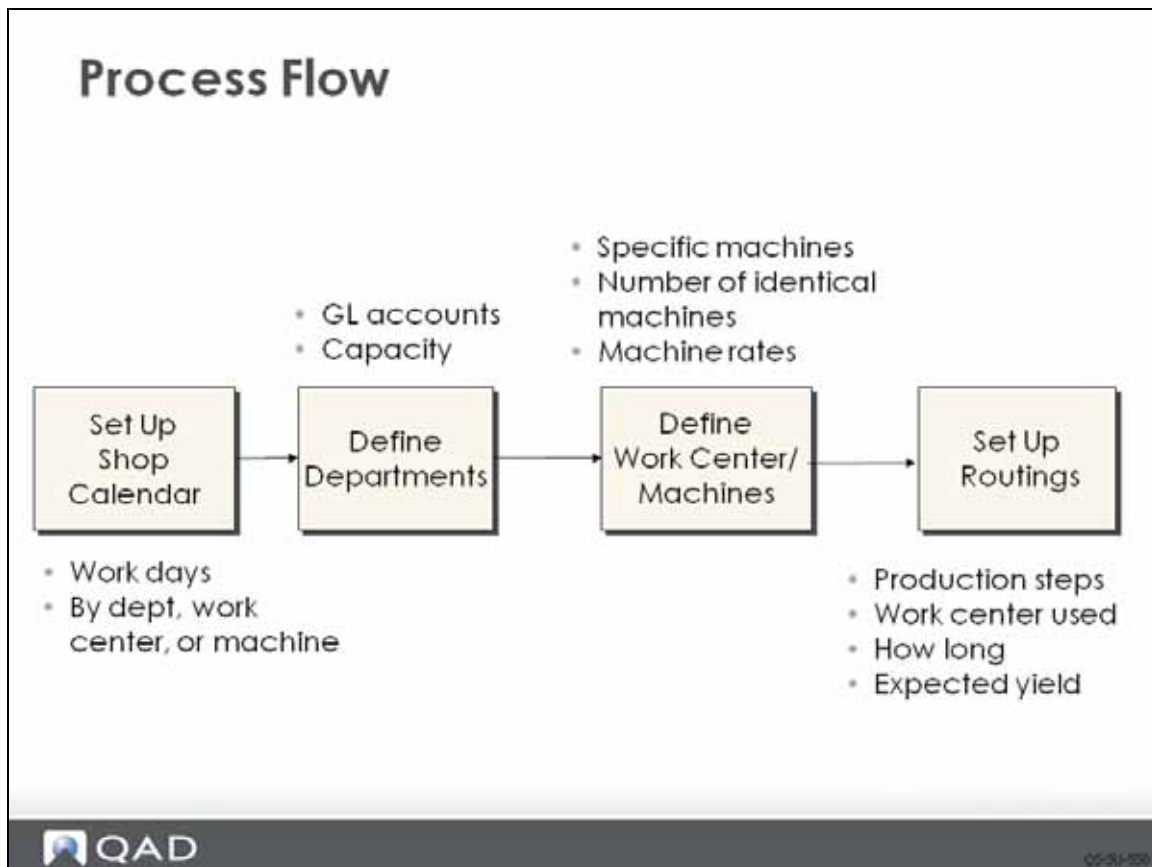
- Shop Calendar
- Departments and Work Centers / Machines
- Routings

Learning Objectives

Objectives

- Describe the information that a department provides
- Describe the information that a work center provides
- Describe the information that a routing provides
- Set up a shop calendar, department, work center, and routing

Key Concepts

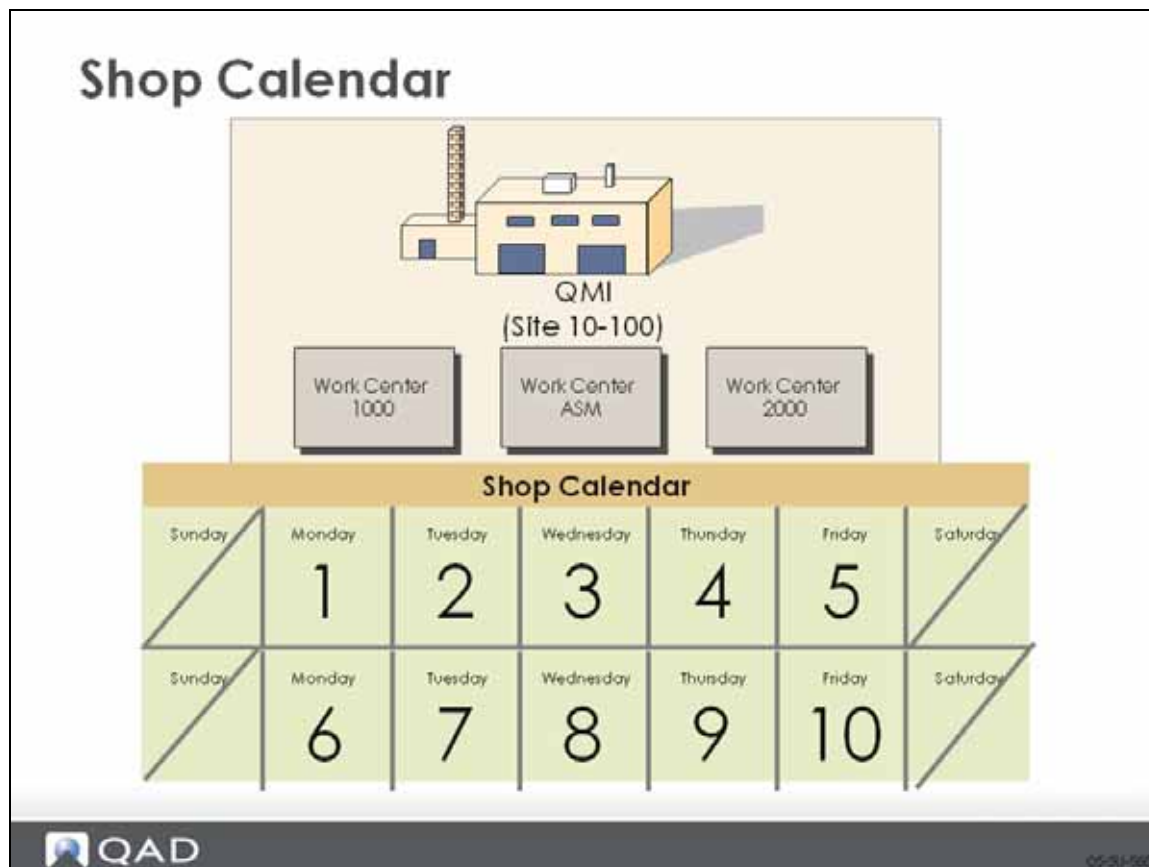


Once you have set up items in Item Master Maintenance, you identify where and how they are manufactured. You perform these tasks by:

- Setting up shop calendars
- Setting up manufacturing departments and work centers/machines
- Defining the manufacturing operations required to produce each of the items

The following pages follow the order shown in the process flow; the shop calendar is discussed next.

Shop Calendar



The shop calendar is required for planning, manufacturing, and distribution functions. The calendar indicates what days the plant is open and how many hours are worked each day. The calendar determines the hours a work center is available to do work. Capacity requirements planning also uses this information.

If the Work Day field is not checked on a particular day, an order cannot be due on that day. None of the planning functions in QAD schedules an order to be due on a non-work day.

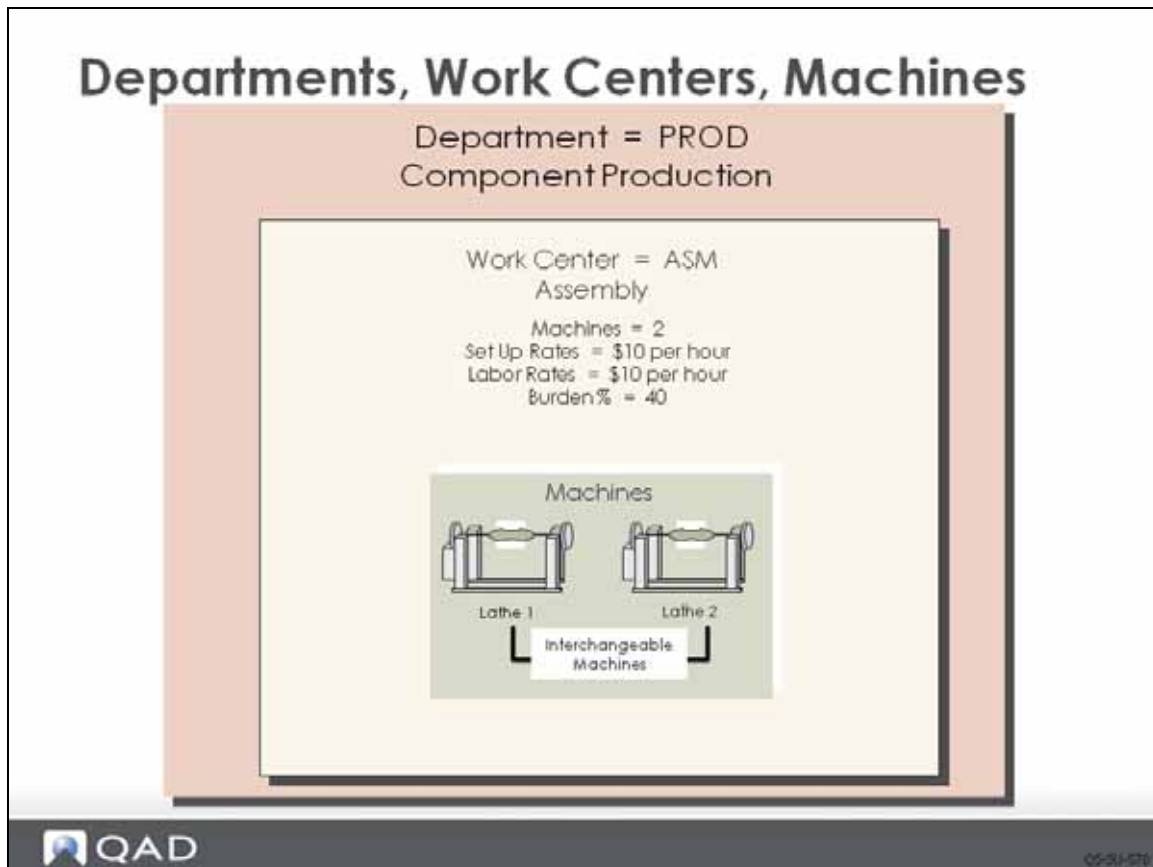
Calendar information is used to schedule:

- Start and due dates for MRP planned orders, master schedule orders, and work orders
- Operations for work orders and repetitive schedules
- The procurement or shipment of materials through association with suppliers and customers

Use Calendar Maintenance to maintain the default calendar for all sites. Use Holiday Maintenance to turn off a normal work day, that is, make it a non-work day for all work centers. Use Calendar Reference to modify a calendar for the short term. For example, add extra hours for a peak season, or indicate a two-week shutdown.

Calendars are also defined for work centers that have different schedules than the default calendar and can be defined for any machines within a work center that have different schedules.

Departments, Work Centers, Machines



Work areas in a manufacturing plant are defined in QAD EE using departments, work centers, and machines.

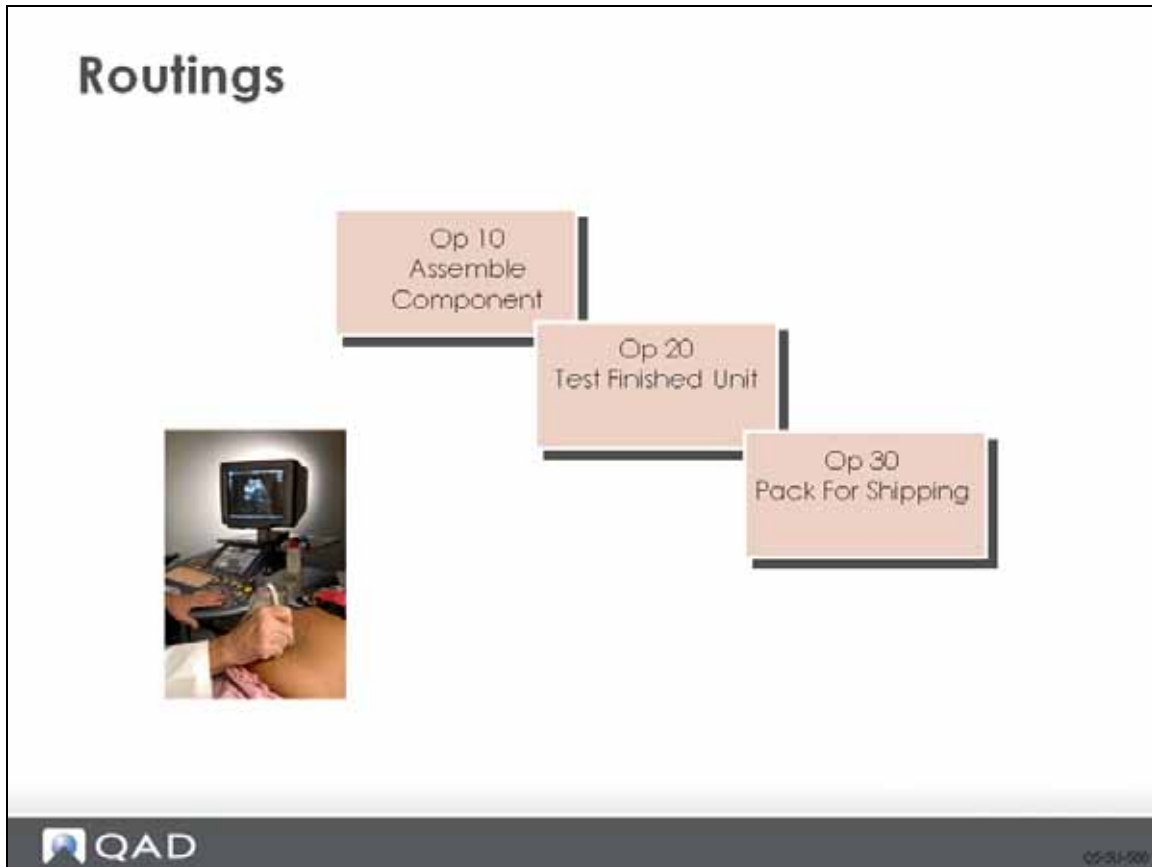
Departments. A manufacturing plant is split into departments for control purposes. Each production unit (work center) must belong to one, and only one, department. This grouping is used primarily for capacity planning and accounting. GL accounts are attached to each department. You define at least one department before you can enter work centers or routings.

Work Centers. A work center is a specific production unit within a department consisting of one or more people and/or machines. In QAD EE, work centers are the most basic units for operation scheduling, capacity requirements planning, and cost determinations for GL transactions. You must have at least one work center to set up routings and to report labor.

Machines. You can set up a work center with multiple identical machines by leaving the Machine field blank and entering the number of machines in the Machines field. Then you can specify the number of machines that can be used for each operation (parallel production) in the route operation. If the machines are not interchangeable, identify each one with a distinct code. For example, you have multiple similar machines but they run at different rates. Or perhaps an older machine has a higher rate of rejects. In this case, each machine must have a unique machine code. The combination of the work center and the machine identifies a specific machine.

Note Defining unique work center/machine combinations supports more precise costing and scheduling. However, it limits the ability of the work center supervisor to decide which machines to schedule work on without generating method variances.

Routings



To manufacture an item or product, you complete one or more activities or operations. The list of required operations is called a routing, which defines the process for making the item. If a product structure is the list of ingredients in a recipe, a routing is the directions or instructions for processing the ingredients to achieve the desired end product. The routing describes:

- The steps required to make the item (operations)
- Where the steps are performed (work center)
- How long they take (queue time, setup time, run time, wait time, and move time)
- The expected yield percentage at each operation (yield %)

Note Queue time, setup time, run time, wait time, and move time are all elements of lead time. The routings section discusses these topics.

For example, the manufacture a medical ultrasound could require a routing with several operations with instructions to assemble the various components. How the business sets up the process and how they want to manage it determines the number of operations, how they are sequenced, and how much detail to include with each. A highly automated process could have only one operation that says simply “assemble components.” A manual assembly process could have many detailed steps.

The department and work center codes associated with routing operations link actual production results with capacity planning, cost accounting, and other programs.

Alternate Routings

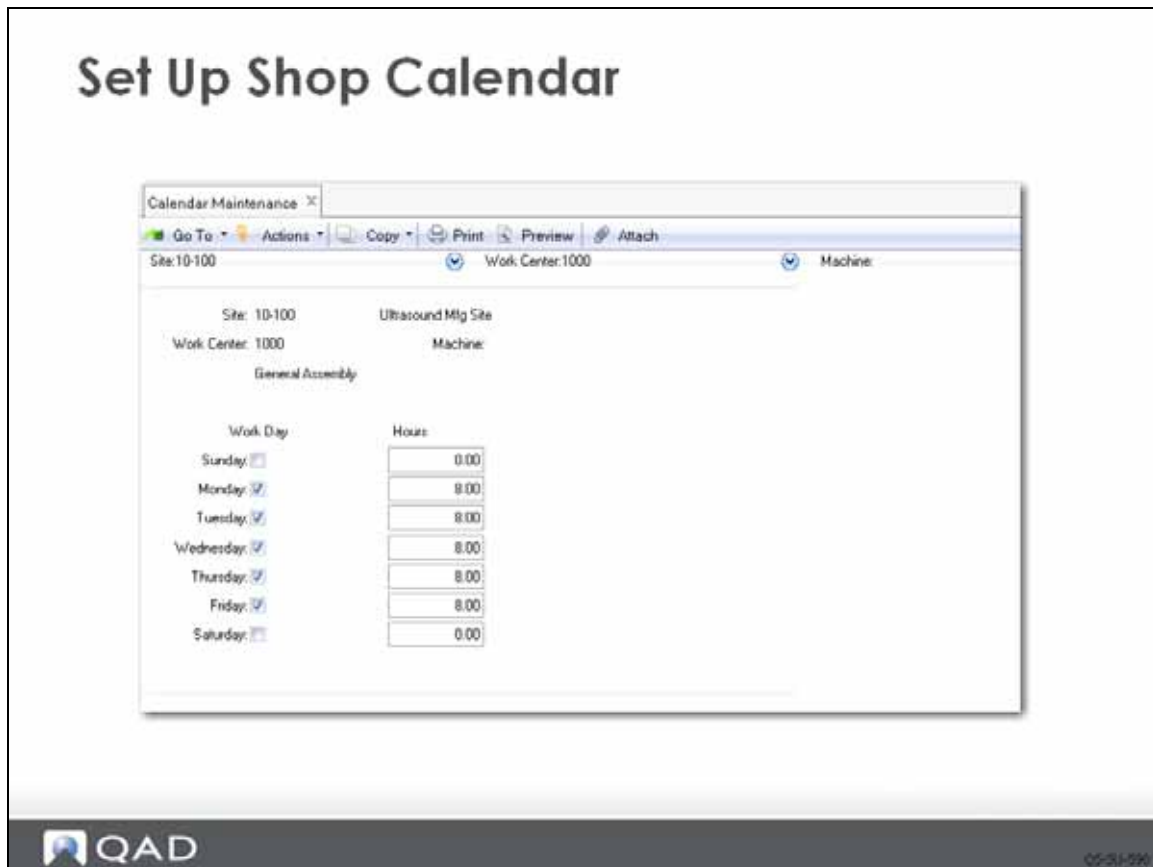
The normal situation is to have the route code be the same as the item number. When several routings can be used to produce the same item, alternate routes are defined with different routing codes. The primary route, or the route you use most frequently, can be linked to the item number in Item Site Planning Maintenance.

Example

This example shows how QMI's Manufacturing Department is set up:

- Shop calendar with five eight-hour days
- Department 0400 with a labor capacity of 8 hours/day
- Work center 1000 with a setup rate of \$5.00/hour, a labor rate of \$4.50/hour, and labor burden of 0.01%
- Routing with three operations:
 - Operation 10 (assembly) requires 0.5 hours setup time to get the components from the inventory room; additionally, per device, it requires 1.00 hour run time to assemble the ultrasound.
 - Operation 20 (test) requires 0.5 hour setup time, and a run time of 0.2 hours.
 - Operation 30 (pack) requires 0.5 hour setup time, and 0.06 run time.

Set Up Shop Calendar



The shop calendar is set up in Calendar Maintenance (36.2.5). This calendar shows a five day week, Monday through Friday, with eight hours available for each day.

If additional sites and or work centers/machines are created, they use this calendar as a default, but it could then be changed to site or work center/machine-specific calendars.

Additional Notes

The system supports defining separate shop calendars for each site/work center/machine that you create. Each can have its own work days and work-day duration entered in Calendar Maintenance. Holidays that affect all calendars can be entered in Holiday Maintenance, but work-center-specific holidays are entered in Calendar Maintenance using the Reference field.

Define Departments

Define Departments

Department Maintenance

Go To Actions Copy Print Preview Attach

Department: 0010 Default Sub-Account: Default Cost Center:

Department: 0010

Default Sub-Account: Override

Default Cost Center: Override

Description: Manufacturing

Labor Capacity: 8

Cost of Production:	5770	Mech	
Labor:	5120	Mech	mfg
Burden:	5220	Mech	mfg
Labor Usage Variance Acct:	5140	Mech	mfg
Labor Rate Variance Acct:	5150	Mech	mfg
Burden Usage Variance:	5240	Mech	mfg
Burden Rate Variance:	5250	Mech	mfg

QAD

CS-31-600

QMI has set up department 0400 using Department Maintenance (14.1). A department is used primarily for capacity planning and accounting purposes and a Labor Capacity of 8 is defined. This means that this department has eight hours of labor capacity per day Monday through Friday based on the shop calendar. This value implies that only one person is in this department since the calendar shows eight hours per day. If the department had 5 people, Labor Capacity would be 40.

Labor capacity is the total number of hours of work that can be performed within a department per day (day length is defined in Calendar Maintenance). The department labor capacity is entered manually as the sum of the capacities of all work centers and machines in the department. Capacity Requirements Planning (CRP) uses labor capacity to calculate capacity and load by department.

Important Use care when setting labor capacity because the system assumes that all labor in the department can be used in any work center in the department. This scenario is seldom the case and could be the cause of setting up more departments.

Also notice the account codes that default from Domain/Account Control; all are manufacturing related. In this case, sub-accounts default also, and the variance accounts have a default cost center code of mfg to indicate that these variances are manufacturing related. These account codes are used:

- When reporting labor and downtime in the Shop Floor Control and Repetitive modules
- When backflushing inventory and closing the accounting for completed work orders

Important If a given work center requires the booking of the cost of production to a different account or subaccount, set up a new department for that work center.

Define Work Centers/Machines

Define Work Centers / Machines

Work Center Maintenance

Go To Actions Copy Print Preview Attach

Work Center: 1000 Machine: Department: 0400

Work Center: 1000 Machine:

Description: General Assembly

Department: 0400 Assembly

Queue Time: 0.25

Wait Time: 0.25

Mach/Op: 1

Setup Crew: 1.00

Run Crew: 1.000

Machines: 1.000

Mach Bdn Rate: 0.05

Setup Rate: 5.00

Labor Rate: 4.50

Labor Burden Rate: 0.02

Labor Bdn %: 0.01%

QAD

QMI has set up work center 1000 (General Assembly) using Work Center Maintenance (14.5). Because this work center has only one machine (actually just a work bench), QMI does not need to specify a machine in the Machine field so it is left blank. If the work center had two or more machines that could not be used interchangeably, then QMI would need to enter a machine code to specify each machine. If the machines were interchangeable, then QMI could leave the machine code blank and put the number of machines in the Machines field.

Notice that this work center belongs to the department 0010, which QMI set up in the previous step.

Machines

If a work area has multiple identical machines, you can define one work center and leave the Machine (code or number) field blank. Enter the number of machines in the Machines field. When a work center has several identical machines, you can specify the number of machines that can be used for each operation (parallel production) in the route operation.

If the machines are not completely interchangeable, identify each one with a distinct code. For example, you have multiple similar machines but they run at different rates. Or perhaps an older machine has a higher rate of rejects. In this case, each machine must have a unique machine code. The combination of the work center and the machine identifies a specific machine.

This example has only one machine per operation and the Machines field shows only one machine in this work center. If two machines were used per operation, then the processing time for an operation that uses that work center/machine combination is cut in half. Any setup time would be doubled.

Cost Calculations

Important information for cost calculations is the specified in the rate fields. Machine Burden Rate, Setup Rate, Labor Rate, Labor Burden Rate, and Labor Burden Percent all enter into item cost calculations and labor feedback functions to determine actual costs and cost variances.

Additional Notes

In a work center, either the number of machines or the number of people limits capacity. The Machines field contains the number of machines or people. Capacity is then calculated by multiplying total hours (from the work center calendar) by the number of machines.

Field Definitions

Machine Burden Rate. The burden rate per hour applicable to machine run time and setup at this work center.

Setup Rate. The average hourly rate paid to set up this work center.

Labor Rate. The average rate paid per labor hour to run this work center.

Labor Burden Rate. The labor burden rate per hour applicable to both setup and run time at this work center.

Labor Burden Percent. The labor burden percentage applicable to the total labor cost at this work center.

Set Up Routing Op 10

The screenshot shows the 'Routing Maintenance' window for 'Set Up Routing Op 10'. The window has a title bar 'Routing Maintenance' and a menu bar with 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. Below the menu bar, there are tabs for 'Routing Code: 01010', 'Standard Operation', and 'Standard Operations'. The main form contains the following fields:

- Routing Code: 01010
- Medical Ultrasound
- Operation: 10
- Start Date:
- End Date:
- Work Center: 1000
- Machine: General Assembly
- Description: ASSEMBLE COMPONENTS
- Machines per Operation: 1
- Milestone Operation: ☒
- Overlap Units: 0
- Subcontract LT: 0
- Queue Time: 0.25
- Setup Crew: 1.00
- Wait Time: 0.25
- Run Crew: 1.00
- Setup Time: 0.5
- Run Time: 1.0
- Tool Code:
- Supplier:
- Move Time: 0.0
- Inventory Value: 0.00
- Start Date:
- Subcontract Cost: 0.00
- End Date:
- Yield Percent: 100.00%
- Comments:

The QAD logo is visible in the bottom left corner, and the text 'CS-3U-628' is in the bottom right corner.

QMI's Production Manager has set up the routing in Routing Maintenance (14.13.1). Notice that the routing code is the same as the item number for the completed device (01010). This is usually the case.

This example has three operations involved in assembling a medical ultrasound:

- Operation 10 (shown here) requires 0.5 hours setup time to get the jig from the tool room; additionally, per device, it requires 1.0 hour run time to assemble the medical ultrasound.
- Operation 20 requires 0.5 hour setup time and 0.2 hour run time to test the device.
- Operation 30 requires 0.5 hour setup time and 0.6 hour run time to pack the ultrasound for shipment.

These times are converted into decimal hours for the routing standard times by dividing the minutes by 60. You can also use Rate Based Routing Maintenance (14.13.2), which uses pieces per hour rather than decimal hours per piece to set the time standard for the operation.

Important Be careful not to use the Standard Operation field by mistake. This field has a special use that is covered in detail in the course on Routings and Work Centers. This feature is not described in this course.

Set Up Routing Op 20

Routing Maintenance

Go To Actions Copy Print Preview Attach

Routing Code: 01010 Standard Operation: Standard Operation

Routing Code: 01010 Medical Ultrasound

Operation: 20 Start Date: End Date:

Standard Operation:

Work Center: 1050 Product Test

Machine:

Description: TEST FINISHED UNIT

Machines per Operation: 1 Milestone Operation: ☒

Overlap Units: 0 Subcontract LT: 0

Queue Time: 0.25 Setup Crew: 1.00

Wait Time: 0.25 Run Crew: 1.00

Setup Time: 0.5 Tool Code:

Run Time: 0.2 Supplier:

Move Time: 0.0 Inventory Value: 0.00

Start Date: Subcontract Cost: 0.00

End Date: Comments: ☐

Yield Percent: 100.00%

QAD CS-3U-636

For operation 20, testing the ultrasound, the run time is 0.2 hour, or 12 minutes

Field Definitions

Queue Time. The time work normally waits at a work center before the operation begins.

Setup Time. The time required to prepare the work center/machines for processing. This is independent of batch size.

Run Time. The standard amount of time required to process a single unit of this item. It can be entered as the units per hour or run time per batch, but internally, this is converted to a run time per unit.

Wait Time. The time spent waiting after the operation is done; for example, drying, curing, cooling. This is based on a 24-hour clock, not the shop calendar.

Move Time. The time a work order is in transit from one operation to the next. Per order independent of order size.

Subcontract Lead Time. A routing operation can be a task performed by an outside vendor or subcontractor. In that case this is the number of calendar days it takes to process the standard order quantity at the subcontractor's site, including any transit time.

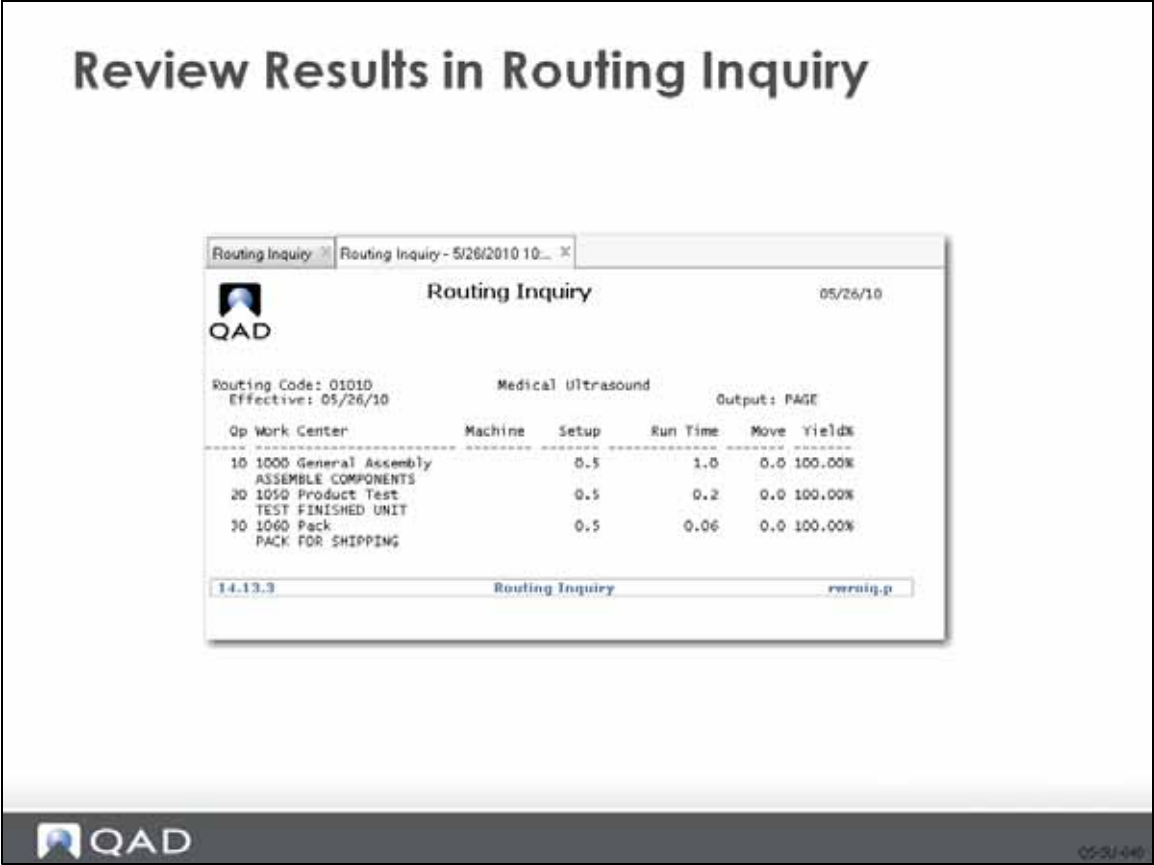
Yield Percent. The normal yield percentage for this operation. The percentage of any order expected to be in usable condition after this operation (used to calculate costs).

Yield in the operation route is intended to be used for scrap that occurs at a specific operation because of some aspect of that operation. It consumes all of the components that have been issued up to that point.

This is in contrast to scrap in the product structure which is associated with a specific component at a specific operation. It is important in setting up structures and routings to account for scrap and yield as accurately as possible and in the correct place. Use this rule:

- At the given operation, is the component scrapped before being assembled? This is component scrap in the structure.
- Is the assembly scrapped after the component is assembled? This is yield in the route.

Review Results in Routing Inquiry



The Production Planner reviews the routing in Routing Inquiry (14.13.3) to ensure that the information is accurate.

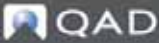
Review

Review

4

Manufacturing


- **Shop calendar**
Calendar Maintenance
- **Departments**
Department Maintenance
- **Work Center**
Work Center Maintenance
- **Routings**
Routing Maintenance

 QAD

CS-2U-460

This chapter introduced how key areas of the manufacturing environment are set up:

- Shop calendar, set up in Calendar Maintenance and Holiday Maintenance, indicates what days the plant is open and how many hours are worked each day.
- Departments, set up in Department Maintenance, are used for capacity planning and accounting purposes.
- Work centers and machines, set up in Work Center Maintenance, are used for operation scheduling, capacity requirements planning, and cost determinations for GL transactions.
- Routings, set up in Routing Maintenance, describe the steps required to make the item (operations), where the steps are performed (work center), how long they take, and the expected yield percentage at each operation.

Exercise 4

Add a Department Record

Note Refer back to the screen shots in the example if you are unsure of any step.

- 1 In Department Maintenance (14.1), add a new department record, 050, for assembly. The key fields to populate are:

Field	Data
Department	050; Click Next until the Description field is highlighted
Description	Assembly
Labor Capacity	8

Accept the default account numbers. Where did these account numbers come from? Click Next, then Back to update the record and exit Department Maintenance.

Add a Work Center Record

- 2 Use Work Center Maintenance (14.5) to add a work center record. Key values to enter or verify are:

Field	Data
Work Center	1005
Machine	<blank>
Description	General Assembly
Department	050
Mach/Op	1
Machines	1
Setup Rate	5
Labor Rate	4.5
Labor Burden Rate	0.02
Labor Bdn%	0.01%

Click Next, then Back to update the record and exit Work Center Maintenance.

Define a Routing or Process Definition

- 3 Use Routing Maintenance (14.13.1) to add a routing code that is the same as the manufactured item number. The key values to enter and verify are:

Field	Data
Routing Code	01010
Operation	10; click Next until Work Center is highlighted
Work Center	1005;
Machine	<blank>; click Next

Field	Data
Description	Assemble Components
Setup Time	0.5 (30 min.)
Run Time	1.0 (60 min.)
Tool Code	<blank>

Accept remaining defaults. Click Next until the Routing Code field is highlighted.

4 Enter the second operation

Field	Data
Operation	20; click Next until Work Center is highlighted
Work Center	1050
Machine	<blank>; click Next
Description	Test Medical Ultrasound
Setup Time	0.5
Run Time	0.02 (12 min.)

Accept remaining defaults. Click Next until the Routing field is highlighted.

5 Enter the third operation

Field	Data
Operation	30; click Next until Work Center is highlighted
Work Center	1060
Machine	<blank>; click Next
Description	Pack Medical Ultrasound
Setup Time	0.5
Run Time	0.06

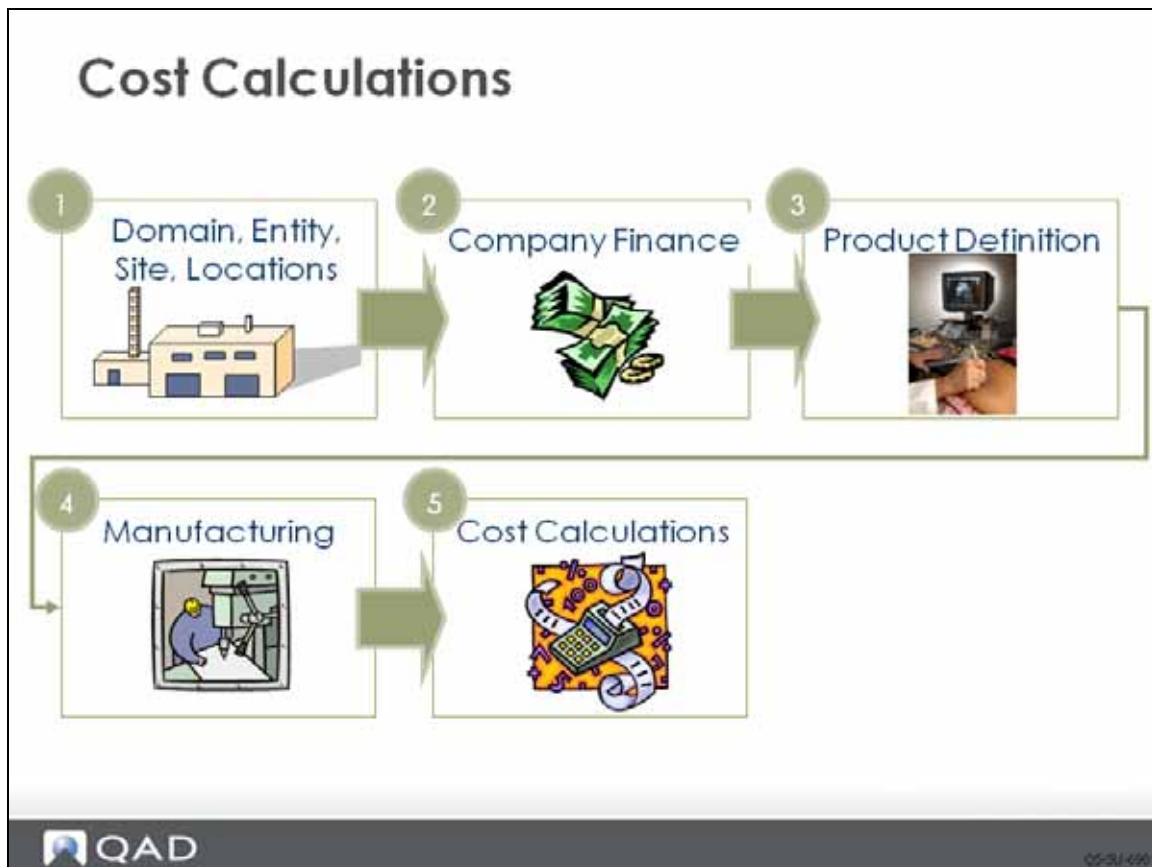
Accept remaining defaults. Click Next twice, then Back to update the record and exit Routing Center Maintenance.

6 Use Routing Inquiry (14.13.3) to review your routing. Click Next. Verify that PAGE is selected in the Output field, then click Next. Make sure that the report displays all of the operations and the correct setup and run times.

Chapter 6

Cost Calculations

Overview



This chapter discusses how the system rolls up lower-level manufacturing costs and how they are managed in the general ledger.

Based on information set-up in product definition and manufacturing, item costs can be calculated. This chapter shows how cost information contained in the routing and product structure is “rolled up” to calculate total cost. It begins with a discussion of routing and product structure cost rollups, followed by discussing the update of the GL cost set from costs collected in the current cost.

Topics

Topics

- Routing Cost Roll Up
- Product Structure Cost Roll Up
- Current Cost Set Move to GL Set

Learning Objectives

Objectives

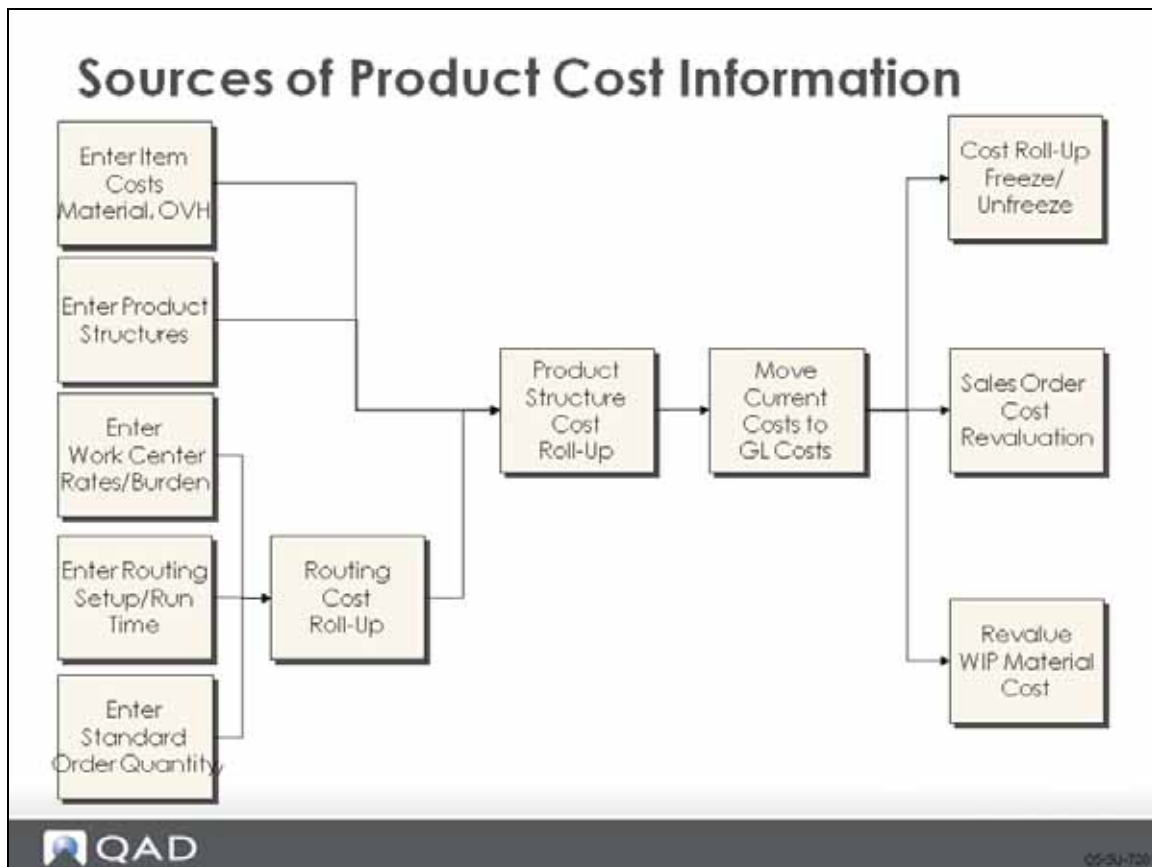
When you finish this section, you should be able to:

- Explain the information captured by a routing cost roll up
- Explain the information captured by a product structure cost roll up
- Explain the importance of the Order Quantity field (in Item Planning Maintenance) to the routing cost roll up
- Roll up routing and product structure costs
- Copy and move current costs to the GL cost set



Q2-20-710

Key Concepts

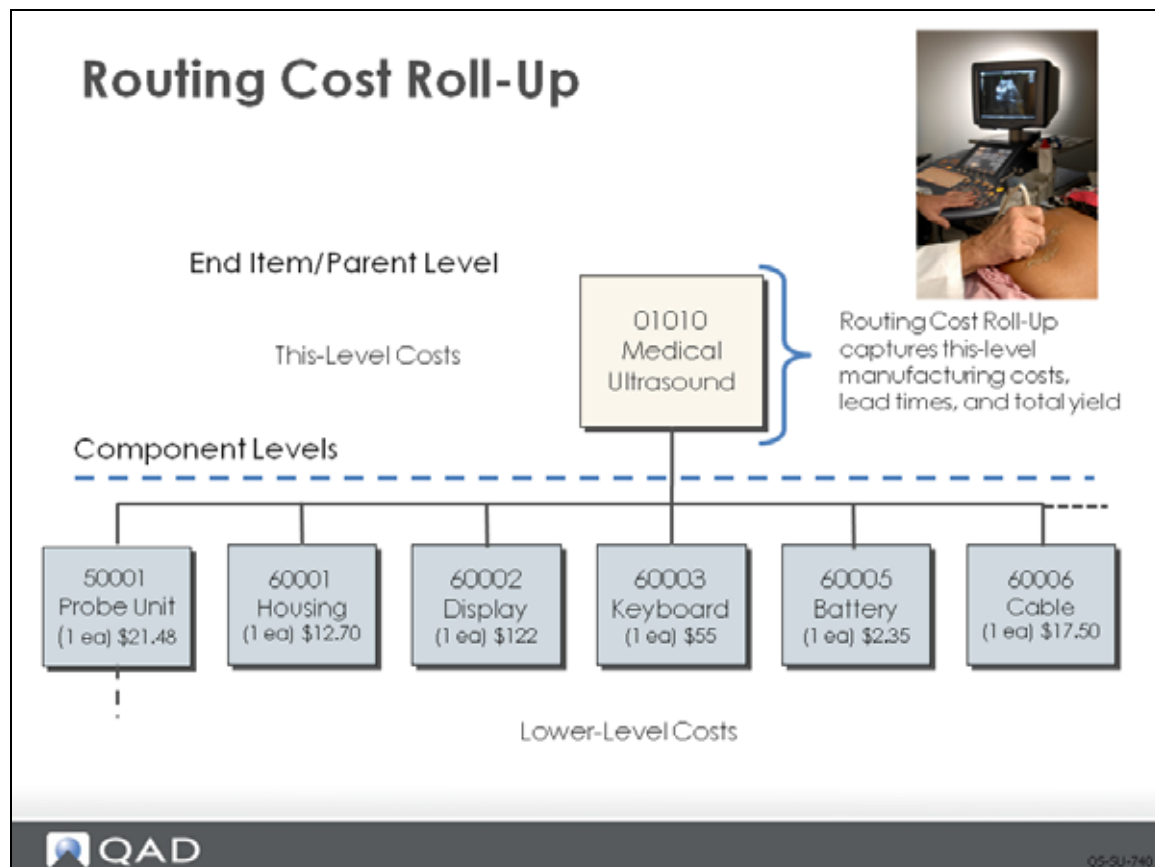


Product cost calculations are based on information from various sources. Some of the key pieces are:

- Purchased material, overhead, and other costs entered manually in Item-Site Cost Maintenance for purchased items
- Component quantity per and scrap rates entered in the product structure (BOM)
- Labor and setup rates entered for each work center
- Variable burden at each work center
- Manufacturing setup and run times entered on each routing operation
- Yield at each operation
- Subcontract cost per unit entered on each subcontracted operation
- Item order quantity entered in Item Planning Maintenance
- BOM and routing code entered in Item Planning Maintenance

Most of this information was described in the previous chapter and shown in the previous examples and exercises. The next steps are to roll up the routing and product structure costs, and move the current cost set to the GL cost set. Those three steps are covered on the following pages.

Routing Cost Roll-Up



Routing Cost Roll-Up calculates the manufacturing costs, lead times, and total yield for one or more items at a particular site. Costs are calculated for each operation after accessing the item master, work center, routing, and standard operation data.

Review Standard Order Quantity

Item Planning Maintenance

Go To Actions Copy Print Preview Attach

Item Number: 01010 Description: Medical Ultrasound
Unit of Measure: EA

Item Planning Data

Matr Sched: ☒ Plan Orders: ☒ Time Fence: 0 MRP Required: ☒
 Order Policy: POQ Order Qty: 5 Batch Qty: Order Period: 7 Safety Stock: Safety Time: Reorder Point: Item Rev: Issue Policy: ☒

Buyer/Planner: 1-01 Supplier: PO Site: Purchase/Manufacture: M Configuration Type: Inspect: 1.0 Ins LT: 0 Cum LT: 0 Mfg LT: 4 Pur LT: 0 ATP Enforcement: NONE Family ATP: ATP Horizon: 0 Run Seq 1: 2

Phantom: Minimum Order: 1 Maximum Order: 5 Order Multiple: 1 Op Based Yield: Yield Percent: 100.00% Run Time: 17.000 Setup Time: 7.500 EMT Type: NON-EMT Auto EMT Processing: Network Code: Routing Code: U-001 BOM/Formula: Replenishment Method: Orders

QAD CS-3U-796

When manufacturing costs are rolled up in Routing Cost Roll-Up (14.13.13), the setup time is divided by the standard order quantity and each item is assigned its share of the setup cost. The run times are calculated separately for each item at each operation. However, the total run time, for all the items in the standard order quantity, is used to calculate the lead time for a standard order. Queue, wait, and move times are added to get the total lead time for the item.

The item planning record provides the order quantity value, which is used to amortize setup costs over a standard or normal order size to obtain a realistic cost per unit value.

Note The user initiates routing and product structure rollups. Some businesses have only one or the other and do not need both. However, when you do have both (the normal situation for manufacturers) always roll-up the routing first, then the product structure. If the routing includes operation yields, account for these yields before determining the materials required from the product structure.

Routing Cost Roll-Up Calculations

Routing Cost Roll-Up Calculations

Work Center Maintenance

Go To Actions Copy Print Preview Attach

Work Center: 1000 Machine Department: 0400

Work Center: 1000 Machine:

Description: General Assembly

Department: 0400 Assembly

Queue Time: 0.25

Wait Time: 0.25

Mach/Op: 1

Setup Crew: 1.00

Run Crew: 1.000

Machine: 1.000

Mach Bdn Rate: 0.05

Setup Rate: 5.00

Labor Rate: 4.50

Labor Burden Rate: 0.02

Labor Bdn %: 0.01%

QAD

CS-3U-750

Routing cost calculations are based upon work center data for hourly rates for setup and run labor. The work center also provides the burden rates as cost per hour for labor and machine burden, as well as labor burden percent.

Cost Calculations

Cost Calculations

Routing Maintenance

Go To Actions Copy Print Preview Attach

Routing Code: 01010 Work Center: 1000 Machine:

Routing Code: 01010 Medical Ultrasound
Operation: 10 Start Date: End Date:

Standard Operation:
Work Center: 1000 General Assembly
Machine:

Description: ASSEMBLE COMPONENTS

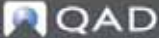
Machines per Operation: 1
Overlap Units: 0
Queue Time: 0.25
Wait Time: 0.25

Milestone Operation: ☒
Subcontract LT: 0
Setup Crew: 1.00
Run Crew: 1.00

Setup Time: 0.5
Run Time: 1.0
Move Time: 0.0
Start Date:
End Date:

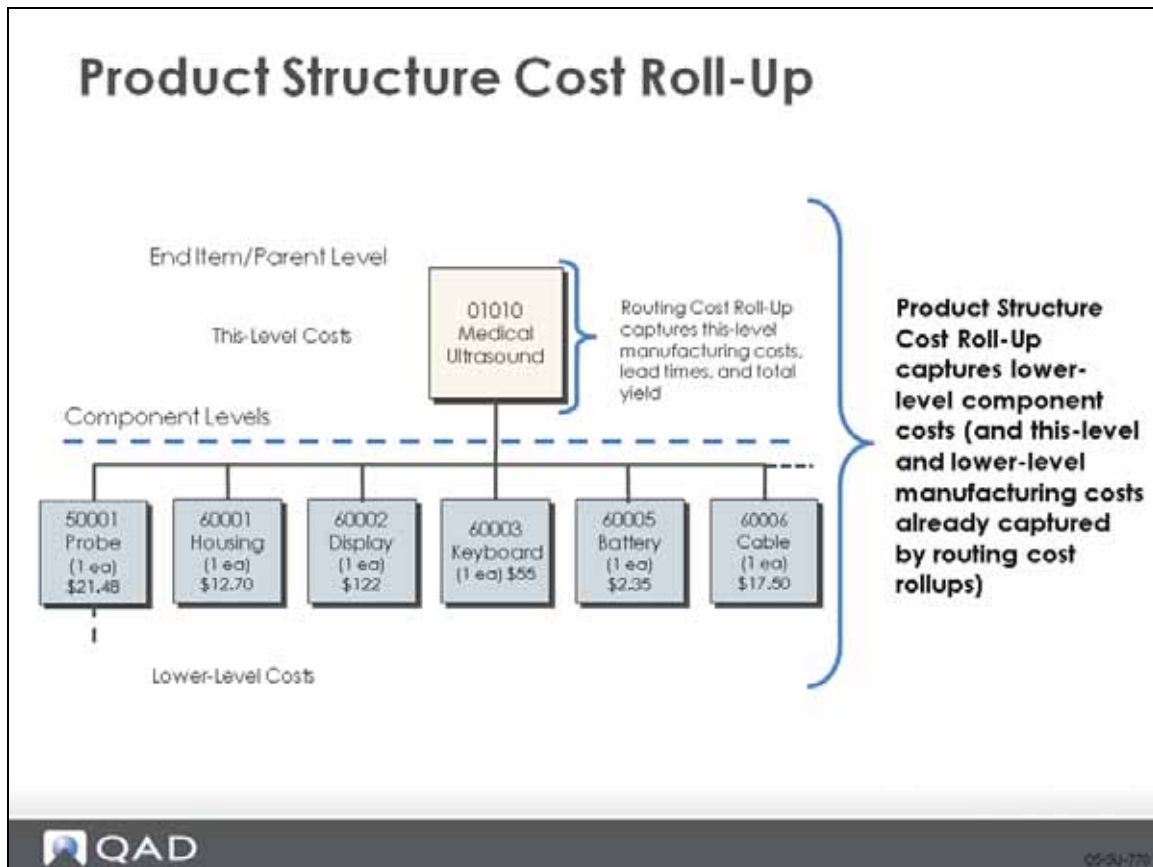
Tool Code:
Supplier:
Inventory Value: 0.00
Subcontract Cost: 0.00
Comments:

Yield Percent: 100.00%


CS-SU-766

The routing records provide the setup and run times, as well as the machines per operations and operation yield percent. For a subcontract operation, the routing provides the per-item cost of the outside processing (subcontract cost).

Product Structure Cost Roll-Up



Product Structure Cost Roll-Up (13.12.13) updates the costs of parent items based on the costs of their lower-level components.

Components have information for the quantity required, expected scrap percentage, and the operation where they are required. Purchased items have material and can have overhead costs. Manufactured items also have labor, burden, and subcontract costs. Product Structure Cost Roll-Up uses these costs to calculate total cost by item, and lower-level run and setup times.

Product Structure

Product Structure

Product Structure Inquiry X

Go To Actions Copy Print Preview Attach

Parent Item/BOM Code 01010 Output PAGE

Parent Item/BOM Code: 01010 Medical Ultrasound EA

As Of: 5/25/2010 Levels: Rev: ID: Domain: Output: PAGE

Level	Component Item	Description	Quantity Per	UM	Ph	T	Iss
Parent	01010	Medical Ultrasound					EA
1	50001	Probe Unit - 10 Mhz	1.0				EA
..2	03003	Standard Connector	1.0				EA
..3	62050	Beryllium Copper	0.0001				r1
..3	62050	Discrete PO					
..3	62050	Beryllium Copper	0.0001				r1
..3	62050	Discrete PO					
..3	90031	Packaging	2.0				EA
..2	60004	Transducer - 10 Mhz	1.0				EA
1	60001	Durable Plastic Housing	1.0				EA
1	60002	Display / Readout	1.0				EA
1	60003	Keyboard	1.0				EA
1	60005	Battery	1.0				EA
1	60006	Monitor Cable	1.0				EA
1	60007	Movable Cart	1.0				EA
1	60008	Printer	1.0				EA
1	60017	Mouse Pad	1.0				EA
1	60018	Dust Cover	1.0				EA
1	60050	Base Unit / CPU	1.0				EA
1	90093	Shipping Carton	1.0				EA

13.6 Product Structure Inquiry bmpsiq.p

QAD

CS-SU-771

Product Structure Inquiry (13.6) shows how many of each components are required to make a medical ultrasound.

