Cost Accounting Primer





Compliments of

Relevant Business Systems, Inc. Two Annabel Lane, Ste 215 • San Ramon, CA 94583 800-473-5382 • www.relevant.com

INTRODUCTION

The purpose of this manual is to give a general overview of the concepts and principles relating to the accounting function as it applies to manufacturing. By design, several sections are very general in construct while others discuss specific accounting issues in great detail. Before beginning, let's review a few tips that, if followed, will help insure the best use and understanding of this manual.

- 1. This document explains basic and general accounting principles. As such, there is no review of computer system functionality- just universal concepts.
- 2. This manual uses some terms unique to the world of accounting. Take a moment to review these terms in the Glossary (page 5) before your reading begins.
- 3. In our narrative a "peeling of the onion" approach has been employed. In other words, the second page adds a bit more detail to what was explained on the first page, the third page a bit more than the second, and so on. With this layered approach general examples are used at first, while more detailed examples follow.
- 4. We're ready to begin. Whether you are familiar with the world of accounting or if this is an introduction for you, we hope that this manual will serve as a helpful tool in your understanding of the accounting process as it applies to a manufacturing environment.

AN OVERVIEW OF THIS MANUAL



This manual is divided into four major sections. See the descriptions below for an overview of what to expect in each section. The icon in the upper-right-hand corner of this page will remind you of the section you're currently reviewing. Due to the progressive nature of our example, it is highly recommended that you begin with this section, "A First Look", and progress to the next section and so on.



A First Look: This section is an overview of the basics. During our first simple example, we will-

Review Business Description.

Review Glossary of terms.

Set up locations.

Set up GL Accounts.

Review the accounts being impacted by the debit and credit process.

Phase I: We will now explore a more in-depth example. In this phase we will manufacture a small quantity of a prototype item. During the process we will-

Review concepts of tracking Material, Labor and Overhead dollars

Review this manual's method of tracking debit and credit amounts as we go.

Follow the step by step process of building our Item, noting along the way the accounting implications.

Review Working Trial Balance Report.

Phase II: In this period we will sell and ship our prototype item to our customer. We will receive their payment, and then pay our vendors & employees. During the process we will-

Review Item pricing.

Place a sales order.

Ship the Item to our customer.

Send an invoice to our customer and receive their payment.

Match our vendors' invoices against our Purchase Order Receipts.

Pay our vendors & employees

Review Working Trial Balance Report.

Phase III: In this period we will start full-scale production. During the process we will-

Receive investments from stock holders.

Hire additional employees.

Purchase additional machinery and equipment.

Ship, sell and invoice full-scale quantities of what was our prototype item as well as other products. Financial Reports: In this section we will review basic financial reports. We will examine-

Income Statement.

Balance Sheet.

Review reports in terms of the output as a result from our example in Period III.

OUR FIRST LOOK



In this section we will begin by reviewing the overall approach and example employed throughout this manual. Next we will look at a glossary of terms (page 5). The more familiar you are with these general accounting terms the clearer the example will be to you as it unfolds. Next, we will begin to explore our first, simple example. The basic subjects reviewed here will set the stage for the more detailed example that begins in the next section, called "Phase I: Manufacturing".



Page 4:	Review Business Description
Page 5:	Glossary of Terms
Page 6:	Determine Locations
Page 7:	Review of Account Structure
Page 8:	Assign GL Accounts for Tracking Material Cost
Page 9:	Assign GL Accounts for Tracking Labor and Overhead Costs
Page 10:	Assign Liability GL Accounts
Page 11:	Review Chart of Accounts
Page 12:	Receive Vendor Supplied Items
Page 13:	Transfer Received Items
Page 14:	Issue Raw Material Items
Page 15:	Assemble and Book Sub-Assembly Labor
Page 16:	Transfer Sub-Assembled Items
Page 17:	Issue Sub-Assembled Items
Page 18:	Assemble and Book Final Assembly Labor
Page 19:	Transfer Finished Items

REVIEW BUSINESS DESCRIPTION



A great deal of information is communicated in this manual. Some of it is fairly general in nature while much of it is quite detailed. Review the items below for a description of the approach employed in this manual in order to effectively communicate the accounting principles in question.



Our First Look- in this section the intent is to begin slowly, with not a lot of detail. We will review some general accounting terms. We will establish locations where we will "build" an imaginary product and then associate these locations with General Ledger accounts, defined by the Chart of Accounts. We will introduce and discuss the idea of Debits and Credits as we move our product through our various manufacturing locations and watch the accounts that are impacted as we go. During this process, no exact quantities or dollar amounts will be tracked.



Phase I: Manufacturing- in this section our example expands to the manufacturing of a prototype product for a small quantity of 10 units that a customer has promised to buy. Using the locations and accounts we have already established, we will watch exact dollar amounts as various accounts are debited and credited. We will also monitor starting and ending balances as we look to ensure that our GL accounts remain in balance throughout the example. We will also explore the principles of tracking Material, Labor and Overhead costs, ending this section with 10 units of our prototype sitting on our Finished Goods shelf ready for shipment. We will close by reviewing a Working Trial Balance report, designed to help ensure that all accounts are in balance.



Phase II: Shipping- in this section our prototype example is continued. This time we will process a sales order for the 10 units built in the prior phase, ship the product to our customer, and invoice the customer for the amount they owe us. We will also receive invoices from our vendors and pay them for the items we bought from them. We will also pay our employees for the labor they performed during Phase 1. Again, the purpose of this section is to review in great detail the precise dollar amounts being debited and credited to various accounts, reinforcing specific accounting principles.



Phase III: Full Production- in this section we will take a step back from tracking dollar amounts and specific accounts with their beginning and ending balances. Instead, we will employ a broader approach as we discuss additional accounting elements not already reviewed in previous sections, such as the purchasing of equipment and machinery, the hiring of office staff, the receipt of investment dollars and so forth. All of this is wrapped around an example of building 10,000 units of our production item (formerly our prototype). The general examples discussed in this section will lead into the elements and dollar amounts shown on the reports reviewed in the final section (see 'Financial Reports', below).



Financial Reports- in this section we will review the Income Statement and the Balance Sheet. The two reports provide visibility into a company's financial activities and standing, allowing managers to make appropriate business decisions and to plan well for future growth. The dollar amounts and figures shown on our two reports are based on the examples discussed in "Phase III: Full Production".

GLOSSARY OF ACCOUNTING TERMS



Absorption: Companies must anticipate or budget their overhead expenses. In a Standard Costing System, when the amount of overhead expenses anticipated (budgeted) turn out to be less than what was actually paid, then the company's overhead expenses are said to have been under absorbed. Conversely, when the amount of overhead expenses anticipated turn out to be greater than what was actually paid, then the company's overhead expenses are said to have been over absorbed

Account: An account is used to record and track financial transactions.

Accounts Payable: Also called A/P, accounts payable are amounts your business owes to suppliers.

Accounts Receivable: Also called A/R, accounts receivable are the amounts owed to your business by your customers.

Accrual Method: With the accrual method, you record income when the sale occurs, not necessarily when you receive payment. You record an expense when you receive goods or services, even though you may not pay for them until later.

Actual Cost: (See also 'Standard Cost'). A method whereby a company bases its costs on the literal and present values of the items it buys, the items it builds, etc.