Item Cost Data

Item Cost Data

Item Cost Maintenance X

Go To Actions Copy Print Preview Attach

Item Number: 50001
 Unit of Measure: EA

Description: Probe Unit - 10 MHz

Totals					
Totals:	6.25882	15.22	21.47882	☐	03/17/11

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

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	15.22	15.22	☒	Material	☐
Labor	6.17	0.00	6.17	☒	Labor	☐
Burden	0.08882	0.00	0.08882	☒	Burden	☐
Overhead	0.00	0.00	0.00	☒	Overhead	☐
Subcontr	0.00	0.00	0.00	☒	Subcontr	☐
				☐		☐

QAD
CS-SU-772

The item cost data displays the material cost of each component of the end item (01010). This cost is multiplied by the quantity per unit and rolled up to the parent-level cost.

Move Current Cost Set to GL Set



By default, the system maintains two cost sets for each item-site:

- Current, which reflects today's cost for an item
- GL, which is used for all general ledger transactions

When costs change, you can update and verify the change in the current cost set first. Then use Current Cost Set Move to GL Set (1.4.22) to reflect the change in the GL cost set. Current Cost Set Move to GL Set is typically used only at regular, widely spaced intervals, usually annually.

By convention, QMI does all its work in the current cost set, checking each step when it is completed. When satisfied that the costs are correct, the entire current cost set is moved (copied) to the GL cost set.

Example

The following example shows how QMI:

- Sets up a standard order quantity of 5 for item 01010 (medical ultrasound)
- Rolls up costs for item 01010 based on its routing
- Rolls up costs for item 01010 based on its product structure
- Copies costs from the current cost set to the GL cost set for all component items

Review Standard Order Quantity for Item

Review Standard Order Quantity

Item Planning Maintenance X

Go To Actions Copy Print Preview Attach

Item Number: 01010 Description: Medical Ultrasound
Unit of Measure: EA

Item Planning Data

Matr Sched: ☒ Plan Orders: ☒ Time Fence: 0 MRP Required: ☒ Order Policy: POQ Order Qty: 5 Batch Qty: Order Period: 7 Safety Stock: 0 Safety Time: 0 Reorder Point: 0 Item Rev: 0 Issue Policy: ☒

Buyer/Planner: 1-01 Supplier: PO Site: Purchase/Manufacture: M Configuration Type: Inspect: 1.0 Ins LT: 0 Cum LT: 0 Mfg LT: 4 Pur LT: 0 ATP Enforcement: NONE Family ATP: ATP Horizon: 0 Run Seq 1: 2

Phantom: ☐ Minimum Order: 1 Maximum Order: 5 Order Multiple: 1 Op Based Yield: ☐ Yield Percent: 100.00% Run Time: 17.000 Setup Time: 7.500 EMT Type: NON-EMT Auto EMT Processing: ☐ Network Code: Routing Code: U-001 BOM Formula: Replenishment Method: Orders

QAD CS-3U-796

QMI has set up a standard order quantity of 5 for its medical ultrasound (01010), which is used to amortize setup costs. Enter this information before rolling up the routing costs. The standard order quantity is entered in Item Planning Maintenance (1.4.7), or the Item Planning Data frame of Item Master Maintenance (1.4.1).

The standard order quantity is what you normally produce in a single lot, batch, or work order. In this case, the setup cost is spread over the production of five units. The order quantity for each item is usually based on some aspect of production that is important to the company. A multiple of the units produced in an hour or a shift is common.

Some firms with high setup costs want large standard order quantities to spread the setup cost over many units of production. A just-in-time (JIT) environment typically invests in dedicated capacity to keep the order quantity or kanban very low.

Routing Cost Roll-Up

Example: Routing Cost Roll-Up

The screenshot displays the 'Routing Cost Roll-Up' window. At the top, there's a title bar and a menu bar with options like 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. Below the menu bar, the 'Site' is set to '10-100' and the 'Cost Set' is 'Current'. The 'Item Number' is '01010'. A red box highlights the 'Site' and 'Cost Set' fields. Another red box highlights the 'Item Number' and 'To' fields, both set to '01010'. Below these, there are several checkboxes for roll-up options: 'Roll-up Labor Time', 'Roll-up Setup Time', 'Roll-up Lead Time', 'Roll-up Item Yield', 'Roll-up Labor Cost', 'Roll-up Burden Cost', 'Roll-up Subcontract Cost', 'Update Items without Routings', and 'Update Items All This Site Only'. All these checkboxes are checked. There is also an 'Include Yield in Cost' checkbox which is checked. At the bottom right, there is an 'Output' field and a 'Batch ID' field. The QAD logo is visible in the bottom left corner of the window.

Using Routing Cost Roll-Up (14.13.13), QMI is ready to roll up the routing costs for item 01010 medical ultrasound at site 10-100. The rollup is for the current cost set, not the GL cost set. Notice all the check boxes that can be used to leave out some elements of cost for unique or special purposes. Use care when leaving out any element of cost.

You can roll up either current or GL costs. The default is to roll up current costs. Although you can roll up GL costs when they change, it is safer to roll up current costs and then copy them to the GL.

After rolling up the routing costs, it is a good idea to verify that the rollup was successful. You can verify the outcome in Item-Site Cost Inquiry, shown next.

Verify Routing Cost Roll-Up

Example: Verify Routing Cost Roll-Up

Item-Site Cost Inquiry
Item-Site Cost Inquiry - 5/26/20... X

Item-Site Cost Inquiry
05/26/10

Item Number: 01010 UM: EA Medical Ultrasound Output: PAGE

Inv Site: 10-100

Price: 2,500.00 Item Price Date Tax: No Tax Class:

Fiscal Class:

Totals:		13.36452	Totals	231.96882	245.33333	05/26/10

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

Element	This Level	Lower Level	Total	Pri	Category	A/D
Material	0.00	225.71	225.71	Yes	Material	No
Labor	13.17	6.17	19.34	Yes	Labor	No
Burden	0.19452	0.08882	0.28333	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No
Totals:		13.36452	Totals	231.96882	245.33333	03/01/10

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

Element	This Level	Lower Level	Total	Pri	Category	A/D
Material	0.00	225.71	225.71	Yes	Material	No
Labor	13.17	6.17	19.34	Yes	Labor	No
Burden	0.19452	0.08882	0.28333	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No

1.4.10
Item-Site Cost Inquiry
ppptiq03.p

Using Item-Site Cost Inquiry (1.4.10), QMI verifies that the current cost set routing costs (labor and burden) were rolled up for item 01010 at site 10-100.

The columns on the cost screens total up. The total cost for labor and burden at this level (in this example 13.36452) is displayed above the column.

Note Since the product structure rollup has not been done, the item has no material costs yet. There are also no GL costs yet.

After completing and verifying the routing cost rollup, the product structure cost rollup can be initiated.

Product Structure Cost Roll-Up

Product Structure Cost Roll-Up

Item: 01010 Site: 10-100 Cost Set: Current

Site: 10-100

Cost Set: Current Default Current Cost Set [LAST / CURR]

Item Number: 01010 To: 01010

Prod Line: To:

Item Type: To:

Group: To:

As of Date: 5/26/2010

Low Level Material ☒

Low Level Labor ☒

Low Level Burden ☒

Low Level Overhead ☒

Low Level Subcontract ☒

Low Level Labor Time ☐

Low Level Setup Time ☐

Print Audit Trail ☒

Set Cost Update Field for: All/Changed Only All

Include Yield % ☒

Output:

Batch ID:

QAD CS-31-020

Using Product Structure Cost Roll-Up (13.12.13), QMI rolls up its product structure costs for item 01010 at site 10-100. The costs include the material costs for the lower-level components, such as the material and overhead costs at this level.

Again notice that QMI is rolling up the current cost set, not the GL cost set.

Verify Costs

Verify Costs

Item-Site Cost Inquiry - 5/26/2010

QAD

Item Number: 01010 UM: EA Medical ultrasound Output: PAGE
 Inv Site: 10-100

Price: 2,500.00 Item Price Data Tax: NO Tax Class:
 Fiscal Class:

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	225.71	225.71	Yes	Material	No
Labor	13.17	6.17	19.34	Yes	Labor	No
Burden	0.19452	0.08882	0.28333	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No
Totals:	13.36452	231.96882	245.33333			05/26/10

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

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	225.71	225.71	Yes	Material	No
Labor	13.17	6.17	19.34	Yes	Labor	No
Burden	0.19452	0.08882	0.28333	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No
Totals:	13.36452	231.96882	245.33333			05/26/10

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

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	225.71	225.71	Yes	Material	No
Labor	13.17	6.17	19.34	Yes	Labor	No
Burden	0.19452	0.08882	0.28333	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No
Totals:	13.36452	231.96882	245.33333			05/26/10

1.4.10 Item-Site Cost Inquiry ppptiq03.p

QAD CS-31-030

Using Item-Site Cost Inquiry (1.4.10) again, QMI verifies that the current cost set product structure costs (lower-level components) were rolled up correctly for item 01010 at site 10-100. Total cost is \$245.33333 per unit.

Move Current Cost Set to GL

QMI now wants the general ledger to reflect the cost information entered in the current cost set for all of the component items in 01010 at site 10-100, so they are ready to copy and move current costs into the GL using Current Cost Set Move to GL Set (1.4.22).

By leaving the item number selection range blank, all records in the system are selected. This behavior is appropriate since the site only has the five sample items. Note the other selection criteria that could be used. Note also the check boxes for which costs to copy. QMI wants to copy all costs.

Percent Change Allowed

This field restricts the cost movement to items whose GL costs would change only within the indicated range. To accept the movement of all costs regardless of the difference from the previous GL costs, enter all 9's in the .NET UI. (In the terminal view, enter a question mark (?) in this field and the corresponding To field to match all values.)

You can look at the potential consequences before actually moving the current costs to GL costs. To perform this action, set Pct Change Allowed to 0%. The proposed changes are displayed on the output device you have chosen, but not copied to the GL costs.

Note When first establishing costs for new items or in a new system, the present GL cost would be zero. The percent change from nothing to something is mathematically undefined since it would require division by zero.

Current Cost Set Move to GL Set

Current Cost Set move to GL Set



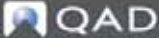
Current Cost Set Move to GL Set

10USA

05/26/10

Item Number	UM	Material	Labor	Burden	Overhead	Subcontract
31010	EA Current	225.71	19.34	0.28333	0.00	0.00
245.33333	Standard	225.71	19.34	0.28333	0.00	0.00
Medical Ultrasound	New Cost	225.71	19.34	0.28333	0.00	0.00
245.33333	% Change	0.0%	0.0%	0.0%	0.0%	0.0%
0.0%	GL Amt. Chg	0.00	0.00	0.00	0.00	0.00
0.00						

End of Report



CS-31-041

Executing Current Cost Set Move to GL Set (1.4.22) produces a report that can be output to Page and looks like the one shown here.

Verify Costs in Current and GL Cost Sets

Verify Cost in Current and GL Cost Sets

The screenshot displays the QAD Item-Site Cost Inquiry window for item 01010 (Medical Ultrasound). The window shows two tables: 'GL Cost Data' and 'Current Cost Data'. Both tables show identical values for 'This Level' and 'Lower Level' costs, with a total of 245.33333. The 'Current Cost Data' table also shows 'Total Pri' and 'Category' for each element.

GL Cost Data (GL Cost Source Site: 10-100 / Set: Standard)					
Element	This Level	Lower Level	Total	Pri	Category A/O
Material	0.00	225.71	225.71	Yes	Material No
Labor	13.17	6.17	19.34	Yes	Labor No
Burden	0.19452	0.08882	0.28333	Yes	Burden No
Overhead	0.00	0.00	0.00	Yes	Overhead No
Subcontr	0.00	0.00	0.00	Yes	Subcontr No
Totals:	13.36452	231.96882	245.33333		05/26/10

Current Cost Data (GL Cost Source Site: 10-100 / Set: Current)					
Element	This Level	Lower Level	Total	Pri	Category A/O
Material	0.00	225.71	225.71	Yes	Material No
Labor	13.17	6.17	19.34	Yes	Labor No
Burden	0.19452	0.08882	0.28333	Yes	Burden No
Overhead	0.00	0.00	0.00	Yes	Overhead No
Subcontr	0.00	0.00	0.00	Yes	Subcontr No
Totals:	13.36452	231.96882	245.33333		05/26/10

1.4.10 Item-Site Cost Inquiry pptiq03.p

QMI can use Item-Site Cost Inquiry (1.4.10) again; this time to verify that the costs for item 01010 now shown in the GL are as expected. That is, the GL costs should be the same as the current costs, and they are.

Enter Item Price in Item Cost Maintenance

Item Cost Maintenance

Item: 01010 Item Number: 01010 Tax Class:

Item Number: 01010 Description: Medical Ultrasound
Unit of Measure: EA

Item Price Data

Price: 2,500.00 Tax: Tax Class: Fiscal Class:

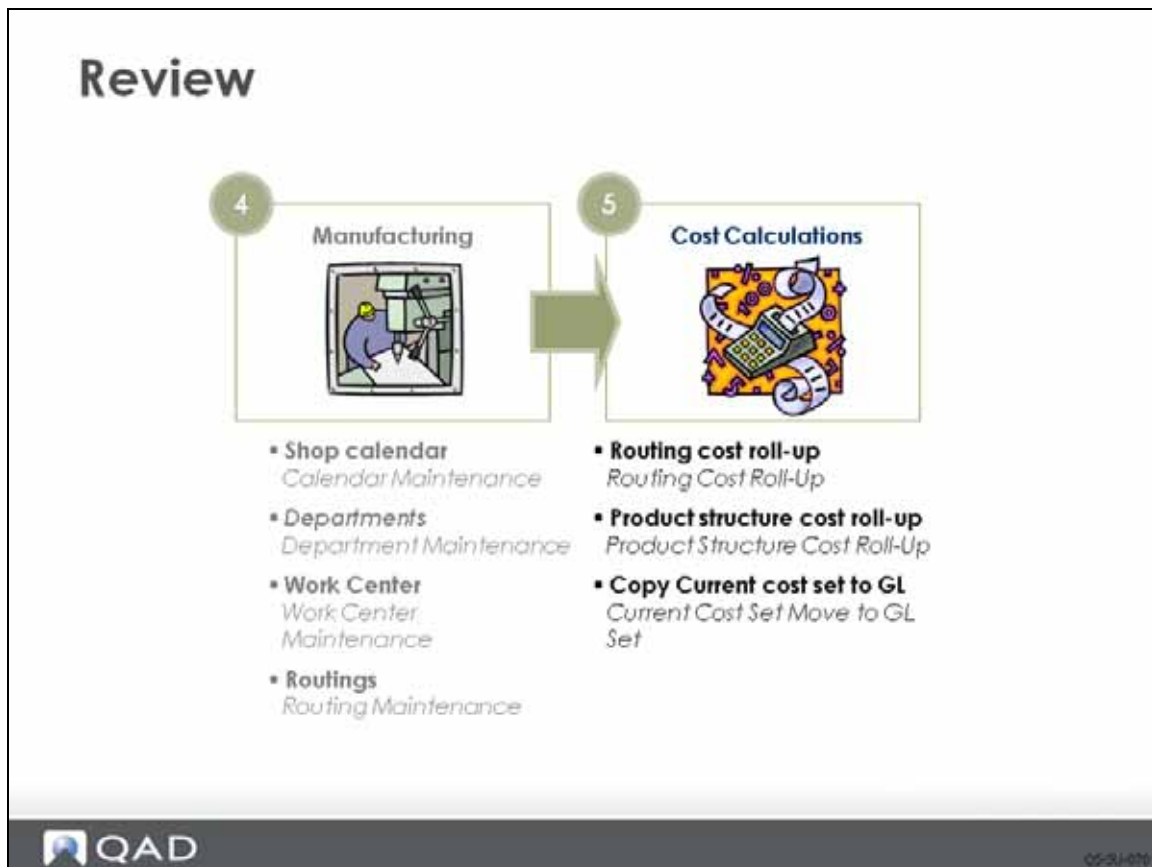
GL Cost Data

Element	This Level	Lower Level	Total	Pri	Category	A/D
				☐		☐

QAD CS-31-051

Now that the standard cost of producing a medical ultrasound has been established, QMI can return to the Item Cost Maintenance (1.4.9) screen and add the retail price to charge for this item. QMI has decided to price this medical ultrasound at \$2,500.00.

Review



This chapter introduced how product costs are developed using:

- Routing cost rollups, which capture this-level manufacturing costs, lead times, and total yield
- Product structure cost rollups, which capture lower-level component costs and all costs previously captured by routing cost rollups

You also saw how up-to-date costs reflected in the current cost set can be moved to the GL cost set to update that cost set as appropriate.

Exercise 5

Check Standard Order Quantity for Item

- 1 Open Item Planning Maintenance (1.4.7). Enter 01010 and click Next.
In the Order Qty field, enter 10. This value is the number of units that the cost of setup time is spread over.
Press Next, then Back to save the record and close Open Item Planning Maintenance.

Calculate Amount of Labor, Burden, and Subcontract Costs for Manufactured Items

Important Manufactured components are calculated first.

- 2 Use Routing Cost Roll-Up (14.13.13) to roll up the routing cost.

Field	Data
Site	10-100; click Next
Cost Set	Current; click Next
Item Number	50001
To	50001; click Next

Click Next, then Back.

Field	Data
Site	10-100; click Next
Cost Set	Current; click Next
Item Number	01010
To	01010; click Next

Use the default settings for all other fields. Click Next, then Back twice to save the record and exit Routing Cost Roll-Up.

Note This function does not generate any output.

- 3 Open Item Routing Cost Report (14.13.15) or Item-Site Cost Inquiry (1.4.10). Verify that the standard costs were correctly calculated for labor and burden.

Calculate Amount of Lower-Level Material, Labor, Burden, and Subcontract Costs

Important Manufactured components are calculated first.

- 4 Use Product Structure Cost Roll-Up (13.12.13) to roll up the product structure. Key fields to populate are:

Field	Data
Site	10-100; click Next
Cost Set	Current; click Next
Item Number	50001
To	50001; click Next

Click Next, then Back.

Field	Data
Site	10-100; click Next
Cost Set	Current; click Next
Item Number	01010 to 01010; click Next

5 Open Item-Site Cost Inquiry (1.4.10).

Verify the Item Number is 01010 and click Next.

Verify that PAGE is selected in Output and click Next.

Check if your standard costs were correctly calculated for lower-level costs.

Important If your rolled up costs are incorrect, the error has its source in one of the data elements you added. Review your entries in the work center, the product structure, the routing record, and the item planning data. Check these values against the values shown in the example screen shots.

Chapter 7

Purchasing

Overview



This chapter examines the procurement process, from initial requisition to material receipt. Key concepts are discussed. The chapter then provides a purchasing flow example, a review, and a hands-on exercise.

Topics

Topics

- Supplier
- Requisitions
- Types of Purchase Orders
- Order Receipt
- Supplier Invoices and Payment Processing

Learning Objectives

Objectives

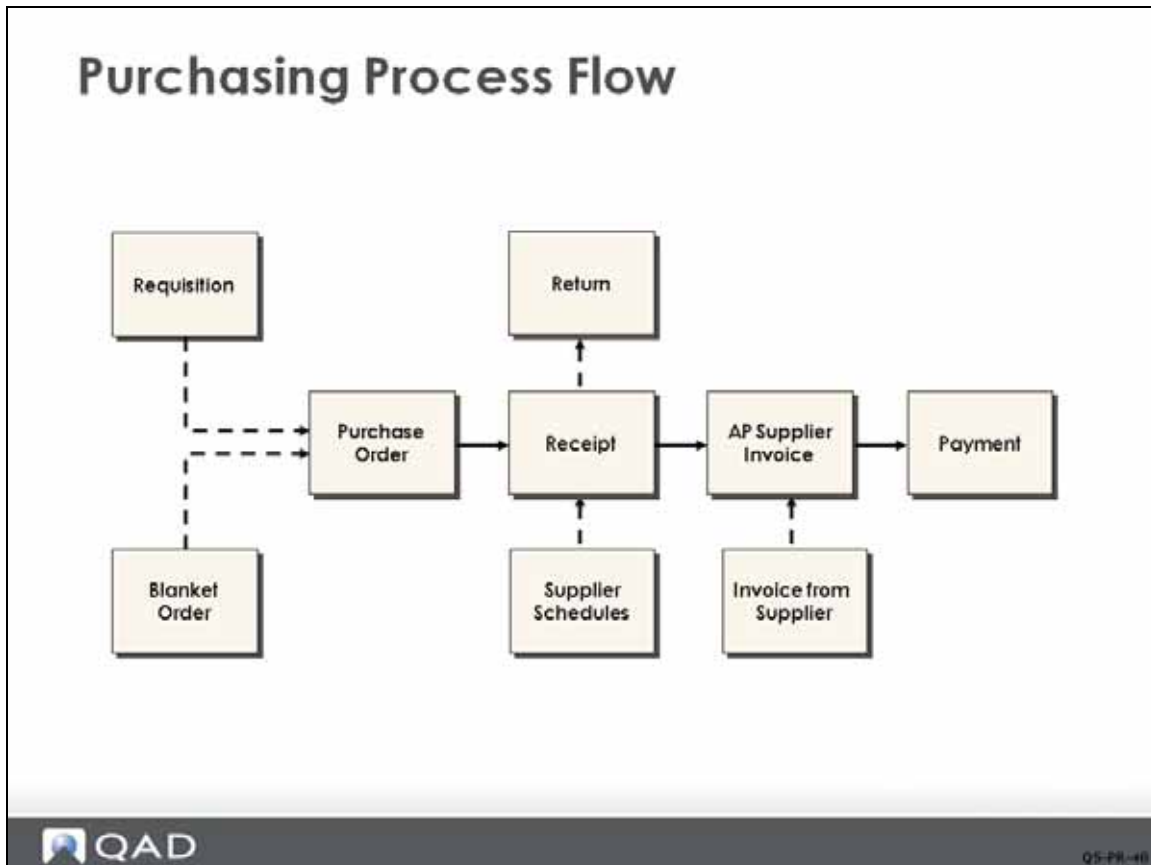
When you finish this section, you should be able to:

- Describe the purchase flow
- Explain how the system handles the different numbering systems that suppliers and customers use for the same item
- Explain how the system handles the different units of measure that suppliers and customers use for the same item
- Describe the purchase requisition flow
- Describe the three kinds of purchase orders that QAD Enterprise Applications supports



QS-PR-030

Key Concepts



Purchasing lets you manage all aspects of ordering and receiving materials and services, including requisitions, approvals, purchase orders, receipts, and returns. It supports purchasing of products as well as non-product materials and services (such as subcontracting services) and gives you the means to support discrete, process, and just-in-time (JIT) manufacturing.

While purchasing supports the purchase of everything, from office supplies to capital equipment for production, this course limits the example to purchasing direct material for manufacturing.

A purchase involves several steps. Often the first step is a requisition, which is the result of demands that material requirements planning (MRP) recognizes. An order is next, either a purchase order, a blanket order, or a supplier schedule. When the ordered goods arrive, a record is made called a receiver. If the goods are returned to the supplier, another record is made. The system keeps a record of each step.

After goods are received, Accounts Payable manages the receipt of an invoice from your supplier and matches it with the receiving documents that the system generates so that payments can be made.

You review several of these purchasing process stages in more detail in the following pages, but before you can perform purchasing functions, a supplier must exist in the system. So this chapter begins with a discussion about entering supplier information.

Supplier

Purchasing: Supplier		
	QMI	Supplier
Item	6001 Mouse Pad	Bridgefield Industries
UOM	EA	CS

	QMI	Supplier
Item	60018 Dust Cover	Bridgefield Industries
UOM	EA	CS

Before you use the purchasing functions, set up information for each of your suppliers. Supplier Create, located under Accounts Payable in the Finance system, is used to create the supplier record and business relation and set up the needed accounting information. QMI's key supplier for purchased components is Bridgeville Industries. The finance staff of QMI has set up this vendor with supplier code 10S1002.

In addition to setting up accounting data for the supplier, QMI has to set up supplier data particular to manufacturing. This set up is done in Supplier Data Maintenance under the Addresses menu in Master Data. This data includes contact names and phone numbers, shipping data, and other information of a non-financial nature.

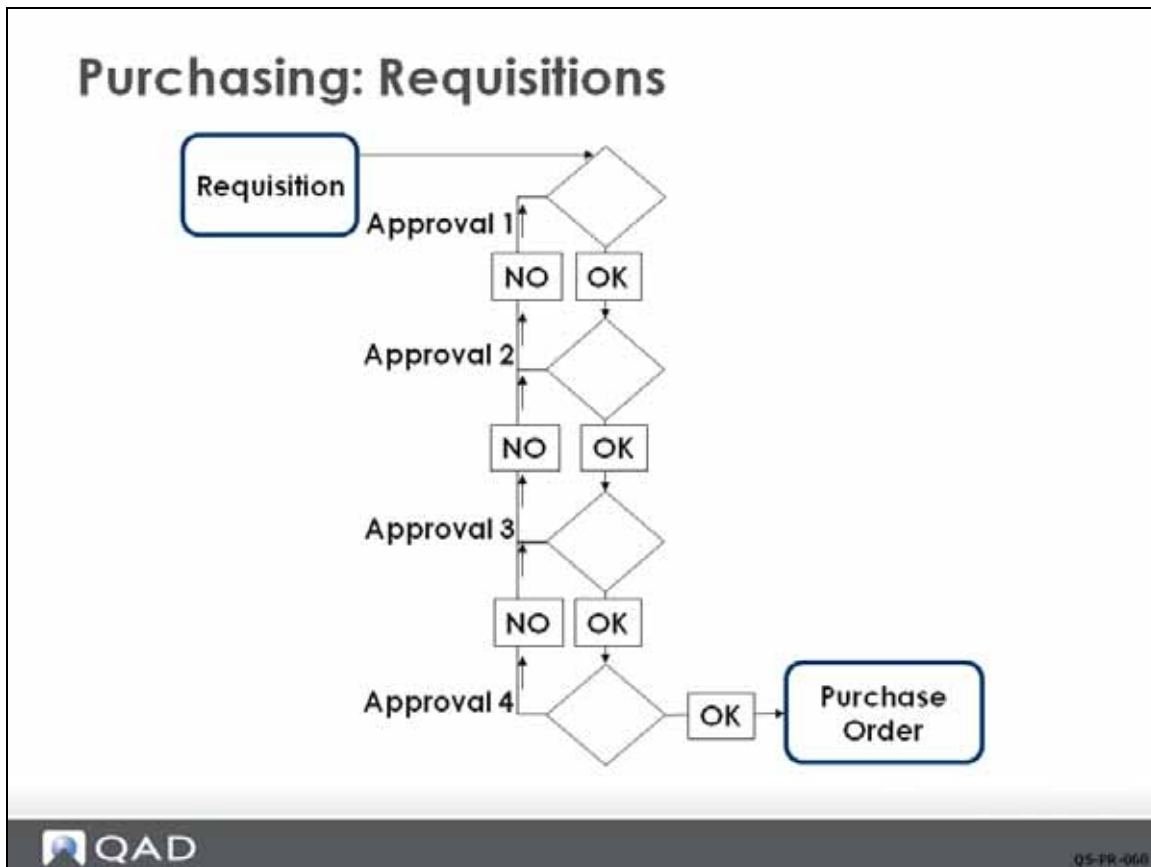
Supplier Items

Supplier items are used to cross-reference your item number with your supplier's item number. Later, in Purchasing, you can reference the supplier's item number instead of your own, and the system finds your item number for you.

Unit of Measure

Unit of measure conversions can be set up so that a unit of measure for a purchase order line can be different than the item master unit of measure. Then, when the item is received, it is converted to the item master unit of measure.

Requisitions

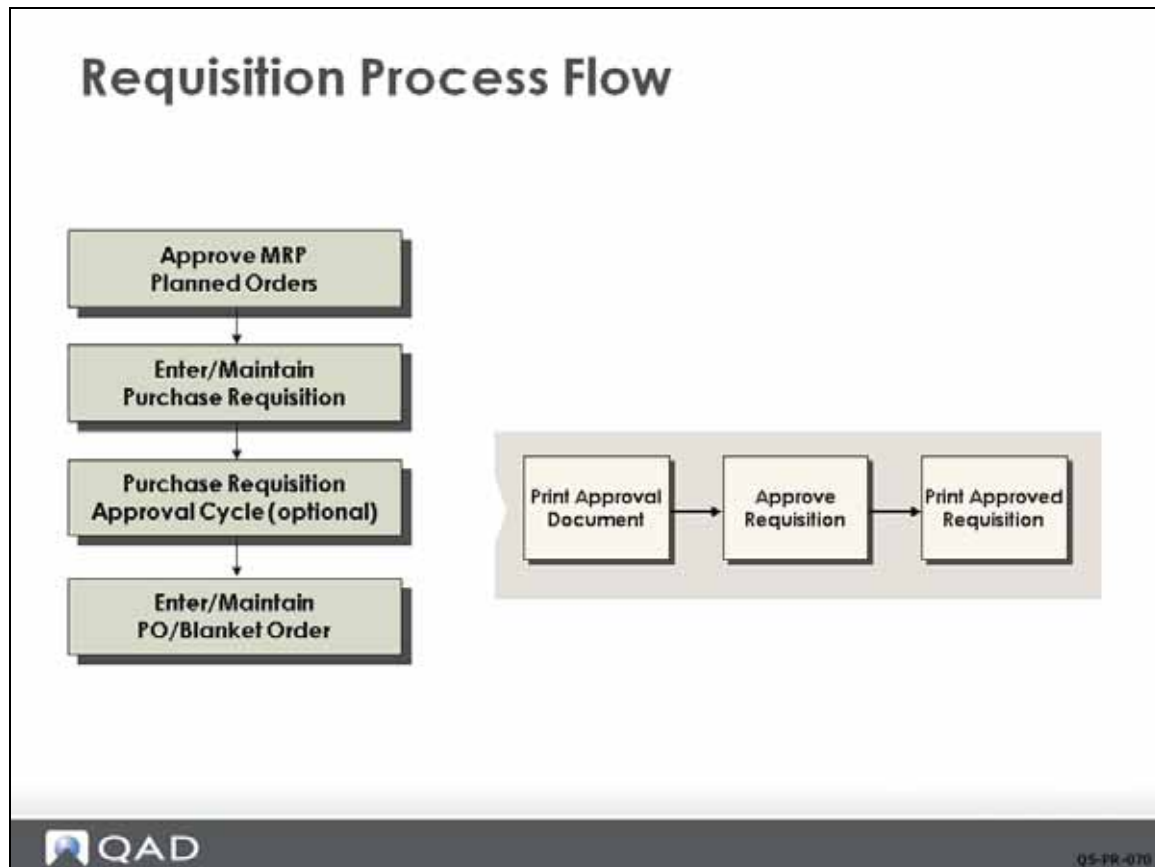


A requisition is a record stating that an item is needed. Requisitions specify the quantity, date needed, and place of delivery. A requisition is often the first step of a purchase, although you can issue a purchase order without it. Some companies also require multiple approvals before requisitions become orders. Once the requisition's information is transferred to a purchase order or a blanket order, the requisition is deleted.

Note QAD EE offers two requisition modules: Purchase Requisitions and Global Requisitions. Both are located in the Purchasing folder under the Supply Chain menu. Global Requisitions offer considerably more functionality (with more complexity). You need a clear understanding of the differences between the two before making an implementation decision. You can only use one or the other requisition module at a time, and there are consequences associated with changing. This course discusses only Purchase Requisitions.

Note A separate Global Requisitions course exists and purchase requisitions are covered in more detail in the purchasing course.

Requisition Process Flow



You can create standard requisitions manually with Purchase Requisition Maintenance or by approving an MRP planned order with Planned Purchase Order Approval. The system refers to requisitions by requisition number.

Approval Process

Companies using requisitions can choose to go through a requisition approval process. Approval levels can be defined to establish approval requirements by product line, site, requestor, and purchase expense account. Then, whenever a requisition is created, it is automatically assigned an approval code. This arrangement determines the approval level based on the requisition cost. The approval level indicates the person who must sign off on the requisition before the item can be purchased. Multiple approval levels can be recorded for each requisition.

For example, a \$50,000 purchase needs regional manager approval, but the purchasing and division managers must sign off first before it is sent to the regional manager.

Printed Requisitions

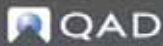
Requisition documents can be printed for each item, listing the approved requisitions for that item with the quantity and due date.

Supplier-item quotes can be printed on the requisition document. These quotes are similar to manual “buy cards” (used in many purchasing departments) because they list the supplier options.

Types of Purchase Orders

Types of Purchase Orders

- Blanket purchase order
- Supplier Schedules
- Discrete purchase orders



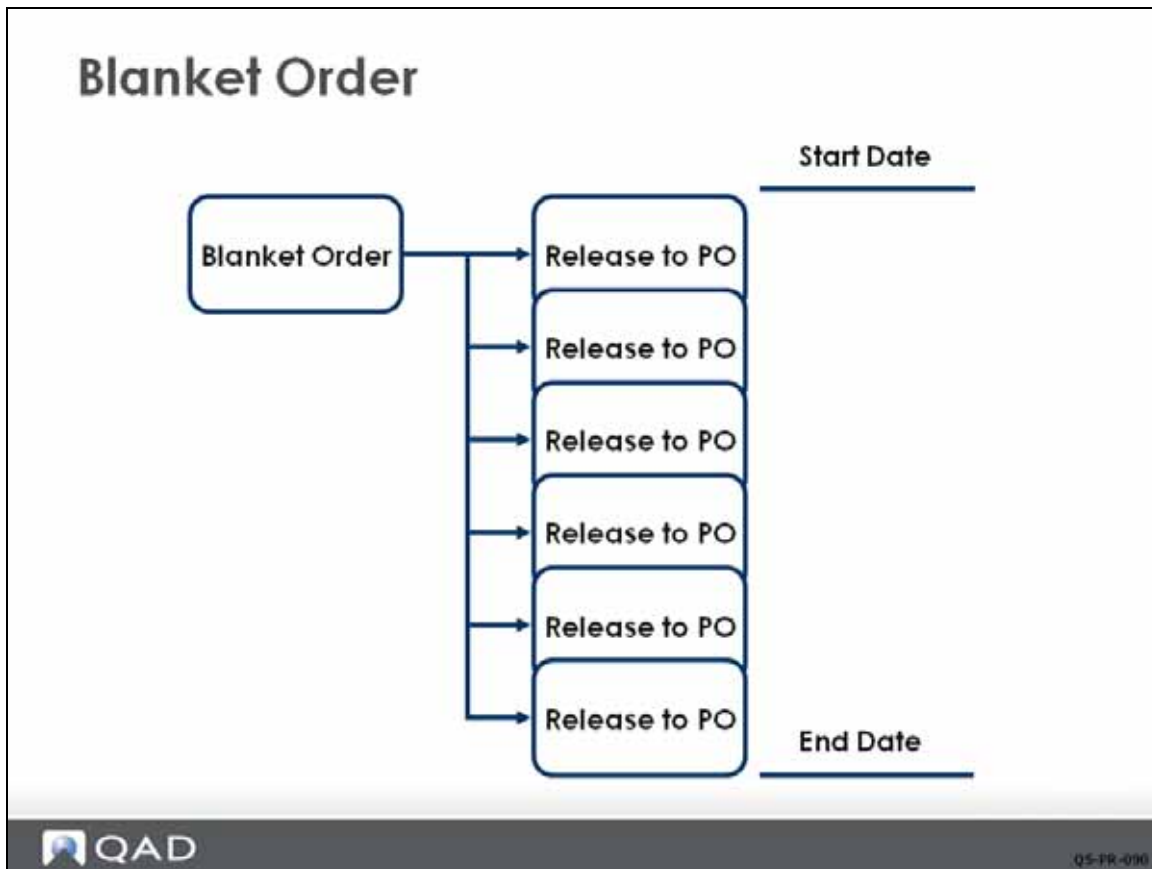
Q5-FR-006

QAD EE supports three kinds of purchase orders:

- Blanket purchase orders
- Supplier schedules
- Discrete purchase orders

Although all three kinds of orders are described in this section, the emphasis is on discrete purchase orders. The Example section is based upon a discrete PO.

Blanket Orders

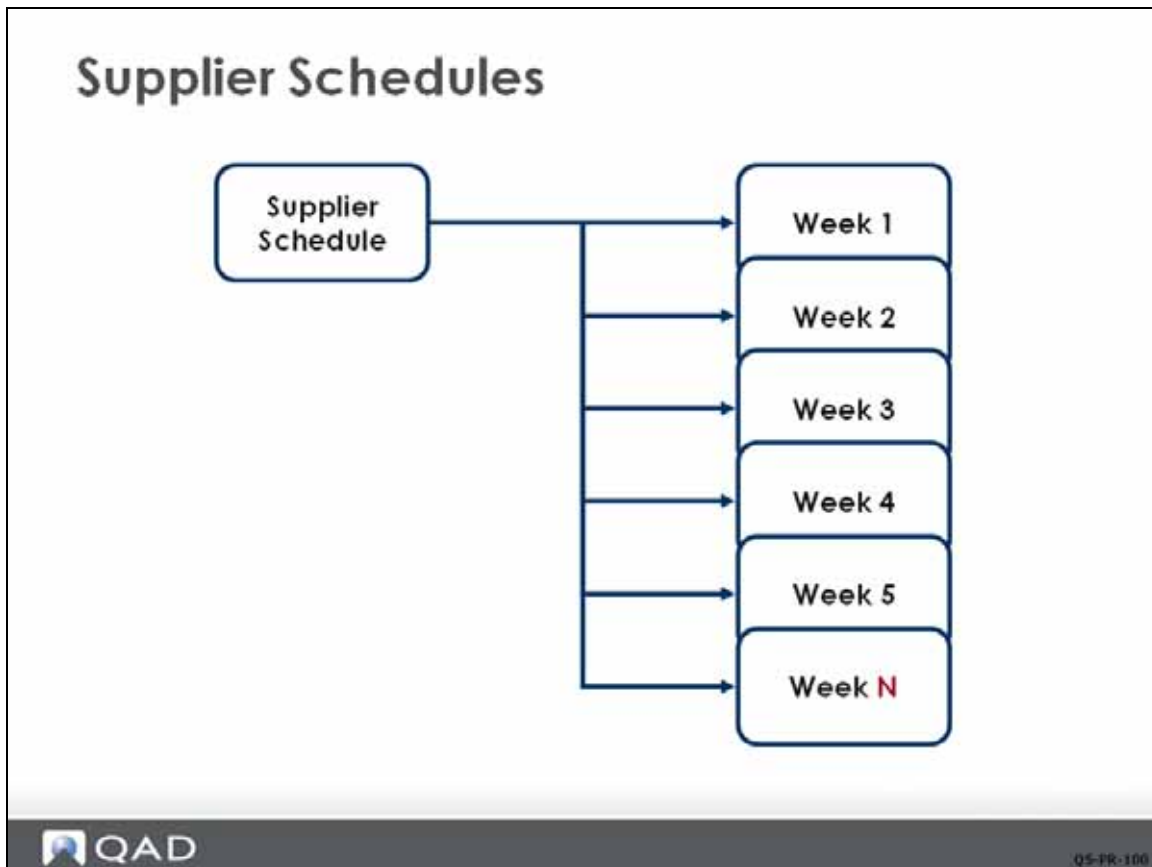


Use blanket orders for multiple deliveries of stock items, where an ongoing relationship with the supplier is assumed, but the exact delivery dates are unknown. Quantities and due dates can be entered up to the time when a blanket order becomes a purchase order. See the figure.

For example, QMI buys all of its components from Bridgeville Industries. Each week, the requirements change and are too small to get quantity discounts. The purchasing manager could negotiate an annual contract with Bridgeville Industries to get better pricing based on the estimated annual usage of purchased items. This pricing could be documented with a blanket order.

Each week a discrete purchase order would be released from the blanket order for the following week's requirement. A weekly release is only one example; the actual release cycle is user-defined. The blanket order tracks of totals ordered to date.

Supplier Schedules

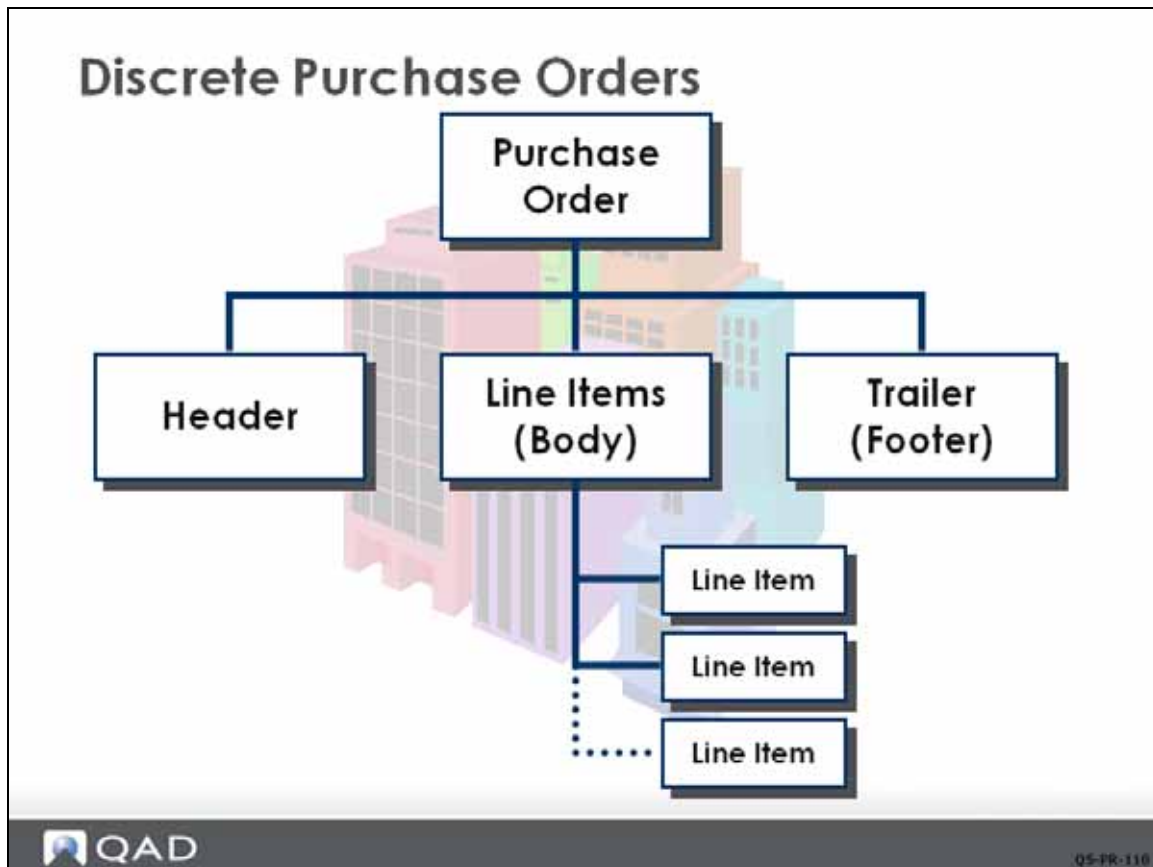


A supplier schedule is an agreement with a supplier that provides long-range planning data. Supplier schedules specify dates and even hours of delivery for the near term, and inform MRP and the supplier about long-term plans. These schedules are used for high-volume, repetitive purchasing, often in a JIT environment. See the figure.

A manufacturer of circuit boards needs circuit board blanks supplied each week. The manufacturer knows its exact needs for the next four weeks and its approximate needs for the next 12 months. The supplier of the blanks uses the information in the supplier schedule to plan orders for raw materials and to plan production and deliveries.

Supplier schedules are designed for use with EDI (Electronic Data Interchange) and as such eliminate most of the paperwork associated with the purchasing process.

Discrete Purchase Orders

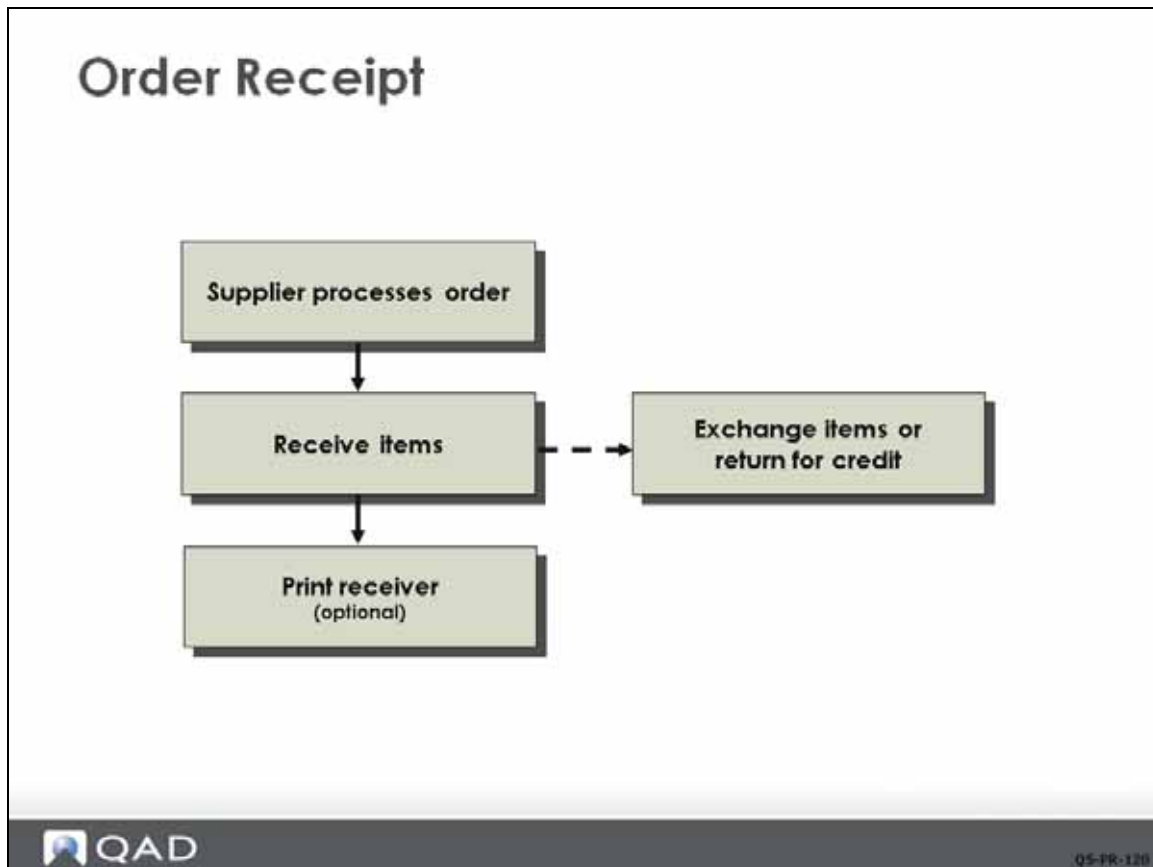


Use discrete purchase orders for single transactions with a supplier. Purchase orders contain a single delivery date for each line item. MRP treats purchase order items as supply and assumes that ordered amounts are available on the delivery date. Receipts can be processed against these purchase orders. You see how to process a discrete PO in the Example section.

The diagram shows the three main sections to the purchase order:

- The header contains data that applies to the entire order. This data includes the PO number, the supplier, the buyer, and other data.
- The line items detail the specific items being purchased. This information includes item numbers and descriptions, quantities, and prices.
- The trailer records the final data applying to the entire order such as taxes and shipping charges.

Order Receipt

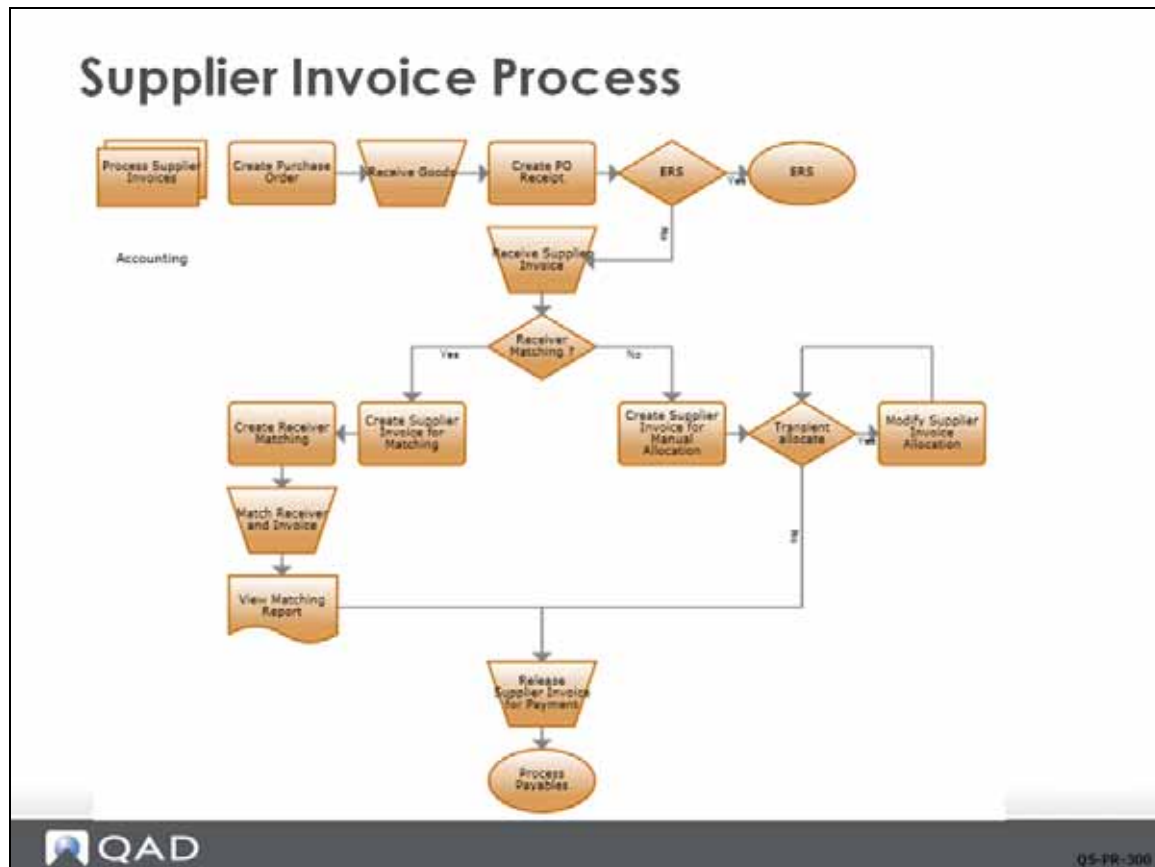


This slide illustrates the order receipt process.

Purchase order receipt transactions are performed when items on an open purchase order are received into inventory. When material is received, inventory is updated as well as the open order quantity on the PO.

All PO receipts and returns generate receivers for matching with supplier invoices in Accounts Payable. A receiver is a record that goods have been received into inventory. Receivers update inventory balances and allow Accounts Payable to verify quantities and prices before paying suppliers. Receiving documents can be printed and attached to the items or routed to the Accounts Payable department.

Supplier Invoicing



The Accounts Payable department records amounts owed to vendors and processes and prints payments for those amounts. Often, an Accounts Payable department uses supplier invoices to document internal approval and help ensure the accuracy of invoices it receives.

A supplier invoice is a document in the system based on the invoice from the supplier. When approved, the supplier invoice authorizes payment to the supplier.

The Accounts Payable department uses the Supplier Invoice function (28.1.1.1) to create, view, modify, and delete supplier invoices and credit notes and:

- Create initial invoices to enter supplier documents immediately into the system.
- Match current invoices against original purchase order receipts.
- Prepare invoices for allocation and allocate the invoice.
- Approve invoices.
- Place invoices on payment hold or release invoices for payment that are currently on hold.
- Reverse incorrect invoices and their postings, and optionally replace these invoices with new invoices.

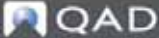
Processing AP Payments

AP Payment Instruments

- Electronic Transfer
 - Use Payment Selection Execute
 - Uses EDI for Payment format transformation

- Check Payment
 - Use Supplier Check Print
 - With or without Payment-in-Process (PIP) account; with PIP is recommended

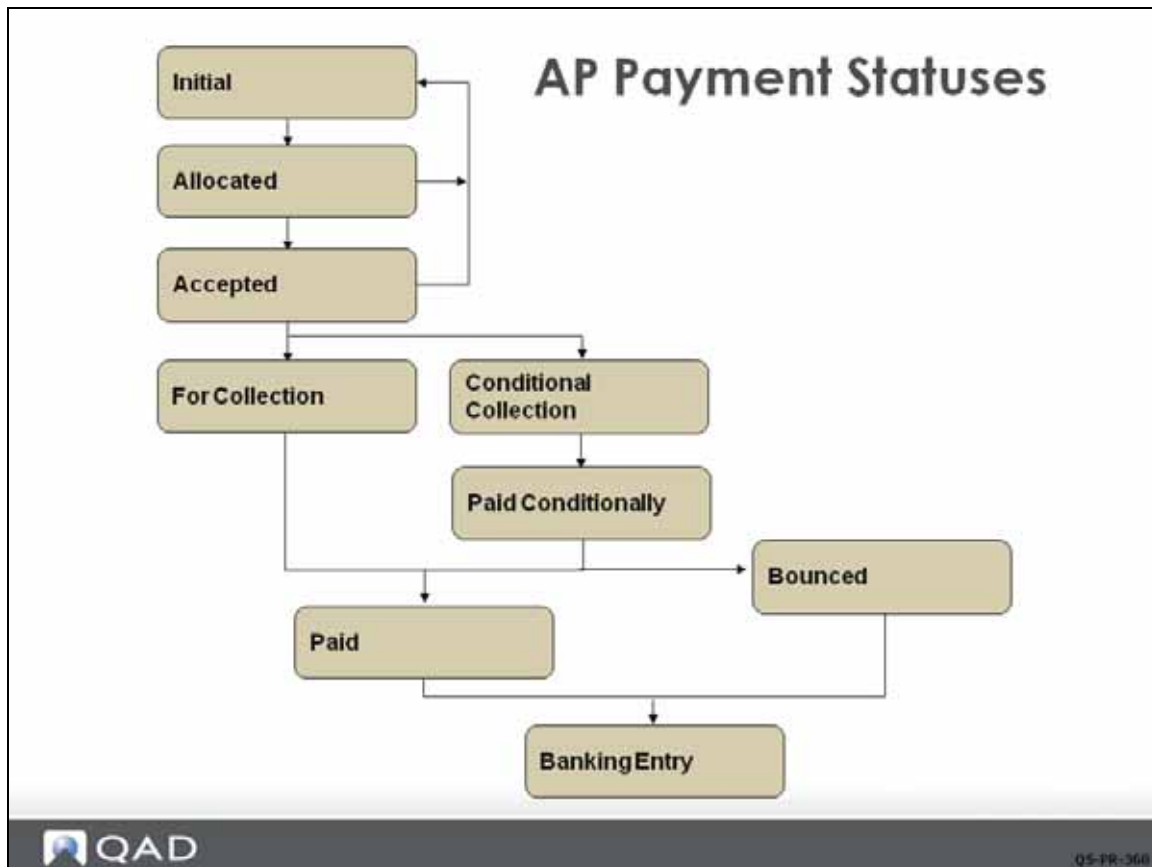
- Other Payment Instruments
 - Drafts, similar to checks
 - Paper transfers, similar to electronic transfer
 - Promissory notes/summary statements, similar to checks
 - Cash, processed directly in Bank/Cash entry


Q5-FR-318

After supplier invoices are approved for payment, the AP department has a range of instruments available for actually paying the suppliers other than check or electronic payment:

- **Draft.** The draft or bill of exchange is a negotiable security that the issuer (the bank) signs and dates. It contains an unconditional order or instruction to pay a fixed amount to the supplier on the agreed due date. Once signed, the draft is considered a collection instrument. Its form, content, and legal consequences are governed by law.
- **Paper Transfer.** The transfer payment instrument is an order for payment that you submit to your bank. The bank ensures that the amount is transferred to the supplier's bank account. Transfers are in paper format.
- **Promissory Notes.** The promissory note is a promise to pay the supplier, instead of an unconditional payment order. If payment is defaulted summary statements, the promissory note carries more risk for the beneficiary and has fewer legal consequences for the issuer. You send summary statements to the supplier. Factoring companies and banks that provide credit card services use summary statements.