Aging Report: An aging report is a list of customers' accounts receivable amounts and their due dates. It alerts you to any slow-paying customers. You can also prepare an aging report for your accounts payable, which will help you manage your outstanding bills.

Asset Account: An account that tracks items of value held by the business. Examples of assets are cash, accounts receivable, furniture, fixtures and computers.

Balance Sheet: A Balance Sheet is a financial report that shows how much your business is worth. It is a financial "snapshot" of your business at a given date in time. It lists your assets, your liabilities, and the difference between the two, which is your equity (book value) or net worth.

Book: The 'book value' of an asset is the purchase price of an asset less accumulated depreciation.

Chart of Accounts: Is a systematic, structured listing of all accounts used by a company. In general, the chart is usually structured to specify account Types (Asset, Liability), Profit Centers (West Coast, Mid-West) and Departments (Sales, Marketing).

Credit: At least one component of every accounting transaction (journal entry) is a credit. A credit either decreases assets or increases liabilities. For example, you are taking money out of the company- an outflow. That is, you are removing money from some source. Simply put, the 'from' side of a transaction.

Debit: At least one component of every accounting transaction (journal entry) is a debit. A debit either increases assets or decreases liabilities. For an example, you are putting money into the company - an inflow. That is, you are applying money to some application. Simply put, the 'to' side of a transaction.

Direct Cost: The portion of cost that is directly expended in providing a product or service for sale and is eventually included in the calculation of Cost of Goods Sold, e.g. labor and inventory.

Equity: Is what your company is worth (book value), taking everything it owns (assets) and subtracting everything that it owes (liabilities).

Income: Is money received by a person or organization because of effort (work), or from return on investments.

Indirect Cost: The portion of cost that is indirectly expended in providing a product or service for sale and is included in the calculation of Cost of Goods Sold, e.g. rent, utilities, equipment maintenance, etc.

Invoice: An itemized bill that is given to a customer or received from a vendor- an itemized list, including prices of products and services purchased by a customer or received from a vendor.

Liability Account: An account that tracks money that a company owes, such as a loan, Accounts Payable, or any other form of claim on the assets of the business that must be paid or otherwise honored.

Overhead: Is the cost associated with providing and maintaining a manufacturing or working environment. For example: renting the building, heating and lighting the work area, supervision costs and maintenance of the facilities. These are expenses that exist whether a business sells anything or not.

Revenue: Is the monetary amount of annual sales, including returned merchandise and discounts, i.e., it is the top monetary figure from which costs are subtracted to determine net income.

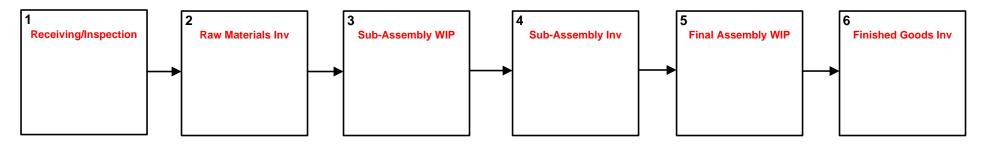
Standard Cost: (See also 'Actual Cost'). A method whereby a company sets predetermined values for the items they will buy, the items they will build, etc. If what is actually bought or built differs from the set standard, then a variance is recorded and managed.

Terms: A contract or arrangement between, for example, a business and vendor, defining the period by which payment is due, special discounts, etc.

WIP: Is an acronym for Work in Process/Progress. Usually refers to inventory that has value added from labor or additional processing. When considered for inventory value, the value of the raw material plus the value added component is accounted for in determining the value of the inventory at that point in the process.

DETERMINE LOCATIONS





Let's manufacture a product. For the purpose of this exercise, we will first establish physical locations through which our product will move during the manufacturing process. The six boxes across the top of this page will represent our locations within the manufacturing plant. Here is a summary of what each location represents...

Location #1: Receiving/Inspection- This is where items we buy from vendors will arrive and be stored while they are counted, inspected and otherwise processed prior to being made available for use at our company.

Location #2: Raw Materials Inventory- This is where our purchased items will be stored once the receiving process has been completed. The term 'Raw' indicates that none of the items here have yet gone through an assembly process at our company (where value will be added). Their condition is just as we received them from our vendors.

Location #3: Sub-Assembly Work in Process- This is the first location where assembly work will be done, joining together various items we've bought from vendors. The term 'Sub-Assembly' indicates that only parts or portions of our product will be assembled here, not the entire or finished product. Refer to the Glossary (page 5) for a definition of the term 'WIP'.

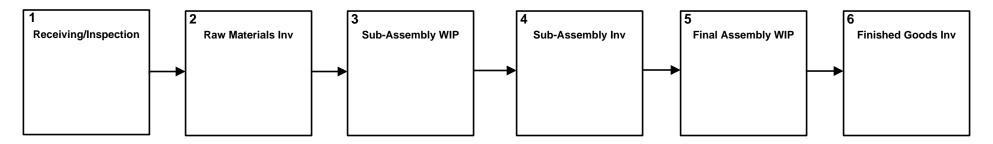
Location #4: Sub-Assembly Inventory- This is the location which will be used to store those items that have experienced some level of assembly work (having had value added). They will wait here until needed for the last stage of assembly, which comes later.

Location #5: Final Assembly Work in Process- This is the second location where assembly work will be done, joining together various items we've either bought from vendors or that we've already assembled to some level. The term 'Final Assembly' indicates that this is where the last assembly work will be done, completing our product.

Location #6: Finished Goods Inventory- This is where our completed product will be stored while waiting for shipment to our customers.

REVIEW OF ACCOUNT STRUCTURE



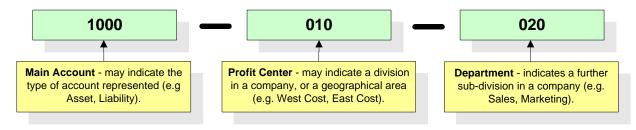


With our locations set, let's begin the process of establishing our company's GL Accounts. The Glossary of Terms defines **Chart of Accounts** as "...a systematic, structured listing of all accounts used by a company. In general, the chart is usually structured to specify account Types (Asset, Liability), Profit Centers (West Coast, Mid-West) and Departments (Sales, Marketing)".

A major issue in management accounting is how detailed the chart of accounts should be. For financial accounting purposes, not much detail is required. However, this would make it more difficult to perform an analysis of sales by product line, sales district, individual customer or a profit center. The kinds of analysis management wants to perform more or less on a routine basis determines the amount of detail in the chart of accounts. There is no formula to determine the "right" level of detail in the account structure. Management must exercise judgment in making the benefit/cost trade-off. In the end, though, a careful and reasoned approach will help to ensure that the structure of your accounts has sufficient "accounting logic" built into it, while at the same time providing for flexibility and room for growth.

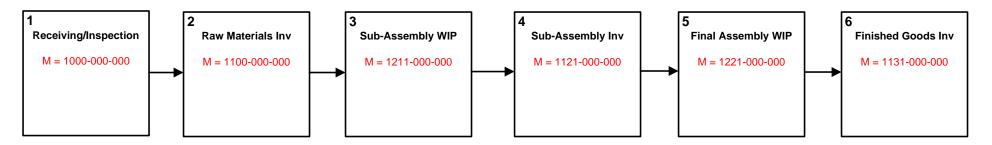
For the purpose of our example we will use an account that consists of 10 digits (i.e. 0000-000-000). The first 4 digits represent what we will call the **Main GL Account**. We have chosen this portion of the account number to represent the <u>type</u> of account being used. For example, the 1000 series will represent Asset accounts. The 2000, 3000, 4000 and 5000 series will represent Liability accounts. The 6000 series will represent Expense accounts, while the 7000 series will represent Income accounts. We have built significant logic into our Main GL Account, which will become clearer as we proceed.