AP Payment Statuses



Payment status codes control payment processing. Different payment instruments follow different status sequences. The particular flow used is determined during financial setup. At a minimum, the Paid and Bounced statuses are used. Typically, a For Collection status is used for payments sent to the bank. The Initial status is for an initial payment registration.

You can define an account for each status through which the payment is processed, or use one GL account to record the transitions. For example, if you are processing a check through the Initial, Allocated, For Collection, and Paid statuses, you can define a GL account of type Supplier Payment for each status. This approach supports detailed reporting requirements.

Each status transition usually generates a posting, which updates the account associated with the status and bank or liability accounts.

All of this processing is managed within Enterprise Financials and is not covered in this class.

Example

The example in this chapter shows the following purchasing activities:

- Review supplier data.
- Set up a unit of measure conversion for 60017 (mouse pad), which the supplier only sells in a case with 100 items.
- Set up a supplier item so that the system knows that QMI's item 60017 is the same as supplier item SCC62050.
- Review Purchasing Control settings.
- Create a purchase order to buy all of the component items for 01010 in sufficient quantities to build ten medical ultrasound devices.
- Receive those items into inventory.

Verify Supplier Data

Supplier Create

Supplier Code: 1051002 Active: ☒

Business Relation: 1051002

Business Relation | Accounting | Payment | Banking | Defaults | Tax Info | Comments

Name: Bodgeville Industries

Address: 3390 Linco Road

Zip/City: 49127 Stevensville

Country Code: USA USA - TAX PURPOSE

State: MI Michigan

County:

Telephone:

Fax:

E-Mail:

Internet:

QAD QS-FR-130

The Finance Department uses the Supplier Activities (28.20.1.1) to create, view, modify, or delete a supplier. If transactions exist, you cannot modify account details. A record can only be deleted if it is not referred to in the system, but it can be marked inactive.

Selecting Draft Instances in System/User Settings, Change System Setting, allows you to save suppliers in draft format. When a record is saved in draft format, none of the system validations are executed. You can then return later to complete the record by choosing the Supplier Browse Drafts activity and selecting the record you want to finish from the list. See *User Guide: Introduction to QAD Enterprise Applications* for details on drafts.

After creating a supplier here, specify additional operational data in Supplier Data Maintenance (2.3.1). An e-mail is automatically sent to the members of the SupplierNotify role responsible for creating this data when a new supplier is created.

Business Relation Create

Business Relation Create

Go To Actions Tools Attach Print Preview

Attachments

Business Relation: Medical Distributors

Name: Medical Distributors, Inc.

Search Name: Medical Distributors, Inc.

Second Name:

Third Name:

Group Name:

Active: ☒

Address Info: General Defaults

Address	Zip Code	City	Name	Search Name	Telephone

Export to Excel
Delete a Row
Insert a New Row
Columns...
Reset to Initial Settings
Print...

QAD Q5-FR-131

Before a supplier can be created, a business relation must exist. Every supplier references a business relation for address details. QMI's Finance Department uses the Business Relation activities (36.1.4.3) to create, view, modify, and delete business relation records. You can also use the Excel Integration option to export records to or load records from an Excel spreadsheet.

Selecting Draft Instances in System/User Settings, Change System Setting, allows you to save business relations in draft format. When you save a record in draft format, none of the system validations are executed. You can then return later to complete the record by choosing the Business Relation Browse Drafts activity (36.1.4.3.6) and selecting the record you want to finish from the list.

Verify Supplier Data

Verify Supplier Data

Supplier Data Maintenance

Go To Actions Copy Print Preview Attach

Supplier 1051002 Site: Carrier:

Supplier Address

Supplier: 1051002 Business Relation: 10-51002

Name: Bridgeville Industries Active: ☐

Address: 3390 Linco Road Added

Address:

Address:

City: Stevenoville State: MI Post: 49127 Format:

Country: USA County:

Attention: Elizabeth Clear [2]

Telephone: [2]

Fax: [2]

Supplier Data

Sort Name: Bridgeville Industries Currency: USD

Supplier: RMS Language: us

Ship Via: PER INSTRUCTIONS Daybook Set: 10PURCH

Remarks:

Carrier: Site:

Purchase Contact: Kanban Supplier:

Promotion Group:

QAD Q5-FR-140

After QMI finance sets up the supplier record, QMI purchasing verifies data and adds vendor-specific information that is used during the creation of purchase orders.

The first frame of Supplier Data Maintenance (2.3.1) displays the address information that finance entered. Purchasing adds contact and shipping information.

Supplier Pricing Data

The screenshot shows the 'Supplier Data Maintenance' window for Supplier 1051002. The window has a menu bar with 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. Below the menu bar, there are tabs for 'Price Table' and 'Discount Table'. The 'Supplier Address' section contains the following information:

Supplier: 1051002	Business Relation: 10-S1002		
Name: Bridgeville Industries	Active: ☐		
Address: 3390 Linco Road	Added:		
Address:			
City: Stevenoville	State: MI	Post: 49127	Format:
Country:	USA	County:	
Attention: Elizabeth Clear	[2]		
Telephone:	[2]		
Fax:	[2]		

The 'Supplier Pricing Data' section contains the following fields:

- Buyer: 3-02
- Price Table:
- Discount Table:
- Fixed Price: ☒

The QAD logo is visible in the bottom left corner, and the text 'Q5-FR-141' is in the bottom right corner.

In the second frame, you can add the buyer code, price, and discount tables if you use this information. When Fixed Price is checked, the same field is also checked on POs created for this supplier. This selection indicates that the negotiated prices with this supplier cannot normally be changed.

Enterprise Material Transfer Data

The screenshot shows a software window titled "Supplier Data Maintenance". It has a menu bar with "Go To", "Actions", "Copy", "Print", "Preview", and "Attach". The main content area is divided into two sections. The top section, "Supplier Address", displays data for "Supplier: 1051002" and "Business Relation: 10-S1002". It includes fields for Name ("Bridgeville Industries"), Address ("3390 Linco Road"), City ("Stevensville"), State ("MI"), Post ("49127"), Country ("USA"), Attention ("Elizabeth Cline"), Telephone, and Fax. There are checkboxes for "Active" and "Added". The bottom section, "Enterprise Material Transfer Data", contains checkboxes for "Send SO Price", "Send Credit Held SO", "Auto EMT Processing", and "Automatic PO Receipt". It also features a "SO Price Reduction" field set to "0.00%" and a "Use SO Reduction Price" checkbox. The QAD logo is in the bottom left, and "Q5-FR-142" is in the bottom right.

The third frame is used for Enterprise Material Transfer (also called back-to-back sales orders/purchase orders), a special case situation that is covered in its own training material.

Supplier Terms Data

The screenshot shows a software window titled "Supplier Data Maintenance" with a menu bar containing "Go To", "Actions", "Copy", "Print", "Preview", and "Attach". The main content area is divided into two sections: "Supplier Address" and "Supplier Terms Data".

Supplier Address Section:

- Supplier: 1051002
- Name: Bridgeville Industries
- Address: 3390 Linco Road
- City: Stevensville
- State: MI
- Post: 49127
- Country: USA
- Attention: Elizabeth Clear
- Telephone: (2)
- Fax: (2)
- Business Relation: 1051002
- Active: ☒
- Added:
- Format:

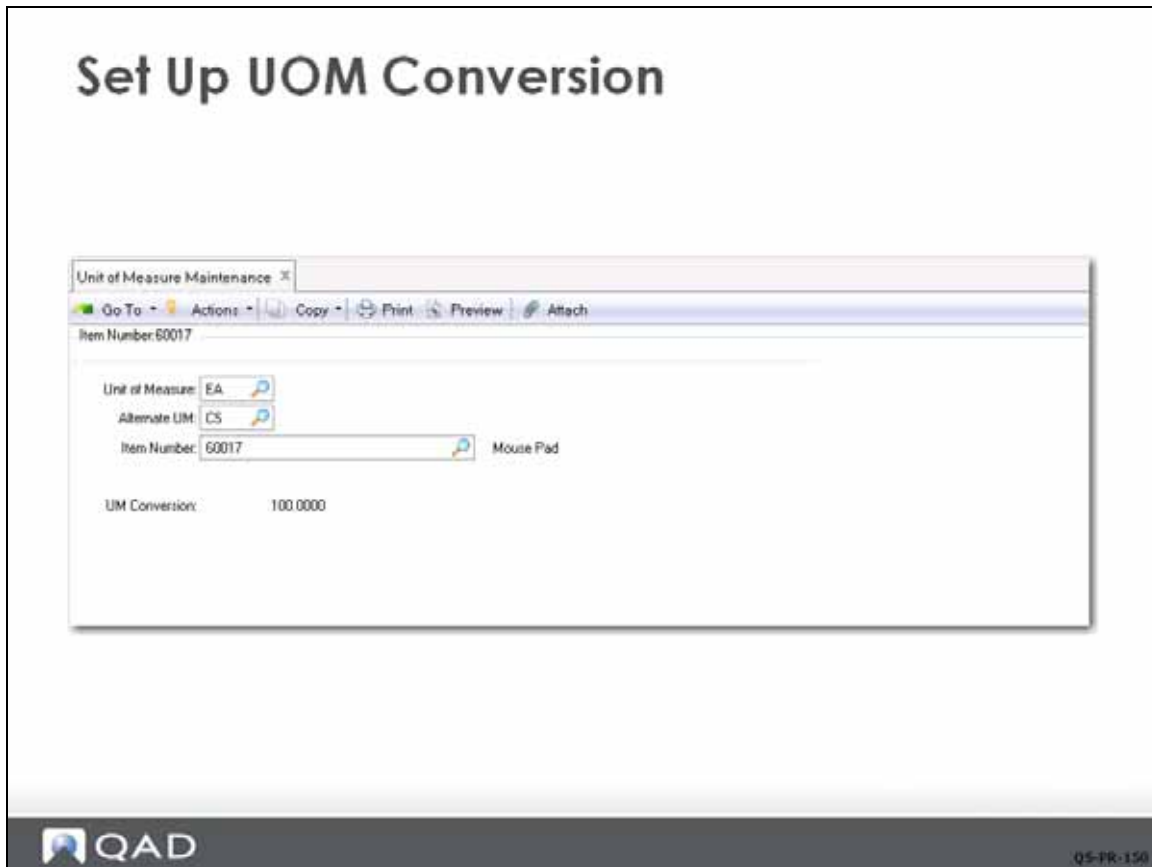
Supplier Terms Data Section:

- Cr Terms: 30D
- Discount Percent: 0.00%
- Partial OK: ☒
- DB Number:
- CoC Number:

The QAD logo is visible in the bottom left corner, and the text "Q5-FR-143" is in the bottom right corner.

The fourth frame displays the credit terms that finance set-up (30D means payable in one month). The Partial OK field is checked, meaning that incomplete purchase order deliveries are allowed. This option is a default for this supplier that can be changed on each PO.

Set Up UOM Conversion



QMI's base unit of measure for the mouse pad (item 60017) is each (EA). The supplier, Bridgeville Industries, only sells the mouse pads in a case of 100. The Purchasing Department uses Unit of Measure Maintenance (1.13) to enter a UOM conversion for the mouse pad so the system can convert a case to a specific quantity.

To do an UOM conversion, the buyer defines an item-specific unit of measure of conversion that applies only to item 60017 as shown in the slide.

To define a generic conversion, such as from Inch to Centimeter, enter IN in Unit of Measure, CM in Alternate UM, leave Item Number blank, and enter 2.54 in the UM conversion field. The system can then convert anything measured in centimeters into inches. If you wanted the system to be able to convert from IN to CM, add another conversion with CM in the Unit of Measure field and IN in the Alternate UM field and 0.394 in the UM conversion field.

Discussion

What does QMI do about item planning data in response to supplier order size information?

Add Supplier Item

Add Supplier Item

Supplier Item Maintenance

Go To Actions Copy Print Preview Attach

Item Number: 60017 Mouse Pad
Supplier: 1051002 Bridgeville Industries
Supplier Item: SCC62050

Unit of Measure: EA
Supplier Lead Time: 0
Use SO Reduction Price: 0.00%
Currency: USD
Quote Price: 0.49
Quote Date: 4/5/2011
Quote Qty: 100.0
Price List
Manufacturer
Manufacturer Item
Comment

QAD Q5-PR-160

Enter information obtained from the supplier, Bridgeville Industries, about the mouse pads in Supplier Item Maintenance (1.19). The supplier's item number for QMI's 60017 is SCC62050.

Typically, suppliers do not use the same numbering scheme that their customers do. By entering the supplier item information in the system, the buyer can use either the supplier's item number or QMI's item number on purchase orders and the system recognizes these numbers as the same item.

Additional Notes

- Note the Quote Price field of 0.49 and the Quote Quantity of 100.
- Supplier lead time is 0 days. This drives the purchase lead time entered in Item Master Maintenance for this item.
- Note also the fields for the manufacturer of an item. Often items are purchased from distributors, but can also be bought directly from the manufacturer.

Important The ability to use the Supplier Item Browse to search on an item or supplier is a powerful feature. This feature lets you inquire on all the suppliers that could supply an item, or all the items you purchase from each supplier.

Verify Purchasing Control Settings

The settings in Purchasing Control (5.24) affect the purchase process. The Ship-To field is the default site code where most shipments are received. The site code is linked to QMI's company address record. This code lets the system print the ship-to address on all purchase orders. The ship-to address can be modified on each purchase order line if necessary.

The PO Prefix field is set to P10 and Receiver Prefix to R10. Since the Receiver Type is set to 1, each line item on the PO generates a receiver, so receiver numbers index differently than PO numbers.

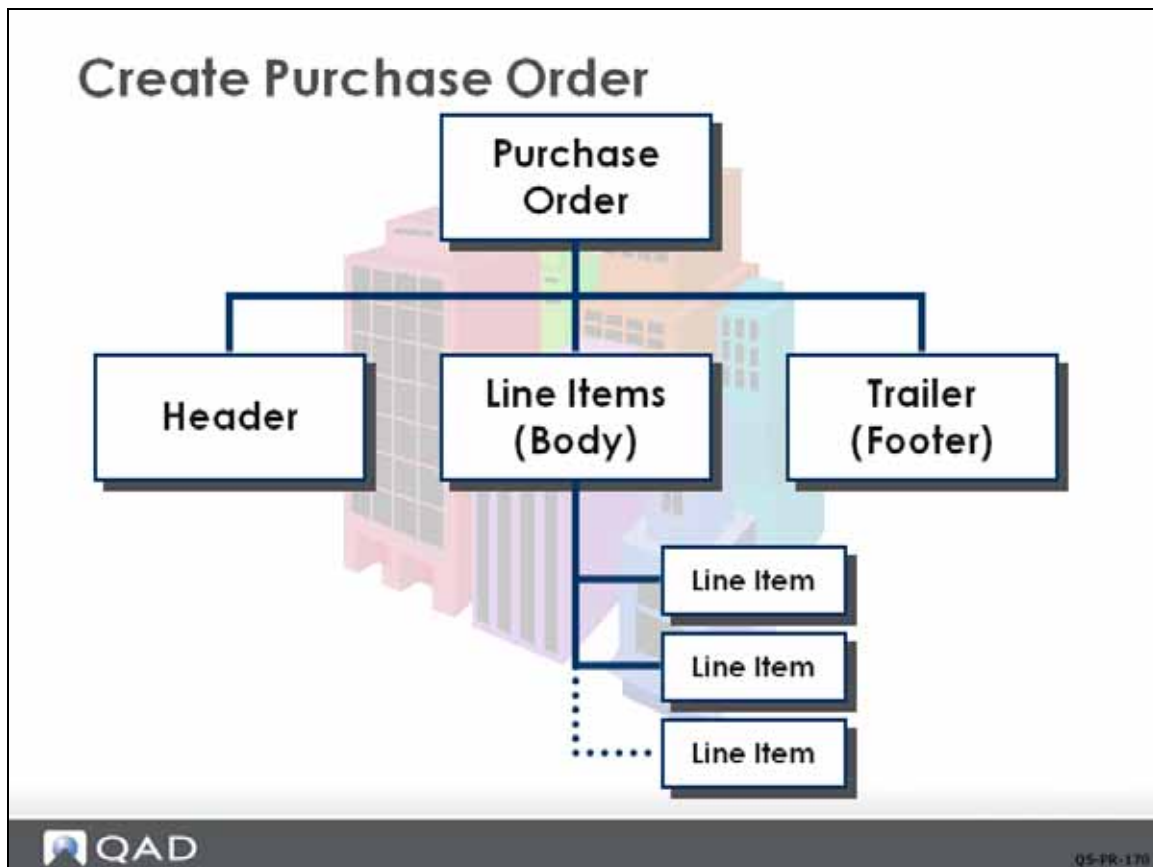
All the fields on the right except Keep Booking History are unchecked.

The tolerance fields set the limits for overshipments. The settings indicate that any item receipt with a count 10% greater than the PO quantity or a value of 100 currency units greater than the PO value is rejected.

The single entry line format lets you customize due dates, sites, tax statuses, and other information for each line item on a purchase order. Multiple entry lets you enter basic information such as item number, quantity, and price for several lines on a single screen.

PO header and line comments are used to add significant detail to a purchase order header (referring to the entire order), or to line item detail (applies only to the specific line). The control settings set the default for each new order.

Create Purchase Order



Remember the three key elements of the purchase order before you begin creating the PO:

- The header contains data that applies to the entire order.
- The line items detail the specific items being purchased.
- The trailer records the final data applying to the entire order such as taxes and shipping charges.

Enter Header Information

Enter Header Information

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Purchase Order: P1010001 Supplier: 1051002 Price Tbl

Header Lines Trailer

Header Details Tax Info Logistics Delivery SRG Committed Comments

Header

Purchase Order: P1010001 Supplier: 1051002 Ship-To: 10-100

Supplier

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

Ship To

QMI - USA Division
30 Ridgedale Ave
East Hanover
USA - TAX PURP

Details

Order Date: 10/6/2010 Price Tbl
Due Date: 10/6/2010 Disc Tbl
Buyer: 3-02 Ln Disc: 0.00
Bill To: 10-100 Site:
Sales/Job: Daybook Set: 10PURCH
Contract: Project:
Contract:
Remarks:

Tax Info

Tax Usage:
Tax Environment: USA
Tax Class:
Taxable: ☒
Tax In: ☐

Currency: USD Language: us
Taxable: ☒
Fixed Price: ☒ Consign: ☐
Credit Terms: 300 Entered By: rgl
Requested By:
Comments:

QAD QS-FR-100

In Purchase Order Maintenance (5.7), QMI's buyer enters a purchase order for the components required to build ten medical ultrasound units.

The first part of the order has header information such as PO number, that the system assigns based on the prefix and number set-up in Purchasing Control; the supplier name, Bridgeville Industries; ship-to address, QMI receiving site 10-100; credit terms; currency; tax information; and order and due dates (both default to today's date). In this example, the system automatically generates the purchase order number; however, you can assign PO numbers manually.

Note Setting the due date on the order header sets the default due date on all line items. If you know all the line items have different due dates, or if you are using requisitions that have the due date, you can leave the header due date blank.

The tax information pops up in a separate window when you click Next or press Enter after completing the header screen. This data defaults from Global Tax Management and is not normally modified in Purchase Order Maintenance. Accept the defaults and click Next to advance.

Questions

Some of the information that was set up in Supplier Maintenance and Purchasing Control is now seen in the order created:

- What default information came from the supplier record (Supplier Data Maintenance)?
- What effect do the Purchasing Control settings have?

Enter Line 1 Data

The screenshot displays the 'Purchase Order Maintenance' window in QAD. The title bar reads 'Purchase Order Maintenance'. Below the title bar is a menu bar with 'Go To', 'Actions', 'Copy', 'Print', 'Preview', and 'Attach'. The window is divided into several sections:

- Header:** Shows 'Purchase Order: P1010001', 'Supplier: 1051002', and 'Ln Format S/M: Single'.
- Lines:** A table with columns: Ln, Site, Req, Item Number, Qty Ordered, UM, Unit Cost, and Disc%. The first line (Ln 1) has Site 10-100, Item Number 62050, Qty Ordered 1.0, UM RL, Unit Cost 1700.00, and Disc% 0.00.
- Line Details:** A form for line 1 with various fields:
 - Qty Received: 0.0, Due Date: 10/6/2010, CRT Int: 0.00
 - Qty to Rel: 0.0, Pur Acct: 6610, Mech, ADM
 - Single Lot: ☒
 - Performance Date:
 - Project:
 - Location: 020
 - Need Date:
 - Type:
 - Item Revision:
 - Sales/Job:
 - Taxable: ☒
 - Status:
 - Fixed Price: ☒
 - Inspect Req: ☐
 - UM Conversion: 1.0000
 - Stock UM Quantity: 1.0, RL
 - Update Avg/Last Cost: ☒
 - Extended Net Cost: 1,700.00
 - Manufacturer: Beryllium Copper

The QAD logo is visible in the bottom left corner, and 'Q5-PR-190' is in the bottom right corner.

For line 1, QMI's buyer enters an order for one roll, item 62050. The unit of measure and unit cost information default from the information entered earlier in Item Master Maintenance.

Additional Notes

Each line specifies a particular item being ordered, its order quantity, and price. Line details include any exceptions to header information, such as a delivery date or receiving site, that apply to this line item only and not the whole order.

The format for PO lines was set to single-line entry in Purchasing Control. This format shows one line item at a time with all the detail in the frame below. This feature lets you verify the data that has defaulted and to modify data as needed. Once the four items are set up on the PO, you review the PO in multi-line format.

Questions

Look at some of the other default information. Where does the following default information come from?

- Location
- Pur Acct

Enter Line 2 Data

Enter Line 2 Data

Purchase Order Maintenance
Go To
Actions
Copy
Print
Preview
Attach

Purchase Order: P1010001
Supplier: 1051002
Site: 10-100
Item:

Header
Lines
Trailer

Lines
Line Details
Tax Info
Comments

Header
Purchase Order: P1010001
Supplier: 1051002
Ln Format S/M: Single

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
2	10-100		60050	10.0	EA	375.00	0.00

Line Details

Qty Received: 0.0
Due Date: 10/6/2010
CRT Int: 0.00

Qty to Rel: 0.0
Pur Acct: 6610
Mech
ADM

Single Lot: ☒
Performance Date:
Project:

Location: 030
Need Date:
Type:

Item Revision:
Sales/Job:
Taxable:

Status:
Fixed Price: ☒
Inspect Req: ☒
Credits:

Supplier Item:
UM Conversion: 1.0000

Manufacturer:
Stock UM Quantity: 10.0
EA

Description: Base Unit / CPU
Update Avg/Last Cost: ☒

Extended Net Cost: 3,750.00

QAD
QS-PR-200

For line 2, the buyer enters an order for 10 CPUs 60050. The system fills in the unit cost of \$375.00.

Enter Line 3 Data

Enter Line 3 Data

Purchase Order Maintenance X

Go To Actions Copy Print Preview Attach

Purchase Order: P1010001 Supplier: 1051002 Site: 10-100 Item:

Header Lines Trailer

Line Details Tax Info Comments

Header

Purchase Order: P1010001 Supplier: 1051002 Ln Format S/M: Single

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
3	10-100		60008	10.0	EA	269.00	0.00

Line Details

Qty Received: 0.0 Due Date: 10/6/2010 CRT Int: 0.00

Qty to Rct: 0.0 Pcr Acct: 6610 Mech ADM

Single Lot: Performance Date: Project:

Location: 020 Need Date: Type:

Item Revision: Sales/Job: Taxable:

Status: Fixed Price: Inspect Req: Coms:

Supplier Item: UM Conversion: 1.0000

Manufacturer: Stock UM Quantity: 10.0 EA

Description: Printer Update Avg/Last Cost:

Extended Net Cost: 2,690.00

QAD

Q5-PR-210

For line 3, the buyer enters an order for ten printers (item 60008).

Enter Line 4 Data

Enter Line 4 Data

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Purchase Order: P1010001 Supplier: 1051002 Site: 10-100

Header Lines Trailer

Line Details

Header

Purchase Order: P1010001 Supplier: 1051002 Ln Format S/M: Single

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
4	10-100		60002	10.0	EA	122.00	0.00

Line Details

Qty Received: 0.0 Due Date: 10/6/2010 CRT Int: 0.00

Qty to Req: 0.0

Single Lot:

Location: 020 Performance Date:

Item Revision: Sales/Job:

Status: Fixed Price:

Supplier Item:

Manufacturer:

Description: Display / Readout

Put Acct: 6610 Mech ADM

Project:

Type:

Taxable:

Inspect Req:

Credits:

UM Conversion: 1.0000

Stock UM Quantity: 10.0 EA

Update Avg/Last Cost:

Extended Net Cost: 1,220.00

QAD

Q5-PR-215

For line 4, the buyer orders 10 each of the display/readout, item 60002.

Enter Trailer Information

Enter Trailer Information

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Purchase Order: P1010001 Supplier: 1051002

Header Lines Trailer

Trailer Tax Info Trailer Information

Header

Purchase Order: P1010001 Supplier: 1051002 Ship-To: 10-100

Trailer

Non-Taxable	7,660.00	Currency: USD	Line Total:	9,360.00
Taxable	1,700.00		Total Tax:	127.50
Tax Date: 10/6/2010			Total:	9,487.50

View/Edit Tax Detail

Trailer Information

Order Revision: 0

Order Rev Date:

Amount Prepaid: 0.00

Print PO: ☒ Status:

EDI PO: ☐ Close Date:

FOB:

Deliver To:

Ship Via: PER INSTRUCTIONS

QAD

Q5-PR-228

The last frame shows the trailer information, which contains tax and order status information for all line items. The 9,487.50 is the total value of the four line items on this order plus tax. The order is selected for printing.

If you change the order, the system prompts you to update the revision number. Updating the revision number allows you to track how many changes were made to the order.

Receive Items

Example: Receive Items

Purchase Order Receipts

Go To Actions Copy Print Preview

Order: P1010001 Supplier: 1051002 Status: Effective: 10/6/2010

Packing Slip: 123456 Move to Next Operation: [X]

Receiver: Bridgeville Industries

Receive All: [X] Comments: [] Ship Date: []

Ln	Item Number	UM	Qty Open	UM	Receipt Qty	UM	Project	Due Date	T
1	62050	rl	1.0	rl	1.0	rl		10/6/2010	
2	60050	EA	10.0	EA	0.0	EA		10/6/2010	
3	60008	EA	10.0	EA	10.0	EA		10/6/2010	
4	60002	EA	10.0	EA	10.0	EA		10/6/2010	

Line: [] Unit of Measure: [] Site: [] Loc: []

Quantity: [] ID: [] Lot/Ser: []

Packing Qty: [] DP: [] Reference: []

Cancel B/O: [] Supplier Lot: []

Item Number: [] Multi Entry: [] Chg Attribute: []

Supplier Item: [] Credits: []

QAD Q5-PR-240

Bridgeville Industries, the supplier, includes a packing list with the shipment. This document includes QMI's purchase order number, their sales order number, QMI's ship-to address, their ship-from address, items and quantities ordered, items and quantities shipped, and other information, such as any back orders. This order is marked that it must be shipped complete.

The receiving transaction has a field to include the packing slip number your supplier provides.

Bridgeville Industries has delivered all of the items that QMI ordered. Using Purchase Order Receipts (5.13.1), the Receiving Department records the delivery by first entering the purchase order number, which identifies the line items and the quantity open (ordered but not received), and then by entering the packing slip number.

Since the packing list indicates that the order was shipped complete, receiving personnel can save a few steps by checking Receive All. This action prefills the transaction frame with all the information needed for receipt processing.

However, one item on the order (620050) is serial-controlled, so the system cannot automatically process its receipt and the Receipt Quantity defaults to 0. The receiving clerk checks Multi-Entry and enters the serial number of each item received. If the numbers are in sequence, the system generates them based on the first number entered.

Receive Serialized Items

Example: Receive Serialized Item

Purchase Order Receipts X
Go To Actions Copy Print Preview Attach

Order: P1010001 Supplier: 1051002 Status: Packing Slip:

Ln	Item Number	UM	Qty Open	UM	Receipt Qty	UM	Project	Due Date	T
1	62050	rl	1.0	rl	1.0	rl		10/6/2010	
2	Receipt Detail - Site: 10-100 Quantity: 10 EA								
3									
4									

Line: 2 Unit of Measure: EA Site: 10-100 Loc: 030
Quantity: 10.0 ID: Lot/Ser:
Packing Qty: 0.0 OP: 0 Reference:

Location	Lot/Serial	Ref	Supplier Lot	Quantity
030	102310			

QAD

QS-PR-240a

The system displays a frame for the Receiving Clerk to enter the serial numbers. In this case, the supplier has shipped ten items that are in serial number order. The clerk enters the first number, clicks Next, and then enters a quantity of 10 (the number previously ordered on line 2 of the PO).

The system displays a prompt requesting confirmation for creating the serial numbers, and then displays the inventory detail in the middle frame.

When complete, the clerk clicks Back to continue the receipt.

Display PO Lines

Display PO Lines

Purchase Order Receipts

Go To Actions Copy Print Preview Attach

Order: P1010001 Supplier: 1051002 Status: Packing Slip:

Ln	Item Number	UM	Qty Open	UM	Receipt Qty	UM	Project	Due Date	T
2	60050	EA	10.0	EA	10.0	EA		10/6/2010	
3	60008	EA	10.0	EA	10.0	EA		10/6/2010	
4	60007	EA	10.0	EA	10.0	EA		10/6/2010	

Display purchase order lines being received

Yes No

Line: Unit of Measure: ID: Lot/Ser: Loc:

Quantity: OP: Reference: Supplier Lot: Multi Entry: Chg Attribute:

Cancel B/O: Item Number:

QAD

Q5-PR-241

This screen pulls the data from the purchase order. If all the data agrees with the packing slip and receiving inspection, the receipt of all items can be completed by clicking Next. This action causes a pop-up window to appear prompting to view the orders lines, as shown here.

Purchase Order Receipts

Purchase Order Receipts

Order: P1010001 Supplier: 1051002 Status: Packing Slip:

Ln	Item Number	Site	Location Ref	Lot/Serial Supplier Lot	Quantity
1	60050	10-100	030		1.0
2	60050	10-100	030	10234	1.0
2	60050	10-100	030	10235	1.0
2	60050	10-100	030	10236	1.0
2	60050	10-100	030	10237	1.0
2	60050	10-100	030	10238	1.0
2	60050	10-100	030	10239	1.0
2	60050	10-100	030	10240	1.0
2	60050	10-100	030	10241	1.0
2	60050	10-100	030	10242	1.0
2	60050	10-100	030	10243	1.0

QAD Q5-FR-242

Clicking Yes brings up a frame that shows the transactions that the system is about to complete. In this case, the clerk must click Next to see all items since each of the serial-controlled items displays on its own line. Clicking Next displays another prompt requesting confirmation for the transaction.

Clicking Yes to the second prompt completes the transaction, which closes the line items on the PO. Since this PO has no other lines, the PO status is also set to closed.

Inventory transactions are posted to the inventory accounts and the inventory detail records are updated. The Supplier Accounts Payable accounts are updated and AP is now ready to voucher the invoice when it arrives and complete its three-way matching. The invoice quantity and price must match the purchase order quantity and price and the receipt quantity before payment can be made.

Review Inventory Levels

Review Inventory Levels

Inventory Detail by Item Browse

Actions Setup Cancel Add to Favorites

Search (1)

Created equals 4/9/2012 Search Clear All

Viewing 1 of 11 of 11 Records per page 100

Item Number	Site	Qty On Hand - Inv Mstr	Qty On Hand - Inv Detail	Location	Lot/Serial	Ref	Status	Expire
60050	10-100	218.0	1.0 030	102310			N-Y-N	
60050	10-100	218.0	1.0 030	102311			N-Y-N	
60050	10-100	218.0	1.0 030	102312			N-Y-N	
60050	10-100	218.0	1.0 030	102313			N-Y-N	
60050	10-100	218.0	1.0 030	102314			N-Y-N	
60050	10-100	218.0	1.0 030	102315			N-Y-N	
60050	10-100	218.0	1.0 030	102316			N-Y-N	
60050	10-100	218.0	1.0 030	102317			N-Y-N	
60050	10-100	218.0	1.0 030	102318			N-Y-N	
60050	10-100	218.0	1.0 030	102319			N-Y-N	
62050	10-100	1.0	1.0 020				Y-Y-Y	

QAD Q5-FR-200

Concerned about the unit of measure conversion on the beryllium copper? Or any other aspect of the transaction? Use Inventory Detail by Item Browse (3.2) to verify that the transactions were completed as expected.

The browse shows an inventory of the items received and their location, status, and quantity.

Discussion

The status column displays the inventory status code associated with the location. Can you explain why the items received into the inspection location (030) are set to N-Y-N?

If you need help, see “Inventory Status Codes” on page 65.

Non-Standard Receipt

The screenshot shows a software window titled "Non-Standard Receipt". Inside the window, there is a sub-window titled "Purchase Order Receipts" with a close button (X). Below the title bar, there is a menu bar with "Go To", "Actions", "Copy", "Print", and "Preview". The main area of the sub-window contains the following fields and controls:

- Order: P1010011 (with a magnifying glass icon)
- Supplier:
- Status:
- Effective: 8/2/2010
- Packing Slip:
- Receiver:
- Move to Next Operation: ☒
- Receive All: ☐ (highlighted with a red box)
- Comments: ☐
- Ship Date:

The QAD logo is visible in the bottom left corner of the main window, and the text "Q5-PR-249" is in the bottom right corner.

Now you look at how to handle PO receipts in a non-standard situation. In this example, the PO is the same as the previous one, except the PO number is different. The first screen shows the Receive All box left unchecked.

Non-Standard Receipt

Non-Standard Receipt

Purchase Order Receipts

Go To: Actions: Copy: Print: Preview: Attach

Unit of Measure: RL Site: 10-100 ID:

Order: P1010011 Supplier: 1051002 Status: Packing Slip:

Ln	Item Number	UM	Qty Open	UM	Receipt Qty	UM	Project	Due Date	T
1	62050	RL	0.0	RL	0.0	RL		6/2/2010	
2	60050	EA	10.0	EA	0.0	EA		6/2/2010	
3	60008	EA	10.0	EA	0.0	EA		6/2/2010	
4	60002	EA	10.0	EA	0.0	EA		6/2/2010	

Line: 1 Unit of Measure: RL Site: 10-100 Loc: 020

Quantity: 0.000000000 ID: Lot/Ser: Reference: Supplier Lot: Multi Entry: Chg Attribute: Cntrl:

Packing Qty: 0.0 GP: 0

Cancel B/O: ☐

Item Number: 62050 Supplier Item:

QAD Q5-PR-250

The receipt screen appears, but because Receive All was unchecked, the Quantity to receive is blank. You can use the lower frame to manually enter each line item and the quantity being received. In subsequent frames, the Receiving Department enters both the actual quantity received for each line (Quantity field) and the quantity indicated on the packing slip (Packing Qty field). This step is especially important when a discrepancy exists between the quantity listed on the packing slip and the actual quantity received. If it is different than the default, the line detail frame can also be used to indicate inventory location the material is put away in.

In this case, the quantities are the same. Complete the line item data and click Next to update the quantity to receive column in the top frame; then you can proceed to the next line item.

Note the field Cancel Back Order. In some cases, a shipment is short a few items. This field lets you receive the item short and cancel the back order, thus closing the PO line. You want to notify your supplier so they do not try to ship the additional items.

In the final frames, the Receiving Department confirms that all information listed is correct and the system processes the order receipt. A trailer frame is displayed to review any taxes.

Questions

Where did the following default information come from: Supplier, Location, Site

If this order had been a partial order, how would you handle that in QAD EE?

Purchase Receipt Document

Purchase Receipt Document

RECEIVER

Supplier: 1051002
Bridgeville Industries
3390 Linco Road
Stevensville, MI 49127
USA - TAX PURPOSE

Page: 1

Receiver: R1010006
Receipt Date: 06/02/10
Print Date: 06/02/10
Purchase Order: P1010011
PO Revision: 0

Packing Slip: _____
Remarks: _____

Ship Date: 06/02/10

Ln	Item Number	UM	Pack Slip Qty	Receipt Qty	Location	Req By
2	60050 Base Unit / CPU ERS Option: 1	EA	0.0	10.0		

Req By: _____

Site	Location	Lot/Serial	Reference T	Tran Qty
10-100	030	5500		1.0
10-100	030	5501		1.0
10-100	030	5502		1.0
10-100	030	5503		1.0
10-100	030	5504		1.0
10-100	030	5505		1.0
10-100	030	5506		1.0
10-100	030	5507		1.0
10-100	030	5508		1.0
10-100	030	5509		1.0
Loc Total				10.0

Ln	Item Number	UM	Pack Slip Qty	Receipt Qty	Location	Req By
3	60008 Printer ERS Option: 1	EA	0.0	10.0	030 10-100	

Q5-PR-262

In the final frames, the Receiving Department confirms that all information listed is correct and the system processes the order receipt. A printed copy of the receiver would look like the image here. Remember that Purchasing Control was set to create one receiver for each line item. QMI has now received enough components to manufacture ten medical ultrasounds.

Additional Notes

Several settings in Purchasing Control affect purchase receipts:

- The Receiver Type field determines whether receivers are created for each order or for each item on the order or not printed at all.
- Tolerance Percent and Tolerance Cost determine how the system manages receipts that exceed the order quantity.

Review Transactions Detail Inquiry

Review Transactions Detail Inquiry

Transactions Detail Inquiry

Go To Actions Copy Print Preview Attach

Output: PAGE

Transaction: 4396 Output: PAGE

Tran Nbr: 4396	Order: P1010002	R1010002
Trans Type: RCT-PO	Revisions: 0	
Date: 5/27/2010	Item Number: 62050	
Time: 10:21	Description: Beryllium Copper	
Effective Date: 5/27/2010	Unit of Measure: RL	
Remarks:	Address: 1051002	
User ID: qni	Name: Bridgeville Industri	
Program: poporc.p	SO/Job:	
Currency: USD	Ship Type:	
Qty Change: 1.0	Price: 1,700.00	
Shipper Number:	IMC:	
Ship Date: 5/27/2010		

QAD Q5-PR-263

Using Transactions Detail Inquiry (3.21.1), you can review the detail of the transactions created for the receipt of item 62050, beryllium copper. The second frame gives the complete detail including inventory, cost, and GL account details.

When you enter this screen, the first transaction you see is the last one that the system processed. This first frame gives a high-level overview of the transaction. Use the up arrow on your keyboard to scroll back through the transactions to see the newly created PO receipts.

Review Transactions

Review Transactions

Transactions Detail Inquiry 10/06/10

Transaction: 37980 Display E-Signature Details: Yes Output: PAGE
 ***** E-Signature Details *****
 Category: InvTran
 This data is currently unsigned
 ***** End of e-signature details *****

Trans Nbr: 37980	Order: P1010001	R10100068
Trans Type: RCT-PO	Revision: 0	
Date: 10/06/10	Item Number: 62050	
Time: 15:17	Description: Beryllium Copper	
Effective Date: 10/06/10	Unit of Measure: RL	
Remarks:	Address: 1051002	
User ID: rgl	Name: Bridgeville Industri	
Program: poporc.p	SO/Job:	
Currency: USD	Ship Type:	
Qty Change: 1.0	Price: 1,700.00	
Shipper Number:	IPC:	
Ship Date: 10/06/10		

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

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

Debit Acct: 1500	Mech	RCT-PO
Cr Account: 2520	Mech	
Amount: 0.00		
GL Reference:		Reference ID:

Debit Acct: 6710	Mech	ACM
Cr Account: 2520	Mech	
Amount: 1,827.50		
GL Reference: 2010/RCT-P00000000018		Reference ID: IC101006000003

QAD Q5-PR-270

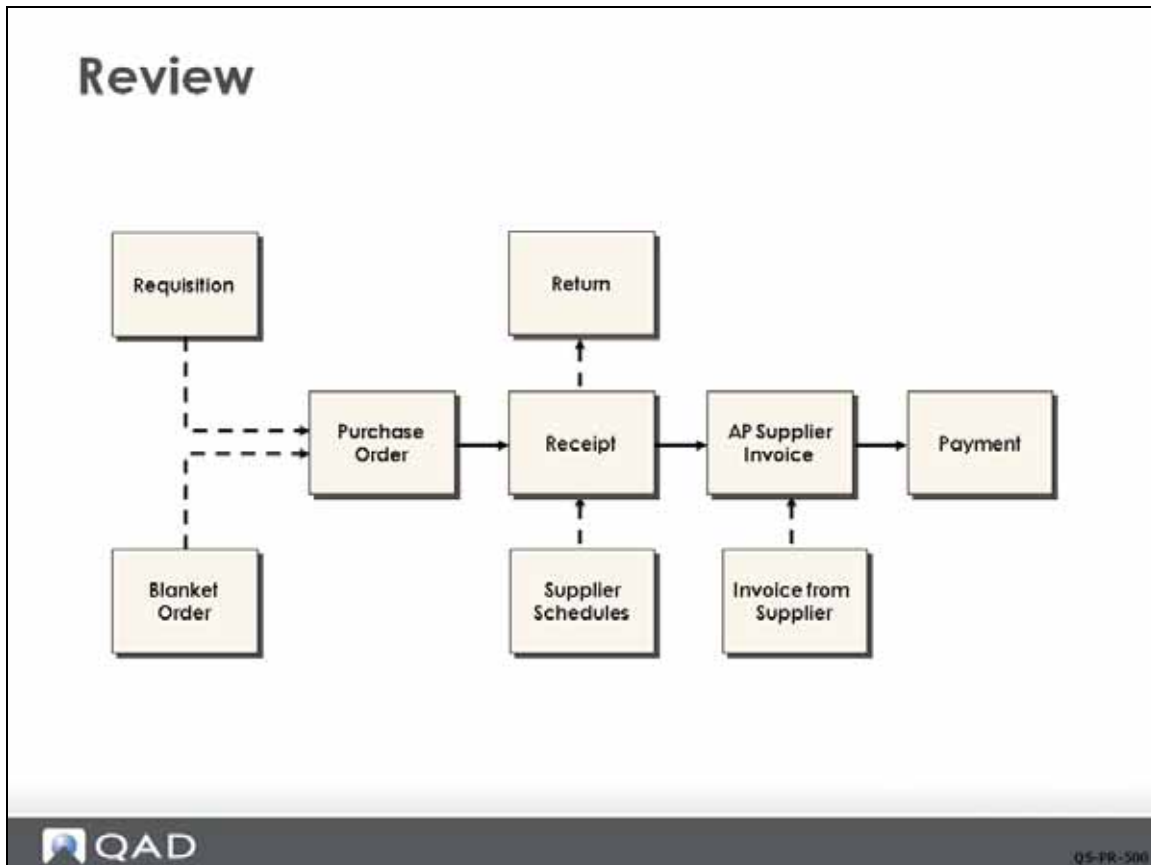
In the first GL transaction, the inventory account (1500) is debited and the PO receipts account (2520) is credited \$1700.00, the total standard cost of the roll of copper.

The reference ID is the number used to track this transaction in the General Ledger. It includes these elements:

- IC indicates that Inventory Control generated the transaction.
- Next is a date code 101006
- The final segment is a sequential number, in this case 3.

The GL Reference shows the year and daybook plus sequence number.

Review



Here is a review of the highlights of the purchasing and accounts payable flow.

- **Purchase Order.** The starting point for payment processing is the purchase order, a contract that confirms your intent to buy. It lists items, quantities, and prices, along with related charges such as taxes and freight. The order also states your billing and shipping addresses, and the credit terms you have negotiated with the supplier. Purchase orders can originate from requisitions, blanket orders, or can be created directly.
- **PO Receipt.** When the items are delivered to your Receiving Department, a receiving document is recorded (PO receipt). The receiver confirms the received items and quantities against the purchase order. Receipts can also be based on supplier scheduled orders.
- **Invoice.** The supplier sends you an invoice to confirm your liability to pay for the items under the conditions specified on the purchase order.
- **Supplier Invoice.** Before you can pay the invoice, verify that the items you received are what you originally ordered and that the supplier has charged you the correct price. Record a supplier invoice in Accounts Payable. When you enter the supplier invoice, you reference the purchase order and the invoice. The system then retrieves the receivers associated with the purchase order so that you can record invoice lines against them. If the invoiced items and quantities match the receiver, the receiver is closed.
- **Payment.** Supplier invoices are then selected for payment and processed by printing checks, electronic funds transfer, drafts, or other payment instruments. The process is managed through status codes from initial receipt to paid status.

Exercise 6

Supplier Data

- 1 Open Supplier Data Maintenance (2.3.1) to review supplier contact information and other data for supplier 10S1002.

Click Next at the e-mail pop-up until you reach the Supplier Terms Data frame.

Field	Data
Supplier	10S1002; click Next
Name	Bridgeville Industries; click Next until Cr Terms appears
Cr Terms	30D (1 month)
Partial OK	Unchecked (no)

Click Next until the Supplier field is highlighted, then click Back to save the record and exit Supplier Data Maintenance.

Supplier Items

Supplier items are used to cross-reference your item number with your supplier's item number. You can also document the supplier's quoted price for the item. Later, you can reference the supplier's item number instead of your own on a purchase order, and the system can find your item number for you.

- 2 Use Supplier Item Maintenance (1.19) to create a record that cross-references your item numbers 60017 and 60018 to your supplier's item numbers.

Field	Data
Item Number	60017
Supplier	10S1002
Supplier Item	SCC60017; click Next
Unit of Measure	EA
Supplier Lead Time	5
Currency	USD
Quote Price	0.49
Quote Qty	100

Click Next to update the record. Enter or verify the information for the next item number.

Field	Data
Item Number	60018
Supplier	10S1002
Supplier Item	SCC60018; click Next
Unit of Measure	EA
Supplier Lead Time	5
Currency	USD

Field	Data
Quote Price	2.99
Quote Qty	100

Click next, then Back to save the record and exit Supplier Item Maintenance.

Purchasing Control

- 3 Use Purchasing Control (5.24) and update settings as follows:

Field	Data
Ship To	10-100
PO Prefix	P10
Next Purchase Order	<system default>
Receiver Prefix	R10
Next Receiver	<system default>
Ln Format S/M	Single
PO Header Comments	Unchecked (no)
PO Line Comments	Unchecked (no)

Let all other fields default. Press Next twice, then Back to update the record and exit.

Create Purchase Orders for Component Items

- 4 Use Purchase Order Maintenance (5.7) to place an order for components 60017 and 60018; all other components are already in inventory.

Field	Data
Purchase Order	<blank>; click Next, then record the system-generated purchase order number from Purchasing Control for reference
Supplier	10S1002; click Next until Order Date is highlighted

Order and Due Date default to today's date.

Field	Data
Site	10-100 (used as a default for the line)
Credit Terms	30D (defaults from the supplier record)

Click Next until the Ln field is highlighted.

- 5 In the line item information, set up purchase order lines for each component for the calculated amount. Key fields to populate are:

Line 1

Field	Data
PO Line	Line 1; click Next
Site	10-100; click Next
Item No.	SCC60017; click Next
Qty Ordered	100; click Next

Field	Data
UM	EA; click Next
Unit Cost	0.49; click Next until the Ln field is highlighted

Line 2

Field	Data
PO Line	Line 2; click Next
Site	10-100; click Next
Item No.	SCC60018; click Next
Qty Ordered	100; click Next
UM	EA; click Next
Unit Cost	2.99; click Next

When you click Next after entering the supplier item, notice how the system switches the ordered item to your item number. This switch happens because of the data you previously set up in Supplier Item Maintenance.

Notice that Update Avg/Last Cost is checked. The check indicates that when these items are received, the current cost of the item is updated to reflect any difference between the last current cost and the prices on this PO. If you do not want the cost updated, you can uncheck this box and the current cost does not change.

- 6 When Ln 3 is highlighted click End Lines, Trailer, Next twice, then Back to save the information and exit Purchase Order Maintenance.

Record Receipts Against a Purchase Order

The supplier has sent the material you ordered for your components. Receive the items into inventory.

- 7 Use Purchase Order Receipts (5.13.1). Key fields to populate are:

Field	Data
Order	PO Number or use lookup (starts with P10); click Next
Supplier	Displays from the PO record
Packing Slip	Enter any number you want
Receiver	<blank>
Receive All	Checked (yes); important for fast simple receipt
Ship Date	<blank>; click Next

Click Next, review the screen, and repeat this process until a window appears that shows the two line items from the PO. The data resembles the following:

Line 1

Field	Data
Line	1; click Next
Item	60017; click Next
UM	EA; click Next
Qty Open	100; click Next
Receipt Qty	100; click Next

Line 2

Field	Data
Line	2; click Next
Item	60018; click Next
UM	EA; click Next
Qty Open	100; click Next
Receipt Qty	100; click Next

If all the information is correct, click Next.

A prompt appears: Display purchase order lines being received. Click Yes.

A frame appears with the following receipt details:

Ln	Item	Site	Location	Quantity
1	60017	10-100	020	100
2	60018	10-100	020	100

All items are received into inventory location 020.

If all the information is correct, click Next. Verify that the data is correct when prompted. Clicking Yes completes the receipt transaction.

If anything is incorrect, click No to go back and fix the issue.

The last screen shows the trailer section. Be sure to click Next; otherwise, your receipt is not saved.

- 8 Open Inventory Detail by Item Browse (3.2) to review the inventory levels for your component items. Enter the following search criteria:

Field	Operator	Data
Item Number	Starts At	60017

This selection criteria display items beginning with those items that you received into site 10-100.

- 9 Use Transactions Detail Inquiry (3.21.1) to review the transactions you created when you did the receipt. The default transaction number that displays is for the last receipt (item 60018).

Scroll through the records you created in these activities by using the up and down arrows on your keyboard in the Transaction Number field. Look at the transaction type to understand what created the transaction.

Look at the GL detail and find the GL transaction number that was created for the last purchase order receipt. What accounts were debited and credited?

Chapter 8

Work Orders

Overview



A work order is an authorization to produce a specific quantity of an item by a specific date. This chapter further defines what a work order is and reviews typical stages of the work order life cycle. After discussing key concepts, an example covers the work order life cycle from creation to close.

Topics

Topics

- Manufacturing Overview
- Work Orders
- WO Type and Status
- WO Bill of Material and Routing
- WO Life Cycle
- WO Release and Issue of Components
- Shop Floor Control
- WO Receipt and Close
- Variances

Learning Objectives

Objectives

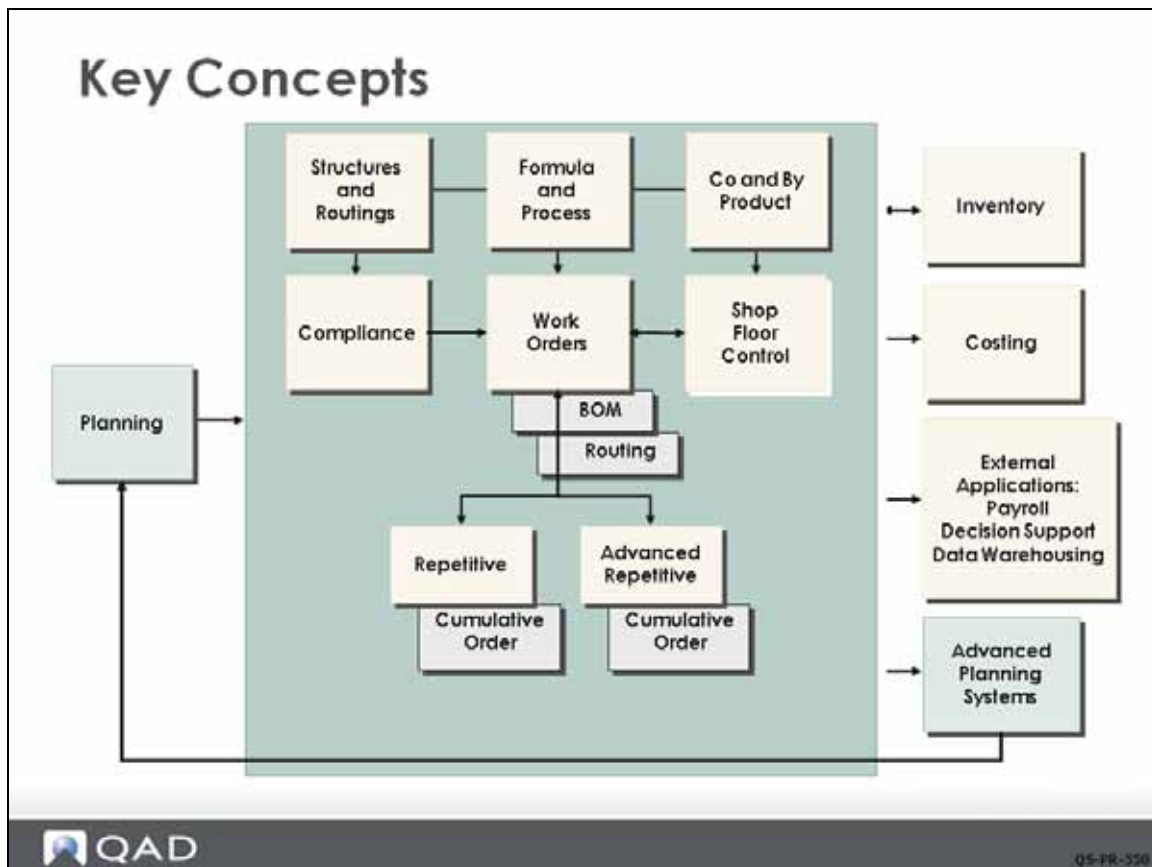
When you finish this section, you should be able to:

- List work order types and status codes
- Describe the work order process flow
- Provide examples of rate, usage, and method variances
- Enter and release a work order
- Issue components
- Record labor
- Receive and close a work order



QS-PR-540

Key Concepts



Manufacturing Overview

QAD EE manufacturing modules handle internal supply and demand. Material is moved out of inventory into production, processed or assembled, and returned to an inventory location. At the center of much of this activity is the Work Orders module, as shown in the slide. In the process of using work orders, you:

- Define bills of material and product structures in the Product Structures module.
- Define routings and operations in the Routings/Work Centers module.
- Create planned orders to fill demand with Material Requirements Planning.
- Monitor and report on the progress of work orders in the Shop Floor Control module.

Manufacturing Environments

QAD EE provides features that support different manufacturing environments.

The Work Orders and Shop Floor Control modules are typically used to manage job shop type manufacturing and low- to intermediate-volume mixed product manufacturing. The Advanced Repetitive or Repetitive modules manage manufacturing in an assembly line or process flow environment.

Formula and Process routings and structures are used to support formula or recipe-based processes. These can also utilize co-product and by-product structures to facilitate disassembly processes or processes that create a main product and related products. The Lean Manufacturing module provides support for Kanban and Flow manufacturing. These advanced functions are covered in detail in their own training materials and are not covered in this course.

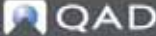
This class focuses on discrete work orders created in the Work Orders module. Understanding the concepts behind work orders is critical to understanding the other manufacturing processes.

Work Order

Work Order

Work Order 123456			
Item	Description	Qty	Date
01010	Medical Ultrasound	1	5/28/XX




Q5-FR-360

A work order is an authorization to produce a specific quantity of an item for a specific date. A work order can represent a manufacturing production order, a repetitive schedule, or a sequenced production line.

Work orders are typically created in response to current or projected demand for an item. Work orders can also be used to build up inventory in anticipation of future demand when there is unused manufacturing capacity.