The next 3 digits will be used to represent the **Profit Center**, while the last 3 digits will represent **Departments**. To keep our example simple, we have not utilized these two segments of the account number.



ASSIGN GL ACCOUNTS FOR TRACKING MATERIAL COST





As we establish our account numbers, we will begin by focusing on the accounts that record the three basic elements tracked in a manufacturing environment, namely Material, Labor and Overhead (these are explained in greater detail later in this manual).

Let's begin with the Material element. We will create one account to represent each physical location (six locations = six accounts), which will enable us to track where our item's raw material cost can be found as it moves through the manufacturing process. By contrast, if we were to only assign one account number to represent all six of our locations, the accounting department in our company would have extremely poor 'visibility' when trying to track costs during the manufacturing process, since everything would be lumped into a single account.

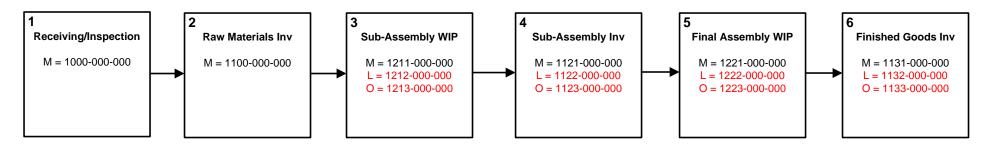
The 'M' in front of each account number is simply an instructional tool used throughout this manual. It indicates that it is a <u>Material account</u>, or in other words an account which only tracks the dollars associated with the cost of physical material (such as the items we will buy from our vendors). This symbol will differentiate accounts associated with material costs from those associated with Labor and Overhead costs, which will be identified later with an 'L' and and 'O', respectively.

Notice some additional logic we are using with the Main Account number (the first four digits). The '11..' series represents material in Inventory, while the '12..' series represents material in WIP.

- GL Account 1000-000-000 = Receiving/Inspection
- GL Account 1100-000-000 = Raw Materials Inv
- GL Account 1121-000-000 = Sub Assembly Inv Material
- GL Account 1131-000-000 = Finished Goods Inv Material
- GL Account 1211-000-000 = Sub Assembly WIP Material
- GL Account 1221-000-000 = Final Assembly WIP Material

ASSIGN GL ACCOUNTS FOR TRACKING LABOR AND OVERHEAD COSTS





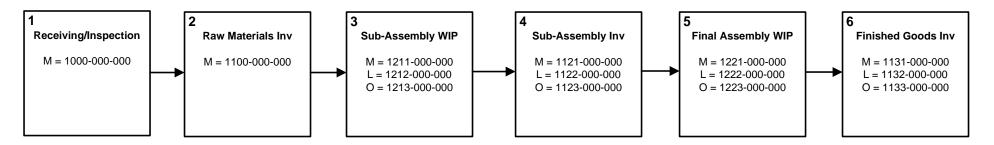
In addition to material costs, we will also track **Labor** and **Overhead** costs associated with the manufacturing of our product. In order to do this we will assign additional GL Accounts. Labor represents work performed by our employees during the assembly process and tracks how much money our company has paid them for their work. Overhead will be incurred simultaneously as labor is performed, tracking the amount of money it costs our company to run the business (see Glossary for definition of 'Overhead').

For the purpose of our example we will associate these Labor and Overhead accounts with certain locations. The first one is Location #3, since this is where labor is first performed. Once an item has had labor and overhead costs connected with it, these become, in a sense, 'glued' to it forever. The total cost of the item is no longer measured simply by its material element (which will be true while in locations #1 and #2), but rather by the sum of its material, labor and overhead elements combined. For this reason, each location down stream from Location #3 will have its own unique account to track the additional elements of labor and overhead. While an item's total unit cost will be the sum of its material, labor and overhead elements, using separate accounts to track these enables the accounting department to accurately measure these components separately if desired.

- GL Account 1122-000-000 = Sub-Assembly Inv Labor
- GL Account 1123-000-000 = Sub-Assembly Inv Overhead
- GL Account 1132-000-000 = Finished Goods Inv Labor
- GL Account 1133-000-000 = Finished Goods Inv Overhead
- GL Account 1212-000-000 = Sub-Assembly WIP Labor
- GL Account 1213-000-000 = Sub-Assembly WIP Overhead
- GL Account 1222-000-000 = Final Assembly WIP Labor
- GL Account 1223-000-000 = Final Assembly WIP Overhead

ASSIGN LIABILITY GL ACCOUNTS





Finally, in order to begin our example, there are just a few more accounts that we need to create, namely our Liability Accounts. Remember, the Glossary of Terms defined **Liability Account** as "An account that tracks money that a company owes, such as a loan, Accounts Payable, or any other form of claim on the assets of the business that must be paid or otherwise honored". The accounts in questions are listed below and will be explained in greater detail as our example unfolds. These will not be associated with any particular physical location.

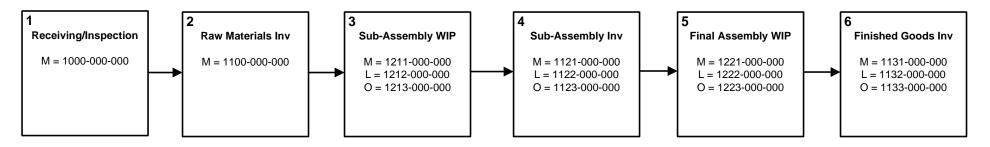
GL Account 2000-000-000 = Accrued Accounts Payable

GL Account 3000-000-000 = Labor Clearing

GL Account 4000-000-000 = WIP Overhead Clearing

REVIEW CHART OF ACCOUNTS



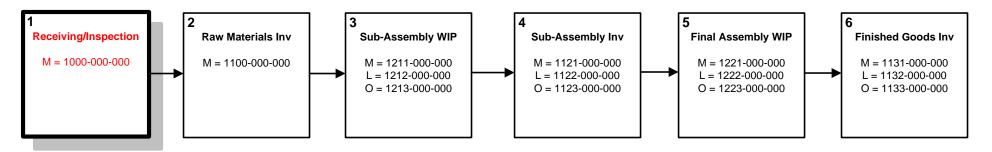


Below is a listing of all of the accounts that we've created up to this point. A typical Chart of Accounts (see Glossary) would include at least this information. As part of a Fiscal Year-End Close procedure, we will copy or add a new Chart of Accounts (accounts that are going to be active for the new Fiscal Year). As our example expands during Phase II we will revisit this chart, noting the latest accounts to be added.

<u>YEAR</u>	ACCOUNT #	ACCOUNT DESCRIPTION	<u>TYPE</u>
2002	1000-000-000	Receiving/Inspection	Asset
2002	1100-000-000	Raw Materials Inventory	Asset
2002	1121-000-000	Sub-Assembly Inv Material	Asset
2002	1122-000-000	Sub-Assembly Inv Labor	Asset
2002	1123-000-000	Sub-Assembly Inv Overhead	Asset
2002	1131-000-000	Finished Goods Inv Material	Asset
2002	1132-000-000	Finished Goods Inv Labor	Asset
2002	1133-000-000	Finished Goods Inv Overhead	Asset
2002	1211-000-000	Sub-Assembly WIP Material	Asset
2002	1212-000-000	Sub-Assembly WIP Labor	Asset
2002	1213-000-000	Sub-Assembly WIP Overhead	Asset
2002	1221-000-000	Final Assembly WIP Material	Asset
2002	1222-000-000	Final Assembly WIP Labor	Asset
2002	1223-000-000	Final Assembly WIP Overhead	Asset
2002	2000-000-000	Accrued Accounts Payable	Liability
2002	3000-000-000	Labor Clearing	Liability
2002	4000-000-000	WIP Overhead Clearing	Liability

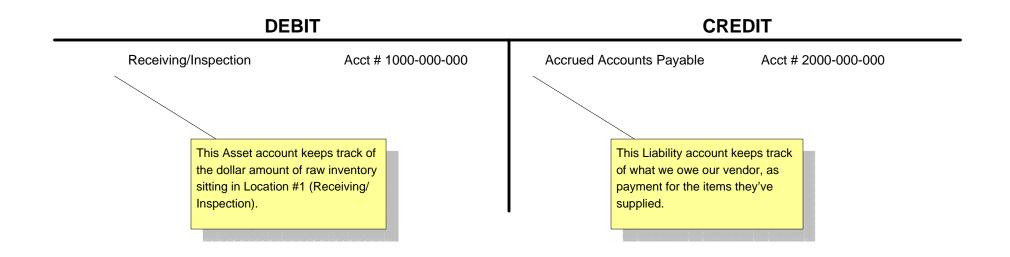
RECEIVE VENDOR SUPPLIED ITEMS





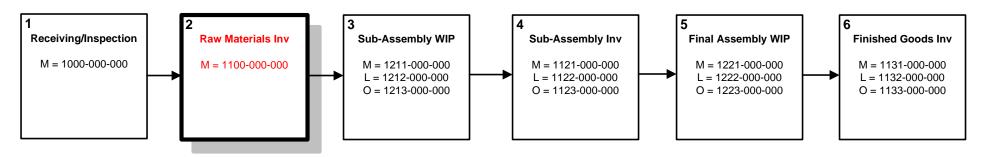
In real life many individual steps take place in the building of a product. This example picks up the process at the point where vendors have delivered to our imaginary company the items we have ordered from them. Our efforts are being driven by the promise from a customer to place an order with us for 10 units of a prototype.

That said, purchase orders for the required items were placed with our vendors. The items have arrived and are now received into Location #1 (Receiving/Inspection) for verification of items and quantities ordered. For every transaction that we perform, such as the receipt of raw material, at least two types of accounting actions will always take place: a **debit** and a **credit** (see Glossary for definitions). One cannot occur without the other and the sum of all debits must equal the sum of all credits (must be in balance). For the transaction just described, the accounting implication will be:

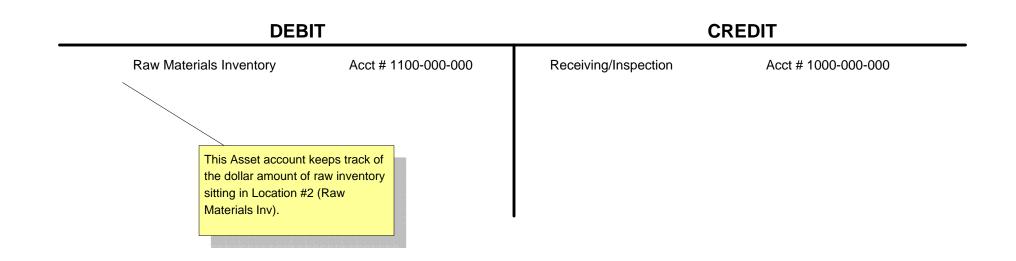


TRANSFER RECEIVED ITEMS



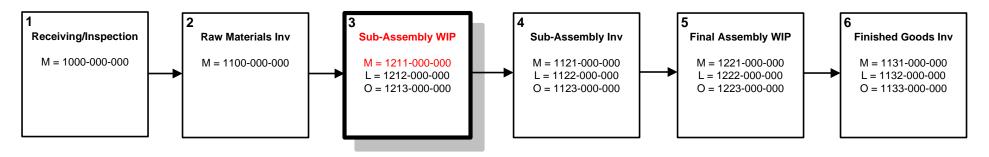


Once verification is complete, items are transferred from Receiving into Location #2 (Raw Materials Inv). Items will remain here until needed in the sub assembly process. The accounting implication will be:

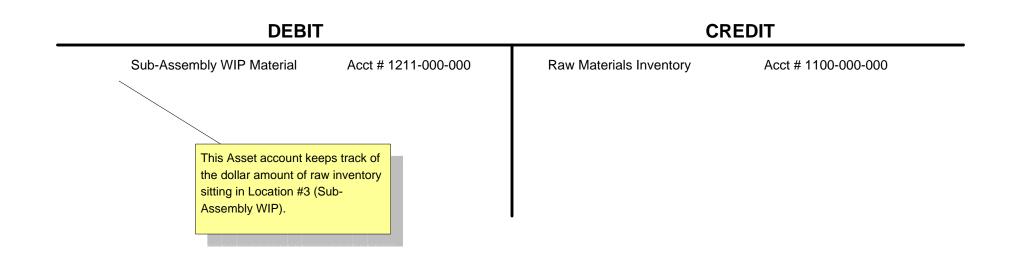


ISSUE RAW MATERIAL ITEMS



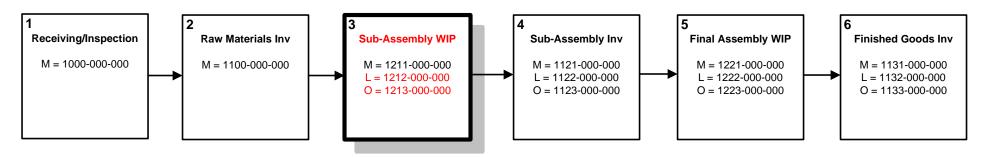


We are now ready to begin the sub assembly of our product. First, items are issued from Raw Materials Inventory into Location #3 (Sub-Assembly WIP). The accounting implication will be:

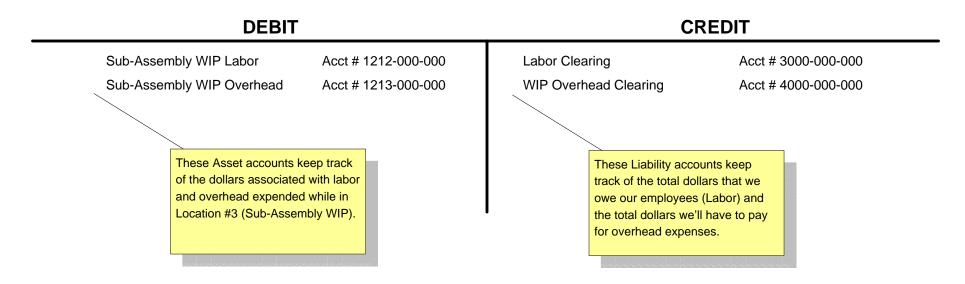


ASSEMBLE & BOOK SUB-ASSEMBLY LABOR



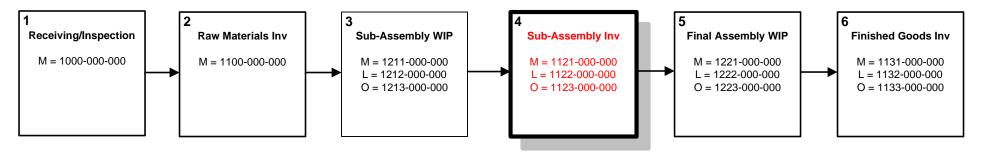


Our employees will now take the raw items that have been issued to them and begin the sub-assembly process. As the sub-assembly work is completed, labor and overhead expenses are recorded and booked. The accounting implication will be:



TRANSFER SUB-ASSEMBLED ITEMS



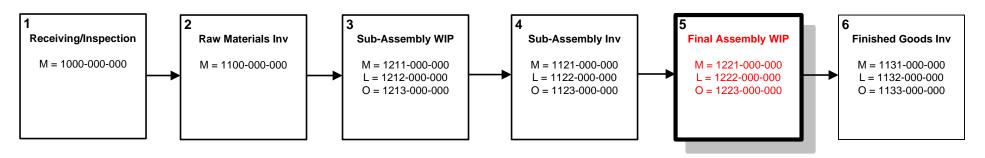


The newly sub-assembled items are transferred from Location #3 (Sub-Assembly WIP) into Location #4 (Sub-Assembly Inv) for storage. As explained earlier, notice that all three types of accounts (Material, Labor and Overhead) are impacted on both the debit and on the credit side of the transaction. Therefore, the accounting implication will be:

DEBIT		CREDIT			
Sub-Assembly Inv Material Sub-Assembly Inv Labor Sub-Assembly Inv Overhead	Acct # 1121-000-000 Acct # 1122-000-000 Acct # 1123-000-000	Sub-Assembly WIP Material Sub-Assembly WIP Labor Sub-Assembly WIP Overhead	Acct # 1211-000-000 Acct # 1212-000-000 Acct # 1213-000-000		

ISSUE SUB-ASSEMBLED ITEMS



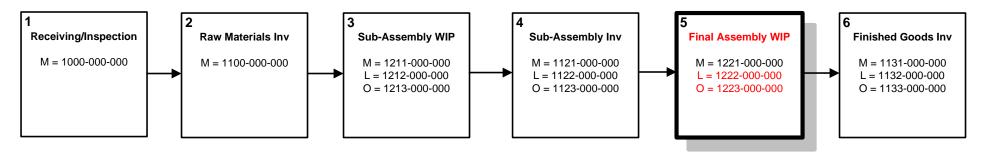


The sub-assembled items are next issued from Location #4 (Sub-Assembly Inv) into Location #5 (Final Assembly WIP). The accounting implication will be:

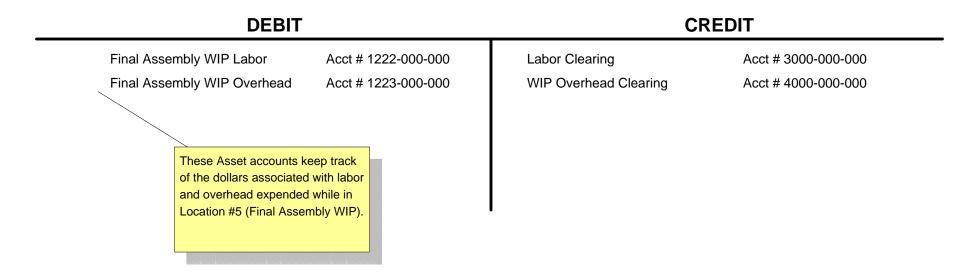
DEBIT		CREDIT			
Final Assembly WIP Material Final Assembly WIP Labor Final Assembly WIP Overhead	Acct # 1221-000-000 Acct # 1222-000-000 Acct # 1223-000-000	Sub-Assembly Inv Material Sub-Assembly Inv Labor Sub-Assembly Inv Overhead	Acct # 1121-000-000 Acct # 1122-000-000 Acct # 1123-000-000		

ASSEMBLE & BOOK FINAL ASSEMBLY LABOR



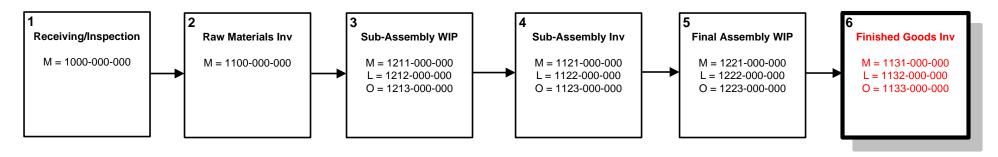


As the final phase of assembly work is completed by our employees, labor and overhead expenses are once again recorded and booked. The accounting implication will be:



TRANSFER FINISHED ITEMS





The finished product is transferred from Location #5 (Final-Assembly WIP) into Location #6 (Finished Goods Inv). The product is now available to be sold and shipped. The accounting implication will be:

DEBIT		CREDIT			
Finished Goods Inv Material Finished Goods Inv Labor Finished Goods Inv Overhead	Acct # 1131-000-000 Acct # 1132-000-000 Acct # 1133-000-000	Final Assembly WIP Material Final Assembly WIP Labor Final Assembly WIP Overhead	Acct # 1221-000-000 Acct # 1222-000-000 Acct # 1223-000-000		

PHASE I: MANUFACTURING



Now that we've run through the process in general terms, let's go through it again from the beginning, but this time with a more detailed example of building a prototype item for a specific customer. We will focus with more detail on the three basic and traditional cost elements: material, labor and overhead. As we follow this example, watch the specific costs as the debits and credits are performed and note the accounts that are impacted. The next few pages will describe the examples we'll be using for this exercise.

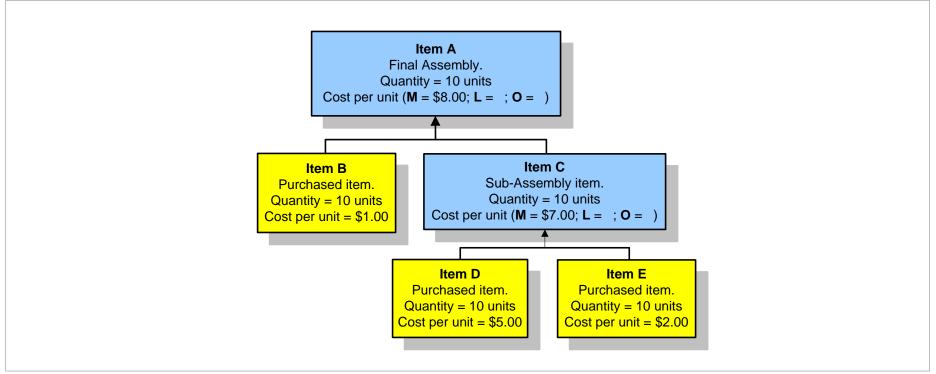


Page 21:	Material
Page 22:	Labor
Page 23:	Overhead
Page 24:	Review of Transaction Table
Page 25:	Step 1: Receive Purchased Items From Vendors Into Receiving
Page 26:	Step 2: Move Items Into Raw Materials Inventory From Receiving
Page 27:	Step 3: Issue Items Into Sub-Assembly WIP Location
Page 28:	Step 4: Book Sub-Assembly Labor and Overhead for John
Page 29:	Step 5: Book Sub-Assembly Labor and Overhead for Sue
Page 30:	Step 6: Move Sub-Assembly Item Into Inventory
Page 31:	Step 7: Issue Items Into Final Assembly WIP Location
Page 32:	Step 8: Book Final Assembly Labor for Peter
Page 33:	Step 9: Book Final Assembly Labor for Mary
Page 34:	Step 10: Move Items Into Finished Goods Inventory
Page 35:	Working Trial Balance Report