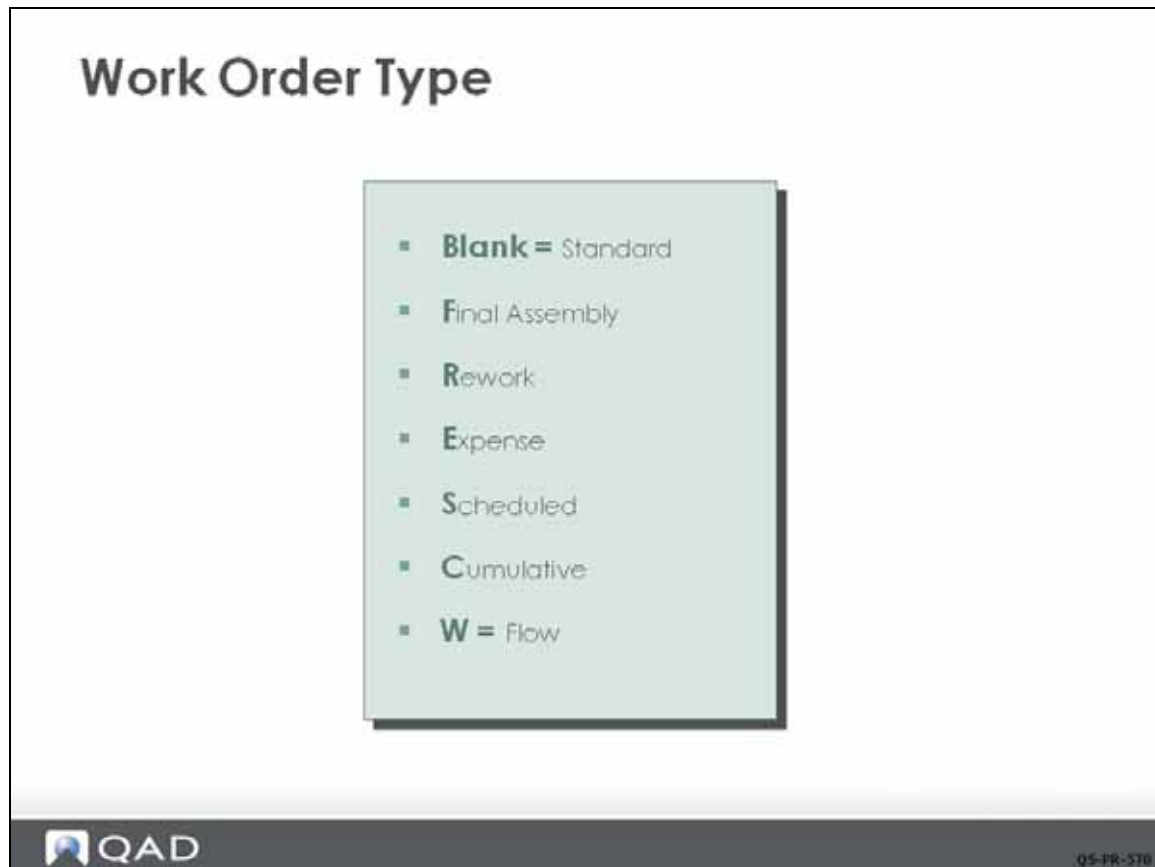
Elements of a Work Order

Important elements of a work order include:

- The type identifies the source of the order and indicates how it is processed.
- The status determines where a work order is in its life cycle.
- The bill of material (BOM) lists the quantities of components required to fulfill an order.
- The routing lists the operations required to complete the order.

These elements are examined on the following pages.

Work Order Type



The work order type indicates how the work order moves through production and how it affects other modules, especially the financial modules.

Most work orders are entered with a blank type. These represent normal manufacturing orders with a standard product structure and routing. The other types indicate special kinds of work orders. All work order types are similar in terms of planning, inventory, and accounting. They differ in their default bills, routings, and status codes.

Joint order sets are a special case associated with Co/By Product orders. Joint order sets can be created for regular work orders that are type code blank. See the related training materials on Joint Products for detailed information. Rework and Expense work orders can share the work order number as a joint order set, but are not considered part of the joint order set. For example, a work order for co-product or by-product can be reworked using the original work order number. The type code must be blank for a base process work order.

Note The combination of the work order number and the work order ID number uniquely identifies each work order. For scheduled orders, the work order number is typically the number of the item being scheduled, and the work order ID becomes the unique identifier.

Users always create Expense and Rework orders.

The system generates work orders of type S, C, F, or W.

S (Scheduled)

The system generates this work order type when a Repetitive schedule is entered. The work order number is the item number scheduled for production. Scheduled orders can be tracked using Repetitive feedback functions or released to create work orders. To release it, change the status field from exploded to allocated or released. The system automatically changes the Type to blank and treats it like a normal work order. The system also updates the repetitive schedule to exclude the order.

C (Cumulative)

The system generates this work order type to track repetitive production costs. Work order functions cannot process these. Cumulative orders are associated with both regular and sequenced repetitive line schedules.

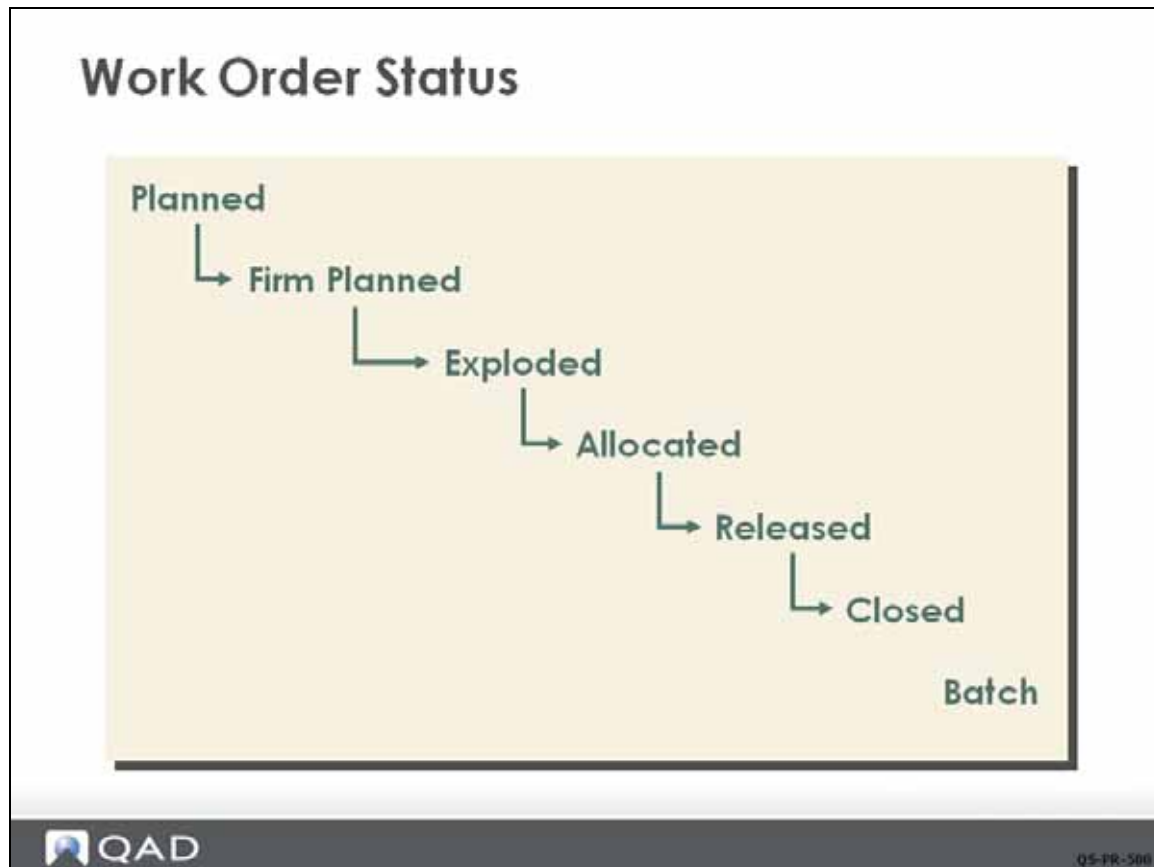
F (Final Assembly)

Generated when a sales order for a configured product is released to manufacturing. The work order number is the sales order number with a decimal and number to correspond to the sales order line number. It uses the standard routing for the item, but the product structure contains only the items chosen on the sales order configuration. These orders are released and processed as regular work orders. You must specify Type F in Multiple WO Release/Print to release the work order, however.

W (Flow)

Generated when you use Flow Schedule Maintenance to create a flow scheduled order that does not reference an existing work order. Work order functions cannot process these.

Work Order Status



Work order status codes correspond to stages in a work order's life cycle.

- MRP usually creates a standard work order. MRP treats the work order as a source of supply. At this point, the order status is Planned.
- When someone reviews the MRP output and confirms the order, it is Firm Planned. Any work order created manually is by default Firm Planned.
- The supply that the work order creates also generates demand for component items; when that demand is calculated, the work order is Exploded.
- At this point, the demand that the order represents has not affected inventory; when inventory is set aside for the order, it is Allocated.
- When work is ready to begin, the work order is Released.
- When work is finished, it is Closed.

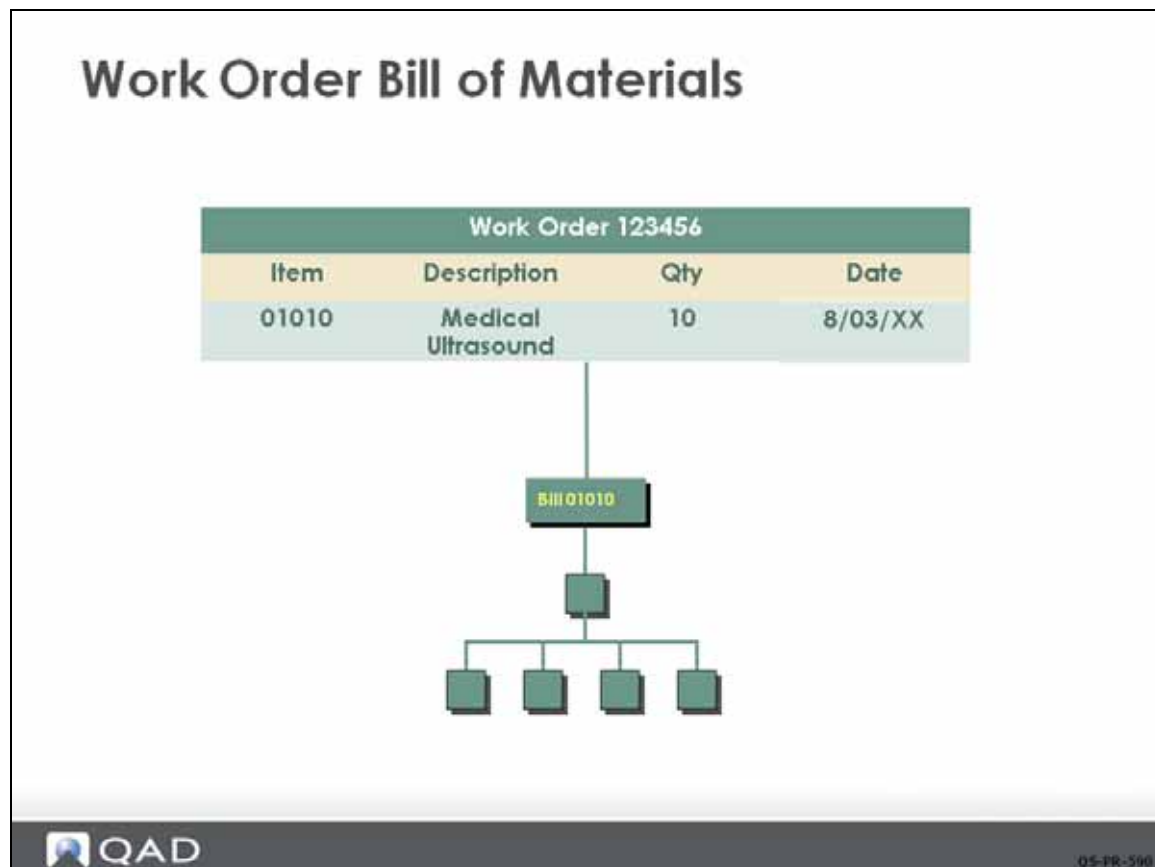
The status of a work order determines how much control you have over its bill, routing, inventory allocations, inventory transactions, and labor feedback.

- You cannot change orders with a status of Planned. MRP manages these orders.
- For orders with status Firm Planned, you can change the dates and quantities as needed, and specify an approved alternate bill or routing.
- For orders with status Exploded, Allocated, or Released, bills and routings can be modified or alternate ones specified.

A work order progresses from one status code to the next and, unless prematurely released, does not return to an earlier status. Most orders progress from status firm planned to released in one step using the function Work Order Release/Print.

Note A work order is manually exploded in special cases to capture the current bill of material before an impending engineering change. Manually allocating a work order is often done to consume the last of a component item that is being phased out. In this case, the inventory of the component would be allocated for that specific order.

Work Order Bill of Material

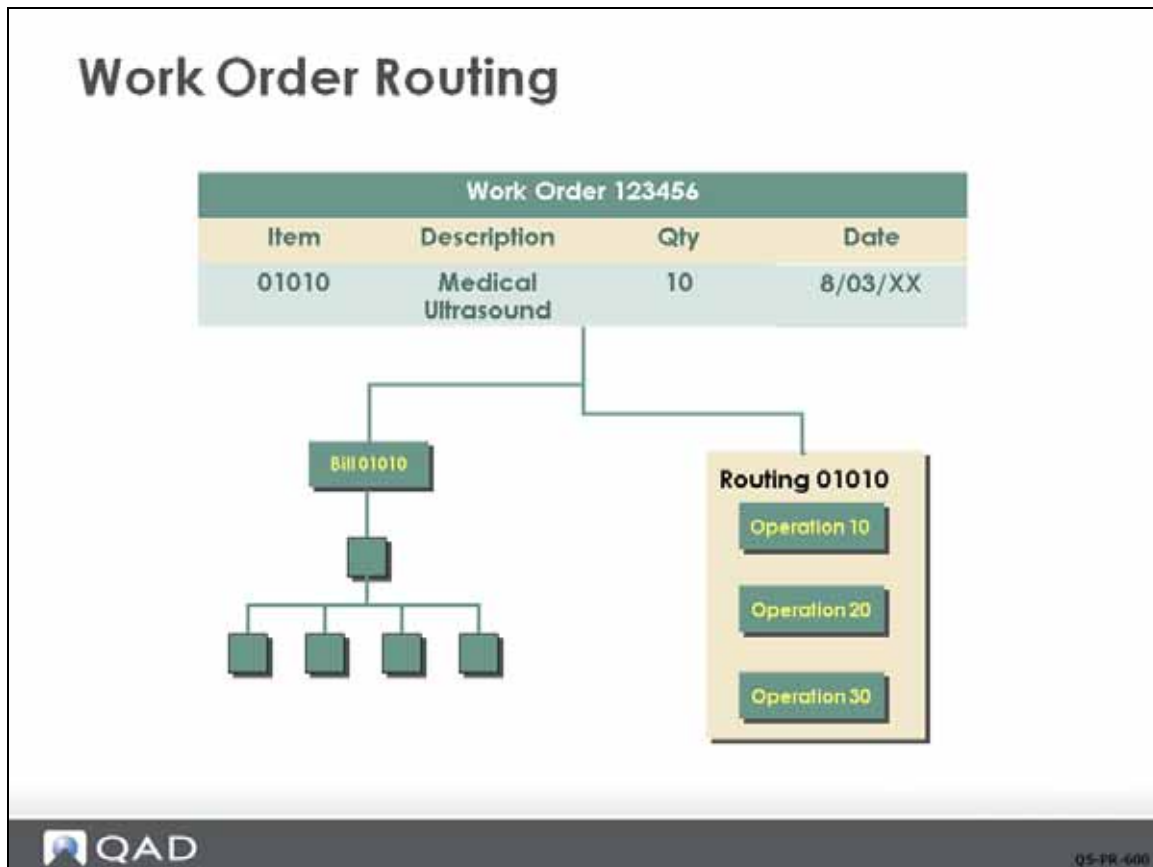


The work order bill of material (BOM) is derived from the item's product structure, defined in Product Structure Maintenance (or Formula Maintenance) and the quantity ordered. Inventory allocations and issues are based on the bill. MRP uses the bill of materials to calculate component demand.

When a work order is created, the product structure for the item is copied into it. This product structure with the order quantity of the work order then becomes the work order bill of material and is specific to that work order. As work progresses, required changes can be made to this copy using Work Order Bill Maintenance (16.13.1). This way, what actually happens can be compared to the standard. When many substitute items are available for assembly, this feature supports what is often called “as built” documentation.

Once the work order bill of material is created, changes to the product structure do not affect the bill.

Work Order Routing



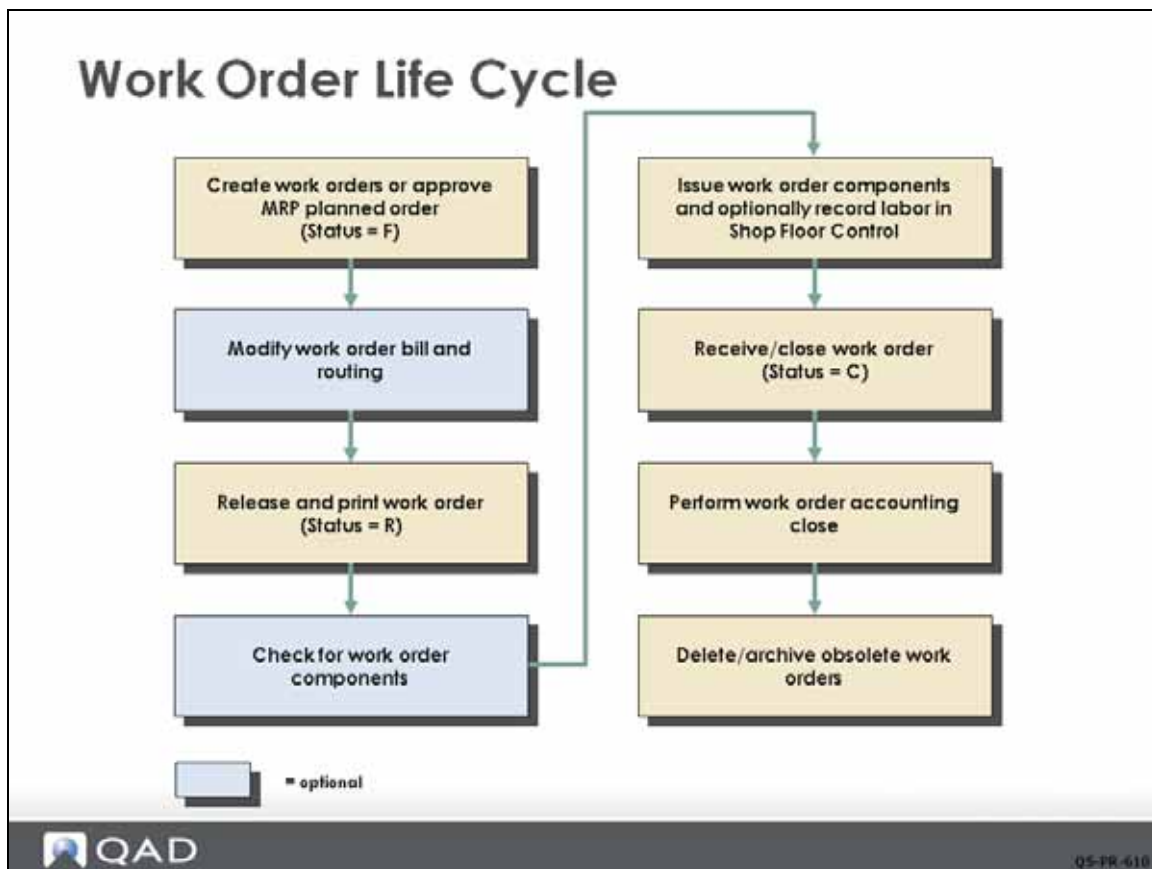
Work order routings specify the operations, or steps, required to manufacture an item. Routing codes identify work order routings. You set up routings and operations using the Routings/Work Centers module. Routings are automatically linked if the item number and routing number are the same. Or, you can manually link them in Item Master Maintenance or Item Planning Maintenance.

When a work order is created, the standard routing is copied into it. As work progresses, required changes can be made to this copy using Work Order Routing Maintenance (16.13.13). This way, what actually happens can be compared to the standard. You can monitor work order operations using the Shop Floor Control module.

Once the work order routing is created, changes to the item routing do not affect the work order.

Together the work order bill and routing let you capture “as built” documentation and otherwise record what actually occurred as opposed to what was planned. This capability does not prevent manufacturing variances, but it does explain them.

Work Order Life Cycle



Work orders are created manually (using Work Order Maintenance) or generated from MRP, repetitive, schedules, or configured sales orders. Work orders are also generated when another work order is split, or when one is released that requires a routable component.

In a standard sequence, shown on this slide, after a work order is created, it is released. Then the materials are issued and received, the work order is closed, and the items are shipped.

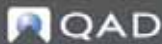
On the next few pages, the following stages in the work order life cycle are examined in detail:

- Release
- Issue of components
- Receipt
- Close

Release Work Order

Release Work Order

- Inventory can only be issued or received against a released work order
- You can release orders:
 - One at a time using Work Order Release/Print
 - At the same time using Multiple Work Order Release/Print
 - In Work Order Maintenance by changing the status to Released
- Releasing a work order has the following effects:
 - Items not previously allocated are detail allocated
 - Picklist is printed
 - First operation is moved to queue status (if Move First Op is Yes)



Q5-FR-620

Creating Picklists

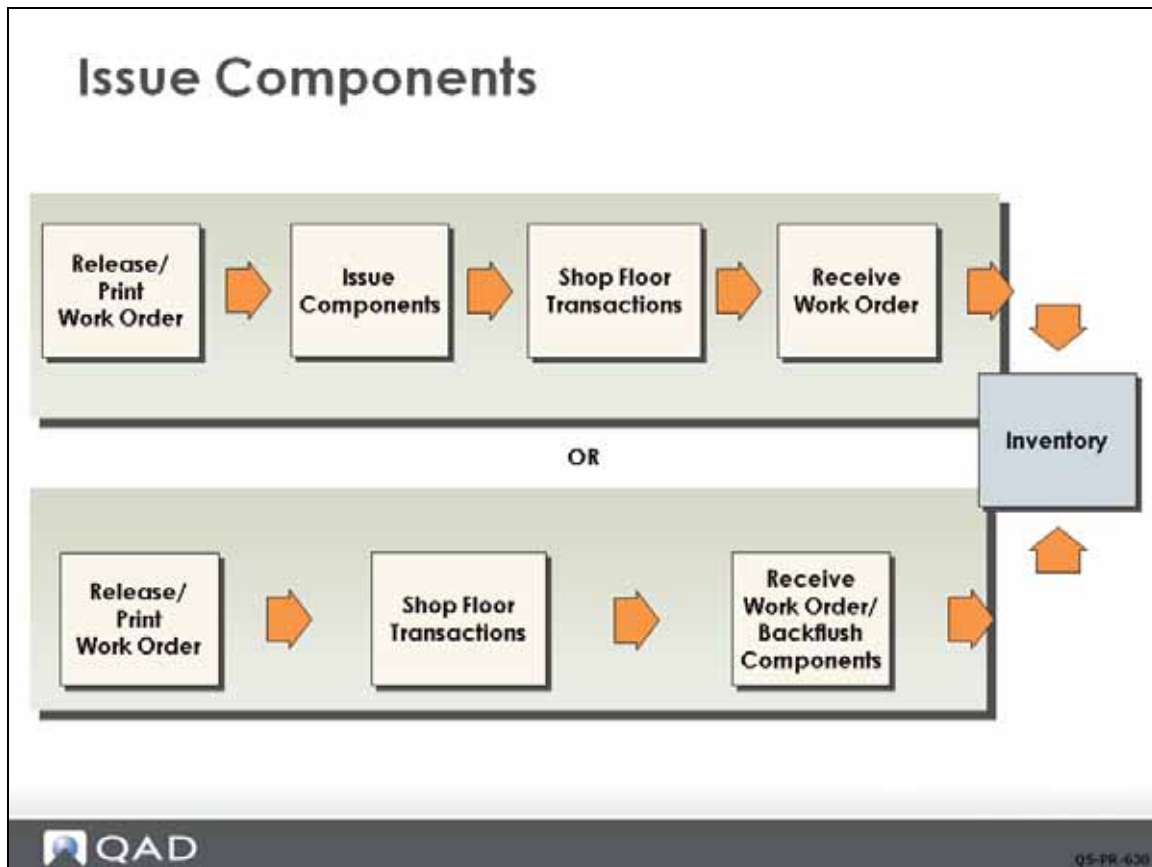
After you release a work order, you can print its picklist. The picklist lists the component requirements and the sites, locations, lot/serial numbers, and reference numbers for the items to issue. The system creates detail allocations when an order is released, regardless of whether you print a picklist. Detail allocations reserve specific quantities in inventory for a work order.

Printing the Routing Sheet

At the time of release, you can also print the routing for the work order. The routing is the detailed list of operations and work centers through which the work order must be processed. The combination of the work order, the picklist, and the routing sheet is often referred to as the shop or job packet.

You can release an order without printing a picklist and routing, but you cannot print a picklist for an order without releasing it.

Issue Components



Work order operations begin when a work order is released and its components issued.

You can issue inventory to a work order in three ways:

- Directly with Work Order Component Issue (16.10), illustrated in the top row of the graphic
- When completed products are received with Work Order Receipt Backflush (16.12), illustrated in the bottom row
- Issue inventory, report labor, and receive items with Work Order Operation Backflush (16.19), also illustrated in the bottom row of the graphic

Inventory transactions occur at different points depending on the method you use. Component quantity on-hand is reduced at a later time using the backflush method.

Work Order Receipt Backflush combines the functions of Work Order Component Issue and Work Order Receipt. Either method tracks the inventory transactions used to issue components to a work order and excludes floor stock, which is issued using an unplanned issue transaction.

You can monitor work order operations using the Shop Floor Control module.

Non-Standard Component Issue

Non-Standard Component Issue

Work Order Component Issue
Go To
Actions
Copy
Print
Preview
Attach

Work Order: 1001
ID: 2280904
Op:
Effective: 5/27/2010

Item Number: 01010
W/O Stat: R
Issue Alloc: ☐

Medical Ultrasound
Issue Picked: ☒

Document:

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss	Qty B/O
50001	0.0	0.0	0.0	0.0	0.0
60001	0.0	0.0	0.0	0.0	0.0
60002	0.0	0.0	0.0	0.0	0.0

Item Number:
Op:
Site:
Loc:

Description:
Lot/Serial:

Quantity:
UM:
Reference:

Substitute: ☐
Cancel B/O: ☐
Multi Entry: ☐

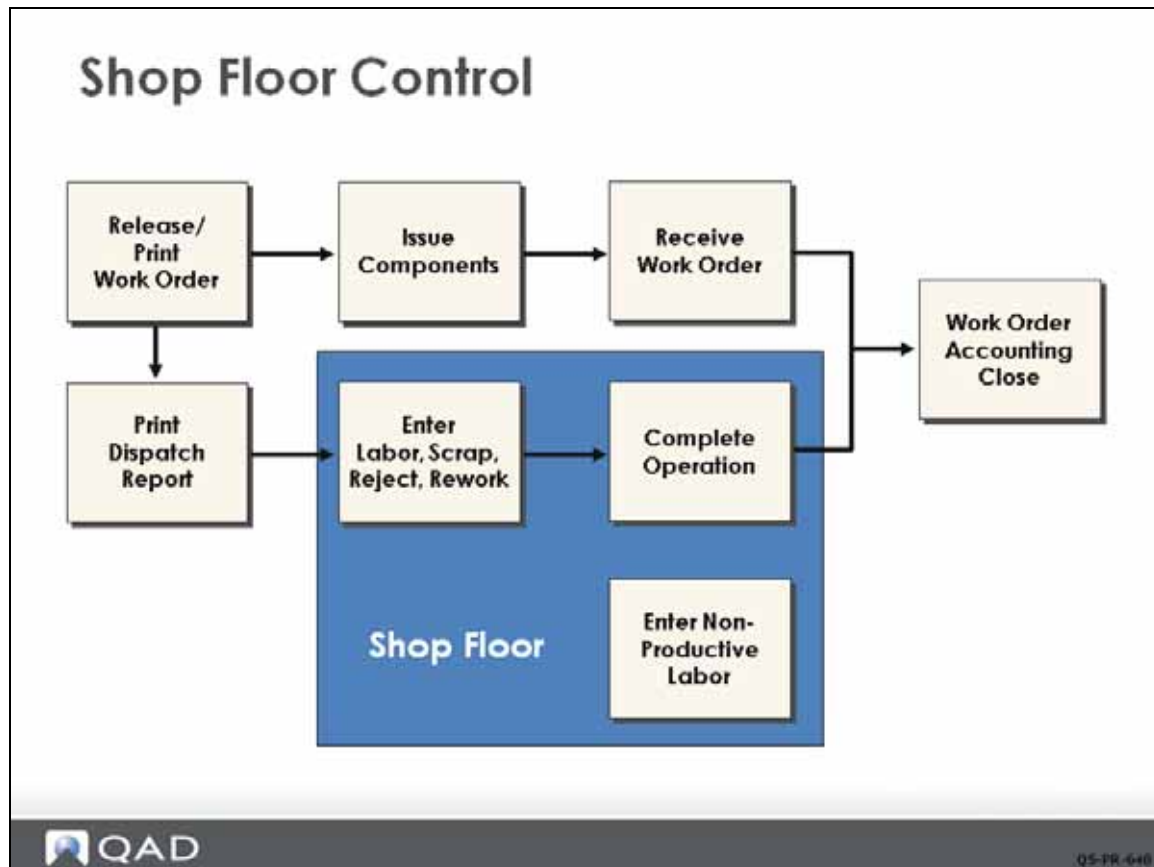
Document:

Q5-PR-635

For a nonstandard issue, you use the lower frame of the issue screen to manually enter the correct data. Examples of such situations include issuing an approved substitute item in place of the standard item or issuing material from a different location. A common situation is needing to issue material from two (or more) locations to get the full quantity required.

Once data in the lower frame is filled in and you click Next, the transaction proceeds normally.

Shop Floor Control



Once a work order is released, shop floor functions track its progress to record labor and to record material usage and completions. Shop floor requires that at least one employee is set up. The slide shows the relationship between shop floor reporting and the work order process flow.

Operation Status

Labor feedback is done by work order, employee, or work center/machine. In all cases, you must identify a released work order. When labor is recorded, operation status is updated to either Setup, Run, or Complete. When work moves to the next operation, its status changes to Queue.

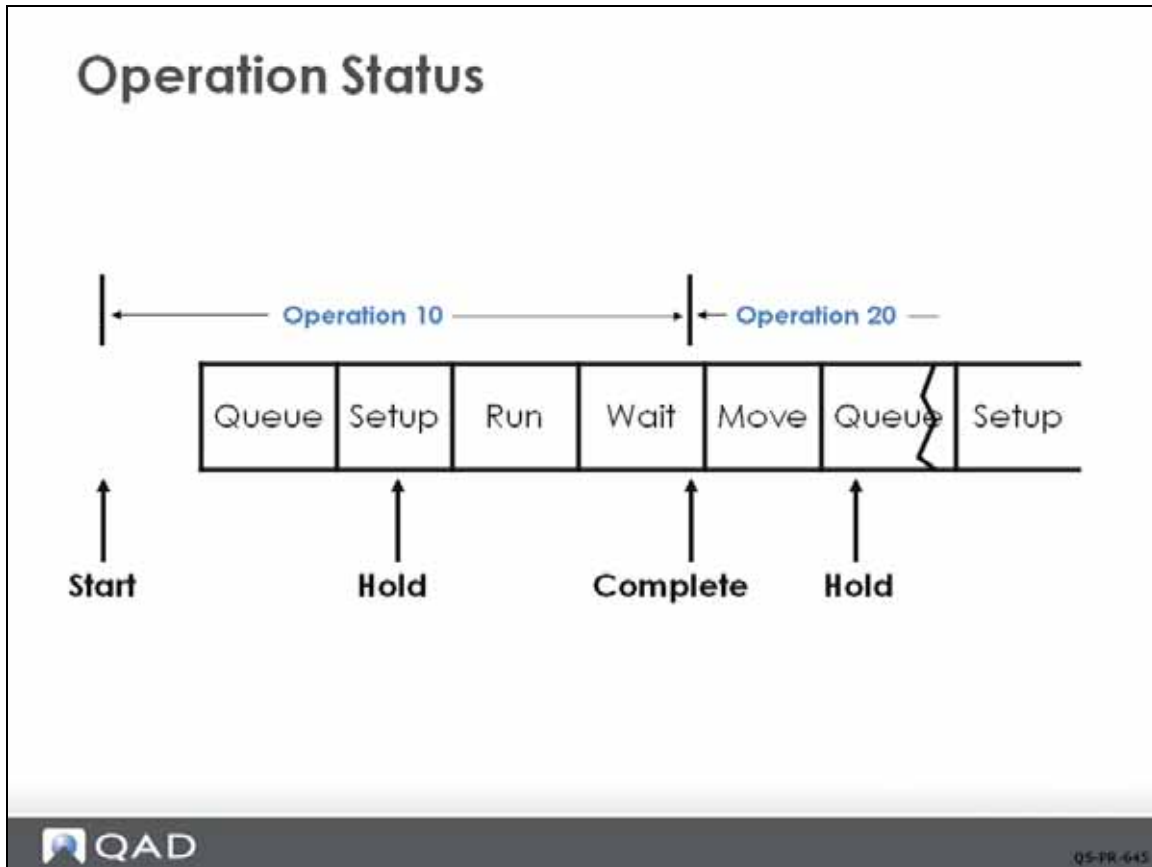
Labor Reporting

If labor is reported only at a few key operations, called milestones, the Operation Complete Transaction can be used to complete the current operation and the ones that have come before it. If no labor was reported against these previous operations, actual labor is set to the anticipated labor to make the quantity reported complete. This labor is referred to as earned labor.

Nonproductive Time

In order to account for all work hours, nonproductive time can also be recorded. Nonproductive time is time not spent working on a specific manufacturing order, such as cleanup time, downtime, meetings, breaks, or time spent waiting for work.

Operation Status



Operation status codes are used to indicate the detailed status of an individual operation. The status codes can be entered manually using Work Order Routing Maintenance (16.13.13) or automatically set when the Shop Floor Control labor feedback transactions are used. The system uses the following status codes:

Queue (Q). If Move Next Operation is Yes in Shop Floor Control (16.20.24), you can set the first operation to Queue automatically upon release of the work order. You can set succeeding operations to Queue automatically when the previous operation is reported Complete.

Setup (S). If setup time is reported, the status is changed to Setup.

Run (R). When run time is reported, the status is updated to Run.

Complete (C). The operation status is Complete when all work at that operation is finished.

Hold (H). An order can be manually placed on hold at any time. An order is manually placed on hold when work is stopped for some reason. Such reasons include running out of material, equipment malfunctions, or because the worker is reassigned to another task.

Not all operations use all lead-time elements, nor do all status codes need reporting. A very short operation can be at status Queue and then reported complete, with any setup and or run time reported at that moment. The wait and move times are not status codes, but elements of lead time. They are referred to as inter-operation times since they have no labor content, but do require that time be scheduled. Examples are paint drying time or transport time between operations in different buildings.

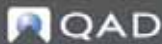
Receiving Work Orders

Receiving Work Orders



When a work order is received:

- **Inventory increases by amount of receipt**
- **Open order quantity decreases**
- **Reject quantity written off to Scrap**



Q5-FR-658

When a work order is completed on the shop floor, the items are typically sent to the stockroom.

- Use Work Order Receipt (16.11) to receive items, close the order, and backflush components of final assembly work orders.
- If you did not issue items previously, issue them when completed products are received with Work Order Receipt Backflush (16.12).
- Use Work Order Operation Backflush (16.19) to issue items, report labor, and receive completed items at an operation.

If you use the Shop Floor Control module, you can enter labor feedback and test results at receipt, and report individual operations as completed.

When a work order is received:

- Inventory increases by the amount of the receipt.
- The open order quantity decreases by the amount of the receipt.
- Any reject quantity is written off to the Scrap account and not placed in inventory.

After the work order has been received, it is ready to close.

Close Work Order

Close Work Order

Item	Description	Date
01010		8/03/XX

CLOSED

Issues and Receipts

...but labor reporting okay until operation closed in SFC or until Work Order Accounting Closed is run

QAD Q5-FR-660

Work orders are typically closed when all the items are received. For most purposes, the receipt of all items ends the life cycle. If a partial receipt is made, the work order can be left open to receive the balance of the items at a later time.

To close a work order:

- Change the order status to Closed. You can change the order status to Closed by setting Close to Yes when completed units are received using Work Order Receipt, or by using Work Order Maintenance.
- Run Work Order Accounting Close to post variances, clear WIP, and close outstanding operations. Execute this program regularly, at least at the end of each fiscal month, for completed orders.

The system prevents component issues and work order receipts for a closed work order. However, additional labor can be reported until either the operations are closed in Shop Floor Control, or Work Order Accounting Close is executed.

To process inventory for a closed work order, you change its status back to Released.

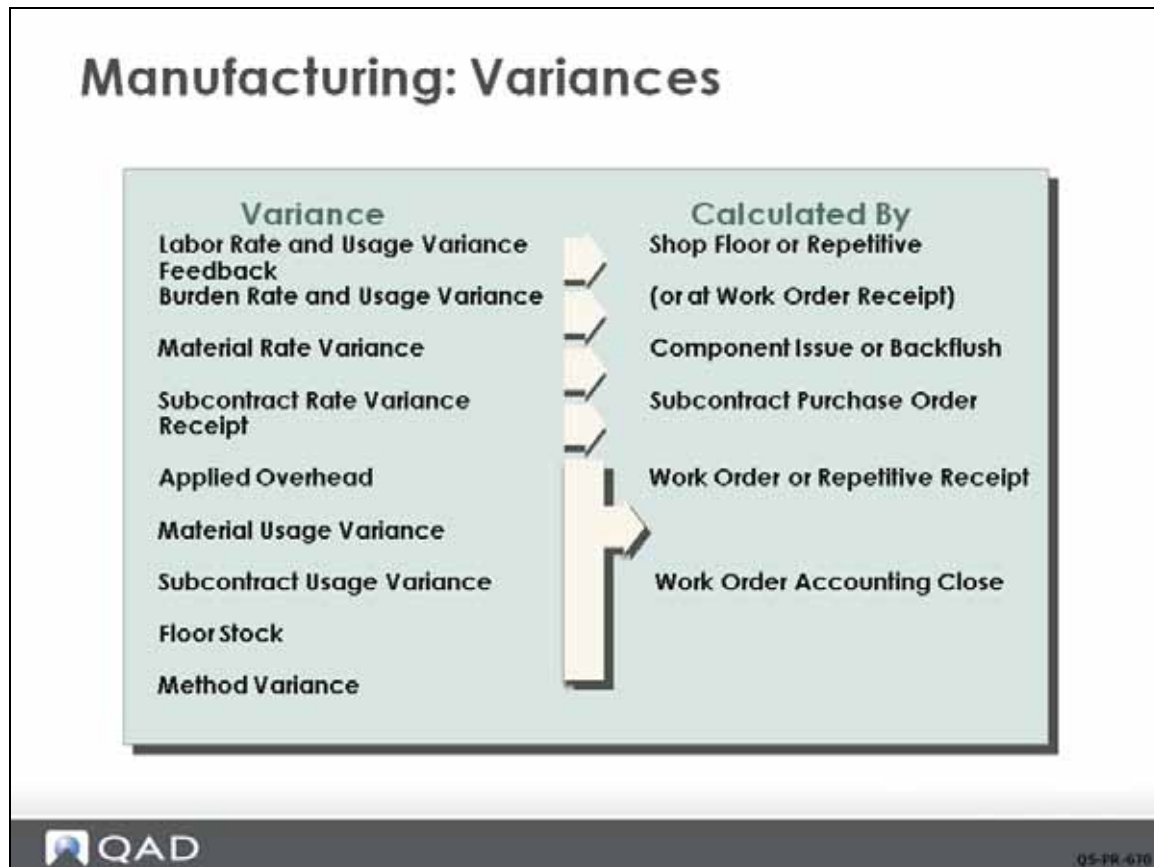
Executing Work Order Accounting Close:

- Completes open work order operations.
- Calculates and posts work order variances for material, labor, burden, and subcontract costs.

- Calculates and posts usage variances when the labor quantity used differs from the standard. For example, if an operation scheduled for five hours took six, a one-hour labor usage variance is posted.
- Calculates and posts rate variances for material and subcontract when cost used differs from standard cost. If pay rates are defined in Actual Pay Rate Maintenance, rate variances are also calculated for labor.
For example, when the standard subcontract cost is \$10 and the PO cost is \$12, the subcontract rate variance is \$2.
- Reconciles the WIP account for closed work orders by calculating and posting method change variances for any residual variances. WIP balances cannot be changed after the work order variances are posted.
- Updates current labor and subcontract costs.
- Posts floor stock amounts.

Important Work Order Accounting Close is normally an accounting or finance function done with the period end close. It is carefully coordinated with other period end accounting processes and controlled by internal procedures.

Variances



One important aspect of the entire manufacturing process is the management of cost. In a standard cost system, each item has a standard cost calculated based on the standard bill and routing. But each time the item is made, the cost can be somewhat different. These differences are tracked as variances. In QAD EE, variances are calculated and posted automatically throughout the manufacturing process. The illustration lists the variances and when they are calculated.

Rate Variance. This variance reflects a difference between the standard cost and the price actually paid. The employee who did the work is paid more or less than the standard work center rate, the subcontractor charged more or less, or the material used had a different GL cost than the item listed on the work order bill. This last cause of variance can mean that a substitute item was used, or that materials were issued from another site with a different cost. It could also mean that the GL cost has changed since the work order bill was created.

Usage Variance. Usage variance reflects a difference between the standard quantity and the quantity actually used (more or fewer hours or more or less material). Both are calculated based on the quantity of inputs that should have been used to get the quantity reported as received, referred to as earned hours or earned materials.

Method Variance. When a work order is completed, Work Order Accounting Close is run to clear out any balance remaining in work in process. After all other sources of costs and variances have been accounted for, any remaining amount in work in process is posted as a method variance.

Example

The following simple example covers the following activities:

- An employee record is reviewed.
- Work order control settings are defined (Work Order Control).
- A work order to build five medical ultrasounds (item 01010) is created (Work Order Maintenance).
- The work order is released (Work Order Release/Print).
- All of the components are issued in quantities sufficient to build five medical ultrasound devices (Work Order Component Issue).
- Labor to assemble the medical ultrasound units is recorded; it involves three operations (Labor Feedback by Work Order).
- The work order is received and closed (Work Order Receipt).

Review Employee Record

The screenshot displays the 'Review Employee Record' window in QAD software. The window title is 'Employee Modify'. It features a menu bar with 'Go To', 'Actions', 'Tools', 'Attach', 'Print', and 'Preview'. Below the menu bar is an 'Attachments' section. The main form contains the following fields:

- Employee Code:** 11-EMP01
- Active:** ☒
- Name:** Angela Patens
- Tabs:** Employee, Business Relation (selected)
- External Employee:**
 - Supplier Code:** [Field]
 - Registration Currency:** [Field]
- User:**
 - Login:** [Field]
- Start Date:** 01/01/2008
- End Date:** [Field]
- Job Title:** [Field]
- Department Code:** [Field]
- Default Project:** [Field]

The QAD logo is visible in the bottom left corner, and the text 'Q5-FR-600' is in the bottom right corner.

Finance/Human Resources set up the employee record for Angela Patens. She has been assigned to the manufacturing department (0100) and has employee code 11-EMP01, which is used for labor reporting.

An employee must report shop floor transactions. Some firms who are not interested in tracking labor times and charges create an administrative employee for reporting purposes only. Everyone doing shop floor transactions then use the code. Another approach is to have the supervisor use their employee code to report labor for the entire department or work center.

Define Control Settings



QMI's Production Manager has configured Work Order Control (16.24) settings so that:

- The system automatically generates work order ID numbers.
- The next number generated is 1000.
- The routing comments are checked.
- The work order release function sets the status of the first operation to Queue (Move First Operation selected).

Move First Operation

This field is typically set to Yes. The released order then appears on the dispatch list for the specified work center and the Queue status indicates that it is waiting to be started. If a lengthy picking effort is required, the work order may not be ready as soon as it is released. In that case, this field would be set to No. Operation Move would be used to change the status later.

Work Order and Routing Comments

The comments screens are always available and can be invoked for any work order as needed. The selection here, if checked, would bring up the comments screen automatically for every work order. This feature is useful if internal procedures require the use of comments on every order. In many cases, comments are only used occasionally and are selected as needed.

Create Work Order

Create Work Order

Work Order Maintenance X

Go To Actions Copy Print Preview Attach

Work Order: 1002 ID: 2309487
 Item Number: 01010 Medical Ultrasound

Type:
 Site: 10-100
 Production Line:

Quantity Ordered: 5.0 Order Date: 3/25/2011
 Quantity Completed: 0.0 Release Date: 3/25/2011
 Qty Rejected: 0.0 Due Date: 3/31/2011
 Sequence: 0.0
 Shift:
 Work Order Status: F Site: 10-100
 Sales/Job: Routing Code: U-001
 Supplier: BOM/Formule Code:
 Yield Percent: 100.00%
 Remarks:
 Comments:
 Post variances at SFC: ☒

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In Work Order Maintenance (16.1), notice that the WO number is based on the Work Order Control setting. Post Variances at SFC has a check mark, based on the setting in Work Order Accounting Control (36.9.11). When checked, variances are posted when shop floor transactions are processed rather than when Work Order Accounting Close is run.

Type. The work order type is blank, which means that this is a normal manufacturing order with a standard product structure and routing.

Work Order Status. This work order has a status of F (Firm Planned), so this order has been reviewed and confirmed, or manually created.

Due Date. The order date and the release date default to the system date (today). The system has calculated the due date based on the lead time calculated from the standard times in the routing, multiplied by the order quantity. If you leave Release Date blank and enter a due date, the system calculates the release date.

Routing Code. The routing U-001 has been specified. This code was defined in Routing Maintenance. If an alternate route is needed for this work order, specify it here.

BOM/Formule Code. The BOM field is blank, so the system accesses the BOM code that matches the item number on the work order. The BOM code was defined in Product Structure Maintenance. If an alternate bill is needed for this work order, specify it here.

Several additional frames display when you click Next, used for special cases beyond the scope of this course. Accept the defaults and continue to click Next until the cursor returns to the first field.

Release Work Order

Using Work Order Release/Print (16.6), QMI's Production Manager releases the work order for five medical ultrasound units. Based on the selections above, a picklist of required component items and a route sheet listing operations are printed. If you have a printer, you can direct the output to the printer and get a hard copy of the picklist and routing sheet. Otherwise, direct the output to Page to view the picklist and routing on your monitor.

The secondary pop-up window shown here is used in special case situations. Accept the defaults and click Next to complete the request.

Once all entries in the Work Order Release/Print screen have been completed, the status of the order changes from F (firm planned) to R (released). During this process, the work order has been exploded and allocated, then released in one step.

The release function generates a document with two parts that can be printed or viewed on your monitor:

- A picklist for selecting component items from inventory
- A routing sheet listing the operations and work centers

Review Picklist

Review Picklist



Work Order Release/Print
10USA

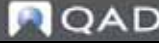
04/10/12 17:30:13
Page:1

Work Order Picklist

Work Order: 1001
ID: 2326383
Batch:
Item Number: 01010
Remarks: Medical Ultrasound
Qty Ordered: 5.0

Issue Date: 04/10/12
Revi D
Work Order Due Date: 04/16/12
Sales/Job:
Deliver To:

Item Number	Rev	Site Location	Lot/Serial Ref	Required Qty to Issue	UM	Issued
50001	AA	10-100		5.0	EA	
		Probe Unit - 10 Mhz				
		020	50001-0911-10	1.0	(	)
		020	50001-0911-11	1.0	(	)
		020	50001-0911-12	1.0	(	)
		020	50001-0911-13	1.0	(	)
		020	50001-0911-14	1.0	(	)
60001		10-100		5.0	EA	
		Durable Plastic Housing				
		020		5.0	(	)
60002		10-100		5.0	EA	
		Display / Readout				
		020		5.0	(	)


Q5-FR-720

The printed picklist lists the medical ultrasound component items, the quantities to issue and the site (10-100) and location (020) to pick from. Note the parentheses, which the issuing stock clerk can use to initial the picklist to indicate which items have been issued.

Review Routing

Review Routing

Work Order Release/Print

10USA

04/10/12 17:30:13

Page:3

Work Order Routing

Work Order: 1001

ID: 2326383

Batch:

Item Number: 01010

Remarks: Medical Ultrasound

Qty Ordered: 5.0

Rev: D

Work Order Due Date: 04/16/12

Sales/Job:

Deliver To:

Op	Work Center	Std Op	Tooling Supplier	Setup Time	Run Time	Actual	By
10	1000 Mach: 1001 General Assembly-Ultra			5.0			()
	ASSEMBLE COMPONENTS			50.0			()
20	1050 Mach: 1001 Product Test-Ultra			2.0			()
	TEST FINISHED UNIT			25.0			()
30	1060 Mach: 1001 Packaging -Ultra			0.5			()
	PACK FOR SHIPPING			10.0			()

16.6
Work Order Release/Print
woword.p

QAD

Q5-FR-720

The printed routing sheet lists the operations 10-20-30, and standard setup and run times to manufacture five units. The routing specifies which work center the work is done in and the short description of the task.

Review Work Order Status

Item Number	Site	Work Order	ID	Quantity Open	Due Date	Sales/Job	Work Order Status
01010	10-100	1000	2280902	5.0	05/28/2010		F
01010	10-100	1001	2280904	5.0	05/28/2010		R
01010	10-100	1002	2280921	5.0	05/28/2010		R
02001	10-200		2280899	1,000.0	05/31/2010		R
70050	10-500	QADDEM0-70050	2280900	10,000.0	05/13/2010		F

The Work Order Browse (16.2) now shows that the status of work order 1001 has indeed changed from F (firm planned) to R (released).

In the process of releasing the order, the work order bill of material was exploded and allocated. In what was just one step for the user, this background processing changed its status from Firm to Exploded to Allocated to Released.

In Work Order Control, the Move First Operation field was selected, so in addition to the order status being set to Released, the operation status for the first operation has been changed to status Queue.

Work Order Component Issue

Work Order Component Issue

Work Order: 1001 ID: 2326383 Op: Effective: 4/10/2012
 Item Number: 01010 ST: R Issue Alloc: ☐
 Medical Ultrasound Issue Picked: ☒
 Document:

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss	Qty B/D
50001	5.0	0.0	5.0	5.0	0.0
60001	5.0	0.0	5.0	5.0	0.0
60002	5.0	0.0	5.0	5.0	0.0

Item Number: Op: Site: Loc:
 Description: Lot/Serial:
 Quantity: UM: Reference:
 Substitute: ☐ Cancel B/D: ☐ Multi Entry: ☐
 Document:

QAD QS-FR-745

The released work order is now in the stock room to have the components issued. QMI stock room personnel use Work Order Component Issue (16.10) to do this using the work order number as shown here. Since this is a standard component issue, check the Issue Picked box. The system then uses the work order bill of material to retrieve the detail item allocation information generated when the work order was released.

In this example, all components were picked from the locations printed on the work order picklist, so they can be issued automatically by setting Issue Picked to Yes. This feature reduces manual entry because it sets the default sites, locations, lot/serial numbers, references, and quantities from the detail allocations on the picklist. To proceed with the transaction, click Next.

Display Items Being Issued

Work Order Component Issue

Work Order: 1001 ID: 2326383 Op: Effective: 4/10/2012
 Item Number: 01010 ST: R Issue Alloc: ☐
 Medical Ultrasound Issue Picked: ☒
 Document:

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss	Qty B/O
50001	5.0	0.0	5.0	5.0	0.0
60001	5.0	0.0	5.0	5.0	0.0
60002	5.0		5.0	5.0	0.0

Display items being issued

Item Number: Op: Site: Loc:
 Description: Lot/Serial:
 Quantity: UM: Reference:
 Substitute ☐ Cancel B/O ☐ Multi Entry ☐
 Document:

QAD Q5-FR-751

A dialog box prompts if you want to see the issue transaction. Click Yes.

Display Items Being Issued 2

Work Order Component Issue

Work Order: 1001
ID: 2326383
Op:
Effective: 4/10/2012

Item Number: 01010
ST: R
Issue Alloc: ☐

Medical Ultrasound
Issue Picked: ☒

Document:

Item Number	Site	Location	Lot/Serial	Ref	Quantity
50001	10-100	020	50001-0911-10		1.0
50001	10-100	020	50001-0911-11		1.0
50001	10-100	020	50001-0911-12		1.0
50001	10-100	020	50001-0911-13		1.0
50001	10-100	020	50001-0911-14		1.0
60001	10-100	020			5.0
60002	10-100	020			5.0
60003	10-100	020			5.0
60005	10-100	020			5.0
60006	10-100	020			5.0

Q5-FR-T32

This screen shows the actual inventory transactions that the system is about to make, including the item number, site, location, and quantity. If all is correct, click Next to bring up a final verification.

If all is correct, click Yes and the inventory transactions are updated.

Click No to return to the transaction frame to make corrections. Completing this transaction removes the components from the inventory location and issues them to Work in Process (WIP) at the GL standard cost. The work order and the component items are now delivered to the first work center on the route for assembly to begin.

Non-Standard Component Issue

Non-Standard Component Issue

Work Order Component Issue

Go To * Actions * Copy * Print * Preview * Attach

Work Order: 1002 ID: 2280921 Op: Effective: 5/27/2010

Item Number: 01010 W/O Stat: R Issue Alloc: ☐ Issue Picked: ☒

Medical Ultrasound

Document:

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss	Qty B/O
50001	0.0	0.0	0.0	0.0	0.0
60001	0.0	0.0	0.0	0.0	0.0
60002	0.0	0.0	0.0	0.0	0.0

Item Number: Op: Site: Loc:

Description: Lot/Serial:

Quantity: UOM: Reference:

Substitute: ☐ Cancel B/O: ☐ Multi Entry: ☐

Document:

QAD Q5-FR-739

When you need to issue a non-standard item, you use the lower frame of the issue screen to manually enter the correct data. Examples of when this method is used include issuing an approved substitute item in place of the standard item or issuing material from a different location. Another common situation occurs when you need to issue material from two or more locations to get the full quantity of the item.

Once the data in the lower frame is filled in and you click Next, the transaction proceeds as normal.

Review Inventory

Item Number	Site	Qty On Hand - Inv Mstr	Qty On Hand - Inv Detail	Location	Lot/Serial	Reference	Status	Expire Date
50001	10-100	109.0	1.0 020	50001-0710-24		YYY		
50001	10-100	109.0	1.0 020	50001-0710-25		YYY		
50001	10-100	109.0	1.0 020	50001-0710-3		YYY		
50001	10-100	109.0	1.0 020	50001-0710-4		YYY		
50001	10-100	109.0	1.0 020	50001-0710-5		YYY		
50001	10-100	109.0	1.0 020	50001-0710-6		YYY		
50001	10-100	109.0	1.0 020	50001-0710-7		YYY		
50001	10-100	109.0	1.0 020	50001-0710-8		YYY		

QAD

Q5-PR-765

Review the on-hand inventory using Inventory Detail by Item Browse (3.2). You can see you still have enough components to build additional ultrasound units. A partial list is shown in the illustration.