MATERIAL



The chart below illustrates the items used in our Product (we'll be building 10 units). We have three items that are purchased from a vendor and delivered to us (B, D and E). The other two items (C and A) will be assembled at our company from those that are purchased. Item A will be our finished Item (this is what our customer will order). In Cost Accounting all expenses associated with the production of our Final Product to be sold, such as material, labor and certain facility charges, are booked at pre-defined rates as the product is built into our finished product. Thus we will review the material unit cost for each item and note how the values roll up into the unit cost of Item A. We'll see later how these unit costs increase as labor is performed.



LABOR



We will need employees to perform labor operations during assembly. Two operations will be performed during the sub-assembly process. John will perform the first operation by joining together some of the various items we've bought from our vendors. Next, Sue will perform the second operation by inspecting the work that John has performed. At this stage the product is not yet complete.

Two more operations will be performed later on during the Final Assembly process (this is where the last level of assembly work is done). Peter will perform the first operation by performing the final assembly work, which completes the product. Next, Mary will perform the second operation by testing the work that Peter has performed.

We will see later how labor costs are joined with the cost of our material.

Sub-Assembly Direct Labor

John earns \$6.00 per hour. Operation = Sub-Assembly work.



Sue earns \$10.00 per hour. Operation = Inspection.

Final Assembly Direct Labor

Peter earns \$6.00 per hour. Operation = Final Assembly work.



Mary earns \$10.00 per hour. Operation = Final Testing.

OVERHEAD



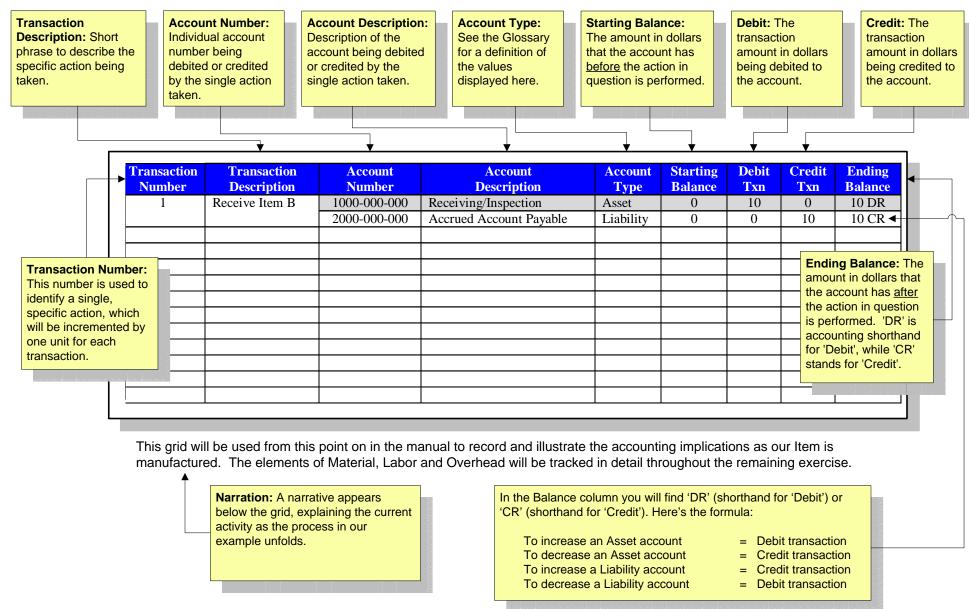
Finally, at the time that labor is performed we will also record and track our overhead cost (the cost of doing business). For our example we will absorb overhead ("charging" to the overhead bucket) by taking our total direct labor dollars and multiplying by half (.5). We will see later how overhead costs are joined with the cost of our material and labor.



The overhead rate will equal half (.5) of the cost of direct labor. For example, If John and Sue work just one hour each, the corresponding overhead rate will equal \$8.00 [(\$6 + \$10) X .5] = \$8.

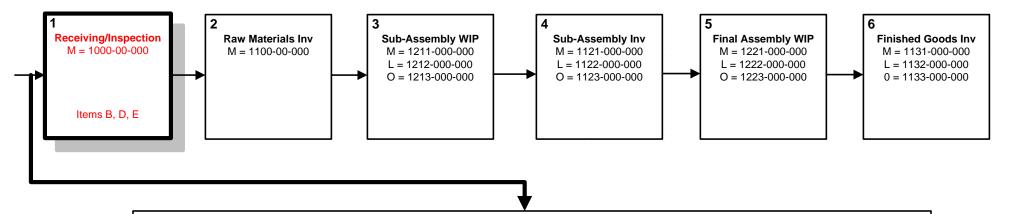
REVIEW OF TRANSACTION TABLE





STEP 1: RECEIVE PURCHASED ITEMS FROM VENDORS INTO RECEIVING.





Transaction Number	Transaction Description	Account Number	Account Description	Account Type	Starting Balance	Debit Txn	Credit Txn	Ending Balance	
1	Receive Item B	1000-000-000	Receiving/Inspection	Asset	0	10	0	10 DR	
		*2000-000-000	Accrued Accounts Payable	Liability	0	0	10	10 CR	
2	Receive Item D	1000-000-000	Receiving/Inspection	Asset	10 DR	50	0	60 DR	
		2000-000-000	Accrued Accounts Payable	Liability	10 CR	0	50	60 CR	
3	Receive Item E	1000-000-000	Receiving/Inspection	Asset	60 DR	20	0	80 DR	
		2000-000-000	Accrued Accounts Payable	Liability	60 CR	0	20	80 CR	
							the fir equal our m Recei	ng Balance: Nal ending balato the total contact (\$80). iving Clearing led AP are in led.	ance is ost of and

Transaction Number 1: Item B is received from the first vendor into receiving. A quantity of 10 units is received at \$1.00 per unit (\$10.00).

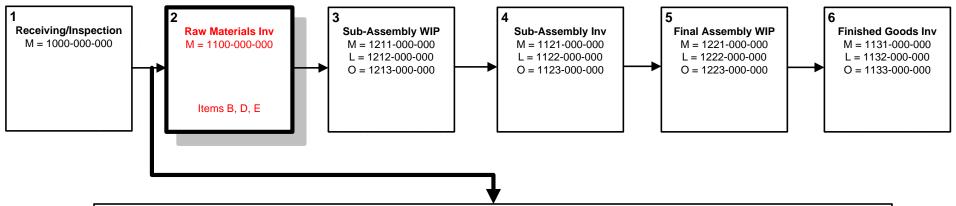
Transaction Number 2: Item D is received from the second vendor into receiving. A quantity of 10 units is received at \$5.00 per unit (\$50.00).