Record Labor

Record Labor

Labor Feedback by Work Order

Go To Actions Copy Print Preview Attach

Work Order: 1001 ID: 2326383
 Operation: 10 ASSEMBLE COMPONENTS Op Status: QUEUE
 Document:
 Employee: 11-emp01 Angela Patens Pay Code:
 Department: 0400 Work Center: 1000 Time Ind: Hours Minutes
 Shift: Machine: 1001 Project:

Quantity Completed: 5.0 Effective Date: 4/10/2012
 Rejects: ☐ Operation Complete: ☒
 Rework: ☐ Move to Next Operation: ☒
 Previous Ops Complete: ☒
 Start Setup: 01:00:00 Elapsed Setup: 0.000
 Elapsed/Stop Setup: 01:30:00
 Start Run: 01:30:00 Elapsed Run: 0.000
 Elapsed/Stop Run: 06:30:00
 Comment:
 Down Time: 00:00:00 Down Time Reason:

QAD Q5-FR-760

Now that the work order is released to production, its status can be updated using shop floor transactions. Shop floor transactions are posted against the work order and operation. They must be entered with a valid employee code. In this simplified example, the senior assembler, Angela Patens, employee 11-EMP01, performs all of the shop floor reporting.

When the route for the medical ultrasound was set up, each operation defaulted to milestone. This indicates that each operation is reported when it is complete.

Angela Patens uses Labor Feedback by Work Order (16.20.1) to record labor for operation 10 on the work order. In addition to the employee ID, other information included is the work order number, operation, and work center, which must be recorded on all labor feedback transactions. When you enter the work order and operation, the system defaults the department and work center with the standard department and work center for the route and operation. These are changed if the work is done in a non-standard work center.

Based on the quantity of units completed (five) and routing details for operation 10 (entered in Routing Maintenance), the setup time is one hour and run time five hours (5 units $\times$ 1.0 hr/unit). If actual setup or run time varied from the standard times, usage variances are generated. Depending on how you organize your shop floor reporting, you can use either the elapsed time for the operation, or enter the start and stop time for the operation.

If you are reporting labor before the completion of the operation (for example, at the end of a shift), but the work is not complete, then the Operation Complete field would be unchecked, and only the units complete would be reported.

The check box for Move Next Operation, if checked, changes the status of the next operation to Queue, and move the quantity complete from this operation into WIP at the next operation.

The check box for Previous Operations Completed, if checked, closes all previous operations with the processing of this transaction.

Operations 20 and 30 are reported in the same manner. This example uses standard times for each operation.

Questions

What information does Department 0400 provide?

GL accounts for manufacturing costs are attached to the department in Department Maintenance.

What information does Work Center 1000 provide?

Rates are specified at the work center level. These rates include the standard labor rates per hour for setup and run operations, and the variable burden rates that apply to all work done in the work center.

Review Labor Transactions

Review Labor Transactions



Operation Transaction Detail

Inq

04/10/12

Tran Nbr: 30501

Display E-Signature Details: No

Output: PAGE

Type: LABOR

Transaction Date: 04/10/12 18:16:07

Work Order: 1001

Effective Date: 04/10/12 Shift:

ID: 2326383 Op: 10

Employee: 11-emp01 Angela Patens

Item Number: 01010

Quantity Completed: 5.0

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: 0.5

Actual Setup Time: 0.5

Std Run Time: 10.0

Actual Run Time: 5.0

Labor Cost Std: 1,262.50

Labor Cost: 137.50

Burden Cost Std: 3.67

Burden Cost: 0.40

Subcontract Std: 0.00

Subcontract Cost: 0.00

Q/L Reference	G/L Transactions				Project
	Amount	DR Acct	Sub-Acct	CC	
Reference ID	12.50	CR Acct	Sub-Acct	CC	Project
1012/SYS-DB0000000001	12.50	1550	Mech		
00120410000001	5120		Mech	mfg	
1012/SYS-DB0000000002	125.00	1550	Mech		
00120410000002	5120		Mech	mfg	
1012/SYS-DB0000000003	1,125.00	1550	Mech		
00120410000003	5140		Mech	mfg	
1012/SYS-DB0000000004	0.04	1550	Mech		
00120410000004	5220		Mech	mfg	
1012/SYS-DB0000000005	0.36	1550	Mech		
00120410000005	5220		Mech	mfg	
1012/SYS-DB0000000006	3.26	1550	Mech		
00120410000006	5240		Mech	mfg	



Q5-PR-77

The labor transactions created when labor was reported for can be reviewed in Operation Transaction Detail Inquiry (16.20.13.9). This inquiry shows standard and actual setup and run times and the GL effects.

Accounts affected are Work in Process, Labor Absorbed, and Burden Absorbed.

Review Work Order Route Operation Status

Review WO Route Operation Status

Work Order: 1001 ID: 2326383
 Item Number: 01010 Medical Ultrasound
 Operation: 10

Standard Operation:
 Operation Description: ASSEMBLY COMPONENTS
 Work Center: 1000 Machine: 1001 General Assembly-Ultra

Qty Ordered: 5.0	Std Setup Time: 5.0	Act Setup Time: 0.5
Qty WIP: 0.0	Std Run Time: 10.0	Act Run: 5.0
Run Complete: 5.0		
Sub Complete: 0.0	Std Move Time: 0.0	Machines per Op: 1
Qty Reject: 0.0	Queue: 0.25	Op Status: C
Qty Rework: 0.0	Wait Time: 0.25	Tool Code:
Start Date: 3/30/2012	Subcontract Cost: 0.00	Supplier:
Due Date: 4/10/2012	Setup Crew: 1.00	Yield%: 100.00%
	Run Crew: 4.00	Comments:
	Overlap Units: 0	
	Subcontract LT: 0	

QAD Q5-FR-700

When the Production Manager created work order 1001 in Work Order Maintenance, the system automatically generated a work order routing. This routing tracks the status of each operation and the quantities recorded complete at each operation. It also shows the actual setup and run times.

This screen shows that Operation 10 is complete (Op Status = C). No units of 01010 are in process at this operation (Qty WIP = 0.0), and 5 have been completed (Run Complete = 5.0).

If you reviewed operation 20, you would see that its status has been changed to Q (Queue).

If additional changes to operation 10 reporting are needed, you can use Work Order Routing Maintenance to change the operation status from C (Complete) to R (Run), allowing additional labor reporting to be done.

Receive and Close Work Order

Work Order Receipt

Go To Actions Copy Print Preview Attach

Work Order: 1001 ID: 2326383 Effective: 4/10/2012

Remarks: Batch:

Item Number: 01010 Lot/Serial Control: S UOM: EA

Description: Medical Ultrasound W/O Stat: R

Open Quantity: 5.0 Automatic Lot Numbers: ☐

Document:

Quantity: Site:

UOM: Location:

Conversion: Lot/Serial:

Scrapped Qty: Reference:

UOM: Multi Entry: ☒

UOM Conversion: Set Attributes: ☒

Total Units: 0.0

QAD Q5-FR-790

Using Work Order Receipt (16.11), QMI receives the 5 medical ultrasound units into its finished goods location (010) and closes the order.

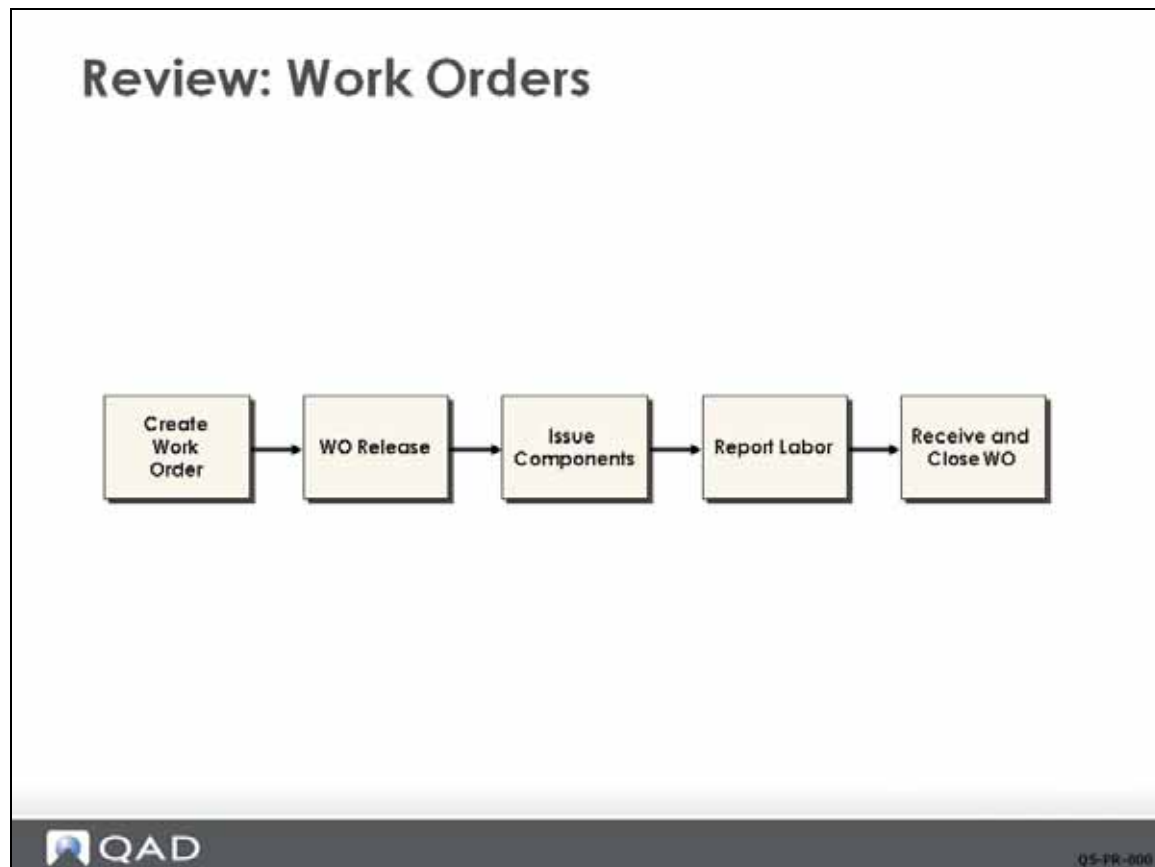
A dialog box prompts if the information is correct. This brings up a screen that displays the inventory transaction that is about to occur. Another pop-up window displays the transaction about to be processed and asks for confirmation that all is correct. Clicking Yes completes the work order close and the inventory update.

This increases (debits) the Inventory account and decreases (credits) the WIP account for the total standard GL cost.

Additional Notes

Work Order Accounting Close is an additional step in the work order life cycle that is usually taken at the end of each GL calendar period as part of the period-end closing process.

Review



This chapter discussed work order types and status codes, and explained the variances that can occur in the work order cycle. You then saw how work orders flow through the system and learned that they are:

- Created in Work Order Maintenance
- Released in Work Order Release/Print
- Issued components by Work Order Component Issue
- Reported in Labor Feedback by Work Order
- Received and closed in Work Order Receipt

For much more detail on work orders and how special situations are managed, see *Training Guide: Work Orders*.

Exercise 7

In the following exercise, you:

- Review an employee record.
- Define control settings.
- Manually add and release a work order.
- Issue components to a work order.
- Report labor to a work order.
- Receive and close a work order

Note Remember, if you are uncertain about a given transaction and how to fill in the data fields, refer to the appropriate section of the example.

Review Employee Record

- 1 Use Employee View (36.1.7.3) to review the record for employee 10-EMP01. An employee is required for shop floor reporting.

Define Control Settings

- 2 Select Work Order Control (16.24) and make sure that the settings are as follows:

Field	Data
Auto W/O Numbers	Checked (yes)
Next W/O Nbr	<default> or a setting of your choice
Work Order Comments	Unchecked (no)
Routing Comments	Unchecked (no)
Move First Operation	Checked (yes)

Manually Add and Release a Work Order

- 3 Open Work Order Maintenance (16.1) to add a work order record.
- 4 Click Next and accept the system-generated Work Order and ID numbers. Note the Work Order Number for future reference: _____.
- 5 Create a work order. Enter or verify the following information:
 - Item Number: 01010
 - Site: 10-100. Click Next until the Quantity Ordered field is highlighted.
 - Status: F (firm planned).
 - Click Next until the Work Order field is highlighted, then click Back to save the record and close Work Order Maintenance.
- 6 Open Work Order Release/Print (16.6) to release the work order you created.
 - Use the lookup function to find your work order.

- Click Next until the Output field is highlighted. You can send the work order picklist and routing output to a printer (if configured) or to your monitor. Verify that PAGE is selected.
- Click Next.
- Review the picklist and routing.
- Find the new status of the order using Work Order Browse (16.2). What is it?

Issue Work Order Components

- 7 Open Work Order Component Issue (16.10) to issue components from your inventory to your work order.
 - Use the Work Order field to specify your work order
 - Select Issue Picked to make your transaction more automatic.

Note By overriding the data in the transaction frame, you can change the quantity issued or the location from which the items are issued. In this exercise, accept the default values since no inventory should exist in any other locations.

- 8 Click Next, respond to any prompts, then click Back to issue the components and exit Work Order Component Issue.

Report Labor to a Work Order

- 9 Manually calculate how much labor for setup and run time you need to complete all 20 units at each operation. (These numbers are on the routing that was printed for the work order.) Assume that the shop has now built the units.

- 10 Open Labor Feedback by Work Order (16.20.1) to report labor and units completed at each operation on your routing, based on your previous calculation.

Use the Work Order field to select the Work Order. Click Next until the Operation field is highlighted.

Repeat the following steps for operations 10, 20, and 30:

- Operation Field: Enter the operation number. Click Next until the Employee field is highlighted.
- Employee: 10-EMP01
- Time Ind: Change to Decimal Hours
- Quantity Completed: Enter the number of units completed
- Elapsed Setup: Enter the time
- Elapsed Run: Enter the run time

Click Next, then Back to save information and exit Labor Feedback by Work Order.

You can use Operation Transaction Detail Inquiry (16.20.13.9) to review the transactions created when you reported labor.

- 11 Use Work Order Routing Maintenance (16.13.13) to review your work order routing. Do the following:
 - Work Order: Specify the work order number
 - Operation: Enter the operation number

- Check how many units have been completed at each operation and how much labor was used for each operation.
- Exit Work Order Routing Maintenance.

Receive and Close a Work Order

- 12** Use Work Order Receipt (16.11) to receive all 20 medical ultrasounds from the work order into inventory at site 10-100, location 010.

Field	Data
Quantity	20
Lot/Serial	MDF950001
Multi Entry	Yes
Close	Yes

- Click Next until you are prompted: Create List of Serial Numbers? Click Yes.
- Click Next until you see MDF950020.
- Click Back until you are prompted: Display Items and Lot/Serial Detail? Click Yes.
- A prompt asks Is all information correct? Click Yes.
- Click Back to exit Use Work Order Receipt.

Chapter 9

Sales Orders/Invoices

Overview



This chapter describes the various activities associated with getting a product to a customer. Typically the sales department is responsible for recording orders, processing shipments, and invoicing. Each of these activities is discussed. An example follows each activity to illustrate the process.

Topics

Topics

- Sales Order Process Flow
- Document Layout
- Allocation of Inventory
- Picklists
- Shipment
- Invoice Management

Learning Objectives

Objectives

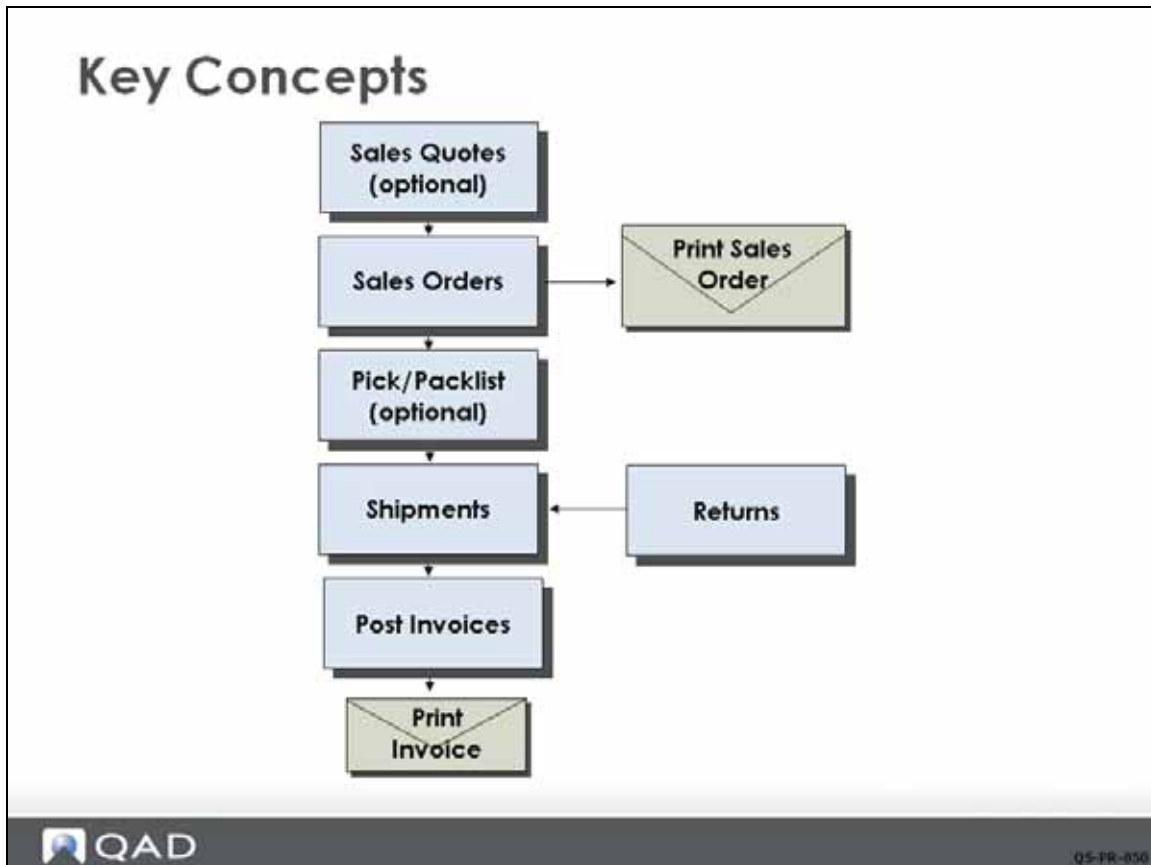
When you finish this section, you should be able to:

- Describe the basic sales order process flow
- Explain the different types of information contained in a sales order document header, line item, and trailer sections
- Explain the differences between general and detail allocations
- Describe the basic invoice process flow
- Describe the basic payment process flow
- Enter, print, and ship a sales order
- Post and print an invoice



QS-PR-040

Key Concepts



A customer sale can begin as a sales order or a sales quote. Both represent offers to sell the customer certain items at a certain price at a certain time. The sales order also represents a commitment from the customer to purchase the items, but a sales quote does not. Therefore, MRP does not consider sales quotes.

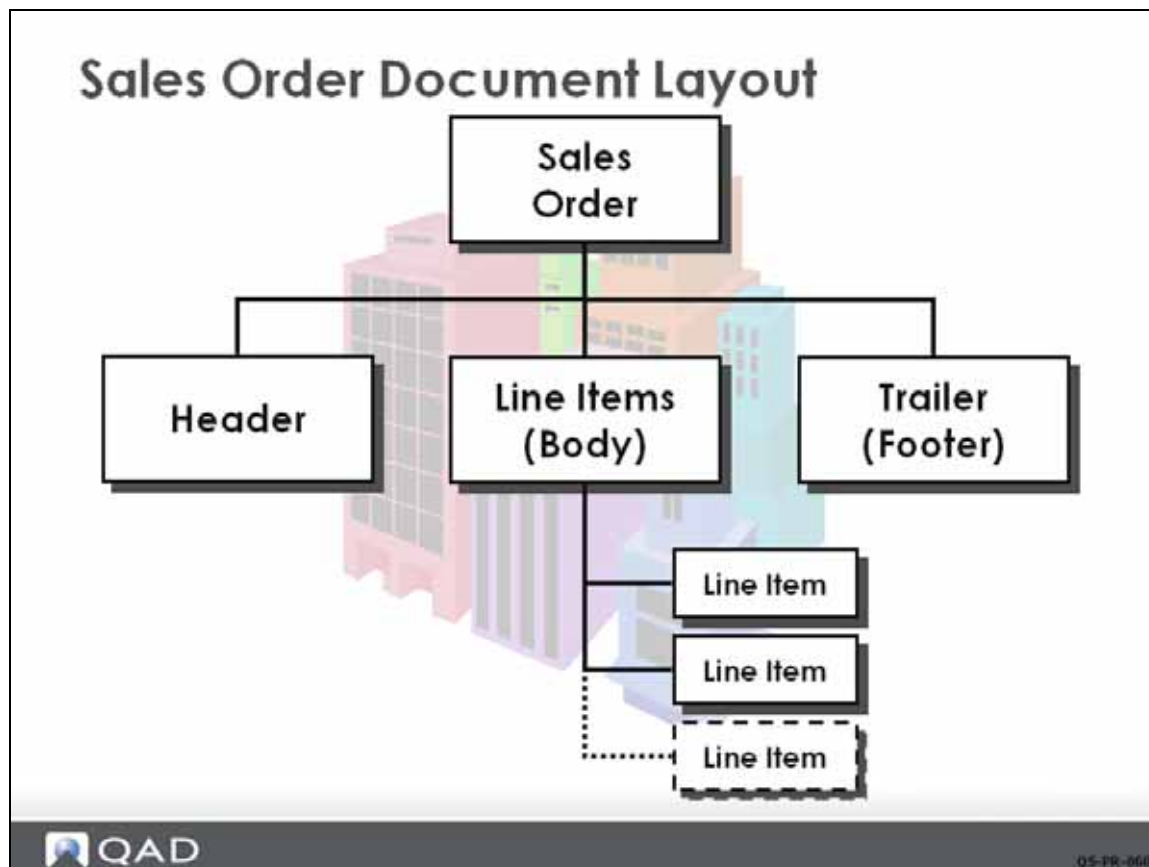
A hard-copy document of the order can be printed and sent to the customer.

After a sales order has been entered and is ready to be shipped, a picklist can be printed. When the picklist is generated, any allocated quantities on the order are incremented as picked. The picklist document can be placed inside the shipping box as a packing list. Inventory is not decremented until items are shipped.

The shipment transaction creates a pending invoice that does not increment Sales until the invoice is posted to Accounts Receivable. Posting the invoice assigns the invoice number based on financial setup and generates the documents that can be printed and sent to the customer.

Once invoices are posted, financial processing continues with accounts receivable functions.

Sales Order Document Layout



In QAD EE, a sales order document has three main parts, that are entered and printed in sequence:

Header. Contains the general terms of the order and default values for line items. Comments can follow that describe the terms or instructions associated with this order in more detail.

Line Items. Specifies a particular item being ordered, its order quantity, and price. Lists any exceptions to header information, such as a date or address that apply to only the line item and not the whole order. Comments may follow each line item, describing in more detail the item, its specifications, or packaging instructions. Each order can have many line items.

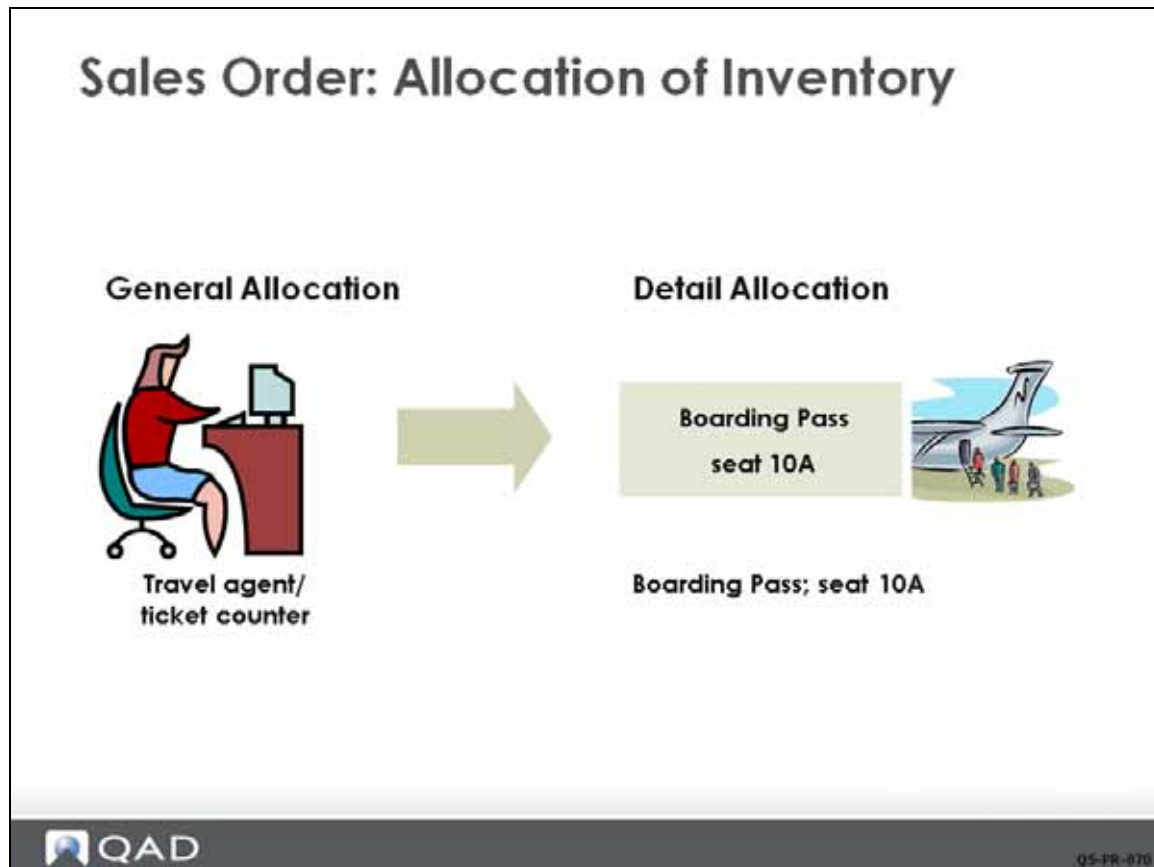
Trailer. Contains tax, shipping, and order status information for all line items. Freight can be calculated automatically on a bulk or unit basis. These charges are not subject to commission or discount, and can be taxable.

Comments can be entered manually on quotes and orders or copied from preexisting master comments and modified as needed. Master comments are useful for storing standard information such as:

- Item specifications and quality requirements
- Item descriptions in other languages
- Export documentation and packaging instructions

A reference code, type, language, and page number (up to 99 pages of text) identifies each master comment.

Allocation of Inventory



QAD EE uses allocations to reserve inventory. Particular quantities can be set aside or allocated to specific sales orders and work orders. For both sales orders and work orders, allocations help ensure that inventory is available when it is needed. For sales orders, allocations also enable the sales department to determine which items are shipped for specific orders and prevents you from promising the same item to two or more customers.

General and Detail Allocations

To allocate inventory, the system distinguishes between a general allocation and a detail allocation.

- A general allocation reserves inventory at a particular site, but it does not specify a specific location or lot/serial numbers. This scenario is similar to buying an airline ticket. The airline allocates a seat for you. This is a general allocation; you have a seat, but you do not know which one.
- Detail allocations enable you to reserve exact items of inventory at a specific location by specifying lot and/or serial numbers, expiration dates, sites, and/or locations. Detail allocation is normally done automatically when the picklist is prepared, but it can be done manually during the order-entry process. In the airline example, detail allocation happens when you get a boarding pass. Now you know what seat you are in. It is detail allocated to you and no one else is assigned to the same seat.

Automatic or Manual

Allocations can be done at several stages, automatically or manually. For sales orders, general allocations can be created during order entry, depending upon the setting in Sales Order Control. The system automatically converts general allocations to detail allocations when picklists are printed. You can also override the system by manually creating detail allocations during order entry. Like the airline boarding pass example, most errors occur when humans try to manipulate the system and override the system allocations.

Printing Picklists

Printing Picklists

Sales Order Packing List - 5/27... X

QMI -USA Division
30 Ridgedale Avenue
East Hanover, NJ 7950
USA - TAX PURPOSE

P A C K I N G L I S T

Order Number: 10510001 Page: 1
Order Date: 05/27/10
Print Date: 05/27/10

Sold To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Ship To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Salespersons: 10SP01
Credit Terms: 2M
Remarks:

Purchase Order:
Ship Via: FEDEX
FOB Point:
2 months after month end of invoice date

Ln	Item Number	Site T Location	Lot/Serial	Qty Open	Qty to Ship	UM	Due Shipped
1	01010	10-100		5.0	EA	06/04/10	
	Revision: D						
	Medical Ultrasound	010	4	1.0	(	)	
		010	5	1.0	(	)	

7.9.13 sosopl.p

QAD Q5-FR-000

Once customer-ordered items have been completed or when stock items are available for shipment, sales personnel can initiate picklist printing for the sales order.

The picklist shows what items to pick to fill an order and what site or location to pick them from. If you created detailed allocations in Sales Order Maintenance, including lot/serial numbers and lot reference numbers, this information appears on the picklist. If you performed a general allocation for the sales order, the system automatically converts the general allocation to a detail allocation when it prints the picklist.

To print a picklist for a sales order, use Sales Order Packing List (7.9.13). You can only print picklists for sales orders not on credit hold. A sample picklist is shown here.

After printing the picklist, the system updates the values displayed in Sales Order Maintenance for the quantity allocated and quantity picked.

Note The terms picklist and packing list are used interchangeably.

Shipment

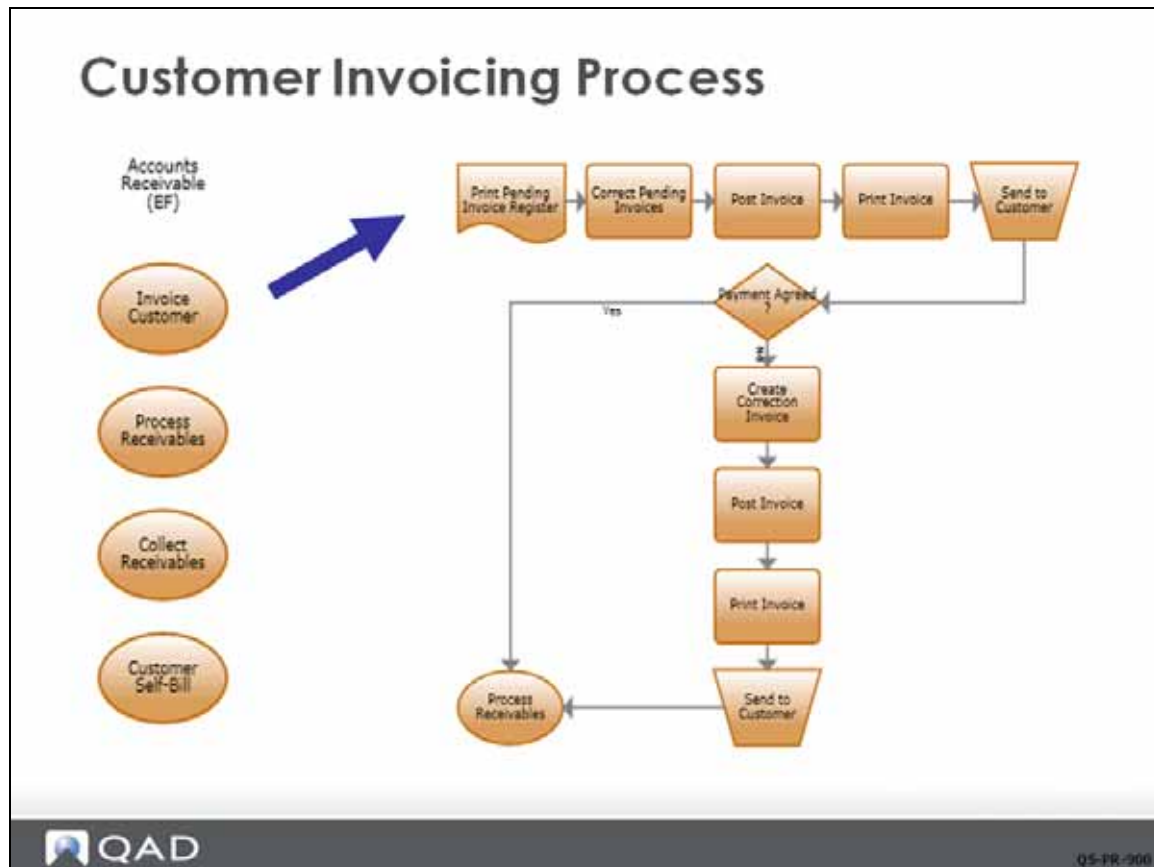


After the items listed on the sales order picklist have been picked, they are packed and shipping paperwork is prepared. Following actual shipment, the shipping transaction can be processed.

Processing the transaction physically decreases the quantity on hand for each of the items that was shipped and generates a GL transaction to decrease (credit) Inventory and increase (debit) Cost of Sales accounts.

Shipping a sales order automatically marks it as ready for invoicing. Typically, an invoice document is generated for each shipment. You ship the items and post it to Accounts Receivable. Posting generates the printed documents to send to the customer. However, you can combine multiple shipments and sales orders on one invoice.

Invoice Management



A sales order shipment automatically creates a pending invoice. While in the pending status, changes can be made to fields such as credit terms, commission percentage, price, and discount.

After a pending invoice is reviewed, it can be posted and printed. Post and print are combined in QAD EE; only a posted invoice can be printed. However, a preview function lets you see what the invoice looks like before you print it. You can select invoices to process by specific sales order number or range of numbers, or by a shipping date or range of dates. The date on the invoice is the system date unless you change it.

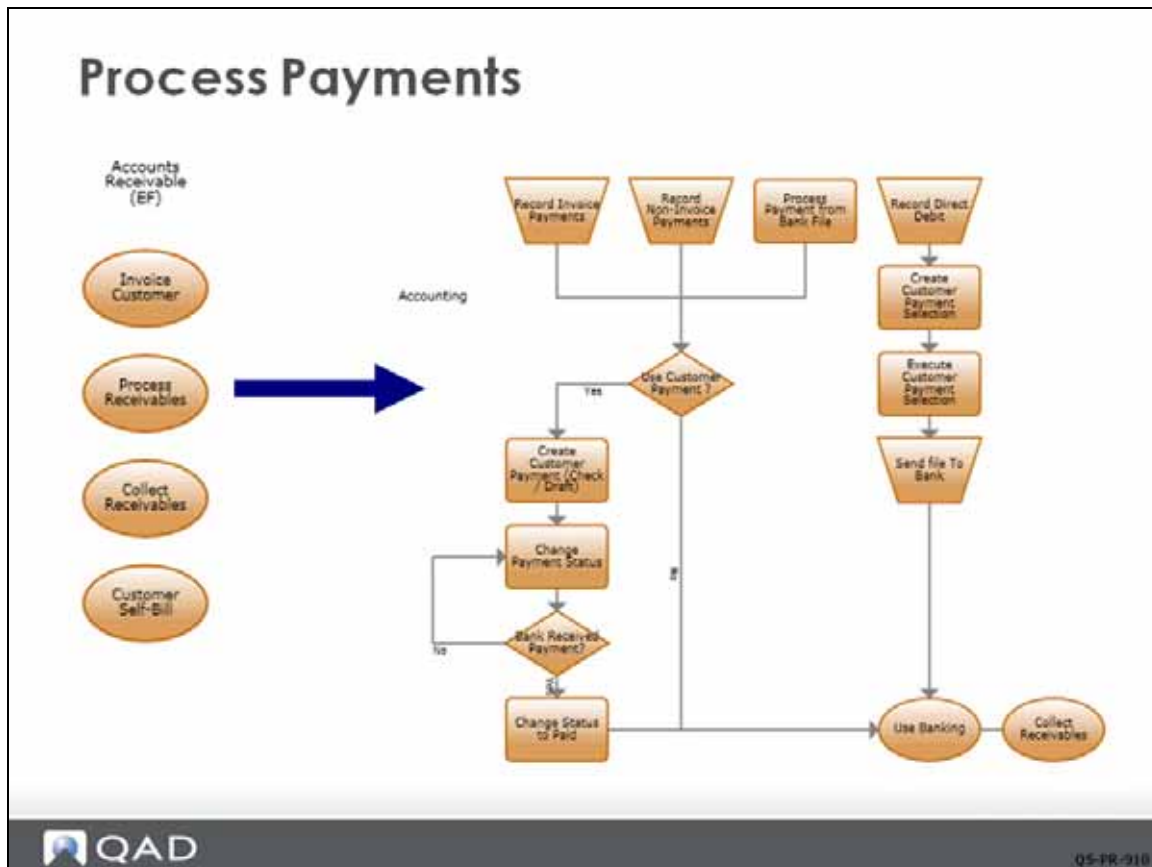
Posting assigns a number to the invoice based on daybooks and daybook sets defined during financial setup. Daybooks support assigning different invoice sequence numbers for each site, and different numbers for sales invoices and strictly financial invoices.

The post function updates the customer's open account balance and GL account balances for Sales and AR, salesperson quota and commission history, sales tax journals and sales analysis history.

Posting deletes complete sales orders. However, you can use invoice history for reviewing issues, configured product information, or reprinting invoices.

If the customer disagrees with any aspect of the invoice, a correction invoice can be created, which is linked to the original invoice, and then printed and posted to correct account balances and maintain an audit trail of changes.

Processing Payment



When processing customer transfer payments, you can use Banking functions to record the payments directly in your bank account while allocating the payment directly to invoices.

For other payment instruments, such as check payments, draft payments, and direct debit payments, you typically use Customer Payment and Customer Payment Selection functions to complete the payment process. These functions let you process a payment through a series of statuses, with postings to payment accounts for each status change. In this way, the payment is fully recorded in the AR sub-ledger, from allocation of the payment to an invoice to acknowledgement from the bank that the payment amount has been transferred to your bank account.

Once the amount is paid, you use Banking functions to update your account statement. The Payment functions handle all types of payment instruments (including checks, drafts, credit card, and direct debits), and both paper and electronic payment formats.

Payment processing is handled entirely within the Enterprise Financials modules and is not covered in this class.

Example

In the following example, QMI's Sales Department:

- Reviews settings for a customer
- Defines settings in Sales Order Control
- Enters a sales order for five medical ultrasounds sold to Pacific Health Care Systems at \$2500.00 per unit
- Prints the sales order and packing list
- Ships five medical ultrasound units to Pacific Health Care Systems

The Accounts Receivable Department then:

- Posts and prints an invoice for this sale

Review Customer Record

Review Customer Record

Customer Data Maintenance

Go To Actions Copy Print Preview Attach

Customer: 10C1003 Customer: 10C1003 Salesperson: 10SP01

Customer Address

Customer: 10C1003 Business Relation: 10-C1003

Name: Pacific Health Care Systems Active: ☐

Address: 600 Calle de Los Caminos Added: 2/8/2010

Address:

Address:

City: Los Angeles State: CA Post: 90212 Format: After

Country: USA - TAX PURPOSE USA County: Los Angeles

Attention: Casey [2]

Telephone: [2]

Fax: [2]

Customer Data

Sort Name: Pacific Health Care Systems Type: DIST

Salesperson: 10SP01 Multiple: ☐ Region: US-E

Ship Via: FEDEX Currency: USD

Resale: Site: 10-100

Remark: Lang: ut

QAD Q5-PR-920

Before QMI's Customer Service Representative (CSR) can enter a sales order, a customer record must exist in the system. The Finance Department has already set up the basic customer data as it relates to accounting. Now the CSR reviews the data in Customer Data Maintenance (2.1.1) and adds sales or service-specific information such as contact names and phone numbers and region or type codes if needed. The CSR can also specify default sales persons and the site code from which QMI normally ship to this customer.

Several additional frames exist in Customer Data Maintenance that let you set defaults for sales order processing. For example, you can indicate that this customer accepts partial shipments and whether to use fixed pricing. Since these settings are defaults, you can change each sales order as required.

Address Tax Data

Address Tax Data

Address Tax Data

Taxable: ☐

Tax Zone: USA-CALA

Tax Class:

Tax Usage:

Tax Inc: ☐

Tax ID - Federal:

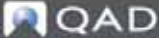
State/VAT ID:

Tax ID - Misc 1:

Tax ID - Misc 2:

Tax ID - Misc 3:

In City: ☒

QAD

Q5-FR-321

When you click Next, a tax information window pops up. Finance sets up tax data. It is rarely changed during sales order processing.

Customer Credit Data

Review Customer Record

Customer Data

Partial OK: ☒	Class: DIST
Discount Tbl:	SIC:
Fixed Price: ☒	Invoice by Authorization: ☐
Daybook Set: 10-SALES	RSS Calendar Option: 1 Customer/Shop
	Non-Sales Order Price List:

Customer Credit Data

Disc Pct: 0.00%	Terms: 2M	Last Sale:
PO Required: ☐	Bill To:	

Customer Freight Data

Freight List: 10FRT	
Min Frt Wt: 1	KG
Freight Terms: ADD	

Enterprise Material Transfer Data

EMT Type: NON-EMT	Customer Shipping LT: 0	Confirmed EMT SO: ☐
		EMT Credit Flow: ☐

Q5-FR-930

QMI Finance has entered customer credit data for Pacific Health Care Systems with terms of 2M (payment is due in two months). You can also see that the bill-to address code is the same as the customer sold-to address code.

If QMI used predefined freight rate tables and freight lists and or freight terms, they would enter the data in this frame for this customer. Freight lists are covered in detail in the training guide on sales order management.

The last frame in Customer Data Maintenance is for setting up Enterprise Material Transfer (EMT), also called back-to-back orders. This functionality is also covered in detail in its own training course.

Define Control Settings

Define Control Settings

Use Which Calc for Qty Available to Allocate: 1

Allocate Sales Order Lines Due in Days: 10 (0 for no allocations)

Limit Allocate to Avail Only: ☒ Detail Allocations: ☐

ATP Enforcement Enabled: ☐ ATP Horizon: 15

Family ATP Calculation: 1 Calculate Promise Date: ☒

Pick Only Allocated Lines: ☒ Sales Order Prefix: 10S

Are Sales Orders Printed: ☒ Next Sales Order: 10000

Keep Booking History: ☒ Integrate with SA: ☒

Shipping Lead Time: 1 Integrate with T&M: ☐

Sales Order Header Comments: ☐ Confirmed Orders: ☒

Sales Order Line Comments: ☐ Fiscal Start Month: 1

Default to Primary Ship-To: ☐ Ln Format S/M: Single

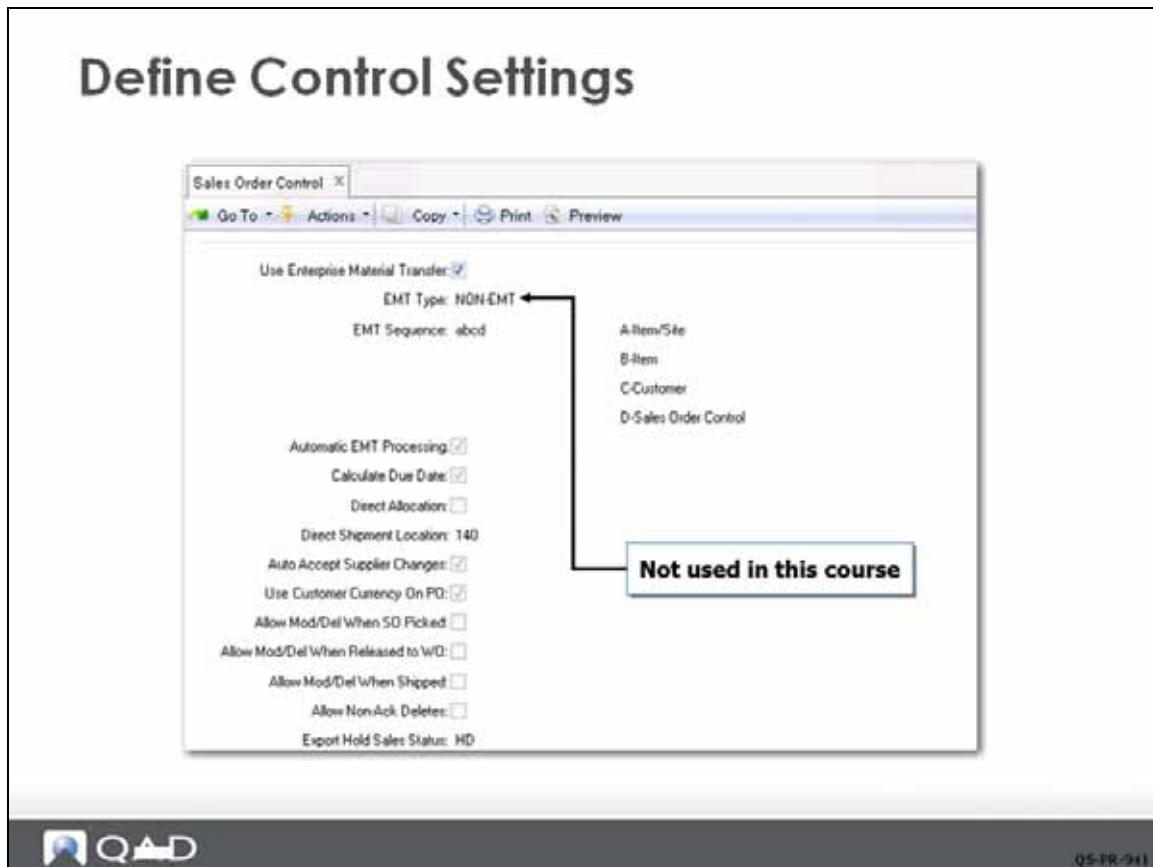
Next Batch: 00000326 FOB:

QAD QS-FR-940

In Sales Order Control (7.1.24), QMI has specified several standards and default settings pertaining to its sales orders:

- The default value for allocations in Sales Order Maintenance is general, since Detail Allocations is not selected.
- Sales orders have a prefix of 10S and the next number to issue is 10000. (Your database can have a different starting number.)
- Sales order data is integrated with the Sales Analysis (SA) module because Integrate with SA is selected.
- On new sales orders, the default value is confirmed for shipment since Confirmed Orders is selected.
- The default format for sales order line-item entry is Single (instead of Multiple), which lets QMI customize due dates, sites, tax status, and other information for each line item.

Define Control Setting



The next frame in Sales Order Control is used to complete the setup for Enterprise Material Transfer, which is covered in a separate training course.

Define Control Settings: Forecast

Define Control Settings: Forecast

Sales Order Control

Go To • Actions • Copy • Print • Preview

Auto Batch Confirmation: ☐

SO Edit ISB Defaults: ☒

SO Returns Update ISB: ☒

Forecast Consumption

Consume Forward: 10

Consume Back: 10

Check Customer Item Nbr First: ☒

Confirmation Batch ID:

Confirmation Printer:

Pending Inv Update ISB: ☒

Auto Batch Shipment: ☐

Shipment Batch ID:

Shipment Batch Printer:

QAD

Q5-FR-350

In the final frame of Sales Order Control, QMI has set forecast consumption to consume forward ten periods and back ten periods. The planning and forecasting section discusses how the system uses this.

Enter Sales Order: Header Information

QMI's CSR enters a sales order for Pacific Health Care Systems (10C1003) in Sales Order Maintenance (7.1.1).

The CSR lets the system generate the sales order ID, which has a prefix of S10 based on the Sales Order Control setting. Other information defaults from the Sales Order Control also, such as site 10-100 and Confirmed for shipment (checked). The credit terms default from the customer record set up by Finance in Customer Create.

Some header elements, such as some date fields, Site, and Confirmed, become default values for line items; you can change these values during line-item entry. The system uses six date fields:

Order Date. The date an order is created; by default the system date but can be changed.

Required Date. The date the customer wants the items.

Promise Date. The date that you say the customer can have the items.

Due Date. The real due date. If an order is late, the due date is later than the promise date.

Perform Date. The date you are held to for shipping performance. This date is normally the same as promise date. This date can change if the customer changes the required date.

Pricing Date. Normally the order date, could be the due date. The date range-based price lists use this date to price items based on the price on a given date.

Enter Sales Order: Freight Data

Enter Sales Order: Freight Data

Freight Data

Salesperson 1: 10SP01

Multiple: ☐

Commission 1: 5.00%

Freight List: 10FRT

Frt Min Wgt: 1

KG

Freight Terms: ADD

Calculate Freight: ☐

Display Weights: ☒

Entered By: mfg

Consignment: ☐

Consume Forecast: ☒

Detail Allocations: ☐

Allocate Days: 10

Comments: ☐

Import/Export: ☐

 QAD

Q5-FR-261

Clicking Next to advance through the sale order displays the pop-up for taxes, then the screen for freight and other defaults from Sales Order Control. Here you can change Consume Forecast, Detail Allocations, and Allocate Days if necessary.

Enter Sales Order: Line Information

Enter Sales Order: Line Information

Sales Order Maintenance
Go To Actions Copy Print Preview Attach

Header Lines Trailer

Line Details

Header

Order: 10S1003 Sold-To: 10C1003 Ln For: Single Org:

Sales Order Line

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
1	01010	5.0	EA	2,500.00	0.0	2,500.00

Line Details

Desc: Medical Ultrasound
Loc: 110 Site: 10-100
USD Cost: 1,805.45157

Sales Acct: 4010 mech ADM
Disc Acct: 4200 Mech
Confirmed: ☒
Required: 4/17/2012
Promised: 4/17/2012
Due Date: 4/17/2012
Perform Date:
Pricing Date: 4/10/2012
Multiple: ☐
Fixed Price: ☒

Credit Terms Int: 0.00
Ship Type:
UM Conversion: 1.0000
Consume Fcst: ☒
Detail Alloc:
Taxable: ☐
Freight List: 10FRT
Comments:

Qty Allocated: 5.0
Qty Picked: 0.0
Qty Shipped: 0.0
Qty to Invoice: 0.0
Salesperson 1: 10SP01
Commission 1: 5.00%
Category:

QAD

Q5-FR-370

The CSR has entered an order for medical ultrasound units (item 01010); the list price of \$2500.00 defaults from information entered in the cost screens of Item Master Maintenance. The remaining information defaults from values previously entered in the sales order header, Sales Order Control, or Item Master Maintenance.

Enter Sales Order: Line Information

Enter Sales Order: Line Information

Sales Order Maintenance X

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Lines Line Details Freight Data Tax Info Comments

Header

Order: 10S1002 Sold-To: 10C1003 Ln For: Single Org:

Sales Order Line

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
		0.0		0.00	0.0	0.00

QAD Q5-FR-971

After completing line 1, the system automatically goes to line 2. Since only one line is needed for this order, the CSR exits the next line by clicking End Lines, and then clicking Trailer to display the trailer frame.

Enter Sales Order: Trailer Information

Enter Sales Order: Trailer Information

Sales Order Maintenance

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Trailer Tax Info Trailer Information

Header

Order: 1051002 Sold-To: 10C1003 Bill To: 10C1003 Ship-To: 10C1003

Trailer

Non-Taxable:	12,520.53	Currency: USD	Line Total:	12,500.00
Taxable:	0.00		Discount:	0.00
Tax Date:		Freight	20	20.53
Containers:	0.00	Freight	20	0.00
Line Charges:	0.00	Special	30	0.00
		Total Tax:		0.00
		Total:		12,520.53

View/Edit Tax Detail

Trailer Information

☐ Print Sales Order
☐ Print Pack List
☐ Print Inv Hist
☐ EDI Inv Hist
☐ Partial OK

CFI Initials:
 Credit card:
 Action Status:
 Revision: 0
 EDI PO Ack:

Prepaid: 0.00
 FOB Point:
 Ship Via: FEDX
 BOL:

QAD Q5-FR-300

The trailer frame is where the system calculates taxes and freight when these features are being used. You can also add any special service or other charges that apply to the entire order rather than a line item.

The lower frame of the trailer record has check boxes to print the sales order and the packing list. You can also maintain the revision level of the sales order to track customer changes to the order. If Finance puts the customer on credit hold, the Action Status field has a value such as H for hold.

Print Sales Order

Print Sales Order

Sales Order Print

Go To • Actions • Copy • Print • Preview • Attach •

Sales Order: 10S1002 To: 10S1002

Sold-To: 10C1003 To: 10C1003

Order Date: To:

Language ID: US To:

Print Features and Options: ☐

Entity Code: 10-100

Form Code: 1

Print Sales Order Trailer: ☐

Discount Detail: None

Discount Summary: None

Increment Order Revision: ☒

Print Additional Line Charges: ☐

Update: ☒

Output: PAGE

Batch ID:

QAD Q5-FR-990

Because the CSR selected Print Sales Order in Sales Order Maintenance, the sales order is available to print in Sales Order Print (7.1.3). As you can see from the print selection screen, you can select sales orders for printing based on a wide selection of criteria.

In this example, specifying one sales order number in both the From and To fields selects only the newly created order.

You can also direct the output to Page, which lets you view the sales order on your monitor.

Sales Order Print

Sales Order Print

Sales Order Print - 4/11/2012 8:11 AM

QMI -USA Division
30 Ridgedale Avenue
East Hanover, NJ 07950
USA - TAX PURPOSE

SALES ORDER
Order Number: 1051002 Revision: 0
Order Date: 04/10/12 Page: 1
Print Date: 04/11/12

Sold-To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Ship-To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Attention: Casey Hohman
Telephone:
Salesperson(s): 10SP01
Credit Terms: 2M
2 months after month end of invoice date
Resale:
Remarks:

Attention: Casey Hohman
Telephone:
Purchase Order:
Ship Via: FEDEX
FOB Point:

Ln	Item Number	Due Date	Qty	Open	UM	Price	Extended Price
1	01010 Medical Ultrasound	04/17/12	5.0	EA		2,500.00	12,500.00
USD Total:							12,500.00

Q5-PR-1000

A copy of the sales order is shown in this example.

After printing the sales order, the system sets Print Sales Order in Sales Order Maintenance to No. To reprint the order, set Print Sales Order to Yes and reprint using Sales Order Print.

Print Sales Order Packing List

To print the packing list, the CSR uses Sales Order Packing List (7.9.13).

Note QAD EE uses the terms packing list and picklist interchangeably.

The shipping clerk can use the picklist to pick the items from inventory for shipment and can then be included with the shipment as a packing list. Alternatively, if you need a hard copy for internal purposes, you can use two copies of the packing list.

Because the CSR has selected Update, after printing the picklist, the system updates the values displayed in Sales Order Maintenance for the quantity allocated and quantity picked.

Set Update to No to print a simulated picklist for review without updating the sales order record.

Sales Order Packing List Print

Sales Order Packing List Print

Sales Order Packing List - 4/11_ X

QMI -USA Division
30 Ridgedale Avenue
East Hanover, NJ 07950
USA - TAX PURPOSE

Sold To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Salespersons: 10SP01
Credit Terms: 2M
2 months after month end of invoice date
Remarks:

PACKING LIST

Order Number: 10S1002 Page: 1
Order Date: 04/10/12
Print Date: 04/11/12

Ship To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Purchase Order:
Ship Via: FEDEX
FOB Point:

Ln	Item Number	Site	T Location	Lot/Serial	Qty Open	Due
1	01010		10	100	5.0 EA	04/17/12
	Revision: 0					
	Medical Ultrasound					
		010		01010-1211-12	1.0	()
		010		01010-1211-2	1.0	()
		010		01010-1211-3	1.0	()
		010		01010-1211-4	1.0	()
		010		01010-1211-5	1.0	()

Q5-PR-1020

The picklist shows what items to pick to fill an order and what site or location to pick them from.

- If you created detailed allocations in Sales Order Maintenance, including lot/serial numbers and lot reference numbers, this information appears on the picklist.
- If you performed a general allocation for the sales order, the system automatically converts the general allocation to a detail allocation when it prints the picklist.

Ship Sales Order

Ship Sales Order

Sales Order Shipments

Go To Actions Copy Print Preview

Order: 10S1002 Ship Allocated: ☐ Sold-To: 10C1003 Site:
 Effective: 4/11/2012 Ship Picked: ☒ Pacific Health Care Systems
 Document:

Sales Order Line Items

Ln	Item Number	T	Qty Alloc	Qty Picked	To Ship	Backorder Site
1	01010		0.0	5.0	5.0	0.0 10-100

Line: Cancel B/O ☐ Site: Loc:
 Quantity: Lot/Serial:
 Item Number: UM: Reference: Multi Entry: ☐
 Description:

QAD QS-PR-1030

To record the shipment of the order, approve the order for invoicing, and reduce the quantity on hand for the five medical ultrasound units shipped, the CSR uses Sales Order Shipments (7.9.15). Because QMI is using a picklist instead of detail allocations for this order, the CSR accepts the default for Ship Picked (Yes).

The middle frame (Sales Order Line Items) shows the open lines on this sales order ready for shipment. This order has one line for a quantity of 5. If necessary, modifications can be made to this line in the bottom frame. For example, if the location has changed, the new location can be entered here.

All items are picked and ready to ship in this example. Clicking Next displays a prompt asking if you want to see the inventory transaction. Click Yes and the system displays the complete inventory transaction.

Ship Sales Order: Review Lines

Ship Sales Order: Review Lines

Sales Order Shipments X

Go To ▾
Actions ▾
Copy ▾
Print ▾
Preview ▾

Order: 1051002
 Effective: 4/11/2012
 Document:

Ship Allocated: ☐
 Ship Picked: ☒

Sold-To: 10C1003
 Pacific Health Care Systems

Site:

Ln	Item Number	Site	Location	Lot/Serial	Quantity	UM
1	01010	10-100	010	01010-1211-12	1.0	EA
1	01010	10-100	010	01010-1211-2	1.0	EA
1	01010	10-100	010	01010-1211-3	1.0	EA
1	01010	10-100	010	01010-1211-4	1.0	EA
1	01010	10-100	010	01010-1211-5	1.0	EA

Q5-PR-1046

The system displays the items to ship for final review. Click Next and a dialog box displays that asks if all information is correct.

If the information is not correct, click No and the system returns to the previous frame where you can make corrections. Click Yes to advance to the trailer frame.

Ship Sales Order: Trailer

Ship Sales Order: Trailer

Sales Order Shipments: X

Go To Actions Copy Print Preview

Order: 10S1002 Ship Allocated: ☐ Sold-To: 10C1003 Site:
 Effective: 4/11/2012 Ship Picked: ☒ Pacific Health Care Systems
 Document:

Non-Taxable:	12,520.53	Currency: USD	Line Total:	12,500.00
Taxable:	0.00	0.00%	Discount:	0.00
Tax Date: 4/11/2012		Freight:	20	20.53
Containers: 0.00		Freight:	20	0.00
Line Charges: 0.00		Special:	30	0.00
		Total Tax:		0.00
		Total:		12,520.53

View/Edit Tax Detail: ☐

Ship Via: 2500 Daybook Set: 10-SALES
 Ship Date: 4/11/2012 ☒ Ready to Invoice
 BOL:
 Remarks:

QAD QS-PR-1050

When you exit the line-items frame, the system brings up the trailer frame for taxes, freight, or other charges that apply to the entire order.

Note Three trailer codes can be displayed on the trailer. The codes are set up in Trailer Code Maintenance (2.19.13) where they are linked to the appropriate GL accounts. You can set up as many trailer codes as you need but only three can be displayed at a time.

In this example, you can see that a freight charge has been added to the order total.

The CSR selects Ready to Invoice and clicks Next, which completes the sales order shipment process.

Review Inventory Detail

Review Inventory Detail

Inventory Detail by Item Browse

Actions: Print Add to Favorites Chart Chart Designer Refresh New Edit Edit

Search (1)

Item Number starts at 01010 Search Clear All

Viewing 1 - 57 of 57 Records per page: 100

Item Number	Site	Qty On Hand	Inv Mstr	Qty On Hand	Inv Detail	Location	Lot/Serial	Reference	Status
01010	10-100	12.0		1.0	010	1234			YYN
01010	10-100	12.0		1.0	010	1235			YYN
01010	10-100	12.0		1.0	010	1236			YYN
01010	10-100	12.0		1.0	010	1237			YYN
01010	10-100	12.0		1.0	010	1238			YYN
01010	10-100	12.0		1.0	010	1239			YYN
01010	10-100	12.0		1.0	010	1240			YYN
01010	10-100	12.0		1.0	010	1241			YYN
01010	10-100	12.0		1.0	010	1242			YYN
01010	10-100	12.0		1.0	010	1243			YYN

QAD QS-PR-1060

Use Inventory Detail by Item Browse (3.2) to see how many medical ultrasound units are remaining in inventory. This listing shows 12 units left in the 010 location at site 10-100.

Transactions Detail Inquiry

Transactions Detail Inquiry

Transaction: 197889 Display E-Signature Details: ☐ Output: [PAGE](#)

Tran Nbr: 197889	Order: 10S1002	2326385
Trans Type: ISS-SO	Revision: 1	
Date: 4/11/2012	Item Number: 01010	
Time: 12:08	Description: Medical Ultrasound	
Effective Date: 4/11/2012	Unit of Measure: EA	
Remarks:	Address: 10C1003	
User ID: mfg	Name: Pacific Health Care	
Program: sosoia.p	SO/Job: 10S1002	
Currency: USD	Ship Type:	
Qty Change: -1.0	Price: 2,500.00	
Shipper Number:	IMC:	
Ship Date: 4/11/2012		

QAD QS-PR-1070

Transaction Detail Inquiry (3.21.1) provides information on the transaction number and type (ISS-SO), the program that created the transaction (sosoia.p), the user who created this transaction, and the source of the transaction (10S10008). Other key information is shown, such as site and location and inventory data.

The most recent transaction displays by default. Notice that the Qty Change displayed is -1. Because the items shipped were serial-controlled, individual transactions were created for each item, rather than one transaction for a quantity of 5.

Click Next to review additional detail including the GL transactions.

Transactions Detail Inquiry: GL Effects

Transactions Detail: GL Effects

Transactions Detail Inquiry
04/11/12

Transaction: 197889 Display E-Signature Details: No Output: PAGE

Tran Nbr: 197889	Order: 1051002	2326385
Trans Type: ISS-SO	Revision: 1	
Date: 04/11/12	Item Number: 01010	
Time: 12:08	Description: Medical Ultrasound	
Effective Date: 04/11/12	Unit of Measure: EA	
Remarks:	Address: 10C1003	
User ID: mfg	Name: Doreen, Muelik, C...	
Program: sosois.p	SD/Job	ISS-SO
Currency: USD	Ship Type	Debit Acct: 5300 Mech
Qty Change: -1.0	Price	Cr Account: 1500 Mech
Shipper Number:	Amount: 0.00	
Ship Date: 04/11/12	GL Reference:	Reference ID:

Site: 10-100 Location: 010 Lot/Serial: 01010-1211-4 Inv Status: Y-Y-N Supplier Lot: Grade/Assay: Reference:	Inventory Data Begin Br Quantity C Qty Begin Lo Loc Qty C Expir	Debit Acct: 5400 Mech Cr Account: 1500 Mech Amount: 0.00 GL Reference: Reference ID:

Cost Data Material: 1.219.92 Labor: 583.67 Burden: 1.86157	Debit Acct: 5010 Mech ADM Cr Account: 1500 Mech Amount: 1,219.92 GL Reference: 2012/ISS-SO000000010 Reference ID: IC120411000010	Debit Acct: 5100 Mech Cr Account: 1500 Mech Amount: 583.67 GL Reference: 2012/ISS-SO000000011 Reference ID: IC120411000011

Debit Acct: 5200 Mech Cr Account: 1500 Mech Amount: 1.86 GL Reference: 2012/ISS-SO000000012 Reference ID: IC120411000012

Q5-PR-1000

The GL effects of the sales order shipment are shown in the Transactions Detail Inquiry output. Notice that each of the GL transaction numbers starts with the letters IC. This prefix indicates that these numbers are inventory transactions. Additional transactions are generated when the invoice is posted.

Review Pending Invoice

Review Pending Invoice

Pending Invoice Register 04/11/12 12:23:37
10USA Page:1

Invoice Number: 1051001 Name: Bill To: Pacific Health Care Systems 10C1003
Salesperson: Pacific Health Care Systems 10C1003 Name: Sold-To: Pacific Health Care Systems 10C1003

Tax Environment: US/NJ Tax Usage:

Sales Order: 1051002 Ship-To: 10C1003 Pacific Health Care Systems Order Date: 04/10/12 PO:

Ln	Item Number	UM	Sales	Sub-Acct	CC	Backorder	TaxUsage	Price	Extended Price	Extended Margin	
1	01010	EA	4010	mech	ACH	1.0	no	2,500.00	12,500.00	3,472.74	
Medical Ultrasound											
Lot/Serial Numbers Shipped: Qty Expire Reference											
01010-1211-12 1.0											
01010-1211-2 1.0											
01010-1211-3 1.0											
01010-1211-4 1.0											
01010-1211-5 1.0											
Non-Taxable: 12,520.53 Currency: USD Line Total: 12,500.00											
Taxable: 0.00 0.00% Discounts: 0.00											
Tax Date: 04/11/12 Freight 20 : 20.53											
Containers: 0.00 Freight 20 : 0.00											
Line Charges: 0.00 Special 30 : 0.00											
Total Tax: 0.00											
Total: 12,520.53											
USD Report Totals:									12,520.53	12,500.00	3,472.74

QAD QS-PR-1090

Shipping a sales order automatically generates the information required for an invoice, referred to as a pending invoice.

Use Pending Invoice Register (7.13.2) to produce a list of pending invoices, based on selection criteria such as a range of sales orders, ship-to addresses, bill-to addresses, or ship dates. This list shows the detail of appears on the invoice.

This example shows the pending invoice for the sales order that shipped. Notice that the invoice number in the listing is blank because it is assigned when the invoice is posted and printed.

You can use Preview Invoice Print (7.13.3) to see an exact image (exception for a blank invoice number) of what the printed invoice copy looks like when you print and send a document to the customer.

Additional Notes

The Extended Margin of 11,303.76, is the unit margin multiplied by the quantity shipped (2260.752×5 units shipped). The unit margin (2260.752) is the price (2500.00) less manufacturing cost (239.248).

The invoice total of 12,520.53 is calculated by multiplying the price per medical ultrasound (2500.00) by the total quantity (5) and adding the freight and trailer charges, if any.

Invoice Post and Print

The company's customer service supervisor or Accounts Receivable (AR) administrator uses Invoice Post and Print (7.13.4) to produce an actual invoice from the pending invoice and post the transaction to the general ledger. The print function assigns the invoice number.

The first frame of the selection screen lets you select sales orders by the usual range of values. Be sure to check the Print Invoice box when you are ready to print hard-copy invoices. Several other frames display additional print options.

Notice the two printer choices for the two types of output from this function:

- The invoice post output is a report that could be sent to a printer with normal paper in the AR department.
- The invoice print output (the actual invoices) could be sent to a printer with letterhead or preprinted invoice paper.

You can also choose Page to direct the output to your monitor.

Invoice Post and Print Sample

Invoice Post and Print
10USA
04/11/12 12:41:36
Page:1

Sales Journal Reference: 2012/CINV000000001 AR Batch: 653

Invoice Number	Bill To Name	Sold-To Name	Slpsn
2012/CINV000000001	10C1001 Pacific Health Care Systems	10C1001 Pacific Health Care Systems	10SP01

Sales Order: 10S1002 Ship-To: 10C1003 Pacific Health Care Systems Order Date: 04/10/12 PO:

Ln	Item Number	UM	Sales	Sub-Acct	CC	Invoiced Backorder	Tax	Price	Extended Price	Extended Margin
1	01010	EA	4010	mech	ADH	5.0	No	2,500.00	12,500.00	3,472.74
Medical Ultrasound										

Non-Taxable: 12,520.53 Currency: USD Line Total: 12,500.00
 Taxable: 0.00 0.00% Discount: 0.00
 Tax Date: 04/11/12 Freight 20 : 20.53
 Containers: 0.00 Freight 20 : 0.00
 Line Charges: 0.00 Special 30 : 0.00
 Total Tax: 0.00
 Total: 12,520.53

Invoice Post and Print
10USA
04/11/12 12:41:36
Page:2

Sales Journal Reference: 2012/CINV000000001 AR Batch: 653

				Consolidated Dr Consolidated Cr		
10USACO	1300	Gserv		04/11/12	12,520.53	.00 Invoice 2012/CINV000000001
10USACO	4010	mech	ADH	04/11/12	.00	12,500.00 Invoice 2012/CINV000000001
10USACO	4691			04/11/12	.00	20.53 Invoice 2012/CINV000000001
					12,520.53	12,520.53
					12,520.53	12,520.53

QAD QS-PR-1130

The output of the invoice post transaction is shown here. The system assigned the invoice number based on criteria set up in the finance system.

The other details in this output are the same as the details displayed in the pending invoice register.

If you print the invoice, it looks the same as the draft invoice seen earlier, but with the invoice number added.

Invoice Print or Reprint

Invoice Print or Reprint

QMI -USA Division
30 Ridgedale Avenue
East Hanover, NJ 07950

USA - TAX PURPOSE

Bill To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Sales Order: 10S1002
Order Date: 04/10/12
Salesperson(s): 10SP01
Credit Terms: 2M
2 months after month end of invoice date
Resale:
Remarks:

I N V O I C E

Invoice: 2012/CINV000000001

Invoice Date: 04/11/12 Revision: 1
Print Date: 04/11/12 Page: 1

Sold To: 10C1003
Pacific Health Care Systems
600 Calle de Los Caminos
Los Angeles, CA 90212
USA - TAX PURPOSE

Ship Date: 04/11/12
Purchase Order:
Ship To: 10C1003
Ship Via: FEDX
BOL:
FOB Point:

Item Number	UM	Shipped	Qty	B/O Tax	Price	Extended Price
01010	EA	5.0	0.0	No	2,500.00	12,500.00
Medical Ultrasound						

*** DUPLICATE ***

Non-Taxable: 12,520.53	Currency: USD	Line Total:	12,500.00
Taxable: 0.00	0.00%	Discount:	0.00
Tax Date: 04/11/12		Freight 20 :	20.53
Containers: 0.00		Freight 20 :	0.00
Line Charges: 0.00		Special 30 :	0.00
		Total Tax:	0.00
		Rounding Trailer Amount:	0.00
		Total:	12,520.53

QS-PR-1135

Note The invoice format that Invoice Print or Reprint (7.13.12) uses, and is shown here, is the standard that the system provides. Most companies create a custom format or use preprinted forms with the company logo or letterhead.

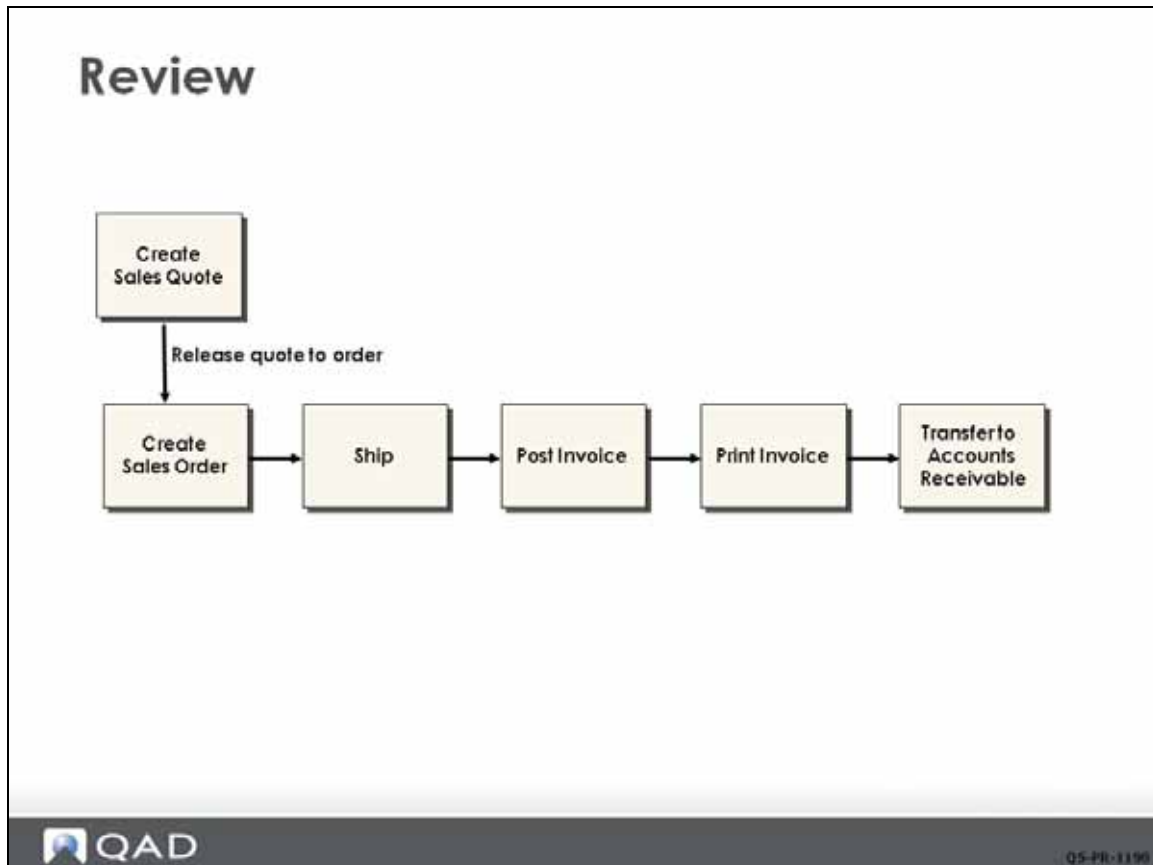
Since the invoice for the sales order in this example was already printed during invoice post, the system adds the comment **DUPLICATE** to this printed version.

Posting the invoice has these effects:

- Generates transactions in the Accounts Receivable module and updates the customer's open account balance
- Updates GL account balances for Sales and AR
- Updates salesperson quota and commission history
- Updates sales tax journals
- Updates sales analysis history

The responsibility for the collection of the payment is transferred to Accounts Receivable.

Review



This chapter showed how a sales order records the customer's intent to buy, listing the items, quantities, price, sales tax, and other charges, and the shipping destination. For Accounts Receivable purposes, the order also records the remit-to address, credit terms, and whether the customer is approved for shipment.

Once the customer order is shipped, a sales invoice is generated. In QAD EE, an order that is marked as ready for invoicing is called a pending invoice. The invoice communicates the customer's obligation to pay and is sent to the bill-to address on the sales order. Usually, the pending invoice register is reviewed and corrections are made before the invoices are posted and then printed and sent to customers. Invoices are posted on a regular basis.

Exercise 8

In the following exercise, you:

- Review a customer record.
- Modify Sales Order Control.
- Add a sales order record.
- Print a packing list and ship the sales order.
- Review customer balance.
- Post and review the invoice.

Review a Customer Record

- 1 Open Customer Data Maintenance (2.1.1) to review a customer record.
- 2 In the Customer field, enter 10C1003. Then press Enter.
- 3 Select the record for Pacific Health Care.
- 4 Press Next until the site code appears (10-100).
- 5 Press Next until the credit terms appears (2M).
- 6 Press Next until the Customer field is highlighted. Then press Back to exit Customer Data Maintenance.

Modify Sales Order Control

- 7 Use Sales Order Control (7.1.24) and set the following fields:

Field	Data
Found in First Frame	
Detail Allocations	Unchecked (no)
Sales Order Header Comments	Unchecked (no)
Sales Order Line Comments	Unchecked (no)
Ln Format S/M	Single
Sales Order Prefix	System Default
Next Sales Order Number	System Default
Integrate with SA	Checked (yes)
Integrate with TrM	Unchecked (no)
Confirmed Orders	Checked (yes)
Found in Third Frame	
SO Edit ISB Defaults	Unchecked (no)

Accept other defaults.

Click Next to save changes.

Add a Sales Order Record

- 8 Use Sales Order Maintenance (7.1.1) to add a sales order.

Header information:

Field	Data
Order	<blank>; click Next
Order:	Record the number for your reference
Sold-To	10C1003; click Next
Bill-To and Ship-To	Use default; click Next
Order Date	Default, today's date
Credit Terms	2M (defaults from customer record)
Site	10-100

Accept remaining default values.

Line 1 information:

Field	Data
Item	01010
Site	10-100 (defaults from header)
Quantity Ordered	5
List Price	2,500.00 (defaults from item master)

Accept remaining default values and click Next through the several frames. Continue to click Next and respond Yes when prompted to confirm update.

The system is now ready for you to enter information for line 2. You are not entering a second line. Click End Lines then click Trailer.

Trailer information:

Field	Data
Print Sales Order	Yes

Accept remaining default values.

- 9 Open Sales Order Print (7.1.3) to review your sales order.
- Enter your sales order number in the Sales Order and To fields and press Next.
 - In Output, Page, and press Next.
 - The sales order appears. Are the results what you expected?

Print a Packing List and Ship the Sales Order

- 10 Use Sales Order Packing List (7.9.13) to print a packing list for your sales order.
- Enter your sales order number in the Sales Order and To fields and press Next.
 - In Output, Page, and press Next.
- 11 Use Sales Order Shipments (7.9.15) to record the shipment of the sales order.
- Enter your sales order number in the Order field and press Next.

When Ship Picked is Yes, the system automatically updates the quantity to ship. You can then modify the quantity that is actually being shipped and the location from where the items were taken.

Field	Data
Line	1
Quantity	5
Site	10-100
Loc	010

Confirm that all information is correct.

- Respond Yes when prompted: Display sales order lines being shipped? Click Next.
- Respond Yes when prompted: Is all information correct?

Field	Data
Ready to Invoice	Yes

Click Next until the Order field is highlighted, click Back.

- 12 Open Inventory Detail by Item Browse (3.2) to review your inventory. You should see that the inventory has decreased by the amount of the shipment.
- 13 Open Transactions Detail Inquiry (3.21.1) to review the inventory transaction and see which accounts were credited and debited when you shipped the sales order.
 - In the Transaction field, enter the order number. Then click Next.
 - In Output, select Page. Then press Next.

Review Pending Invoices and Print an Invoice for the Shipment

- 14 Open Pending Invoice Register (7.13.2) to review the pending invoices outstanding.
This report displays invoices that have not yet been printed and posted. You can also change the selection criteria to show invoices that have printed but not yet posted.
 - Enter the order number in the Sales Order and To fields. Then press Enter.
 - In Output, select Page. Then press Next.
- 15 Open Preview Invoice Print (7.13.3) to review the invoice for your sales order.
 - In the Sales Order and To fields, enter the order number.
 - Press Next until Output is highlighted.
 - In Output, select Page. Then press Next.
 - The invoice displays.

This lets you review the invoice without actually printing a hard-copy document that is normally sent to your customer.

Post the Invoice to Accounts Receivable

- 16 Open Invoice Post and Print (7.13.4) to post the invoice.
In the Sales Order and To fields, enter the order number. Then press Next.

Make the following entries:

Field	Data
Print Invoice	Checked (yes). Press Next
Print Lot/Serial Numbers Shipped	Checked (yes). Click Next

Press Next until the Invoice Post and Print report appears.

Review a Customer Account (Optional)

Viewing the updated customer balance in the AR module can require some setup:

- The balance daemon must be running. This is a background process that monitors operational transactions that affect customer balances and updates them in the financial records. You can start it using Balance Daemon Start (36.14.16.2.4) in the System Administration menu.
- The Crystal Reports runtime must be installed on your computer. If it is not, you are prompted to install it before the report runs.

- 17** Open Customer Account Activity Report (27.17.3) to see the customer's (10C1003) open account balance.

The type is I for invoice and the reference is the invoice number.

Chapter 10

Planning

Overview



Planning ensures the timely, efficient, and economical movement of material to the marketplace. Material is probably the most visible element that is planned, but material plans need linking to plans for sales, manufacturing, and distribution operations, personnel, plant, and equipment. When they are linked, all of these planning elements contribute to the balancing of supply, demand, and resources.

This chapter provides an in-depth picture of the end-to-end planning process and shows how the concepts introduced in the previous chapters are used together.

Topics

Topics

- Production Planning
- Forecasting
- Master Schedule
- MRP and Action Messages
- Item Planning Parameters
- Planned Orders

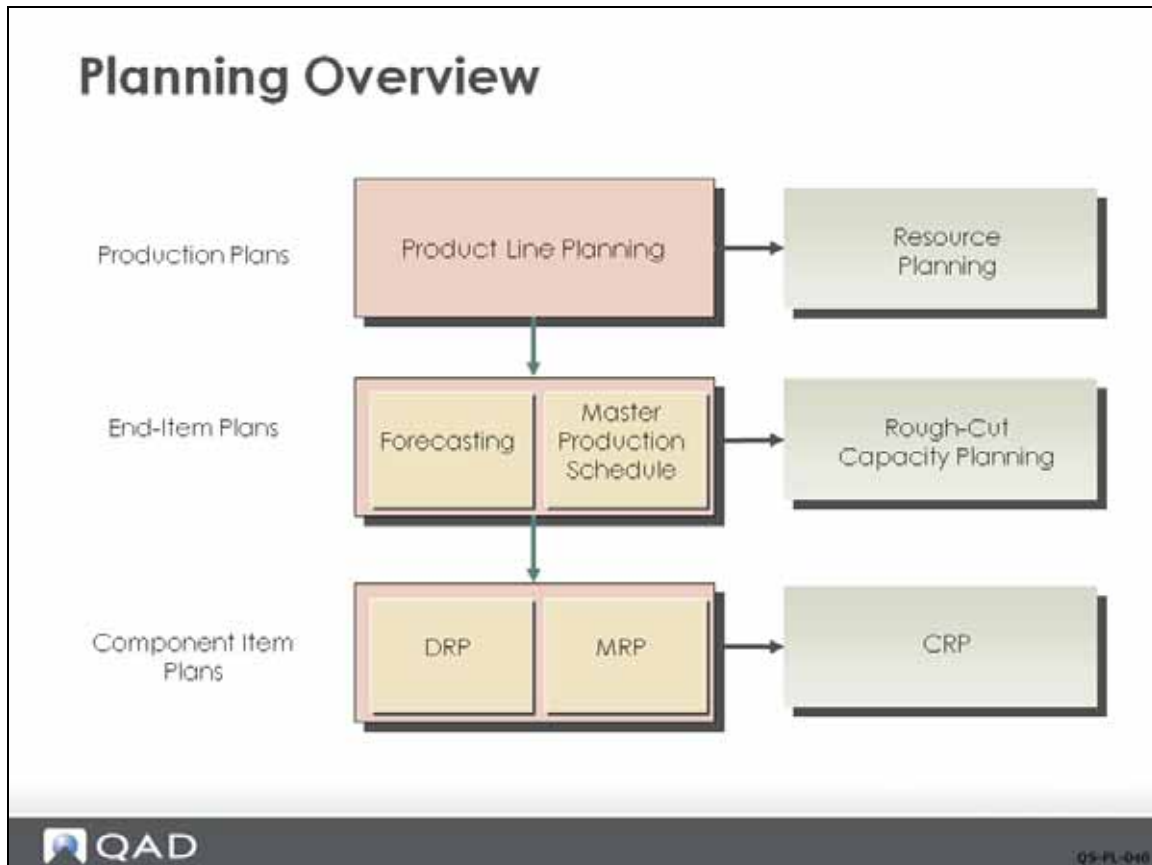
Learning Objectives

Objectives

When you finish this section, you should be able to:

- Provide examples of production plans, end-item plans, and component-item plans
- Name the key input to the Master Schedule
- Explain forecast consumption
- Describe forward and backward consumption
- Define the term Time Fence
- Explain how Order Policy and Period are related
- Enter a forecast
- Read Master Schedule Summary and Detail Inquiries
- Read MRP Summary and Detail Inquiries
- Approve planned purchase and work orders

Key Concepts



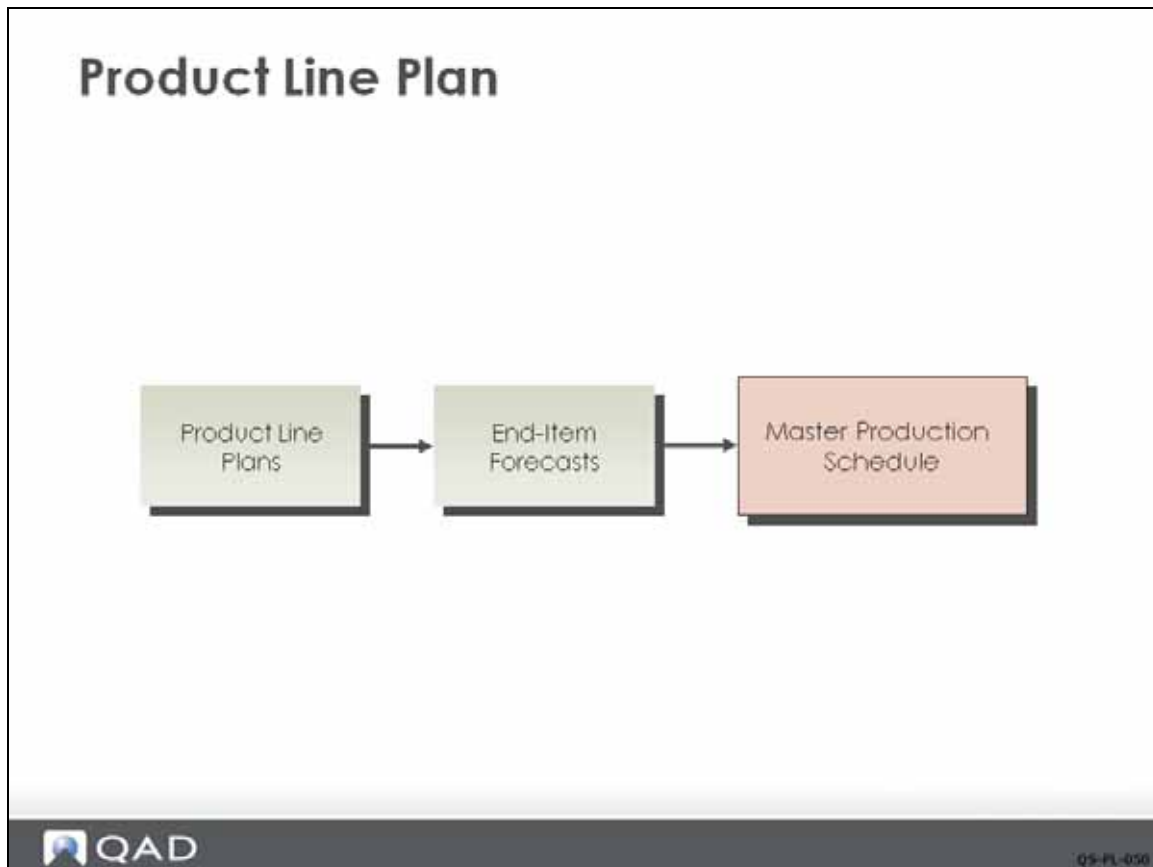
Within a corporation, planning is done at many levels by many different people. QAD EE provides an integrated set of planning tools that are useful at most of these levels. The primary components of the planning system are production planning, end-item planning, and component item planning.

Production Planning. At this level, product line planning functions are used to balance sales forecasts, production forecasts, and income forecasts for an entire product line, while meeting the profit goals established in the strategic plan. Often, different people create these plans and product line planning brings them together. Resource planning is used to determine whether you have the resources to meet the plans.

End-Item Planning. Once established, the product line plan is broken down into individual item forecasts. The Master Scheduler reviews actual and forecast demands and sets production levels in response to these demands. Rough-Cut Capacity Planning (RCCP) determines if you have enough critical resources to meet the master schedule.

Component Item Planning. Material Requirements Planning (MRP) and Distribution Requirements Planning (DRP) both calculate the quantity of raw materials and components needed for the master schedule. DRP generates planned orders for items to transfer from another site. MRP generates planned orders for purchased and manufactured items. Capacity Requirements Planning (CRP) determines fairly precisely how this plan loads production resources at your site.

Production Planning: Product Line Plan

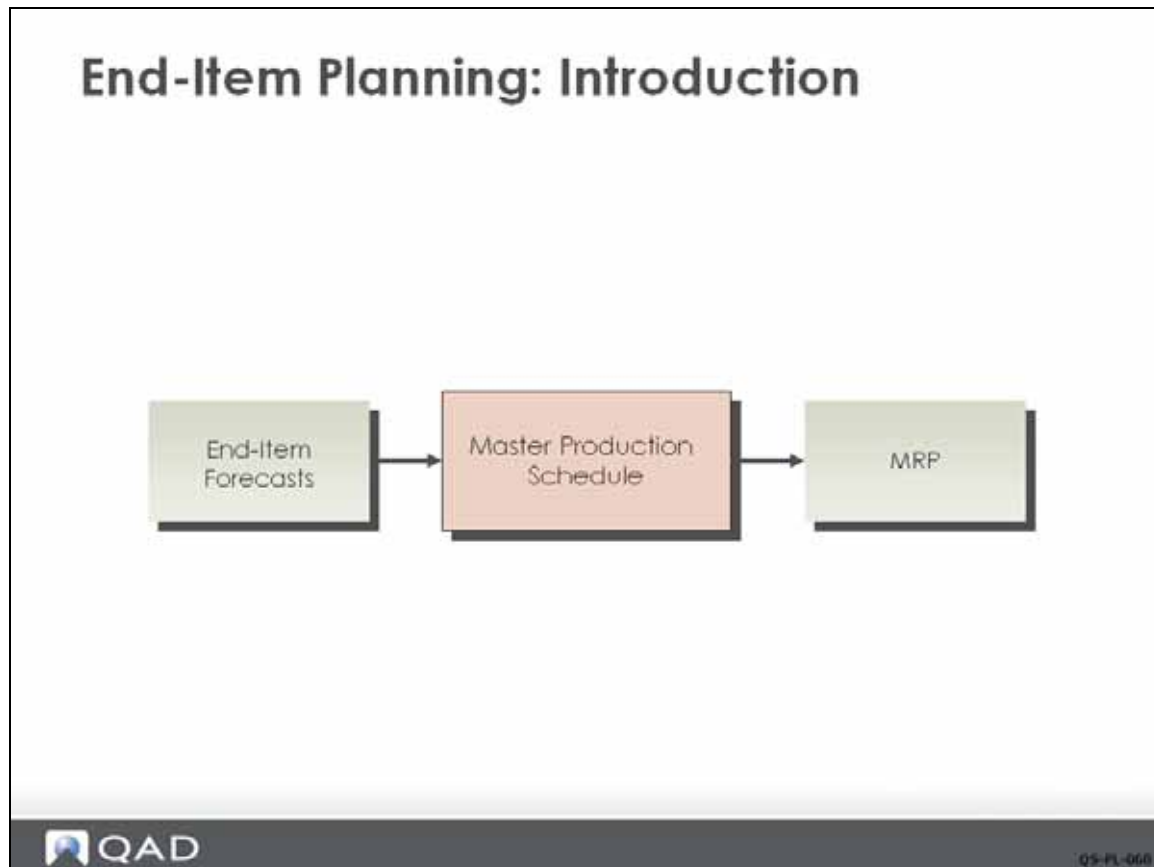


Product line plans generally cover one to three years and are shown in months or quarters. They are composed of aggregate forecasts that are converted into end-item forecasts. These detailed forecasts provide input that the master scheduler uses to create a statement of production.

The purpose of a product line plan is to:

- Aggregate forecasts.
- Establish aggregate production goals (aligned to corporate goals).
- Plan efficient and cost effective use of production resources, such as machines and manpower.
- Outline the level of planned manufacturing output and its cost.
- Provide input to a master schedule and rough-cut capacity plan.
- Balance sales forecasts, production forecasts, and income forecasts for an entire product line.
- Determine whether there are enough resources, in aggregate, to meet the plan.

End-Item Planning: Introduction



In QAD EE, end-item planning is done in the Forecast/Master Plan module. It begins with the master scheduler, who estimates the demand for a product and determine how many to produce. The planning horizon is at least as long as the longest cumulative lead time in the system. Many companies like to plan and forecast 12 to 18 months into the future to ensure adequate resource planning and coverage for seasonal products.

Inputs. The primary inputs to the master scheduling process are actual and forecast demands. Forecast demands are derived from the product line plans but are much more detailed. Unlike product line plans, which express forecasts in terms of thousands of dollars of production for a complete line of items by month, forecasts are expressed in terms of quantities for a specific item and site by week. Products subject to seasonal demand can have forecasts that fluctuate widely from week to week. Seasonal build schedules are used to smooth these requirements, increasing production in advance of anticipated spikes in demand.

Output. The output of the master scheduling process is a detailed plan of the number of end items and the schedule for their production. The check on this plan is the availability of critical resources. If you want to make 50 items next week but your fabricator only makes 25 in a week, you cannot fulfill the plan. Detailed resource planning is done at this stage, looking at the actual schedule and its demands on resources as specified in item resource bills. In many cases, only bottleneck resources are reviewed.

End-Item Planning: Forecasting



The forecast is an estimate of future demand for an item at a particular site, stated in terms of quantity per week. It is the starting point for developing an executable plan. In QAD EE, this forecast is a shipment forecast, or the quantity of an item to ship (not ordered) that week. Forecasts are normally entered for items subject to independent demand, from sales orders or spares. Dependent demand, for components and raw materials, is calculated from this.

The system keeps a running total of the actual quantity to ship each week. The due date on the sales order line item or customer schedule determines the quantity.

In summary, forecasts:

- Estimate future demand for an item
- Are typically a sales function
- Can be an integral part of master scheduling
- Represent one point of input to the master schedule

Source of independent demand can be created for any item, but is usually created for:

- End items
- Critical subassemblies
- Service parts

Terminology

Abnormal Sales Demand

Some sales order demand the forecast cannot anticipate and is considered abnormal sales demand. Major new accounts or windfall orders, such as orders for roofing materials after a hurricane, could generate this demand. Since the forecast did not anticipate abnormal sales demand, it should not consume the forecast. This fact effectively adds abnormal sales order demand directly on top of the net forecast. A sales order demand is classified as abnormal by using the Consume Forecast option in Sales Order Maintenance.

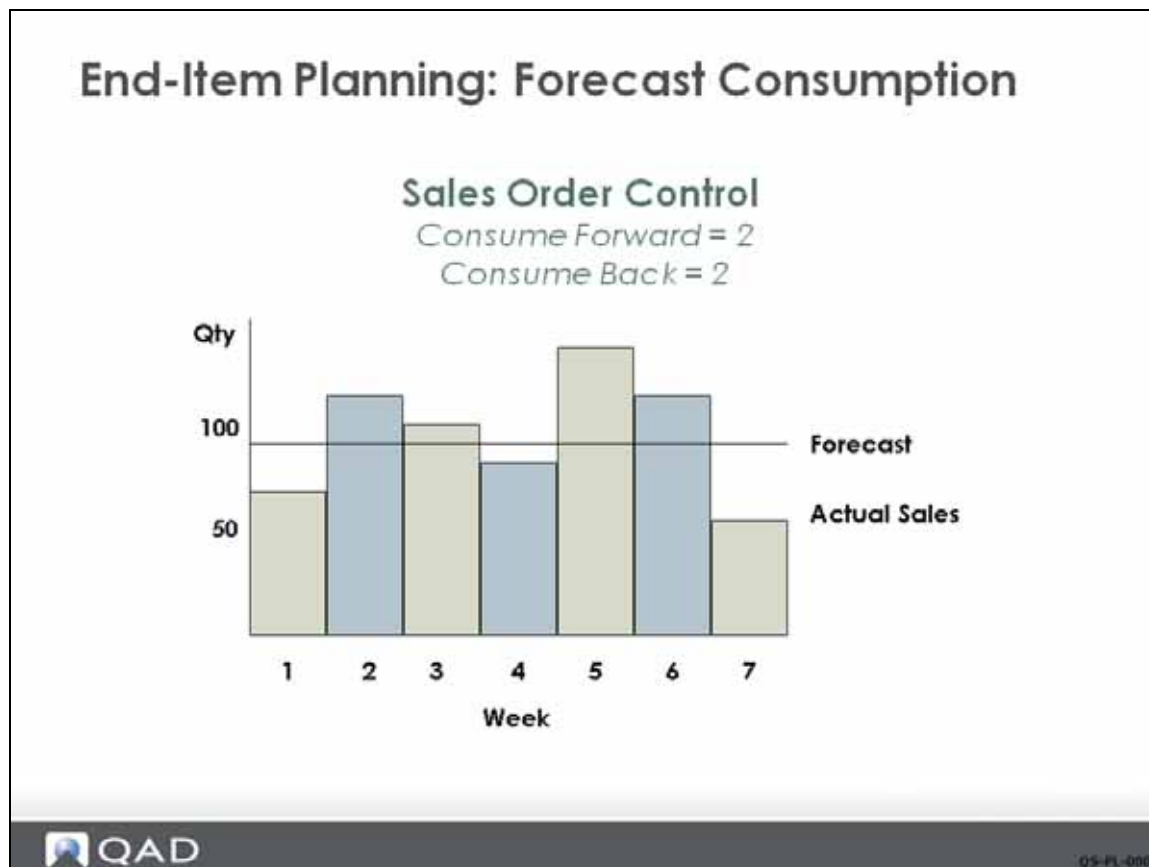
Net Forecast

Net (remaining) Forecast is the amount of the forecast not sold in any given week. MRP always plans to make enough product to match actual orders (regular sales and abnormal). However, it also plans production to satisfy any remaining forecast, since orders for this amount can still be expected.

Production Forecast

The system calculates Production Forecast based on the forecast of sales of another product. For example, sales of disk drives are based on the forecast of computer sales. MRP also plans these.

End-Item Planning: Forecast Consumption



Incoming sales orders and scheduled customer deliveries are netted against the forecast. The net (remaining) forecast is calculated as the original forecast less quantity sold (except abnormal sales). Planning sees total demand as actual sales (normal and abnormal), net forecast, and production forecast.

Forecast Consumption

The process of netting sales order quantities from the forecast is called forecast consumption.

As a rule, forecasts are more accurate in the long term rather than the short term. Since forecasts are entered for one-week periods, actual shipments seldom correspond to the forecast for a single one-week period. You can predict shipments with more accuracy over a month or a quarter.

Consume Forward/Backward

One method of managing this type of fluctuation is to expand the forecast window by using forward and backward consumption. As you would expect, when sales orders are booked, they consume the forecast in the week they are due. But if there is no unconsumed forecast in that week, the system looks at a specified number of weeks before and /or after it to check for unconsumed forecast. This method recognizes that unsold forecast that needs to be consumed can exist in other weeks.

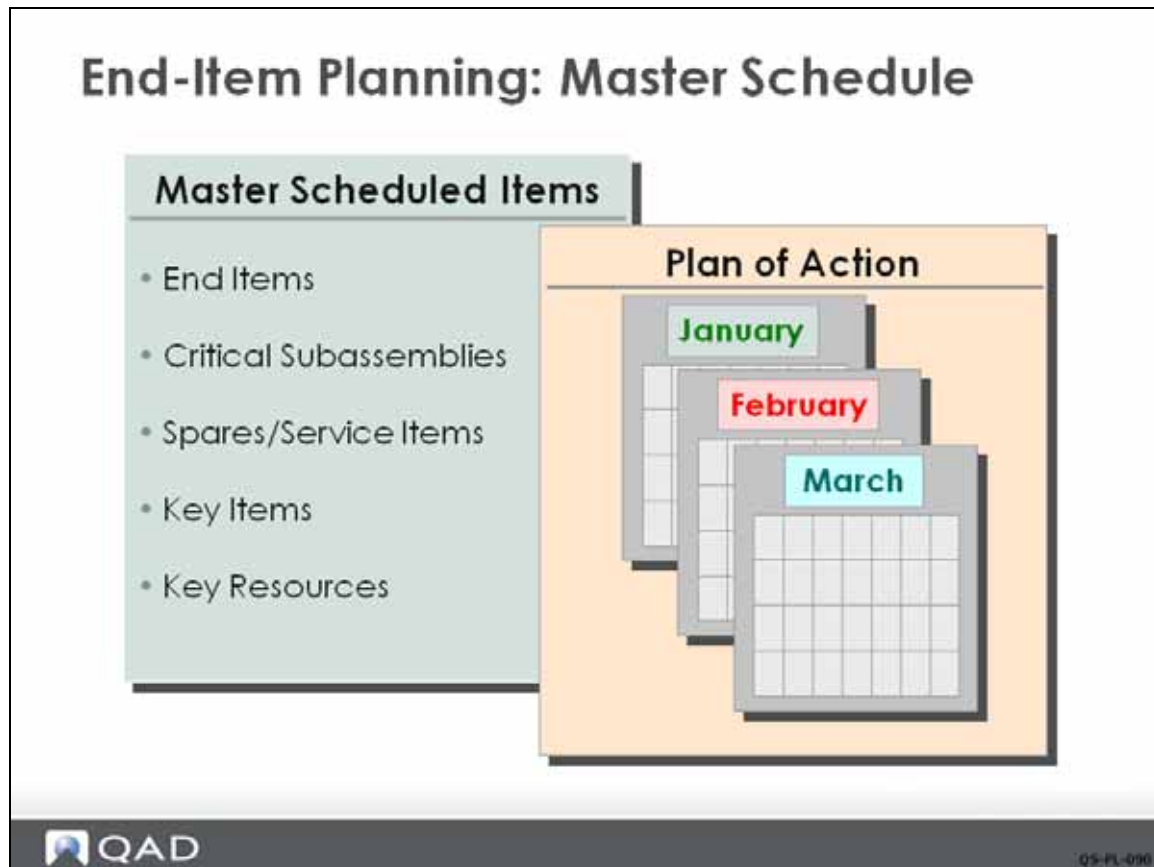
The rules for forecast consumption are set up in Sales Order Control.

Forecasts are often done by month (as in Forecast Simulation), then arithmetically spread to weeks.

- Using a forecast consumption value of forward one week and backward two weeks, plus the current week a sales order is booked in, gives a four week period for the actual sales to equal the original month forecast.
- Forward two weeks and backward one week, or backward three weeks and forward none, gives the same effect.

Most companies would choose to consume unconsumed forecast from prior periods before taking consumption from future periods.

End-Item Planning: Master Schedule



A master schedule is developed by site and item and is the key plan that provides primary input to MRP. A master schedule is a statement of production determining which items to schedule, when orders are needed, and how much to produce.

Master scheduling can be done to anticipate sales as entered in the system and control production when no sales orders are used (in inventory replenishment or build-to-stock environments, for example).

Using master scheduling and MRP is an effective method to set production levels in response to actual and forecast demand (over a period roughly equivalent to the cumulative lead time), and determine in a rough way (RCCP) whether critical resources will constrain supply.

The master scheduler drives the entire production resource of a site. Producing the master schedule requires manpower, materials, manufacturing capability (capacity), cash flow, and management resources. As such, internal procedures with top-level management commitment control the master schedule process.

Rough-Cut Capacity Planning (RCCP)

The rough-cut capacity plan provides a tool for:

- Careful evaluation of changes to the master schedule and their impact on material and capacity.
- Rough evaluation of potential capacity issues.

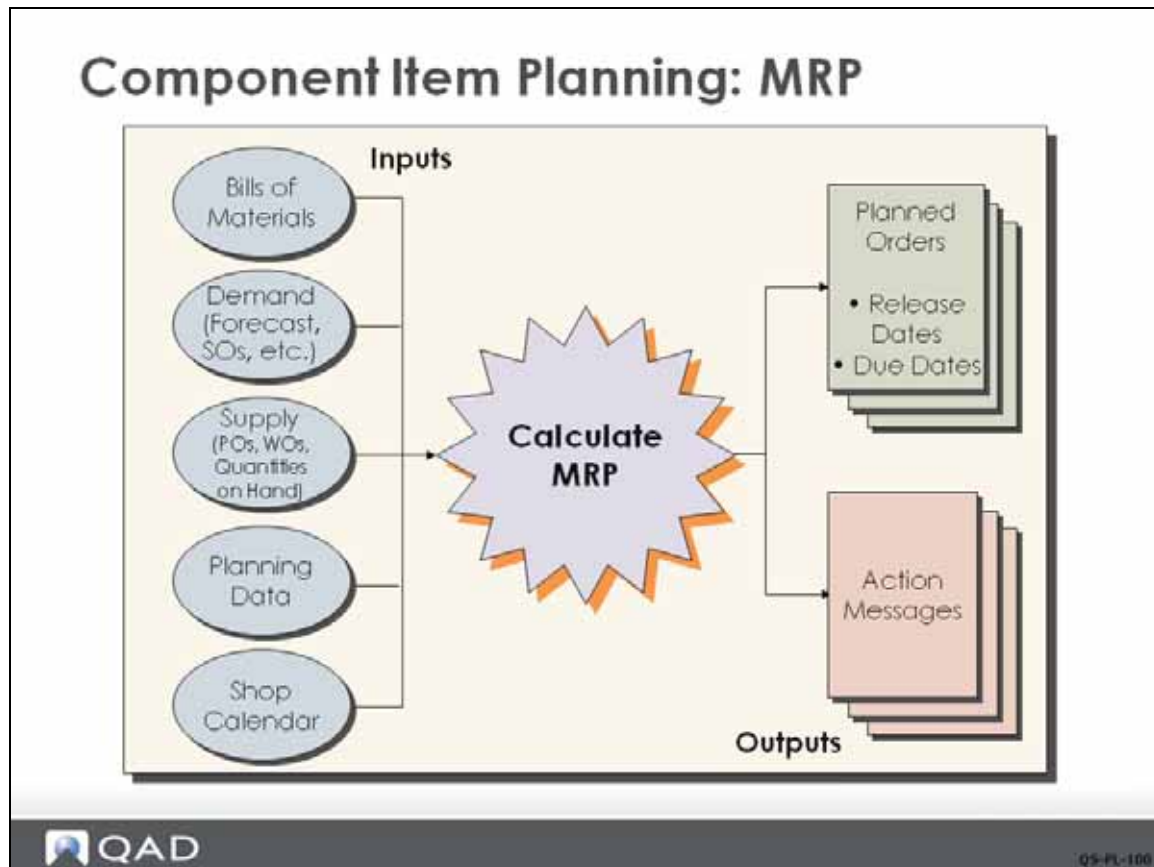
- Proper balancing of customer needs and manufacturing needs.
- Effective stabilization of MRP.

Normal uses of a master schedule include driving RCCP and MRP and planning future production.

The production plan is broken down into buildable units with specific dates for completion. The production plan is met if the master schedule is developed to support it.

RCCP provides a high-level planning process for key resources that can constrain the execution of the manufacturing plan.

Component Item Planning: MRP



The master schedule is a detailed schedule of production, but production can be achieved only if the component materials are available.

MRP and DRP explode the master schedule to calculate the demand for components based on the bill of materials (BOM). These components can be purchased, manufactured, or acquired internally from another site.

MRP Inputs

- Sources of demand (forecast, production forecast, sales orders, gross requirements, seasonal build, safety stock)
- Sources of supply (nettable quantity on hand, purchase orders, work orders, repetitive schedules, quality orders)
- Item planning data, lead times, order policy, whether the item is manufactured or purchased
- Product structures/formulas
- Shop calendar

MRP Outputs

The primary outputs of MRP are planned orders and action messages. Within the time fence, you only get action messages. Planned orders are generated outside of the item's time fence. Usually the planner reviews and approves MRP planned orders as work orders or requisitions.

In summary, MRP is a time-phased priority planning system that calculates material requirements using product structures, inventory status, the master schedule, and open order dates.

Supply is scheduled and rescheduled to meet changing demand and maintain valid due dates

MRP Options

The material requirements plan can be created using either net change, regenerative or selective methods.

Net Change. Net change MRP replans items for all selected sites that have changed since the last MRP run. The primary advantage of net change MRP is that it often takes less time to process than regenerative MRP. A net change MRP run processed after correctly acting on action messages yields the same result as a regenerative MRP.

Regenerative MRP. Regenerative MRP creates a material plan for all selected sites starting at the top level, exploding new requirements, and continuing to lower-level components. Remember that each site is a separate MRP plan. Only DRP passes requirements between sites. One advantage of regenerative MRP is that it guarantees that all plans are completely synchronized and that all due dates are valid.

Selective MRP. Selective MRP is a special case situation and processes a limited set of user-defined items, and could be used for what-if analysis.

Capacity Requirements Planning (CRP)

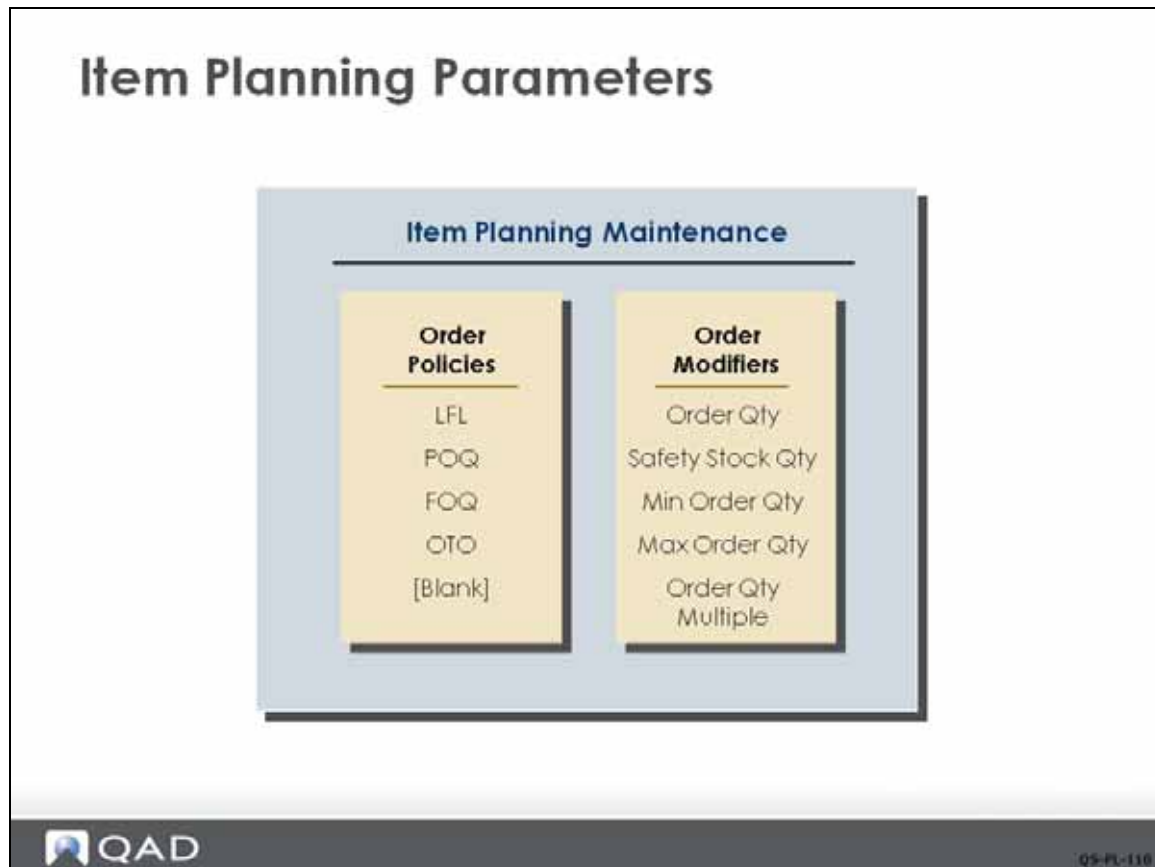
MRP component planning is checked against the capacity requirements plan (CRP). CRP determines how much labor and how many machine resources are required for production, and it calculates workload for a department, work center, or machine. It is used for short to medium-range capacity management to determine and provide the resources required to meet MRP's detailed item schedules.

Time Fence

Time fence is a policy or guideline established to note where various restrictions for changes in operating procedures take place. For example, changes to the master schedule can be accomplished easily beyond the cumulative lead time. However, changes inside the cumulative lead time become increasingly more difficult (to a point where changes are resisted). Time fences can be used to define these points.