Transaction Number 3: Item E is received from the third vendor into receiving. A quantity of 10 units is received at \$2.00 per unit (\$20.00).

^{*} Note: Accrued Accounts Payable keeps track of the dollars that we owe our vendors.

STEP 2: MOVE ITEMS INTO RAW MATERIALS INVENTORY FROM RECEIVING





Fransaction Number	Transaction Description	Account Number	Account Description	Account Type	Starting Balance	Debit Txn	Credit Txn	Ending Balance	
4	Move Item B	1100-000-000	Raw Materials Inventory	Asset	0	10	0	10 DR	
		1000-000-000	Receiving/Inspection	Asset	80 DR	0	10	70 DR	
5	Move Item D	1100-000-000	Raw Materials Inventory	Asset	10 DR	50	0	60 DR	
		1000-000-000	Receiving/Inspection	Asset	70 DR	0	50	20 DR	
6	Move Item E	1100-000-000	Raw Materials Inventory	Asset	60 DR	20	0	80 DR	
		1000-000-000	Receiving/Inspection	Asset	20 DR	0	20	0	
							he balance Clearing acc down to \$0	ance: Note h in the Receiv count is drain as the items a to the Raw v account.	/ing ed

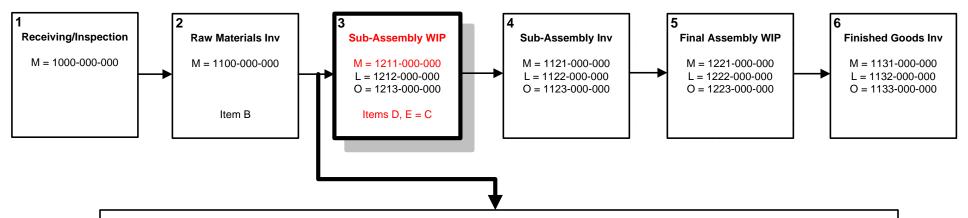
Transaction Number 4: Item B is moved (transferred) from the Receiving area into the Raw Materials Inventory area. A quantity of 10 units is moved at \$1.00 per unit (\$10.00).

Transaction Number 5: Item D is moved (transferred) from the Receiving area into the Raw Materials Inventory area. A quantity of 10 units is moved at \$5.00 per unit (\$50.00).

Transaction Number 6: Item E is moved (transferred) from the Receiving area into the Raw Materials Inventory area. A quantity of 10 units is moved at \$2.00 per unit (\$20.00).

STEP 3: ISSUE ITEMS INTO SUB-ASSEMBLY WIP LOCATION





Transaction Number	Transaction Description	Account Number	Account Description	Account Type	Starting Balance	Debit Txn	Credit Txn	Ending Balance	
7	Issue Item D	1211-000-000	Sub-Assembly WIP Material	Asset	0	50	0	50 DR	
		1100-000-000	Raw Materials Inventory	Asset	80 DR	0	50	30 DR	
8	Issue Item E	1211-000-000	Sub-Assembly WIP Material	Asset	50 DR	20	0	70 DR	◀
		1100-000-000	Raw Materials Inventory	Asset	30 DR	0	20	10 DR	◀
							Note in the Inventor becaute yet note in the interest in the i	ng Balance: that \$10 rema Raw Materia tory account, use Item B is eeded in the nbly process.	ls not

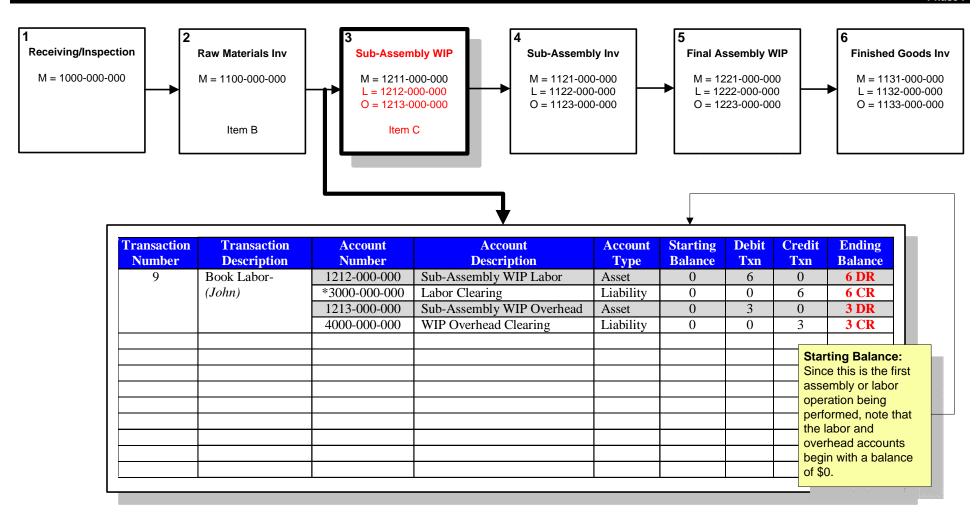
Transaction Number 7: Item D is issued from the Raw Materials Inventory area to the Sub-Assembly WIP area so that it may be used in the assembly of Item C. A quantity of 10 units is issued at \$5.00 per unit (\$50.00).

Transaction Number 8: Item E is issued from the Raw Materials Inventory area to the Sub-Assembly WIP area so that it may be used in the assembly of Item C. A quantity of 10 units is issued at \$2.00 per unit (\$20.00).

Ending Balance: The combined cost of Items D and E is \$70. This will be the material cost for Item C.

STEP 4: BOOK SUB-ASSEMBLY LABOR AND OVERHEAD FOR JOHN



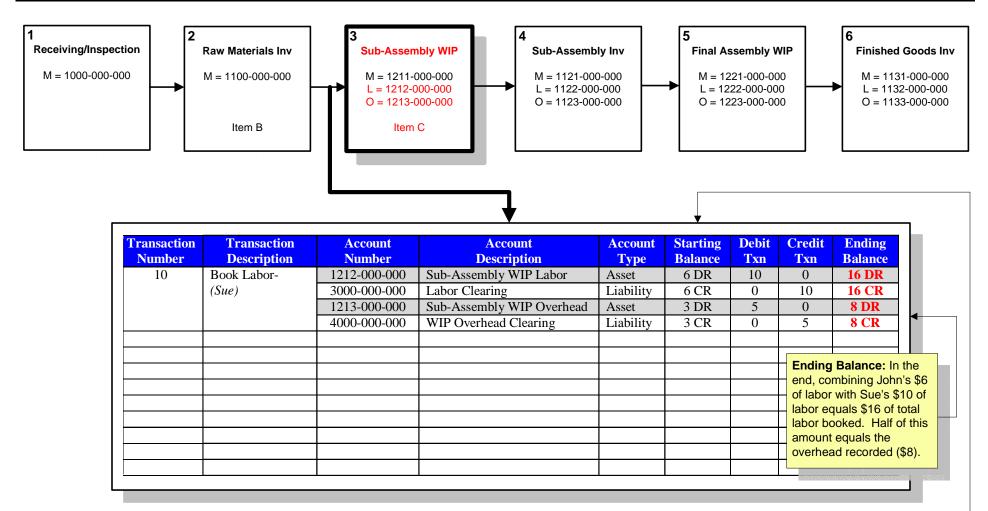


Transaction Number 9: For the first operation of sub-assembly work, John spends 1 hour putting together Items D and E (creating Item C) at 6.00 per hour. So, the total amount of labor to book for John is 6.00. At the same time that this labor is booked, an overhead amount of 3.00 will also be recorded (overhead equals half of labor, or $6.00 \times 5.5 = 3.00$).