A time fence is expressed in days and is defined in Item Planning Data Maintenance (1.4.7) or Item Site Planning Data Maintenance (1.4.17). It tells the system not to change any planned orders within that number of days, but instead to provide action messages telling the planner what the system suggests be done.

Component Item Planning: Item Planning Parameters



QAD uses item planning parameters to determine how MRP plans items. General item planning parameters can be defined in Item Master Maintenance (1.4.1) or Item Planning Maintenance (1.4.7). Site-specific parameters are entered in Item-Site Planning Maintenance (1.4.17). Any parameters not entered in Item-Site Planning Maintenance default from Item Master Maintenance or Item Planning Maintenance.

Order Policies

Order policy determines the rules for planning orders. Order policies are used together with order modifiers to determine order quantities. There are four types of policies:

Lot for Lot (LFL). A lot sizing technique where MRP plans a separate supply order for each demand order. For example, sales orders exist for the same item with quantities of 5, 10, 15, and 20. MRP plans four orders for 5, 10, 15, and 20 units.

Period Order Quantity (POQ). A lot sizing technique where lot size is equal to net requirements for a given time period expressed in days (Order Period field). For example, a 30-day order period would create one planned order for all requirements for the next 30 days. The calculation of the period does not begin until the first statement of demand. For example, if MRP is run today for an item with a 30-day period, but the first demand order is five days in the future, the system then counts 30 days from five days from now to create the 30-day period bucket.

Fixed Order Quantity (FOQ). A demand rate lot sizing rule where a fixed quantity (Order Quantity field) must be ordered. For example FOQ is 100 and demand is 105. MRP plans two orders for 100.

One Time Only (OTO). A lot-sizing technique that produces an order only once, based on the due date of the first item required. This technique is typically used for projects, such as creating an engineering drawing, that occur only once during the manufacturing of a product.

Order Policy Blank. A blank order policy is used to prevent MRP from planning an item.

Note An order policy that the system does not recognize (EOQ for example) defaults to LFL. Two other parameters are used with order policy:

Order Quantity. This specified quantity is used with the Fixed Order Quantity (FOQ) order policy. It is also used for all item cost and lead time calculations as the standard order quantity.

Safety Stock Quantity. This specified quantity is used as inventory reserve to compensate for unexpected demand and to maintain desired service levels. This applies to all order policies, including a blank.

Order Modifiers

Order modifiers change planned order quantities. Minimum, maximum and multiple are order modifiers.

Minimum Order Quantity. This quantity is the smallest order that is planned. Only use minimum quantities with items that have continuing demand, since the minimum order quantity could exceed the actual current demand. Items that have decimal demand values from yield or scrap calculations can be forced to whole numbers by setting this parameter to 1 or to any whole number. Often the minimum quantity is a vendor-required minimum for purchased items.

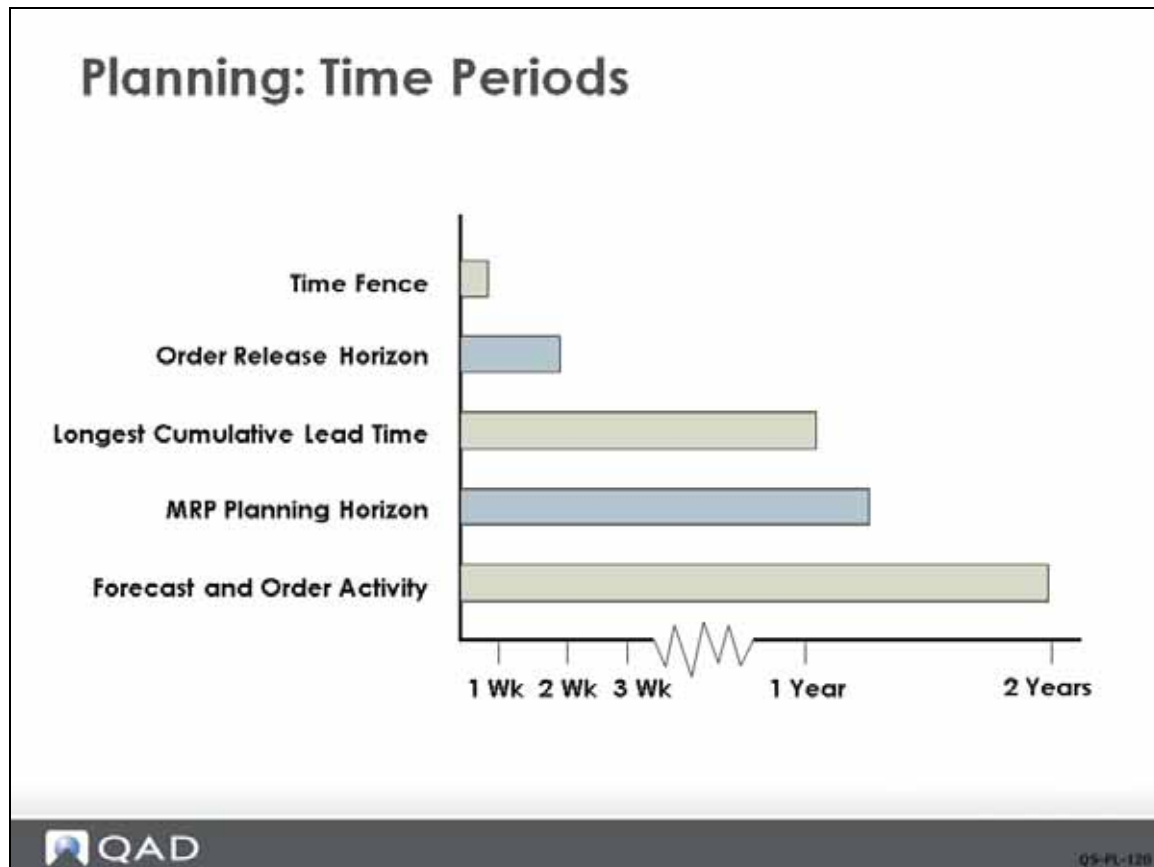
Maximum Order Quantity. MRP generates a warning message when a planned order quantity is larger than the specified maximum order quantity. Excessively large lot sizes can tie up a resource so that other orders are delayed unnecessarily. Further, setting a quantity limit can uncover data entry errors (for example, entry of 1,000 instead of 100).

Order Quantity Multiple. Planned orders are created in multiples of this quantity. That is, if the order multiple is 100, planned orders are only created for quantities of 100, 200, 300, and so on. Order multiples are appropriate for multiple cavity molding applications, packaging, and so on.

Lead Time

Lead times determine when to release orders to be available on their due date. Manufacturing lead time is for manufactured items; purchasing lead time plus inspection lead time is for purchased items. Safety lead time can be added to both. The system calculates lead time using the operation times in the route and the standard order quantity for manufactured items. The planner enters the lead time for purchased items.

Component Item Planning: Time Periods



Planning Horizon

Before you run MRP, you set the MRP planning horizon. This specifies a period, in calendar days, over which MRP is to plan. MRP only processes material requirements within this horizon. The longer this horizon, the longer it takes MRP to plan. However, the planning horizon is at least as long as the longest cumulative lead time, plus any associated preparation times. Usually, the master schedule also covers a time frame that is at least this long.

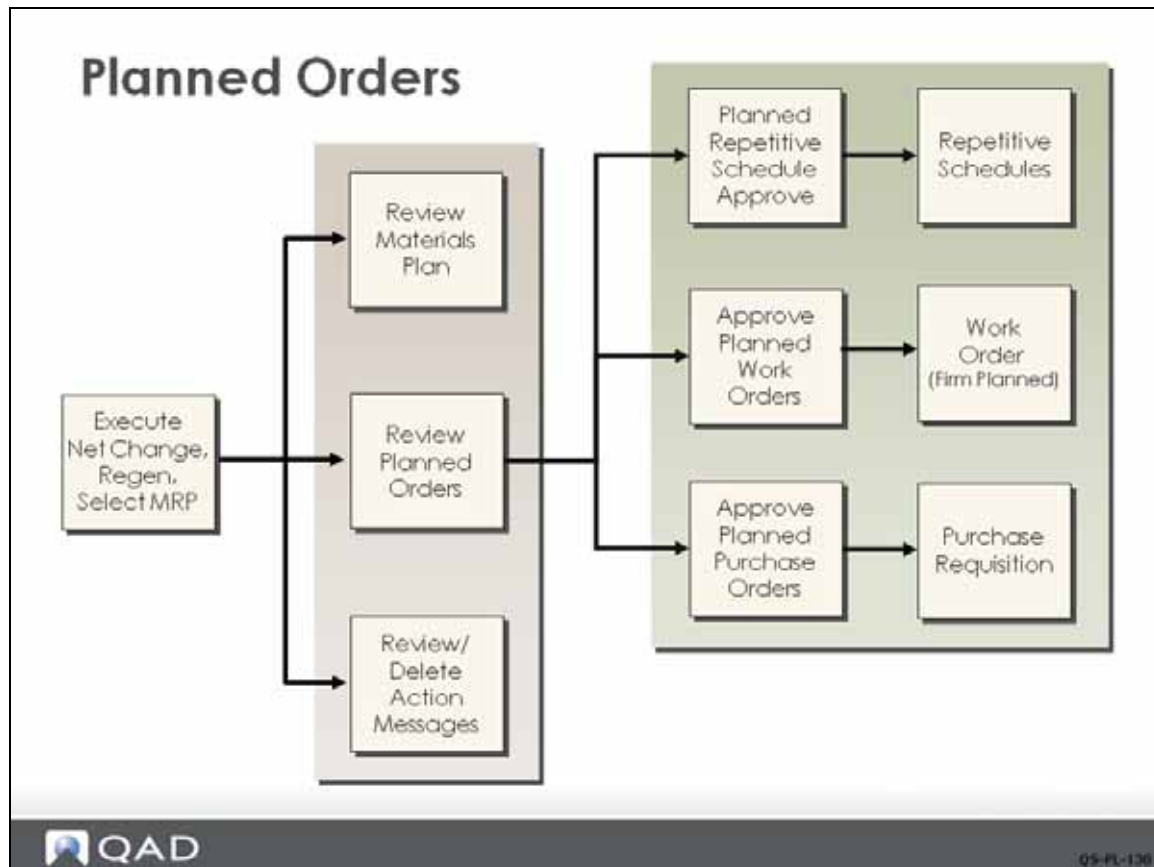
Cumulative Lead Time

Cumulative lead time represents the longest planned length of time to obtain an item, assuming that neither it nor any of its components (if any) are in stock. For a manufactured item, this includes the time it takes to acquire raw materials, inspect them, make any subassemblies or components, and assemble and inspect the finished product. These times are entered in Item Planning Maintenance for each item in the fields Mfg LT, Pur LT, and Ins LT.

Order Release Horizon

To provide visibility for what orders are due for releases, MRP generates Release Due action messages. Typically, you want to see these messages in advance, not just on the day the order is due for release. You can set the release horizon for any number of days. MRP generates Release Due messages only for orders due for release within this number of days from today's date.

Component Item Planning: Planned Orders



If the parameter for order policy is not blank, and Plan Orders is set to Yes in Item Master Maintenance, MRP creates planned orders to satisfy net requirements. The system creates either planned work orders or planned purchase orders, based on the Pur/Mfg code.

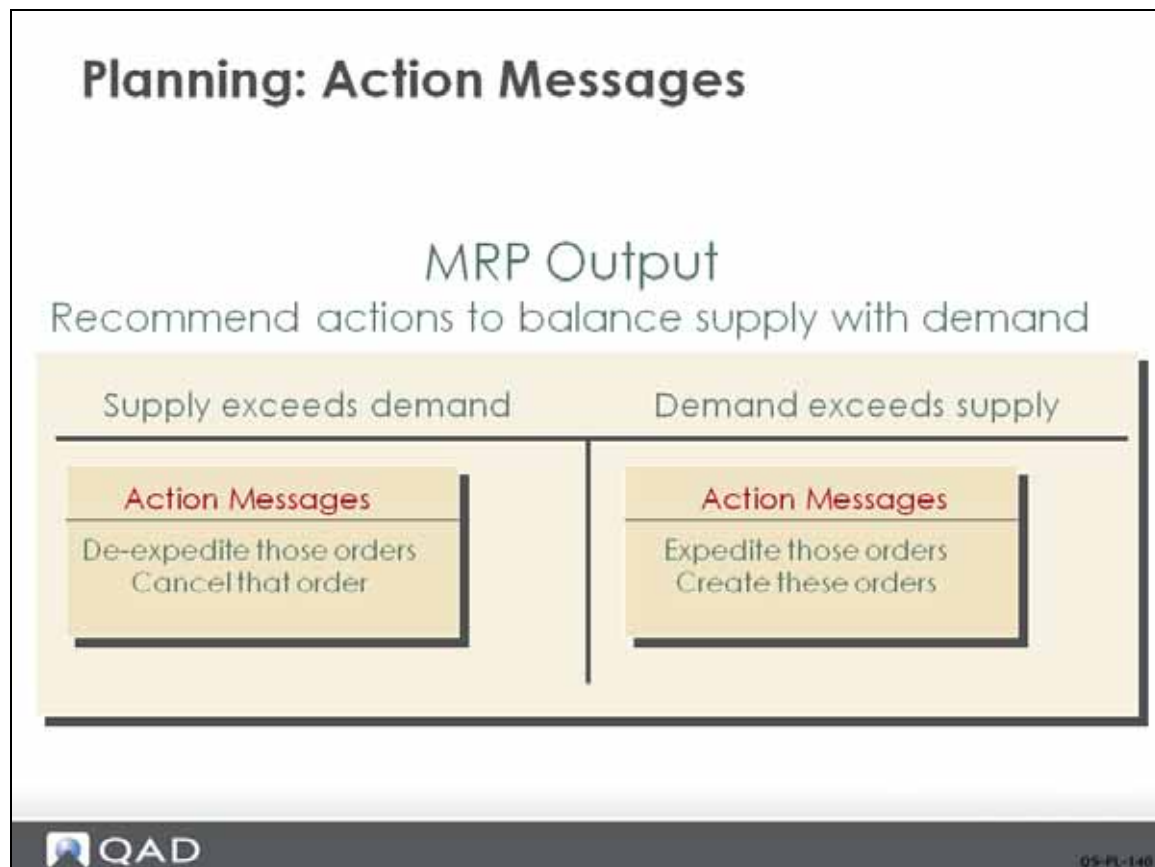
Internally, both planned work orders and planned purchase orders are stored as work orders with status Planned. The primary difference between them is that orders for purchased items are created without work order bills.

Planned Order Approval

The process of approving planned work orders changes the status of work orders from Planned to Firm Planned. While each successive MRP run can modify or delete planned orders, firm planned orders have due dates and quantities that are fixed with respect to the MRP planning process. The due dates and quantities for firm planned orders can be changed manually in Work Order Maintenance.

The process of approving planned purchase orders deletes the planned purchase orders and creates purchase requisitions. Purchase requisitions can be reviewed by buyers or purchasing agents and filled by purchase orders. Once the purchase order is released, it becomes supply for the item at that site.

Component Item Planning: Action Messages



To project inventory balances and calculate net requirements, MRP reschedules purchase orders, work orders, and repetitive schedules and plans all activity based on the revised schedule. When it does this, it also generates action messages to alert planners to actions to take to execute the plan, such as rescheduling, canceling, and releasing orders.

Usually the first thing the planner does after running MRP is to look at the action messages. Action messages can be reviewed online and deleted when the required action is taken. They can also be printed along with the detailed plan.

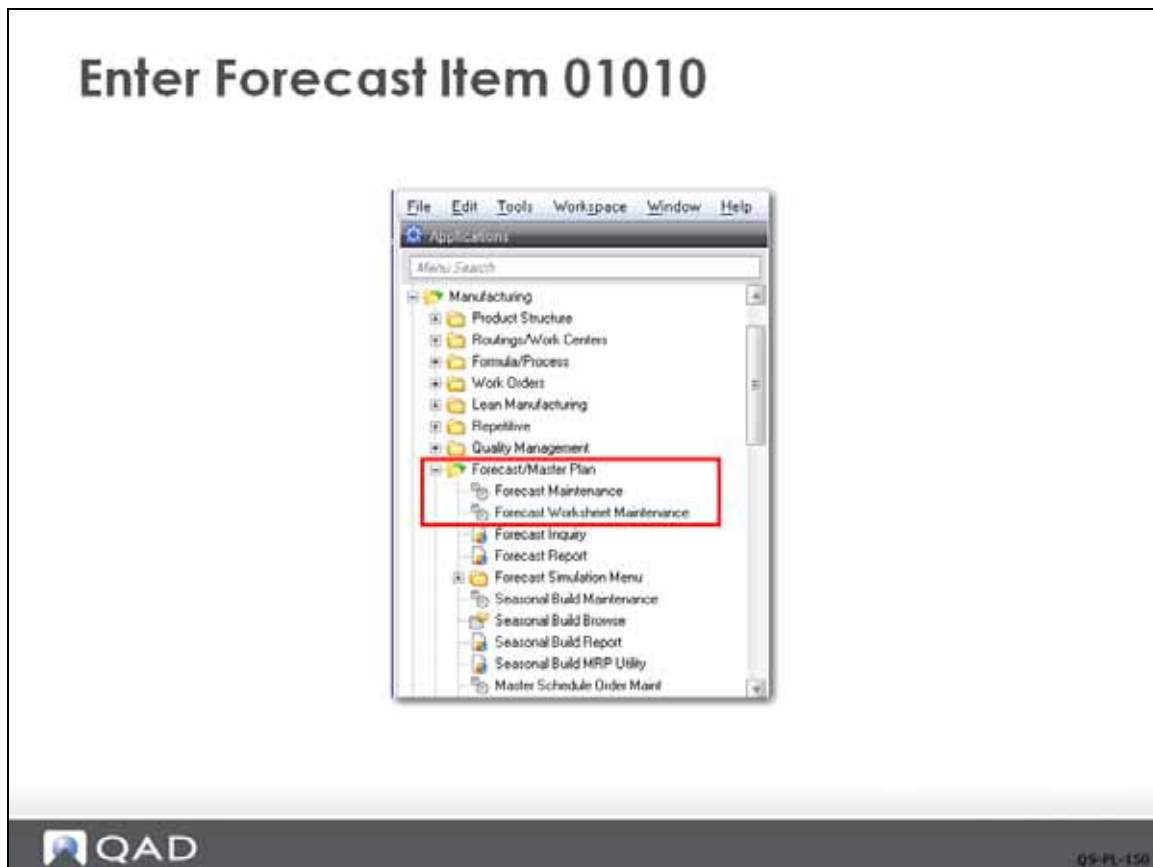
Example

This section provides an example of how the planning process works. In this example, QMI:

- Enters a forecast for medical ultrasound units
- Enters a sales order that consumes demand
 - Line 1: normal SO, quantity = 5, due in two weeks
 - Line 2: abnormal SO, quantity = 5, due in five weeks
- Runs MRP
- Approves planned purchase orders
- Creates a purchase order using MRP requisitions for the component items
- Receives the PO
- Approves planned work orders
- Releases and issues work order
- Builds work order items and puts the items into stock
- Ships a sales order

In the process of reviewing the production schedule and MRP reports, you see the effect of the manufacture and purchase lead times on release dates for the purchase orders and work orders in the example.

Enter Forecast Item 01010



QAD Enterprise Applications offers two screens for entering forecast data:

- Forecast Maintenance (22.1)
- Forecast Worksheet Maintenance (22.2)

Forecast Maintenance

Forecast Maintenance

Item Number: 01010 Site: 10-100 Year: 2010

Week	Forecast	Week	Forecast	Week	Forecast	Week	Forecast
1/4/2010	0	4/5/2010	0	7/5/2010	5	10/4/2010	5
1/11/2010	0	4/12/2010	0	7/12/2010	5	10/11/2010	5
1/18/2010	0	4/19/2010	0	7/19/2010	5	10/18/2010	5
1/25/2010	0	4/26/2010	0	7/26/2010	5	10/25/2010	5
2/1/2010	0	5/3/2010	0	8/2/2010	5	11/1/2010	5
2/8/2010	0	5/10/2010	0	8/9/2010	5	11/8/2010	5
2/15/2010	0	5/17/2010	0	8/16/2010	5	11/15/2010	5
2/22/2010	0	5/24/2010	0	8/23/2010	5	11/22/2010	5
3/1/2010	0	5/31/2010	5	8/30/2010	5	11/29/2010	5
3/8/2010	0	6/7/2010	5	9/6/2010	5	12/6/2010	5
3/15/2010	0	6/14/2010	5	9/13/2010	5	12/13/2010	5
3/22/2010	0	6/21/2010	5	9/20/2010	5	12/20/2010	5
3/29/2010	0	6/28/2010	5	9/27/2010	5	12/27/2010	5
Total	0	Total	25	Total	65	Total	65

Item Description: Medical Ultrasound

QAD Q9-PL-155

Forecast Maintenance (22.1) provides 52 weekly buckets, so an entire year's forecast for a given item and site can be entered in one screen. If you are using forecast simulation, this screen can also be populated automatically with data from the forecast simulation calculation.

Forecast Worksheet Maintenance

Review Forecast Worksheet: Item 01010

Forecast Worksheet Maintena...
Go To ▾
Actions ▾
Copy ▾
Print
Preview
Attach ▾

Item Number: 01010 Site: 10-100 Year: 2012

Week	Forecast	Sales	Abnormal	Prod Fcst	Net Forecast
14 4/2/2012	5	0	0	0	1
15 4/9/2012	5	5	0	0	0
16 4/16/2012	5	5	0	0	0
17 4/23/2012	5	12	0	0	0
18 4/30/2012	10	0	0	0	3
19 5/7/2012	10	0	0	0	10
20 5/14/2012	10	0	0	0	0
21 5/21/2012	10	24	0	0	0
22 5/28/2012	10	0	0	0	6
23 6/4/2012	5	0	0	0	5
24 6/11/2012	5	0	0	0	5
25 6/18/2012	5	0	0	0	0
26 6/25/2012	5	12	0	0	0
Totals	90	58	0	0	30

Q9-PL-168

In Forecast Worksheet Maintenance (22.2), the system displays 13 weeks of forecast buckets at a time. Clicking Next advances to successive calendar quarters. In addition, this screen displays actual sales orders, abnormal sales orders, production forecasts, and net forecast.

Using Forecast Worksheet Maintenance, the QMI planner has entered forecasts for the number of medical ultrasound units expected to ship each week for the next few months, starting with April 5. Some orders are already in the system. The planner notes an increase in orders because of a special spring promotion and increases the forecast for five weeks from 5 to 10.

Discussion

If it takes one person one day to assemble five units and the forecast for 30 on each five-day week is reasonable, what action is necessary?

Define Control Settings: Forecast Consumption

Forecast Consumption

Sales Order Control

Go To Actions Copy Print Preview

Auto Batch Confirmation: ☐

SO Edit ISB Defaults: ☒

SO Returns Update ISB: ☒

Forecast Consumption

Consume Forward:

Consume Back:

Check Customer Item Nbr First: ☒

Confirmation Batch ID:

Confirmation Printer:

Pending Inv Update ISB: ☒

Auto Batch Shipment: ☐

Shipment Batch ID:

Shipment Batch Printer:

QAD QS-PL-170

In Sales Order Control (7.1.24), the QMI planner has set up rules for forecast consumption. In this example, whenever sales exceed forecast in a period, the system consumes the forecast, first by going back, then forward one period from the original forecast in the period the sales order is due. The system then continues to search backward and forward until the specified number of previous periods (2) and future periods (1) have been examined, or the entire sales order quantity has been applied.

Enter Sales Order Line: Consume Forecast

Enter Sales Order Line: Consume Forecast

Sales Order Maintenance

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Lines Line Details Freight Data Tax Info Comments

Header

Order: 10S10001 Sold-To: 10C1003 Ln For: Single Org:

Sales Order Line

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
1	01010	15.0	EA	2,500.00	0.0	2,500.00

Line Details

Desc: Medical Ultrasound
Loc: 100 Site: 10-100
USD Cost: 1,805.45157
Lot/Serial:

Sales Acct: 4010 mech ADM
Disc Acct: 4200 Mech
Confirmed: ☒ Credit Terms Int: 0.00
Required: Ship Type:
Promised: 4/12/2012 UM Conversion: 1.0000
Due Date: 4/12/2012 Consume Fore: ☒
Perform Date: Detail Alloc:
Pricing Date: 4/11/2012 Taxable:
Multiple: Freight List: TDFRT
Commission 1: 5.00% Category: Fixed Price: ☒ Comments:

QAD

QS-PL-100

In Sales Order Maintenance (7.1.1), the QMI customer service representative (CSR) has entered two sales order lines for its medical ultrasound (item 01010).

Line 1 (shown in the illustration) is for an order of 15 units due in two weeks. This order, once confirmed, consumes the forecast because the Consume Forecast box was selected.

Line 2 is shown on the next page.

Enter Sales Order Line: Do Not Consume Forecast

Enter SO Line: Do Not Consume Forecast

Sales Order Maintenance X

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Lines Line Details Freight Data Tax Info Comments

Header

Order: 10S10001 Sold-To: 10C1003 Ln For: Single Org:

Sales Order Line

Ln	Item Number	Qty Ordered	UM	List Price	Discount	Net Price
2	01010	15.0	EA	2,500.00	0.0	2,500.00

Line Details

Desc: Medical Ultrasound

Loc: 010 Site: 10-100

USD Cost: 1,805.45157

Lot/Serial:

Qty Allocated: 4.0

Qty Picked: 0.0

Qty Shipped: 0.0

Qty to Invoice: 0.0

Salesperson 1: 10SP01

Commission 1: 5.00%

Category:

Sales Acct: 4010 mech ADM

Disc Acct: 4200 Mech

Confirmed ☒

Required: 5/19/2012

Promised: 5/19/2012

Due Date: 5/19/2012

Perform Date: 5/19/2012

Pricing Date: 4/11/2012

Multiple: ☐

Fixed Price: ☒

Credit Terms Int: 0.00

Ship Type:

UM Conversion: 1.0000

Consume Fcst: ☐

Detail Alloc: ☐

Taxable: ☐

Freight List: 10FRT

Comments:

QAD QS-PL-190

Line 2 is for an order of 15 ultrasound units due in five weeks. This order does not consume the forecast because the Consume Forecast box has not been selected.

Additional Notes

Consume Forecast is not selected (unchecked) when the order quantity is considered abnormal and is planned in addition to the forecast. Perhaps the best definition of abnormal sales is those sales that were not anticipated in the forecast. This can be sales to new customers, new markets, or a current customer significantly increasing their volume. Businesses should establish their own rules and guidelines for sales order entry to determine when an order is considered abnormal.

Discussion

What is the impact of an order for 30 medical ultrasound units due in two weeks on the QMI production department?

Review Forecast Worksheet: Item 01010

Review Forecast Worksheet: Item 01010

Forecast Worksheet Maintena... x

Go To Actions Copy Print Preview Attach

Item Number: 01010 Site: 10-100 Year: 2012

Week	Forecast	Sales	Abnormal	Prod Fcst	Net Forecast
14 4/2/2012	5	0	0	0	0
15 4/9/2012	5	20	0	0	0
16 4/16/2012	5	5	0	0	0
17 4/23/2012	5	12	0	0	0
18 4/30/2012	10	0	0	0	3
19 5/7/2012	10	0	0	0	10
20 5/14/2012	10	0	15	0	0
21 5/21/2012	10	24	0	0	0
22 5/28/2012	10	0	0	0	6
23 6/4/2012	5	0	0	0	5
24 6/11/2012	5	0	0	0	5
25 6/18/2012	5	0	0	0	0
26 6/25/2012	5	12	0	0	0
Totals	90	73	15	0	29

QAD QS-PL-195

Forecast Worksheet Maintenance (22.2) shows the effect of the new sales order on the net forecast:

- Line 1 for 15 units in week 15 consumes forecast. Sales for that week now shows 20 (previously it was 5).
- Line 2 for 15 units in week 20 does not consume forecast so the quantity of 15 displays in the Abnormal column.

The effect of the setting of Forecast Consumption in Sales Order Control (2 periods back and 1 forward) can be seen most clearly with the order for 24 units on week 21. This is 14 more than was forecast for this week.

- The system consumes the 10 for week 20
- Then it consumes the 10 for week 19 (not consumed by the abnormal demand).
- and then consumes 4 in week 21, leaving a net forecast of 6 remaining for that week.

Note MRP always plans for the total demand, even when it exceeds forecast.

Master Schedule Summary: Item 01010

Master Schedule Summary: Item 01010

Master Schedule Summary Inq. X

Run Export to Excel View as PDF

Item Number: 01010 Site: 10-100 Display Negative ATP: ☐ Start Date: 4/9/2012 End Date: Column Type: Week Per Column: 1 Column: 12

Item Number: 01010 Medical Ultrasound MRP Required: **Yes**

Site: 10-100 Mfg LT: 4 Plan Orders: Yes Pur/Mfg: M

Qty on Hand: 24.0 EA Purchase LT: 0 Order Quantity: 0 Minimum Order: 1

Order Policy: POQ Safety Stock: 0 Yield Percent: 100.00% Maximum Order: 5

Order Period: 7 Safety Time: 0 Time Fence: 0 Order Multiple: 1

Category	Past	4/9/2012	4/16/2012	4/23/2012	4/30/2012
Production Forecast	0	0	0	0	0
Forecasts	0	0	0	0	3
ID Week Date	Past	4/9/2012	4/16/2012	4/23/2012	4/30/2012
2012-04-30 18 4/30/2012	0	0	0	0	3
2012-05-07 18 5/7/2012	0	0	0	0	0
2012-05-28 22 5/28/2012	0	0	0	0	0
2012-06-04 23 6/4/2012	0	0	0	0	0
2012-06-11 24 6/11/2012	0	0	0	0	0
Sales Orders	60	20	0	12	0
Gross Requirements	0	0	0	0	0
Master Schedule	54	0	17	0	0
Projected QOH	18	-2	15	3	0
Available to Promise	0	-15	0	0	0
Cumulative ATP	0	-15	-15	-15	-15

QAD Q9-PL-210

Master Schedule Summary Inquiry (22.18) shows the QMI master scheduler the planning data for the item at this site. The data can include lead times, order policy, order period, order quantity, whether the item is purchased or manufactured, and the current quantity on hand. Most importantly, though, this screen shows a summary of the master schedule demands for an item. This example shows item 01010 and the current plan to satisfy its demand.

The net forecast is provided in the Forecast row, and the total of the sales order quantities are shown in the Sales Orders row. You can expand each row to show the details by clicking the + sign on the right. You can also send the report to Excel for easier data manipulation.

The Projected QOH (quantity on hand) is the calculated on-hand balance at the end of each period. In this example, there are 18 units in stock or on hand from past production, so demand in the first week makes the Projected QOH number negative. In the week beginning 4/9, the sales order demand for 20 means that the Projected QOH is -2 (QOH - demand; $18 - 20 = -2$).

The real key to this screen is the MRP Required field, highlighted in red, which is checked. This simply means something has changed since MRP was last run and that the displayed data is no longer accurate. You must run MRP again.

In this example, there is no inventory Available to Promise.

You see the effect of running MRP when the QMI planner runs MRP later in this example.

Master Schedule Summary Inquiry

Item Number	Site	Medical Ultrasound	Mfg LT	Plan Orders	Order Quantity	Yield Percent	Time Fence	Required	Yes
01010	10-100		1	Yes	5	100.00%	0	Yes	M

In Master Schedule Summary Inquiry (22.18), the display defaults to a period length of a week. In the input selection frame, you can select period lengths of days (D), weeks (W), or months (M).

You can also display multiple periods in each column by putting a number in the Per Column field. Specify a start date and end date to look at specific ranges of data.

For example, if your business worked four, ten-hour days per week you can make the period Days and display four periods per column.

Item Planning Data

Item Planning Data: Item 01010

Item Planning Maintenance X

Go To Actions Copy Print Preview Attach

Item 01010 Item Number 01010 Supplier

Item Number: 01010 Description: Medical Ultrasound

Unit of Measure: EA

Item Planning Data

Mstr Sched: ☒ Plan Orders: ☒

Time Fence: 0

MRP Required: ☒

Order Policy: POQ Order Qty: 5

Batch Qty: 0

Order Period: 7

Safety Stock: 0

Safety Time: 0

Reorder Point: 0

Item Rev: D

Issue Policy: ☒

Buyer/Planner: 1-01

Supplier:

PQ Site:

Purchase/Manufacture: M

Configuration Type:

Inspect: ☒

Ins LT: 0

Cum LT: 0

Pur LT: 0

Mfg LT: 1

ATP Enforcement: NONE

Family ATP: ☒

ATP Horizon: 0

Run Seq 1: 2

Phantom: ☐

Minimum Order: 1

Maximum Order: 5

Order Multiple: 1

Op Based Yield: ☒

Yield Percent: 100.00%

Run Time: 1.250

Setup Time: 1.500

EMT Type: NON-EMT

Auto EMT Processing: ☒

Network Code:

Routing Code: U-001

BOM/Formula:

QAD QS-PL-228

The next few pages review some of the key planning-related settings that the QMI planner has set up in Item Planning Maintenance (1.4.7) for the medical ultrasound units and its components.

Since item 01010 is the end item subject to independent demand, it is master scheduled and the planner wants the system to plan orders. Both Mstr Sched and Plan Orders are enabled (checked). This means that this item is master scheduled (forecasted in our example) and MRP creates planned orders.

Note MRP processes requirements the same whether the Mstr Sched box is checked or not. However, most reports and inquires in the system can be selected for master scheduled items only. This is very useful for master schedulers since they can select only their items for review.

The Order Policy of POQ (Period Order Quantity) instructs MRP to calculate demand for this item over the number of calendar days specified as the Order Period (in the example, 7) and creates one order to satisfy this demand.

An M in the Purchase/Manufacture field indicates that item 01010 is manufactured. It has a manufacturing lead time of one day, shown in the Mfg LT field. The lead time is based on the order quantity of 5. Because it is a manufactured item, the system displays the setup and run times for reference. Since 01010 is manufactured, no purchasing lead time is specified.

Item Planning Data: Item 50001

Review Planning Data: Item 60005

Item Planning Maintenance X

Go To Actions Copy Print Preview Attach

Item Number: 60005 Description: Battery
Unit of Measure: EA

Item Planning Data
Master Sched: ☐
Plan Orders: ☒
Time Fence: 0
MRP Required: ☒
Order Policy: POQ
Order Qty: 0
Batch Qty:
Order Period: 7
Safety Stock: 0
Safety Time: 0
Reorder Point: 25
Item Rev:
Issue Policy: ☒

Buyer/Planner: 1-02
Supplier:
PO Site:
Purchase/Manufacture: P
Configuration Type:
Inspect: ☐
1.0 Ins LT: 0
Mfg LT: 0
ATP Enforcement: NONE
Family ATP:
ATP Horizon: 0
Run Seq 1: 2

Phantom: ☐
Minimum Order: 25
Maximum Order: 2,000
Order Multiple: 5
Op Based Yield: ☐
Yield Percent: 100.00%
Run Time: 0.000
Setup Time: 0.000
EMT Type: NON-EMT
Auto EMT Processing: ☐
Network Code:
Routing Code:
BOM Formula:
Replenishment Method: Orders

Cum LT: 0
Pur LT: 3

QAD

Q9-PL-246

Item 60005, the battery, is a purchased component required to assemble item 01010.

The Purchase/Manufacture field in this case is set to P. Most purchased components also have purchase lead times. Based on the planning information, the planner has indicated to MRP that these materials are ordered in quantities to cover demand during an order period of seven days, and that a purchase order for the component item is released three days before the item is needed (Pur LT). Purchased items do not have setup or run time.

The field to note here is Order Multiple. You must order some purchased items in multiples. In this case, the vendor has told us to purchase in multiples of 5.

Discussion

Based on this overview and the discussion of forecast consumption, do you see that QMI can have an upcoming problem meeting demand? It currently takes 5 working days to make 25 units. How can QMI address the issue of increasing capacity?

Note For more detailed information on planning data and MRP, refer the courses on MRP and CRP and on Master Scheduling and RCCP.

Item Planning Data: Item 02003

Item Planning Data: Item 02003

Item Planning Maintenance

Go To Actions Copy Print Preview Attach

Item: 02003 Item Number: 02003 Supplier: 1051002

Item Number: 02003 Description: Standard Connector
Unit of Measure: EA

Item Planning Data
Mstr Sched: ☒
Plan Orders: ☒
Time Fence: 0
MRP Required: ☒
Order Policy: POQ
Order Qty: 10
Batch Qty:
Order Period: 7
Safety Stock: 0
Safety Time: 0
Reorder Point: 0
Item Rev:
Issue Policy: ☒

Buyer/Planner: 201
Supplier: 1051002
PO Site:
Purchase/Manufacture: P
Configuration Type:
Inspect:
1.0 Ins LT: 0 Cum LT: 0
Mfg LT: Pur LT: 2
ATP Enforcement: NONE
Family ATP:
ATP Horizon: 0
Run Seq 1:
2:

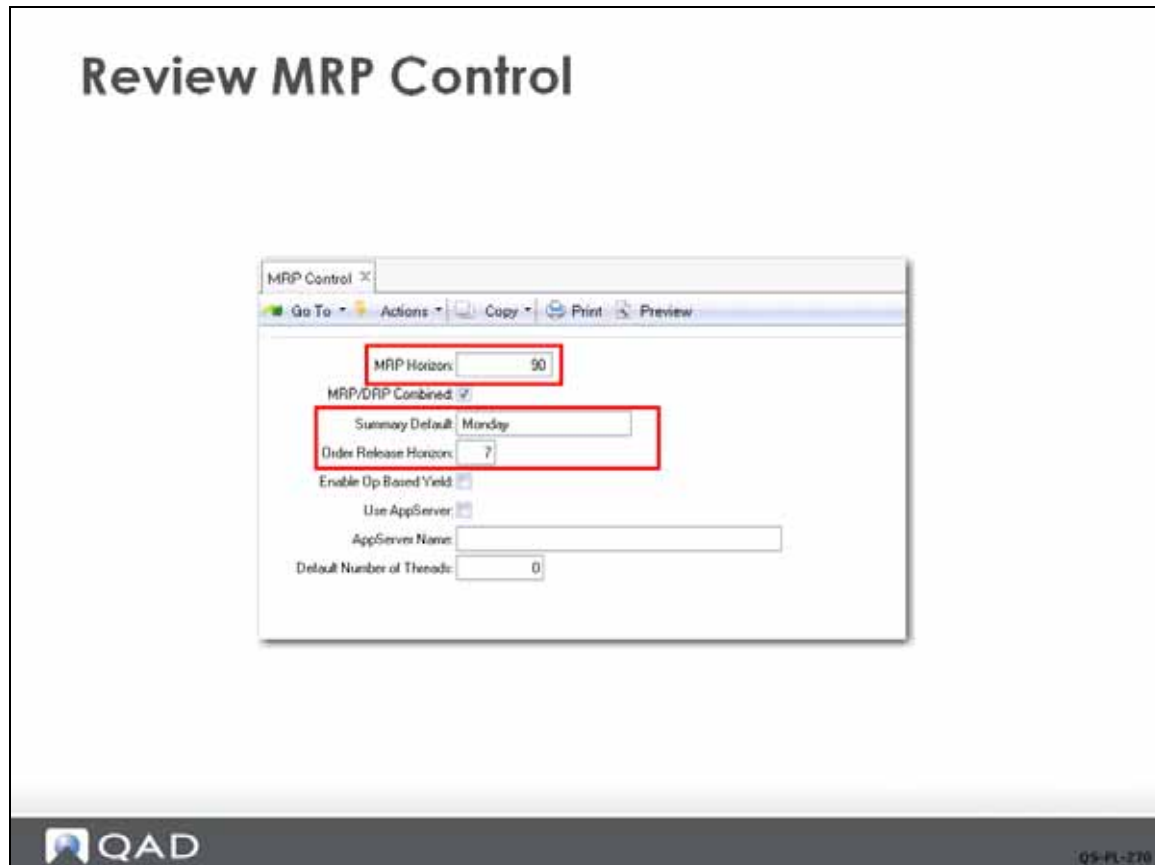
Phantom:
Minimum Order: 10
Maximum Order: 0
Order Multiple: 2
Op Based Yield:
Yield Percent: 100.00%
Run Time: 0.002
Setup Time: 0.200
EMT Type: NON-EMT
Auto EMT Processing:
Network Code:
Routing Code: 02001
BOM/Formula:

QAD

Q3-PL-258

In this example, the planning data for the Standard Connector (item 02003) was set to normally buy enough for ten units: Order quantity 10, minimum order of 10, and a multiple of 2. Note the purchasing lead time of three days.

Review MRP Control



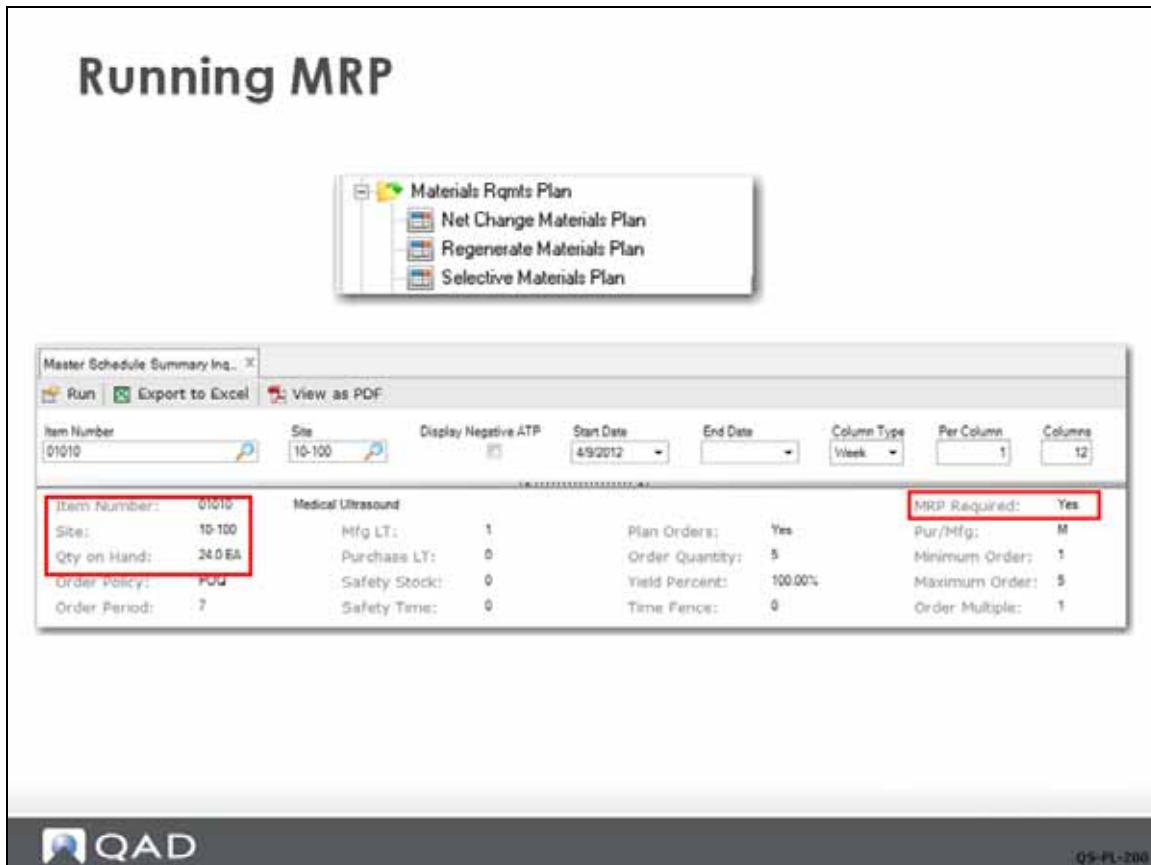
MRP Control (23.24) has important settings that affect MRP processing.

MRP Horizon. This is the number of days into the future MRP plans and is at least one day longer than the longest cumulative lead time in your system. For purposes of this course, 90 days are more than enough. In general, a planner would want to err on the side of planning too far into the future rather than not far enough.

Summary Default. Determines on which day of the week MRP and MPS summary inquires begin displaying data. This can be set to any day of the week, or Today. Typically, companies want the columns to be consistent and always display a week beginning with their normal start day. Setting the field to Today changes the start day of the display every day.

Order Release Horizon. Indicates the number of days that the system looks into the future to find an order release date. This is very important for MRP action messages. For example, when set to 7, the system marks all planned orders due for release in the next seven days as due for release. If you have many planned orders and review them daily, you may want this set to one or two days. For purposes of this course, seven days works fine.

Running MRP



The menu at the top of this slide shows the three ways to run MRP.

Net Change Materials Plan

The normal method used on a routine daily or weekly basis is net change MRP (23.1), which selects all the items at a site with the MRP Required field set to Yes. The value of this field can be viewed in Master Schedule Summary Inquiry (22.18), as seen here.

When Regenerate Materials Plan (23.2) is first run, MRP Required is set to No for all items. In the normal course of business, almost any transaction for an item resets this field, indicating to run MRP run again to recalculate the demand and supply for the item. Issues and receipts are obvious changes in inventory. Less obvious are changes in the forecast, safety stock, or item planning data. These changes also reset the field to Yes.

Regenerate Materials Plan

Regenerate MRP runs against all items at a site and can take much longer than net change MRP, depending on how many inactive or obsolete items you have. This is the method often used when running MRP for the first time.

For net change and regenerate, the only user selection is the site or range of sites. MRP is always calculated by site. If you have several sites in your database and run MRP for all the sites, each site has its own MRP output that is separate from the others.

Selective MRP

Running Selective MRP

Selective Materials Plan X

Go To • Actions • Copy • Print • Preview • Attach •

Item Number: 01010 To: 01010

Site: 10-100 To: 10-100

Master Scheduled Items: ☒ Buyer/Planner:

Non Master Scheduled Items: ☒ Product Line:

MRP Items: ☒ Group:

DRP Items: ☒ Item Type:

Required Items Only: ☒ Supplier:

Resolve Low Level Codes: ☒ PurMfg:

Synchronized Calculation: ☒ Synchronization Code:

Number of AppServer Threads: 0

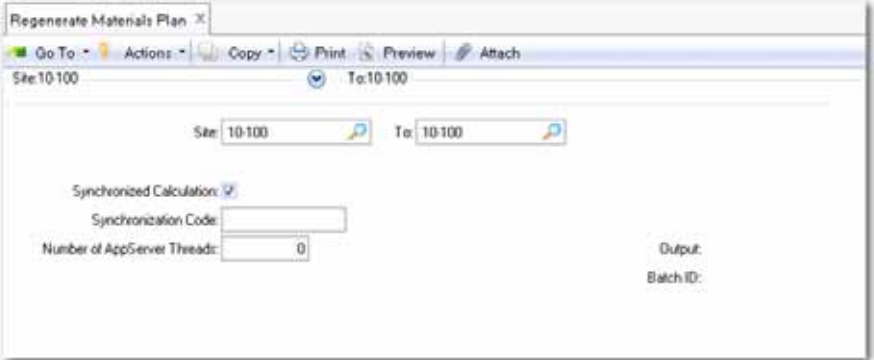
Output: Batch ID:

QAD QS-PL-230

Selective Materials Plan (23.3) lets the planner select specific items or groups or ranges of items. There are many ways to limit the number of items that this MRP method processes, as you can see in the selection screen. While this is a powerful planning tool, remember that items excluded from the process can impact items included in the process.

Running MRP: Regenerate

Running MRP: Regenerate



Regenerate Materials Plan

Go To Actions Copy Print Preview Attach

Site: 10-100 To: 10-100

Site: 10-100 To: 10-100

Synchronized Calculation: ☒

Synchronization Code:

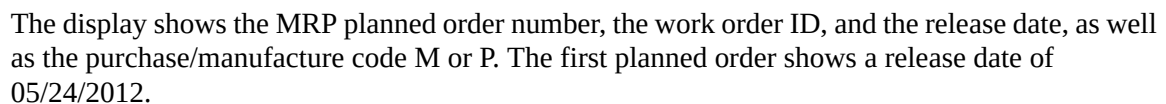
Number of AppServer Threads:

Output:

Batch ID:

QAD Q9-PL-300

To recalculate demand and plan supply for all items at site 10-100, the company's planner runs Regenerate Materials Plan (23.2). The site code, or range of site codes, is the only selection the planner uses. The other fields are technical settings used in multiple processor environments.



Review MRP Action Messages

Item Number	Description	Date	Message Detail	Order	LineID	Ac	Buyer/Planner
60010	Prepared Layered Mat	4/12/2012	Expedite Purchase Order	PO051218	2	5,100.0	1-02
80002	Biquanide Compound	4/12/2012	De-expedite Purchase Order	PO011212	2	500.0	3-02
80031	Ethanol Liquid	4/13/2012	De-expedite Purchase Order	PO021212	3	950.0	3-02
80041	Caromer 980 Powder/Thickening Agent	4/13/2012	Expedite Purchase Order	PO051204	5	650.0	3-02
80036	Benzyl Alcohol Liquid	4/13/2012	De-expedite Purchase Order	PO021212	5	55.0	3-02
80003	Phenolic	4/13/2012	Expedite Purchase Order	PO041220	1	1,000.0	3-02
80040	Lidocaine Liquid	4/13/2012	De-expedite Purchase Order	PO041212	8	425.0	3-02
50011	Ultrasound Array	4/15/2012	Release due for Work Order	W0412002	2322939	13.0	1-02
80060	Simethicone	4/16/2012	De-expedite Purchase Order	PO041204	8	500.0	5-02
80053	Preservative	4/16/2012	De-expedite Purchase Order	PO041217	1	6,250.0	4-02
90015	15 ml Tube	4/16/2012	De-expedite Purchase Order	PO041216	1	125.05	3-02
50020	Industrial Housing	4/16/2012	Release due for Planned Order	00020087	2286375	15.0	1-02
60001	Probe Unit - 10 Mhz	4/16/2012	De-expedite Work Order	W0312020	2319027	25.0	1-02
60003	Keyboard	4/17/2012	Expedite Purchase Order	PO051205	1	25.0	1-02
50001	Probe Unit - 10 Mhz	4/17/2012	Release due for Work Order	W0412020	2322956	13.0	1-02

The QMI planner reviews the Action Message Browse (23.6), shown here. It is important to review action messages first as the MRP planned orders only make sense if the actions that the messages require are implemented.

The recommended order in which to read this report is:

- Check the action message.
- Check the date column. This is the date associated with the action message.
- Check whether the item is manufactured or purchased. This indicates whether you need to approve a planned order as a work order or purchase requisition.
- Check the due date.

In this example, there are a number of messages about expediting and de-expediting orders. These messages indicate that orders are due after they are needed and need expediting, or before they are needed, and need to be de-expedited by changing the due date.

For some orders, a “Release due” message displays, indicating that these orders need approval.

Review Inquiries: Master Schedule Detail

Master Schedule Detail: Item 01010

Master Schedule Detail Inquiry
04/11/12

Item Number: 01010
 Medical Ultrasound

Site: 10-100 Start Date: 04/11/12
 Output: PAGE

Item Number: 01010
 Medical Ultrasound
 Buyer/Planner: 1-01
 Mstr Sched: Yes
 MRP Required: No
 Plan Orders: Yes
 Issue Policy: Yes

Qty on Hand: 24.0
 UM: EA
 Order Policy: POQ
 Order Period: 7
 Time Fence: 0
 Safety Time: 0
 Safety Stock: 0

Site: 10-100
 Pur/Mfg: M
 Mfg LT: 1
 Pur LT: 0
 Ins LT: 0
 Inspect: No
 Cum LT: 0

Yield Percent: 100.00%

Cum LT: 0

Due Date	Gross Reqs	Mstr Sched	Proj QOH	Plan Grds	Details
			24		Beginning Available
04/12/12	5		13		SO: 10S10000 Line: 1
04/12/12	15		-2		SO: 10S10001 Line: 1
04/16/12		5	3		W/O: 1001 ID: 2326383
04/20/12			15	12	W/O: W0412028 ID: 2322964
					Release Date 04/19/12
04/25/12	2		13		SO: S0041204 Line: 1
04/25/12	2		11		SO: S0041207 Line: 1
04/25/12	1		10		SO: S0041210 Line: 1
04/25/12	1		9		SO: S0041210 Line: 5
04/25/12	1		8		SO: S0041213 Line: 1
04/25/12	1		7		SO: S0041213 Line: 5
04/25/12	2		5		SO: S0041217 Line: 1
04/25/12	2		3		SO: S0041217 Line: 3
04/30/12	3		0		Forecast
05/07/12	10		-10		Forecast
05/19/12	15		-25		SO: 10S10001 Line: 2
05/20/12			-4	21	W/O: W0512028 ID: 2324188
					Release Date 05/19/12

Q9-PL-330

The Master Schedule Detail Inquiry (22.21) provides more detail than the summary browse and the organization of data is different.

In the summary, the information is organized in general buckets of days, weeks, or months. In the detail, the information is organized chronologically by specific due dates, showing only dates that have a transaction.

The Master Schedule Detail Inquiry screen shows sources of demand, sales orders, and forecasts in this example, and the MRP planned order to satisfy that demand along with the order's release date.

In this example, the system has an initial quantity on hand of 24 items (Proj QOH column). This quantity covers initial requirements (5 and 15), so the system does not plan to release an MRP planned order until 04/19/2012. The items created on that work order are used to fill sales orders over the next week.

Another work order is due to release on 05/19/12 to cover forecasted need and additional sales orders.

MRP Summary Inquiry

MRP Summary Inquiry: Item 01010

MRP Summary Inquiry
Run
Export to Excel
View as PDF

Item Number: 01010
Site: 10-100
Start Date: 4/9/2012
End Date:
Column Type: Week
Per Column: 1
Columns: 12

Item Number:	01010	Medical Ultrasound	Pur/Mfg:	M	Site:	10-100	
Qty on Hand:	24.0 EA		Mfg LT:	1	Minimum Order:	1	
Buyer/Planner:	1-01	Order Policy:	POQ	Purchase LT:	0	Maximum Order:	5
Master Schedule:	Yes	Order Period:	7	Inspect LT:	0	Order Multiple:	1
MRP Required:	No	Time Fence:	0	Inspect Req:	No	Order Quantity:	5
Plan Orders:	Yes	Safety Time:	0	Cumulative LT:	0	Yield Percent:	100.00%
Issue Policy:	Yes	Safety Stock:	0				

Category	Past	4/9/2012	4/16/2012	4/23/2012	4/30/2012	5/7/2012	5/14/2012
Gross Requirements	60	20	0	12	3	10	
Sched Receipts	0	0	5	0	0	0	
Projected QOH	18	-2	15	3	0	-10	
Plan Ords Due	54	0	12	0	0	0	
Plan Ords Rel	54	0	12	0	0	0	

QAD

Q9-PL-346

The information in MRP Summary Inquiry (23.13) is similar to the information shown in Master Schedule Summary Inquiry, but the MRP summary includes information about planned orders, which are MRP calculated. In general:

- The Master Schedule Summary Inquiry deals in more detail with demand, forecasts, and sales orders, and displays one row of supply: the Master Schedule.
- The MRP Summary Inquiry deals more with the supply orders, showing only one line of demand, the Gross Requirements. It then gives detail of when planned orders are due, must be released, and are scheduled for receipt.

Planned Orders Due are calculated to satisfy demand from sales orders, forecasts, and so on.

Planned Orders Release indicates when to release the planned orders to meet the due date. MRP calculates by backward scheduling from the due date, using the lead time and shop calendar information.

Once a planned order is released, it becomes a scheduled receipt and no longer appears on the Plan Ord Rel line but rather on the Sched Receipt line.

MRP Detail Inquiry: Item 01010

MRP Detail Inquiry: Item 01010



MRP Detail Inquiry

04/11/12

Item Number: 01010
Medical Ultrasound

Site: 10-100 Start Date: 04/11/12
Output: PAGE

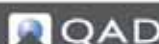
Item Number: 01010
Medical Ultrasound
Buyer/Planner: 1-01
Mstr Sched: Yes
MRP Required: No
Plan Orders: Yes
Issue Policy: Yes

Ord Pol: POQ
Order Period: 7
Time Fence: 0
Safety Time: 0
Safety Stock: 0

Qty on Hand: 24.0
UH: EA
Min Order: 1
Max Order: 5
Ord Mult: 1
Order Qty: 5
Yield%: 100.00%

Site: 10-100
Pur/Mfg: M
Wfg LT: 1
Pur LT: 0
Ins LT: 0
Inspect: No
Cum LT: 0

Due Date	Gross Rqqs	Sched Rcpt	Proj QOH	Plan Grds Details
			24	Beginning Available
04/12/12	5		13	SO: 10510000 Line: 1
04/12/12	15		-2	SO: 10510001 Line: 1
04/18/12		5	3	W/O: 1001 ID: 2326383
04/20/12			15	12 W/O: W0412028 ID: 2322964
04/25/12	2		13	Release Date 04/19/12 SO: S0041204 Line: 1
04/25/12	2		11	SO: S0041207 Line: 1
04/25/12	1		10	SO: S0041210 Line: 1
04/25/12	1		9	SO: S0041210 Line: 5
04/25/12	1		8	SO: S0041213 Line: 1
04/25/12	1		7	SO: S0041213 Line: 5
04/25/12	2		5	SO: S0041217 Line: 1
04/25/12	2		3	SO: S0041217 Line: 3
04/30/12	3		0	Forecast
05/07/12	10		-10	Forecast
05/19/12	15		-25	SO: 10510001 Line: 2
05/20/12			-4	21 W/O: W0512028 ID: 2324188 Release Date 05/19/12



Q9-PL-350

The MRP Detail Inquiry (23.16) shows information in the same format as the Master Schedule Detail Inquiry, but it shows scheduled receipts instead of master scheduled quantities.

Forecasts are done in weekly buckets. Because the system makes no assumption about when in the week the demand occurs, all orders to satisfy forecast are due on the first work day of the week.

MRP Summary Inquiry: Item 50001

MRP Summary Inquiry: Item 50001

MRP Summary Inquiry X
Run Export to Excel View as PDF

Item Number: 50001
Size: 15-100
Start Date: 4/9/2012
End Date:
Column Type: Week
Per Column: 1
Columns: 12

Item Number: 50001 Probe Unit - 10 MHz Size: 10-100
Qty on Hand: 88-0 EA Pur/Mfg: M Mfg LT: 0 Minimum Order: 0
Buyer/Planner: 1-02 Order Policy: POQ Purchase LT: 0 Maximum Order: 0
Master Schedule: No Order Period: 7 Mfg LT: 0 Order Multiple: 0
MRP Required: No Time Fence: 0 Inspect LT: 0 Order Quantity: 0
Plan Orders: Yes Safety Time: 0 Inspect Req: No Yield Percent: 100.00%
Issue Policy: Yes Safety Stock: 0 Cumulative LT: 0

Category	Past	4/9/2012	4/16/2012	4/23/2012	4/30/2012	5/7/2012
Gross Requirements	100	15	27	15	15	15
Sched Receipts	0	0	0	0	0	0
Projected QOH	52	37	23	8	-7	-22
Plan Order Due	63	0	13	0	0	0
Plan Order Rel	63	0	13	0	0	0

Q3-PL-368

This slide shows the MRP Summary Inquiry (23.13) for component 50001 (Probe Unit).

Discussion

Why does QMI need 27 probes in week 04/16? Do you remember when the sales order line was due on the order created earlier?

The MRP Detail Inquiry can provide an answer.

MRP Detail Inquiry: Item 50001

MRP Detail Inquiry 04/11/12

Item Number: 50001 Site: 10-100 Start Date: 04/10/12
 Probe Unit - 10 Mhz Output: PAGE1000

Item Number: 50001 Qty on Hand: 89.0 Site: 10-100
 Probe Unit - 10 Mhz UM: EA Pur/Mfg: M
 Buyer/Planner: 1-02 Ord Pol: POQ Min Order: 0 Mfg LT: 0
 Mstr Sched: No Order Period: 7 Max Order: 0 Pur LT: 0
 MRP Required: No Time Fence: 0 Ord Mult: 0 Ins LT: 0
 Plan Orders: Yes Safety Time: 0 Order Qty: 0 Inspect: No
 Issue Policy: Yes Safety Stock: 0 Yield%: 100.00% Cum LT: 0

Due Date	Gross Reqs	Sched Rcpt	Proj QOH	Plan Ords Details
04/10/12			52	Beginning Available
04/10/12	15		37	W/O: 10120003 ID: 2288626 Assem: 01040
04/17/12	15		22	W/O: 10250002 ID: 2296208 Assem: 01040
04/18/12			35	13 W/O: W0412020 ID: 2322956
04/19/12	12		23	Release Date 04/17/12 W/O: W0412028 ID: 2322964 Assem: 01040
04/24/12	15		8	W/O: 12130002 ID: 2299610 Assem: 01040
05/01/12	15		-7	W/O: 12130003 ID: 2299611 Assem: 01040
05/08/12	15		-22	W/O: 12130004 ID: 2299612 Assem: 01040
05/15/12	15		-37	W/O: 12130005 ID: 2299613 Assem: 01040

QAD Q9-PL-370

The MRP Detail Inquiry (23.16) for item 5001 shows the impact of new requirements for the parent end-item (01010). The system is planning work orders to assemble the probes for the orders that QMI created.

More orders for a component can become due for release earlier and for larger quantities than you expect because of a combination of factors:

- Sales orders are due in the middle of the week.
- Forecasts are due on Mondays.
- The lead time offset for assembly and purchase of components is combined.
- You must combine demands on one planned order because of the POQ policy.

MRP Summary Inquiry: Item 02003

MRP Summary Inquiry: Item 02003

MRP Summary Inquiry
Run
Export to Excel
View as PDF

Item Number: 02003
Site: 10-100
Start Date: 4/9/2012
End Date:
Column Type: Week
Per Column: 1
Columns: 12

Item Number: 02003 Standard Connector Site: 10-100

Qty on Hand: 0.0 EA Pur/Mfg: 0 Minimum Order: 100

Buyer/Planner: 1-02 Order Policy: FOG Mfg LT: 0 Maximum Order: 2,000

Master Schedule: No Order Period: 0 Purchase LT: 0 Order Multiple: 100

MRP Required: No Time Fence: 0 Inspect LT: 0 Order Quantity: 1,000

Plan Orders: Yes Safety Time: 0 Inspect Req: No Yield Percent: 100.00%

Issue Policy: Yes Safety Stock: 100 Cum LT: 0

Category	Past	4/9/2012	4/16/2012	4/23/2012	4/30/2012	5/7/2012
Gross Requirements	159	30	43	30	30	30
Sched Receipts	0	0	0	0	0	0
Projected QOH	-159	311	708	738	708	678
Plan Ords Due	0	1000	0	0	0	0
Plan Ords Pld	0	1000	0	0	0	0

Q9-PL-300

This MRP Summary Inquiry (23.13) shows the requirements and order schedule for the standard connector (item 02003).

The requirement to buy in cartons of 1000 makes it more difficult to see the connections between the lower-level component and the higher-level demand.

This is one reason why it is so important to get good planning data, plan well ahead of lead time requirements, and trust the system.

MRP Detail Inquiry: Item 02003

MRP Detail Inquiry: Item 02003



MRP Detail Inquiry

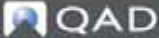
04/11/12

Item Number: 02003 Site: 10-100 Start Date: 04/11/12
Standard Connector Output: PAGE1000

Item Number: 02003 Qty on Hand: 0.0 Site: 10-100
Standard Connector UM: EA Pur/Mfg: 0

Buyer/Planner: 1-02 Ord Pol: F00 Min Order: 100 Mfg LT: 0
Mstr Sched: No Order Period: 0 Max Order: 2,000 Pur LT: 0
MRP Required: No Time Fence: 0 Ord Mult: 100 Ins LT: 0
Plan Orders: Yes Safety Time: 0 Order Qty: 1,000 Inspect: No
Issue Policy: Yes Safety Stock: 100 Yield%: 100.00% Cum LT: 0

Due Date	Gross Reqs	Sched Rcpt	Proj QOH	Plan Ords	Details
04/11/12			-189		Beginning Available
04/11/12			811	1,000	I/S: 08020077 Site: 10-200
					Release Date: 04/10/12
04/17/12	30		781		W/O: 10350002 ID: 2296208
					Assem: 01040
04/17/12	13		768		W/O: W0412020 ID: 2322956
					Assem: 50001
04/24/12	30		738		W/O: 12130002 ID: 2299610
					Assem: 01040
05/01/12	30		708		W/O: 12130003 ID: 2299611
					Assem: 01040
05/08/12	30		678		W/O: 12130004 ID: 2299612
					Assem: 01040



Q9-PL-390

MRP Detail Inquiry (23.16) for item 02003 shows the higher-level work orders for the medical ultrasound assembly that are creating the demand for the connectors and the effect of the order multiple of 1000.

MRP Summary Inquiry: Item 60003

MRP Summary Inquiry: Item 60003

MRP Summary Inquiry
Run
Export to Excel
View as PDF

Item Number: 60003
Site: 10-100
Start Date: 4/9/2012
End Date:
Column Type: Week
Per Column: 1
Columns: 12

Item Number:	60003	Keyboard	Site:	10-100			
Qty on Hand:	46.0 EA		Pur/Mfg:	P			
Buyer/Planner:	T-02	Order Policy:	POQ	Mfg LT:	1	Minimum Order:	20
Master Schedule:	Yes	Order Period:	7	Purchase LT:	5	Maximum Order:	1,000
MRP Required:	No	Time Fence:	0	Inspect LT:	0	Order Multiple:	1
Plan Orders:	Yes	Safety Time:	0	Inspect Req:	No	Order Quantity:	0
Issue Policy:	Yes	Safety Stock:	0	Cumulative LT:	0	Yield Percent:	100.00%

Category	Past	4/9/2012	4/16/2012	4/23/2012	4/30/2012	5/7/2012
Gross Requirements	102	15	27	15	15	15
Sched Receipts	63	13	0	0	0	0
Projected QOH	7	5	-22	-37	-32	-27
Plan Ords Due	0	0	0	0	20	20
Plan Ords Rat	0	0	0	20	20	25

QAD

Q3-PL-400

The MRP Summary Inquiry (23.13) for item 60003 (keyboard) shows an initial quantity on hand of 46. Since the keyboard is a purchased component, the detail inquiry shows a purchase order as a source of supply.

MRP Detail Inquiry: Item 60003

MRP Detail Inquiry: Item 60003

MRP Detail Inquiry
04/11/12

Item Number: 60003
 Keyboard

Site: 10-100 Start Date: 04/11/12
 Output: PAGE

Item Number: 60003
 Buyer/Planner: 1-02 Ord Pol: POQ
 Mstr Sched: Yes Order Period: 7
 MRP Required: No Time Fence: 0
 Plan Orders: Yes Safety Time: 0
 Issue Policy: Yes Safety Stock: 0

Qty on Hand: 46.0
 IM: EA Min Order: 20
 Max Order: 1,000
 Ord Mult: 1
 Order Qty: 0
 Yield%: 100.00%

Site: 10-100
 Pur/Mfg: P
 Mfg LT: 1
 Pur LT: 5
 Ins LT: 0
 Inspect: No
 Cum LT: 0

Due Date	Gross Reqs	Sched Rcpt	Proj QOH	Plan Ords	Details
04/11/12			-8		Beginning Available
04/14/12		13	5		PO: P0041205 Line: 1
04/17/12	15		-10		W/O: 20250002 ID: 2296208 Assem: 01040
04/19/12	12		-22		W/O: W0412078 ID: 2322964 Assem: 01010
04/24/12	15		-37		W/O: 12130002 ID: 2299610 Assem: 01040
05/01/12	15		-52		W/O: 12130003 ID: 2299611 Assem: 01040
05/01/12			-32	20	W/O: 08020111 ID: 2286399 Release Date 04/26/12
05/08/12	15		-47		W/O: 12130004 ID: 2299612 Assem: 01040

Q9-PL-410

MRP Detail Inquiry (23.16) for item 60003 shows a purchase order receipt scheduled this week for a quantity of 5.

Approve Planned Orders

The QMI planner uses Planned Purchase Order Approval (23.11) to approve MRP planned purchase orders.

When you approve the MRP planned purchase orders, the system converts these orders into purchase requisitions. The planner:

- Selected a range of item numbers that includes only the components of the medical ultrasound and only for the local site.
- Selected a range of dates that include any past due orders, but only looking a short time into the future. This limits the number of orders selected.
- Set Default Approve to Yes so all planned orders are selected for approval. If you do the selection by release date (for example all orders due for release today, a common way to use this function), then you would want to check Default Approve.

If you are unsure, you can leave Default Approve unchecked and approve the orders individually. When there are many planners, you usually select orders by buyer/planner code.

A review screen displays next.

Approve Planned Orders

Ln	Req	Item Number	Qty Ordered	Rel Date	Due Date	Appr
1	08020111	60003	20.0	4/26/2012	5/1/2012	☒
2	08020112	60003	20.0	5/3/2012	5/8/2012	☒
3	08020113	60003	25.0	5/10/2012	5/15/2012	☒
4	04110038	60003	37.0	5/17/2012	5/22/2012	☒
5	04110039	60003	20.0	5/24/2012	5/29/2012	☒
6	04110040	60003	20.0	5/31/2012	6/5/2012	☒
7	04110041	60003	20.0	6/7/2012	6/12/2012	☒
8	04110042	60003	34.0	6/14/2012	6/19/2012	☒
9	04110043	60003	20.0	6/21/2012	6/26/2012	☒
10	04110044	60003	20.0	6/28/2012	7/3/2012	☒

Ln: 0 Appr: ☐

The Appr box is already checked because Default Approved was checked in the previous selection screen. Clicking Next brings up a verification window for confirmation. Clicking Yes approves all orders, converting them into purchase requisitions. They are no longer planned orders.

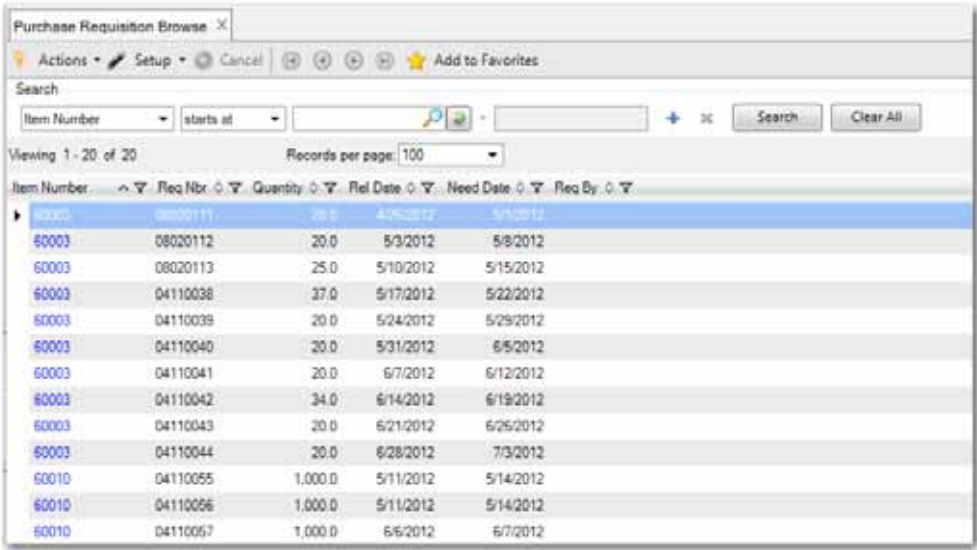
If more orders need approval than fit on one screen, clicking Next brings up the next ten orders for review. The system cycles through as many screens as necessary to display all the orders included with your selection criteria.

If you are manually selecting orders for approval, or if you need to change a particular order's selection, use the lower frame. Enter the line number of the order you want to change, then click Next to the Approval check box and check it or uncheck it, then click Next again.

A pop-up displays requesting confirmation of the approval. Clicking Yes approves all orders, converting them into purchase requisitions. They are no longer planned orders.

If more orders need approval than fit on one screen, clicking Next brings up the next ten orders for review. The system cycles through as many screens as necessary to display all the orders included with your selection criteria.

Review Purchase Requisition



Purchase Requisition Browse

Actions Setup Cancel Add to Favorites

Search

Item Number starts at Search Clear All

Viewing 1 - 20 of 20 Records per page: 100

Item Number	Req Nbr	Quantity	Rel Date	Need Date	Req By
60003	08020111	38.0	4/5/2012	5/1/2012	
60003	08020112	20.0	5/3/2012	5/8/2012	
60003	08020113	25.0	5/10/2012	5/15/2012	
60003	04110038	37.0	5/17/2012	5/22/2012	
60003	04110039	20.0	5/24/2012	5/29/2012	
60003	04110040	20.0	5/31/2012	6/5/2012	
60003	04110041	20.0	6/7/2012	6/12/2012	
60003	04110042	34.0	6/14/2012	6/19/2012	
60003	04110043	20.0	6/21/2012	6/26/2012	
60003	04110044	20.0	6/28/2012	7/3/2012	
60010	04110055	1,000.0	5/11/2012	5/14/2012	
60010	04110056	1,000.0	5/11/2012	5/14/2012	
60010	04110057	1,000.0	6/6/2012	6/7/2012	

QAD QS-PL-470

In Purchase Requisition Browse (5.1.5), you can see that the system has converted the planned purchase orders into purchase requisitions. Notice the Release Date and Need Date.

The Release Date is when the purchase order should be created and released to the vendor to ensure that the material arrives when it is needed (Need Date). The Release Date takes into account the purchase lead time and any internal purchase inspection lead time. The purchase lead time is determined in consultation with the vendor and makes allowance for transport time.

Create Purchase Order

Create Purchase Order

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Header Details Tax Info Logistics Delivery ERS Consignment Comments

Header

Purchase Order: P1010004 Supplier: 1051002 Ship-To: 10-100

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

Ship To: QMI -USA Division 30 Ridgedale Avenue East Hanover NJ 07950 USA - TAX PURPOSE

Details

Order Date: 04/12/12 Price Tbl: Disc Tbl: Confirming: ☒ Imp Exp: ☐

Due Date: 4/11/2012 Disc Tbl: 0.00 Currency: USD Language: us

Buyer: 3-02 Ln Disc: 0.00 Taxable: ☒ Fixed Price: ☒ Consign: ☐

Bill To: 10-100 Site: Daybook Set: 10PURCH Credit Terms: 300 0.00

Sales/Job: Contract: Project: Entered By: mfg

Contact: Requested By:

Remarks: Comments:

QAD Q9-PL-460

The QMI buyer now creates a purchase order to buy the required components based on the requisitions created from the MRP planned orders.

The purchase order is created in Purchase Order Maintenance (5.7) using the same basic procedure that was shown in the chapter on Purchasing. However, in this case, the line items are created from requisitions rather than entered manually, which requires a few adjustments to the process.

When creating a PO from requisitions, leave the Due Date field on the PO header blank. This ensures that the line item due dates default from the requisition due date, not the PO header due date. This means that each line item can have a different due date, based on the requisition need date.

Add Purchase Order: Line 1 (60003)

Add Purchase Order: Line 1 (60003)

Purchase Order Maintenance

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P1010004 Supplier: 1051002 Ln Format S/M: Single

Lines

Ln	Site	Req	Item	Qty Ordered	UM	Unit Cost	Disc%
1	10-100			0.0		0.00	0.00

Line Details

Qty Received: Due Date: CRT Int:

Qty to Rel: P/O Acct:

Single Lot ☐ Performance Date: Project:

Location: Need Date: Type:

Item Revision: Sales/Job: Taxable ☐

Status: Fixed Price ☐ Inspect Req ☐ Cmnts:

Supplier Item: UM Conversion:

Manufacturer: Stock UM Quantity:

Description: Update Avg/Last Cost ☐

Extended Net Cost:

QAD QS-PL-496

To create a line, the buyer only needs to enter the requisition number for the item (using the lookup) and the remaining fields are filled in based on the requisition. Using the requisition lookup, double-click the requisition number to add it to the PO. Then click Next until you cycle back to the line number field for the next item.

Note Once a requisition is added to a PO, the requisition record is deleted. It now exists only as purchase order line item.

Add Purchase Order: Line 1 (60003) 2

Add Purchase Order: Line 1

Purchase Order Maintenance

Go To • Actions • Copy • Print • Preview • Attach •

Header Lines Trailer

Lines Line Details Tax Info Comments

Header

Purchase Order: P1010004 Supplier: 1051002 Ln Format SM: Single

Lines

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
10-100		04110038	60003	37.0	EA	55.00	0.00

Line Details

Qty Received: 0.0 Due Date: 4/11/2012 CRT Int: 0.00
Qty to Rel: 0.0 Pur Acct: 6610 Mech: ADM
Single Lot: ☐ Performance Date: 4/11/2012 Project:
Location: 000 Need Date: 5/22/2012 Type:
Item Revision: Sales/Job: Taxable: ☐
Status: Fixed Price: ☐ Inspect Req: ☐ Cmnts: ☐
Supplier Item: UM Conversion: 1.0000
Manufacturer: Stock UM Quantity: 37.0 EA
Description: Keyboard Update Avg/Last Cost: ☐
Extended Net Cost: 2,035.00

Q9-PL-500

Line 1 for item 60003 is shown here; the data defaults into the PO line from the requisition. If buyers have authority, they can override the requisition information and manually adjust the PO line item quantities, due date, or cost and discount. Buyers often, for example, have authority to increase the line item quantity slightly in order to get a quantity discount.

The buyer adds two more requisitions to the order before exiting the lines to complete the trailer.

Add Purchase Order: Trailer

Add Purchase Order: Trailer

Purchase Order Maintenance X

Go To Actions Copy Print Preview Attach

Header Lines Trailer

Trailer Tax Info Trailer Information

Header

Purchase Order: P1010004 Supplier: 1051002 Ship-To: 10-100

Trailer

Non-Taxable:	4,235.00	Currency: USD	Line Total:	4,235.00
Taxable:	0.00		Total Tax:	0.00
Tax Date: 4/11/2012			Total:	4,235.00

View/Edit Tax Detail

Trailer Information

Order Revision: 0

Order Rev Date: Amount Prepaid: 0.00

Print PO: ☒ Status:

EDI PO: ☐ Close Date:

FOB:

Deliver To: Ship Via: PER INSTRUCTIONS

QAD Q9-PL-540

The trailer frame displays the total value of the order and completes the purchase order.

Receive Purchase Order

Receive Items

Purchase Order Receipts X

Go To • Actions • Copy • Print • Preview

Order: p1010004 Supplier: 10S1002 Status: Effective: 4/12/2012

Packing Slip: Move to Next Operation: ☒

Receiver: Bridgeville Industries **Receive All: ☒** Comments:

Purchase Order Receipts X

Go To • Actions • Copy • Print • Preview

Order: P1010004 Supplier: 10S1002 Status: Packing Slip:

Ln	Item Number	UM	Qty Open	UM	Receipt Qty	UM	Project	Due Date	T
1	60003	EA	37.0	EA	37.0	EA		4/11/2012	
2	60003	EA	20.0	EA	20.0	EA		4/11/2012	
3	60003	EA	20.0	EA	20.0	EA		4/11/2012	

QAD QS-PL-550

In Purchase Order Receipts (5.13.1), the receiving clerk checks Receive All since the purchase order has been shipped complete. This sets up the receipt for simplified processing. If the vendor has provided a packing slip with a reference number, the number can be entered.

Next displays a screen with all the receiving data pre-filled. Click Next to proceed and click Yes when prompted to display the details about the receiving transactions about to complete. The details include the default inventory location where the system expects the material to be placed. If all is correct click Next.

You can use Inventory Detail by Item Browse (3.2) to review the current inventory balances of the component items after the receipt.

Review Planned Order Report or Browse

Planned Order Report or Browse

The screenshot shows the 'Planned Order Browse' window in QAD. It features a search bar at the top with fields for 'Item Number' and 'starts at', along with 'Search' and 'Clear All' buttons. Below the search bar, it indicates 'Viewing 1 - 100 of 652' records, with a 'Records per page' dropdown set to 100. The main area is a table of planned orders.

Item Number	Site	Work Order	ID	Buyer/Planner	Purchase/Manufacture	Qty Ordered	UM	Rel Date
01010	10-100	04110002	2326386	1-01	M	22.0	EA	5/24/2012
01010	10-100	04110003	2326387	1-01	M	5.0	EA	6/1/2012
01010	10-100	04110004	2326388	1-01	M	5.0	EA	6/8/2012
01010	10-100	04110005	2326389	1-01	M	12.0	EA	6/22/2012
01010	10-100	04110006	2326390	1-01	M	3.0	EA	6/29/2012
01010	10-100	04110007	2326391	1-01	M	5.0	EA	7/6/2012
01013	10-100	04110037	2326404	1-03	P	1,000.0	BX	6/22/2012
01025	10-100	04110008	2326392	1-01	M	9.0	EA	6/6/2012
01030	10-100	08020029	2286330	1-01	M	50.0	EA	4/9/2012
01030	10-100	08020030	2286331	1-01	M	25.0	EA	4/26/2012
01030	10-100	08020031	2286332	1-01	M	25.0	EA	5/10/2012
01030	10-100	08020032	2286333	1-01	M	25.0	EA	5/31/2012
01030	10-100	08020033	2286334	1-01	M	25.0	EA	6/14/2012
01030	10-100	09070005	2288191	1-01	M	25.0	EA	7/5/2012

The QAD logo is visible in the bottom left corner, and the text 'Q9-PL-590' is in the bottom right corner.

The QMI planner and buyer have handled the planned purchase orders. Next, the planner focuses on the manufacturing orders.

The production control planner checks the Planned Order Report (23.12) or Browse (23.9) to see a list of the orders that MRP has planned but that are not firm planned yet. Once approved, MRP planned orders become firm planned orders. Remember, MRP cannot replan firm planned orders, so you do not want to approve MRP planned orders until you are ready to release them.

Note MRP planned purchase orders, when approved, become purchase requisitions. MRP planned work orders, when approved, become firm planned orders.

The Planned Order Browse shows both manufactured and purchased item planned orders. Note the M, P, or L in the Purchase/Manufacture column.

For this example, the planner decides to release the first planned order.

Approve Planned Work Orders

Approve Planned Work Orders

Planned Work Order Approval

Go To • Actions • Copy • Print • Preview • Attach •

Item Number: 01010 To: 01010

BOM Formula: To:

Site: 10-100 To: 10-100

Release Date: To:

☒ Default Approve

☐ Buyer Planner

☐ Include Phantom

☐ Include Kanban Replenished Items

☐ Include Line Manufactured Items

☐ Include Purchased Items

QAD QS-PL-600

The planner uses Planned Work Order Approval (23.10) to approve the MRP planned order. The planner has deselected Default Approve.

Note You can also choose orders by planner code or release date to limit the items displayed.

Planned Work Order Approval: Line 1

Planned Work Order Approval: Line 1

Ln	Work Order	ID	Item Number	Qty Ordered	Rel Date	OK
1	04110002	2326386	01010	22.0	5/24/2012	☐
2	04110003	2326387	01010	5.0	6/1/2012	☐
3	04110004	2326388	01010	5.0	6/8/2012	☐
4	04110005	2326389	01010	12.0	6/22/2012	☐
5	04110006	2326390	01010	3.0	6/29/2012	☐
6	04110007	2326391	01010	5.0	7/6/2012	☐

Ln	Work Order	ID	Item Number	Qty Ordered	Rel Date	OK
1	04110002	2326386	01010	22.0	5/24/2012	☐

QAD QS-PL-610

Because Default Approve was unchecked in the first frame of Planned Work Order Approval (23.10), the OK check box defaults to unchecked. After reviewing the list, the planner approves specific orders by entering the line number displayed in the upper window into the Ln field of the lower frame, clicking Next, and checking OK by clicking the cursor in the box.

Clicking Next moves the check mark to the upper window and clicking it again displays a confirmation message.

Planned Work Order Approval: Line 1

Planned Work Order Approval: Line 1

Planned Work Order Approval

Go To Actions Copy Print Preview Attach

Ln	Work Order	ID	Item Number	Qty Ordered	Rel Date	OK
1	04110002	2326386	01010	22.0	5/24/2012	☒
2	04110003	2326387	01010	5.0	6/1/2012	☐
3	04110004	2326388	01010	5.0	6/8/2012	☐
4	04110005	2326389	01010	12.0	6/22/2012	☐
5	04110006	2326390	01010	3.0	6/29/2012	☐
6	04110007	2326391	01010	5.0	7/6/2012	☐

Is all information correct

Yes No

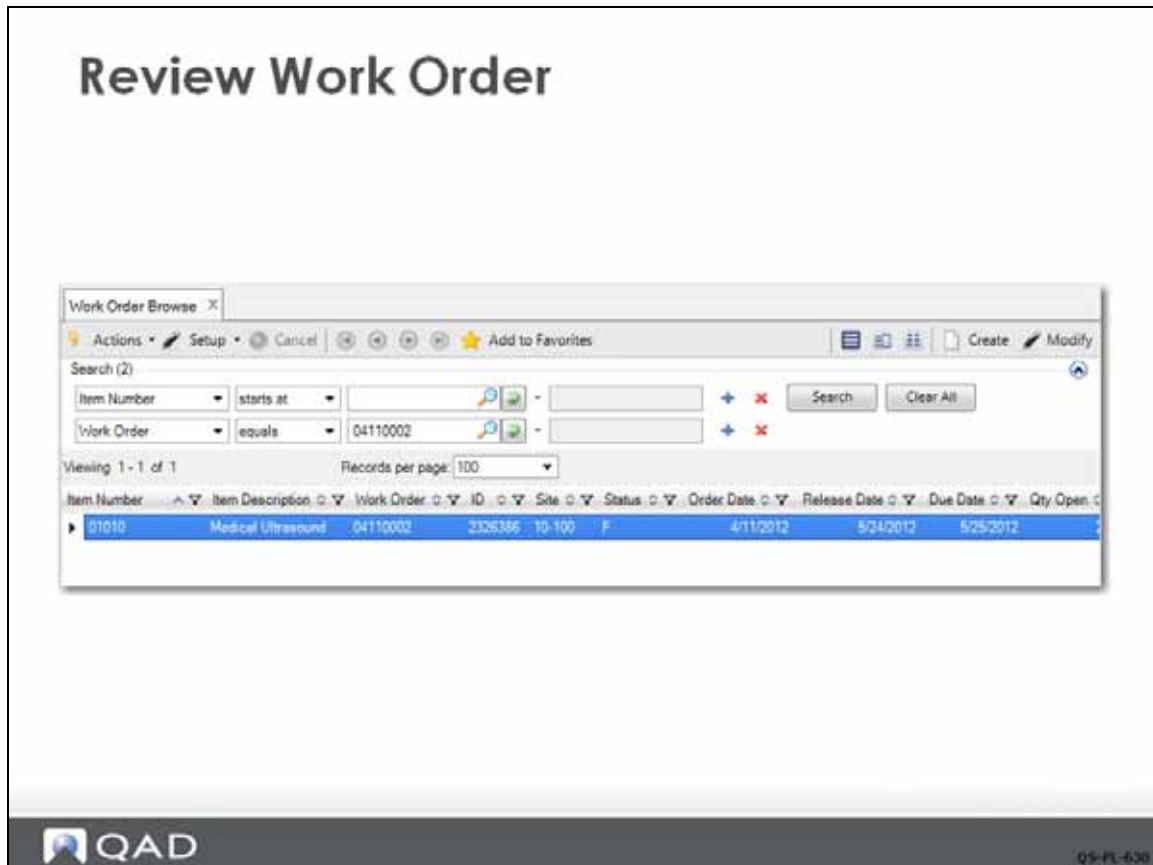
Ln	Work Order	ID	Item Number	Qty Ordered	Rel Date	OK
0						☐

QAD

Q9-PL-628

Clicking Yes to the confirmation approves the planned order and makes it Firm Planned. When an order is firmed, you can no longer see it in Planned Work Order Browse.

Review Work Order



In this example, the planner uses Work Order Browse (16.2) to review work orders for item 01010 at site 10-100.

Since there are many orders, the planner adds another search criteria to the browse and searches for the specific order he just approved (04110002), which now has a status code of F (firm planned). This means that it is no longer under MRP control.

Note the different numbering scheme for MRP planned orders compared to the manually created order created earlier. The manually created order has a sequential number assigned from the counter in Work Order Control. The MRP orders have a date-coded sequential number.

Verify Availability of Components

Verify Availability of Components

Work Order Component Check
04/12/12

Work Order 04110002	ID	Component Item	Short Only No	Output PAGE
Component Item	Qty Req UM	On Hand	Qty Alloc	Qty Short
50001	22.0 EA	89.0	0.0	0.0
Probe Unit - 10 Mhz	10-100	22.0 EA	777.0	0.0
60001	22.0 EA	135.0	0.0	0.0
Durable Plastic Housing	10-100	22.0 EA	123.0	0.0
60002	22.0 EA	1,209.0	0.0	0.0
Display / Readout	10-100	22.0 EA	125.0	0.0
60003	22.0 EA	771.0	0.0	0.0
Keyboard	10-100	22.0 EA	235.0	0.0
60005	22.0 EA	183.0	0.0	0.0
Battery	10-100	22.0 EA	545.0	0.0
60006	22.0 EA			
Monitor Cable	10-100			
60007	22.0 EA			
Movable Cart	10-100			
60008	22.0 EA			
Printer	10-100			
60050	22.0 EA			
Base Unit / CPU	10-100			
90093	22.0 EA			
Shipping Carton	10-100			

16.3.18
Work Order Component Check
www.qcc.p

QAD

QS-PL-648

QMI's production activity control (PAC) manager uses Work Order Component Check (16.3.18) to verify the availability of components in inventory.

By default, this utility shows only those components that are short of the requirement for this order.

In the selection screen, you enter the specific work order you want to check. If you uncheck the Short Only box, you see the display pictured here, which shows the specific quantities required for this order and the quantity on hand. In this example, each component has a sufficient quantity.

Release Work Order

Release Work Order

Work Order Release/Print X

Go To Actions Copy Print Preview Attach

Work Order: 04110002
ID: 2326306
Batch:
Print Picklist: ☒
Print Routing: ☒
Print Co/By-Products: ☒

Deliver To:
Print Bar Code: ☐
Operation: ☒
Update Release Date: ☐

Item Number: 01010
Medical Ultrasound
Quantity Ordered: 22.0
Quantity Completed: 0.0
Sales/Job:
Remarks:

Release Date: 5/24/2012
Work Order Due Date: 5/25/2012
Work Order Status: F
Supplier:

Output:
Batch ID:

QAD Q9-PL-650

The PAC manager releases the work order using Work Order Release/Print (16.6). Note the print selection options that have been chosen. Set the Output field to Page to view the result of releasing the work order.

Work Order Release/Print: Picklist

Work Order Release/Print

Work Order Release/Print
10USA

04/12/12 00:37:21
Page:2

Work Order Picklist

Work Order: 04110002
 ID: 2326386
 Batch:
 Item Number: 01010
 Remarks: Medical Ultrasound
 Qty Ordered: 22.0 EA

Issue Date: 05/24/12
 Rev: 0
 Work Order Due Date: 05/25/12
 Sales/Job:
 Deliver To:

Item Number	Rev	Site Location	Lot/Serial Ref	Required Qty to Issue	UM	Issued
*** Continued ***						
50001		020	50001-1011-2	1.0	()	
		020	50001-1011-3	1.0	()	
		020	50001-1011-4	1.0	()	
		020	50001-1011-5	1.0	()	
		020	50001-1011-6	1.0	()	
60001		10-100		22.0	EA	
Durable Plastic Housing		020		22.0	()	
60002		10-100		22.0	EA	
Display / Readout		020		22.0	()	
60003		10-100		22.0	EA	
Keyboard		020		22.0	()	

Q5-PL-660

This slide shows the hard-copy work order picklist. This document would be routed to the stock room so the stock clerk can use it to issue the components to the work order.

Work Order Release/Print: Routing

Work Order Routing



Work Order Release/Print
10USA

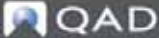
04/12/12 00:37:21
Page:5

Work Order Routing

Work Order: 04110002
 ID: 2326386
 Batch:
 Item Number: 01010
 Remarks: Medical Ultrasound
 Qty Ordered: 22.0 EA

Rev: 0
 Work Order Due Date: 05/25/12
 Sales/Job:
 Deliver To:

Op	Work Center	Std Op	Tooling Supplier	Setup Time	Run Time	Actual	By
10	1000 Mach: 1001 General Assembly-Ultra			5.0			()
	ASSEMBLE COMPONENTS			220.0			()
20	1050 Mach: 1001 Product Test-Ultra			2.0			()
	TEST FINISHED UNIT			110.0			()
30	1060 Mach: 1001 Packaging -Ultra			0.5			()
	PACK FOR SHIPPING			44.0			()


Q9-PL-670

This screen shows the work order routing, which would be sent with the components to the work center of the first operation and each subsequent operation.

Note It is not necessary to print hard-copy documents. Many companies manage production in a paperless fashion. The system knows what components are required for each order, so the stock room can do an electronic transaction to issue the parts. In the same manner, the shop floor control system knows each operation in each work center for the work order and reporting can be done with any terminal.

Issue Work Order Components

Issue Work Order Components

Work Order Component Issue

Go To • Actions • Copy • Print • Preview • Attach •

Work Order: 04110002 ID: 2326386 Op: Effective: 4/12/2012
 Item Number: 01010 ST: R Issue Alloc: ☐
 Medical Ultrasound Issue Picked: ☒
 Document:

Item Number	Qty Open	Qty Alloc	Qty Picked	Qty to Iss	Qty
50001	22.0	0.0	22.0	22.0	
60001	22.0	0.0	22.0	22.0	
60002	22.0		22.0	22.0	

Display items being issued
 Yes No

Item Number: Op: Site: Loc:
 Description: Lot/Serial:
 Quantity: U/M: Reference:
 Substitute: ☐ Cancel B/O: ☐ Multi Entry: ☐
 Document:

QAD QS-PL-660

The stock clerk issues the components using Work Order Component Issue (16.10). By checking Issue Picked in the header frame, the system pre-fills the transaction fields with the information from the work order picklist created in the previous step.

Click Yes to Display Items being Issued so you have an opportunity to verify that the correct items are being issued from the correct locations in the correct quantities. Then click Yes again when prompted to confirm the transaction and issue the components.

Report Labor

Report Labor

Labor Feedback by Work Order

Go To Actions Copy Print Preview Attach

Work Order: 04110002 ID: 2326386
 Operation: 30 PACK FOR SHIPPING Op Status: QUEUE
 Document:
 Employee: 10-emp01 Alex Erikson Pay Code:
 Department: 0550 Work Center: 1060 Time Ind: Hours Minutes
 Shift: Machine: 1001 Project:

Quantity Completed: 22.0 Effective Date: 4/12/2012

Rejects
 Rework

Start Setup: 00:00:00
 Elapsed/Stop Setup: 00:00:00 Elapsed Setup: 0.000
 Start Run: 00:00:00
 Elapsed/Stop Run: 00:00:00 Elapsed Run: 0.000

Operation Complete: ☒
 Move to Next Operation: ☒
 Previous Ops Complete: ☒

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

QAD Q9-PL-690

On the shop floor, Angela (employee 10-EMP01) uses Labor Feedback by Work Order (16.20.1) to report the labor for completing the 22 medical ultrasound units. Operation 30, shown here, is the last operation.

Each operation was recorded with Operation Complete selected. This means that no intermediate reporting was done. Move Next Operation was selected, which set the status at the next operation to Queue. Previous Operations Complete was selected just to ensure that all operations were closed in case anyone forgot to report it.

Discussion

Where were the standard setup and run times defined?

Receive and Close Work Order

Work Order Receipt

Work Order: 04110002 ID: 2326386 Effective: 4/12/2012

Remarks: Batch:

Item Number: 01010 Lot/Serial Control: S UOM: EA

Description: Medical Ultrasound W/O Stat: R

Open Quantity: 22.0 Automatic Lot Numbers: ☐

Document:

Quantity: 22.0 Site: 10-100

UOM: EA Location: 010

Conversion: 1.0000 Lot/Serial:

Scrapped Qty: 0.0 Reference:

UOM: EA Multi Entry: ☒

UOM Conversion: 1.0000 Set Attributes: ☐

Total Units: 22.0

Remarks:

Close ☒

QAD QS-PL-700

Using Work Order Receipt (16.11), the Finished Goods Inventory personnel receive the 22 units of 01010 and close the work order.

Note the check mark in Multi-Entry. The medical ultrasound is a serial number controlled item so each of the 22 units must be received individually. To streamline this, you can enter the first serial number and the system generates a sequence of 21 more numbers for you.

After completing this, the clerk selects the Close box. This indicates that the work order is complete and closed from a manufacturing standpoint. To do a partial receipt, enter the quantity being received into inventory and leave the Close box unchecked. This leaves the work order status R (Released) and open to receive the balance of the items at a latter time.

Clicking Next displays a prompt to review; clicking Next again displays a confirmation.

Review MRP Summary

Review MRP Summary

MRP Summary Inquiry X

Run Export to Excel View as PDF

Item Number: 01010 Site: 10-100 Start Date: 4/5/2012 End Date: Column Type: Week Per Column: 1 Column: 12

Item Number: 01010 Medical Ultrasound Site: 10-100

Qty on Hand: 46.0 EA

Buyer/Planner: 1401 Order Policy: POQ Pur/Mfg: M Mfg LT: 1 Minimum Order: 1

Master Schedule: Yes Order Period: 7 Purchase LT: 0 Maximum Order: 5

MRP Required: Yes Time Fence: 0 Inspect LT: 0 Order Multiple: 1

Plan Orders: Yes Safety Time: 0 Inspect Req: No Order Quantity: 5

Issue Policy: Yes Safety Stock: 0 Cumulative LT: 0 Yield Percent: 100.00%

Category	Past	4/8/2012	4/15/2012	4/23/2012	4/30/2012	5/7/2012
Gross Requirements	60	20	0	12	3	
Sched Receipts	0	0	5	0	0	
Projected QOH	40	20	37	25	22	
Plan Ords Due	54	0	12	0	0	
Plan Ords Rel	54	0	12	0	0	

QAD QS-PL-710

A quick review of the MRP Summary Inquiry (23.13) for item 01010 shows a much more balanced situation. Previous quantity on hand was 24 and now 46 items are on hand. None of the weeks show a projected negative quantity on hand, which means there is enough inventory to meet orders.

Ship Items on Sales Order

Allocate Items to Sales Order

Sales Order Manual Allocations
X

Go To ▾
Actions ▾
Copy ▾
Print
Preview
Attach ▾

Order	Sold-To	Site	
10510001	10C1003	Pacific Health Care Systems	10-100

Ln	Item Number	T	Qty Allocated	Qty Picked	Qty B/O	Due Date
1	01010		15.0	0.0	0.0	4/12/2012
2	01010		0.0	0.0	15.0	5/19/2012

Ln	Item Number	T	UM	Qty Allocated	Qty Picked	Detail Allocations

Q9-PL-740

QMI's sales department has received the authorization from the customer to ship the first line (quantity of 15) on their sales order 10210001. Sales Order Control has been set to allocate orders 10 days before the shipment due date. In order to complete the shipment, 15 units of inventory (01010) need allocation to the sales order.

The system lets you do this in several ways:

- Edit the order in Sales Order Maintenance and set Detail Allocations to Yes. It can be time-consuming to navigate all of the frames in the maintenance program.
- Create manual allocations with Sales Order Manual Allocations (7.1.6), shown here. These can be general or detail.
- Print a packing list and set Update to Yes. These allocations are always detailed and can include serial numbers.

Print Packing List

Print Packing List

Sales Order Packing List Sales Order Packing List - 4/11

Go To Actions Copy Print Preview Attach

Due Date: To:

Sales Order: 10S10001 To: 10S10001

Ship-To: To:

Language ID: To:

Site: To:

Entity Code: 10-100

Print Only Lines to Pick: ☒

Override Partial OK Flag: ☐

Print Features and Options: ☐

Print Negative Quantities: ☐

Form Code: 1

Update: ☒

QAD Q9-PL-750

After creating the general allocations to the sales order line, print a packing list with Sales Order Packing List (7.9.13) to create detail allocations. Make sure that the Update check box is selected.

The picklist can be used to pick the items from inventory for shipment and can then be included with the shipment as a packing list. Alternatively, if you need a hard copy for internal purposes, you can use two copies of the packing list.

Ship Sales Order

Ship Sales Order

Sales Order Shipments

Go To Actions Copy Print Preview

Order: 10S10001 Ship Allocated: ☐ Sold-To: 10C1003 Site:
 Effective: 4/12/2012 Ship Picked: ☒ Pacific Health Care Systems
 Document:

Sales Order Line Items

Ln	Item Number	T	Qty Alloc	Qty Picked	To Ship	Backorder	Site
1	01010		0.0	15.0	15.0	0.0	10-100
2	01010		0.0	0.0	0.0	15.0	10-100

Line: Cancel B/O: ☐ Site: Loc:
 Quantity: Lot/Serial:
 Item Number: UM: Reference: Multi Entry: ☐
 Description:

QAD QS-PL-770

With the packing list in hand, the QMI shipping department, pulls the inventory, packs it for shipment, and processes the shipment transaction using Sales Order Shipments (7.9.15). Notice that the second line of the order has not been allocated and the 15 items on it display in the Backorder column. All of the items on line 1 are ready to ship.

The sales clerk continues to click Next and respond Yes when prompted to complete the transaction. The sales order remains open since not all of the items have shipped.

Invoice Post and Print										
10USA										
04/12/12 02:00 PM										
Sales Journal Reference: 2012/CINV000000002 AR Batch: 655										
Invoice Number		Bill To Name			Sold-To Name			Slgspsn		
2012/CINV000000002		10C1003 Pacific Health Care Systems			10C1003 Pacific Health Care Systems			10SP01		
Sales Order: 10S10001 Ship-To: 10C1003 Pacific Health Care Systems Order Date: 04/11/12 PO:										
Ln	Item Number	UM	Sales	Sub-Acct	CC	Invoiced Backorder	Tax	Price	Extended Price	Extended Margin
1	01010 Medical Ultrasound	EA	4010	mech	ADM	15.00.0	No	2,500.00	37,500.00	10,418.23
Non-Taxable: 37,548.57		Currency: USD		Line Total:		37,500.00				
Taxable: 0.00		0.00%		Discount:		0.00				
Tax Date: 04/12/12				Freight 30 :		48.17				
Containers: 0.00				Freight 20 :		0.00				
Line Charges: 0.00				Special 30 :		0.00				
				Total Tax:		0.00				
				Total:		37,548.17				
Sales Journal Reference: 2012/CINV000000002 AR Batch: 655										
Consolidated Dr Consolidated Cr										
10USACO	1300	Gserv		04/12/12	37,548.57		.00	Invoice	2012/CINV000000002	
10USACO	4010	mech	ADM	04/12/12	.00	37,500.00		Invoice	2012/CINV000000002	
10USACO	4691			04/12/12	.00	48.17		Invoice	2012/CINV000000002	
					37,548.57	37,548.57				
					37,548.57	37,548.57				

Review the output of Invoice Post and Print by directing it to Page and viewing it on your monitor.

Exercise 9

Balance and Order Quantity Values

Use the accompanying table to determine in which periods orders are required and for what quantities. Assume no on-hand inventory exists. For example, looking at period 1 and its demand, the correct entry for LFL is 25. Looking at POQ 2 Periods, the correct entry is 55.

Order Policy and Modifier

Period	1	2	3	4	5	6	7	8	9	10
Demand	25	30	20	35	25	30	25	35	30	25
LFL	25									
FOQ = 35										
POQ 2 Periods	55									
POQ 2 Periods Min Qty = 60										
POQ 2 Periods Multi Qty = 25										

Enter a Forecast for Parent Item

Note This exercise uses different quantities than the prior examples provided in the text.

- 1 Open Forecast Worksheet Maintenance (22.2) to enter a forecast for parent item 01010 at site 10-100 for the next five weeks.
- 2 Make the following selections:

Field	Data
Item Number	01010
Site	10-100
Year	Accept the default (the current year)

- 3 Click Next until you are at the current week.
- 4 Enter a weekly forecast of 20 for each of the next five weeks.
- 5 Be sure to continue through all the frames. Only 13 weeks are displayed at a time. The next few frames contain weeks 14 through 26, weeks 27 through 39, and weeks 40 through 52.

Define Control Setting for Forward/Back Forecast Consumption

- 6 Open Sales Order Control (7.1.24) to enter values that affect forecast consumption.
- 7 Accept all defaults and click Next until you reach the Consume forward and Consume Back fields.

- 8 Make the following entries:

Field	Data
Consume Forward	10
Consume Back	10
SO Edit ISB Defaults	Unchecked (no)

Setting SO Edit ISB Defaults to No avoids unnecessary pop-ups in Sales Order Maintenance.

Enter a Sales Order

- 9 Open Sales Order Maintenance (7.1.1) to enter a sales order with three lines.

- 10 Write down the order number here for later reference: _____

- 11 In the header, accept all defaults except for the following:

Field	Data
Sold-To	10C1003
Bill-To	10C1003
Ship-To	10C1003

Line 1

Field	Data
Item	01010
Site	10-100
Quantity	20
Due Date	7 days from today
Consume Forecast	Yes

Line 2

Field	Data
Item	01010
Site	10-100
Quantity	20
Due Date	14 days from today
Consume Forecast	No

Line 3

Field	Data
Item	01010
Site	10-100
Quantity	20
Due Date	21 days from today
Consume Forecast	Yes

- 12 At line 4 click End Lines. Click Trailer. Click Next. Enter your initials in CR Initials. Click Next, then Back.

Review Forecast

- 13** Open Forecast Worksheet Maintenance (22.2) to review the forecast for item 01010. Notice that sales of the first 20 consumes forecast. Sales of second 20 does not consume any forecast.

Review Master Schedule Summary

- 14** Open Master Schedule Summary Inquiry (22.18) to review item 01010 at site 10-100.
- 15** Make the following entries:

Field	Data
Item	01010
Site	10-100
Start Date	Monday of the current week
Column Type	W (weekly)
Per Column	1

- 16** Click Run.
- 17** The display screen has two sections. In the top section, locate the following fields and record the values:
- QOH (quantity on hand): _____
- MRP Required: Yes/No _____
- Plan Orders: Yes/No _____
- Order Policy: _____
- 18** Review the bottom frame. Notice forecast amounts, sales order amounts, projected QOH, available to promise (ATP), and cumulative ATP.

Review Planning Data and Run Regenerate MRP

- 19** Open Item Planning Maintenance (1.4.7) to review planning data for item 01010. Add the following data if necessary:

Field	Data
Order Policy	POQ
Order Period	7
Order Quantity	20
Manufacturing Lead Time	System calculation
Order Multiple	1

- 20** Open Regenerate Materials Plan (23.2) for site 10-100.
Enter your initials in the printer field; there is no output.
- 21** Open Master Schedule Summary Inquiry (22.18) to review item 01010 at site 10-100.
Make sure that the master schedule meets the forecast demand of parent item 01010.

22 Open Master Schedule Detail Inquiry (22.21).

What information does it provide that the Master Schedule Summary Inquiry did not provide?

Review Action Messages and Approve Planned Orders**23** Open MRP Summary Inquiry (23.13) to review parent item 01010 and component items such as 60017 and 60018 at site 10-100.**24** Open MRP Detail Inquiry (23.16) to review parent item 01010 and component items such as 60017 and 60018 at site 10-100.**25** Open Action Message Browse (23.6) to review each of the items.**26** Open Planned Purchase Order Approval (23.11) to approve any MRP-planned work orders based on Action Message Browse.

Field	Data
Item Number	<blank>
Site	10-100 to 10-100
Release Date	<blank> to today's date or end of the week
Default Approve	Yes

Approve orders. The pop-up confirmation window displays. Click Yes.

27 Open Purchase Requisition Browse (5.1.5) to check for items 60017 and 60018 to ensure that planned orders have been changed to purchase requisitions.**Exercise 10**

In the following exercise, you go through the basic processing functions and see how they affect planning. During this exercise, you:

- Add purchase orders (POs) using purchase requisitions and receive them.
- Release MRP-approved work orders, issue components, report labor, receive, and close work orders.
- Add, ship, and invoice a sales order.

Add and Receive Purchase Orders (Using Requisitions)**1** Open Purchase Order Maintenance (5.7) to add a purchase order with each of the component items (60017 and 60018) on a purchase order line.

Header information:

Field	Data
Purchase Order	Use default (system generated)
Supplier	10S1002
Due Date	<blank>

On the line, in the Req (requisition) field, use your look-up browse to select a requisition for each item.

Update and exit.

- 2 Open Purchase Order Receipts (5.13.1) to receive your purchase order.

Approve Planned Work Orders

- 3 Open Planned Order Browse (23.9) to view MRP-planned orders that need your approval. Approve the first order. Write down the number of this order for reference here:
_____.

- 4 Open Planned Work Order Approval (23.10) to approve the work order you noted in the previous step.

Field	Data
Item Number	01010
Site	10-100
Release Date	<blank>
To	Release date of work order to approve based on information from Planned Order Browse in previous step

- 5 Open Work Order Browse (16.2) to see if the status of the planned order changed from P (Planned) to F (Firm Planned) when you did the approval.

Issue Components, Report Labor, Receive, and Close

- 6 Open Inventory Detail by Site Browse (3.3) to verify the availability of components in inventory for site 10-100.
- 7 Open Work Order Release/Print (16.6) to release your firm-planned order. Locate the work order by using the lookup. Accept all default values.
- 8 Open Work Order Component Issue (16.10) to issue components to your work order.
- 9 Open Labor Feedback by Work Order (16.20.1) to report labor against your work order. Use an employee from the pull down menu and report standard setup and run time for all operations (10, 20, and 30) for your work order quantity.

Important Time Ind = Decimal Hours

You can view standard times on the work order routing that was printed when the order was released.

- 10 Open Work Order Receipt (16.11) to receive your work order quantity of item 01010 into inventory and close the work order.

Field	Data
Multi Entry	Yes
Lot/Serial Number	MD9500021
Quantity	10
Create list of serial numbers	Yes

Click Next, then Back until the Remarks field is displayed.

Click Next.

Display Items and Lot/Serial detail = Yes.

Is all the information correct = Yes.

Click Back to exit.

- 11** Open MRP Summary Inquiry (23.13) to check item 01010.

Add, Ship, and Invoice a Sales Order

- 12** Open Sales Order Shipments (7.9.15) to ship line 1 of the sales order that you created in the previous exercise (step 9). Do not ship line 2.

Enter Line 1 manually.

Field	Data
Multi Entry	Yes
Lot/Serial Number	MD9500021
Quantity	10
Create list of serial numbers	Yes

Enter Line 2 manually, Quantity 0.

- 13** Open Invoice Post and Print (7.13.4) to post and print the invoice.
- 14** Open Customer Account Activity (27.17.3) to review the customer's account.

Note The update of the customer account requires some system setup. See the similar step at the end of "Exercise 8" on page 300.

Answers to Order Policy and Modifier Activity

Period	1	2	3	4	5	6	7	8	9	10
Demand	25	30	20	35	25	30	25	35	30	25
LFL	25	30	20	35	25	30	25	35	30	25
FOQ = 35	35	35	35	35		35	35	35	35	
POQ 2 Periods	55		55		55		60		55	
POQ 2 Periods Min Qty = 60	60		60		60		60		60	
POQ 2 Periods Multi Qty = 25	75			75		50		75		25