^{*} Note: Labor Clearing keeps track of the dollars that we owe our employees.

STEP 5: BOOK SUB-ASSEMBLY LABOR AND OVERHEAD FOR SUE



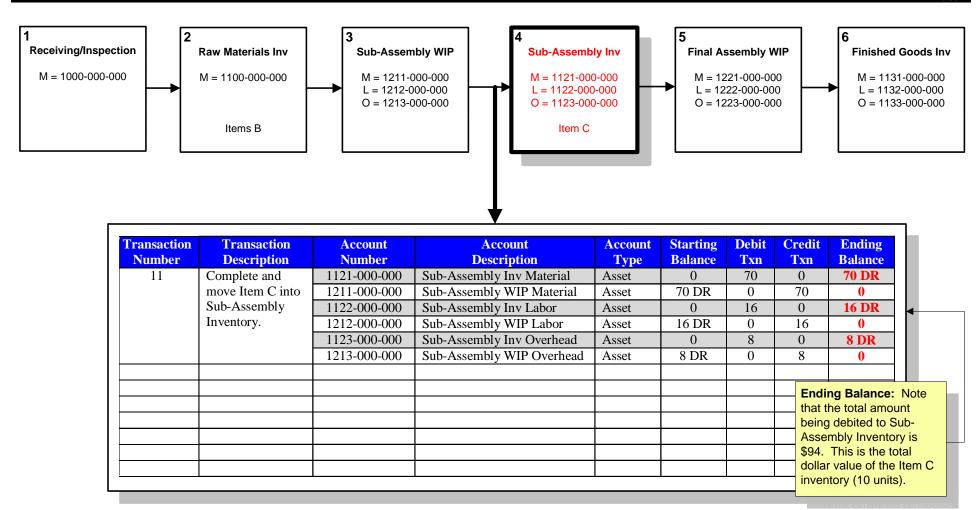


Transaction Number 10: For the second operation of sub-assembly work, Sue now spends 1 hour inspecting what is now Item C at \$10.00 per hour. So, the total amount of labor to book for Sue is \$10.00. At the same time that this labor is booked, an overhead amount of \$5.00 will also be recorded (overhead equals half of labor, or \$10.00 X .5 = \$5.00).

Starting Balance: The labor and overhead accounts now start with dollars that where recorded as a result of John's one hour of work during the first operation.

STEP 6: MOVE SUB-ASSEMBLY ITEM INTO INVENTORY

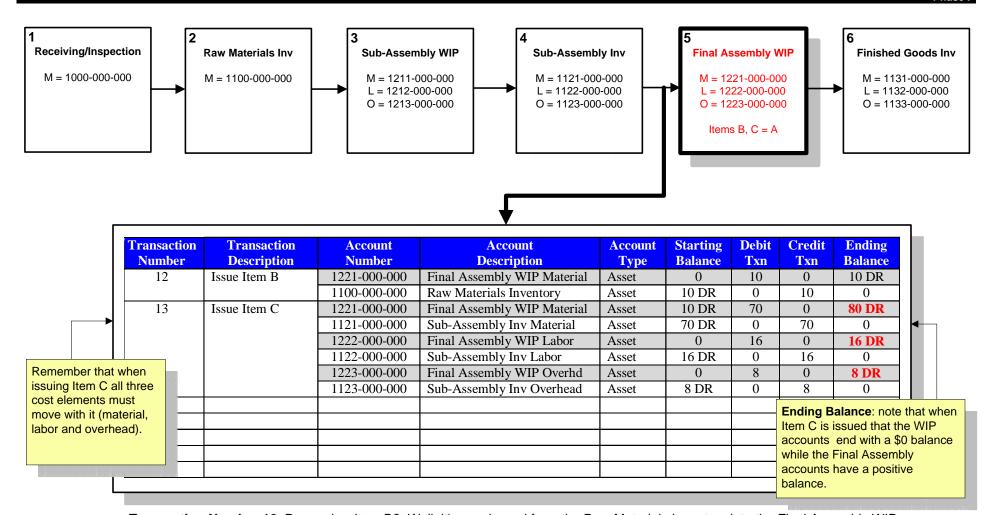




Transaction Number 11: Once both operations of assembly are finished, 10 units of the completed assembly (Item C) will now be moved (transferred) into the Sub-Assembly Inventory area where they will be stored. All three cost elements (material, labor and overhead) will be continually associated with this item from now on, so this single action (the moving of Item C into Sub-Assembly Inventory) will impact six different accounts (two for material, two for labor and two for overhead).

STEP 7: ISSUE ITEMS INTO FINAL ASSEMBLY WIP LOCATION



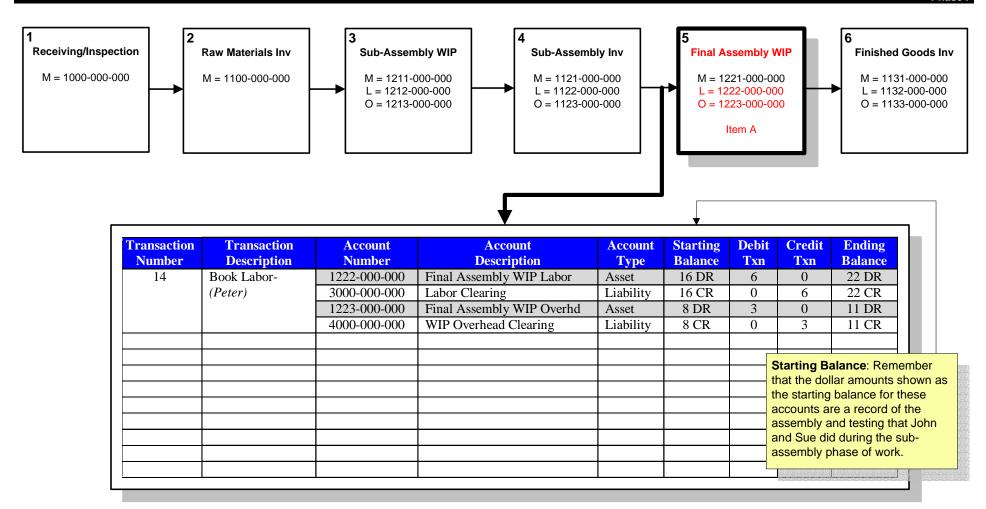


Transaction Number 12: Remember Item B? Well, it's now issued from the Raw Materials Inventory into the Final Assembly WIP location, a total of 10 units at \$1.00 per unit for a total of \$10.00. This will be one of two items used in the assembly of the final Item. Since Item B has never had any labor performed with it, only material cost is recorded during this transaction.

Transaction Number 13: Item C is issued from the Sub-Assembly Inventory area into the Final Assembly WIP location, a total of 10 units at \$9.40 per unit for a total of \$94.00 (Material = \$70; Labor = \$16; Overhead = \$8).

STEP 8: BOOK FINAL ASSEMBLY LABOR FOR PETER.

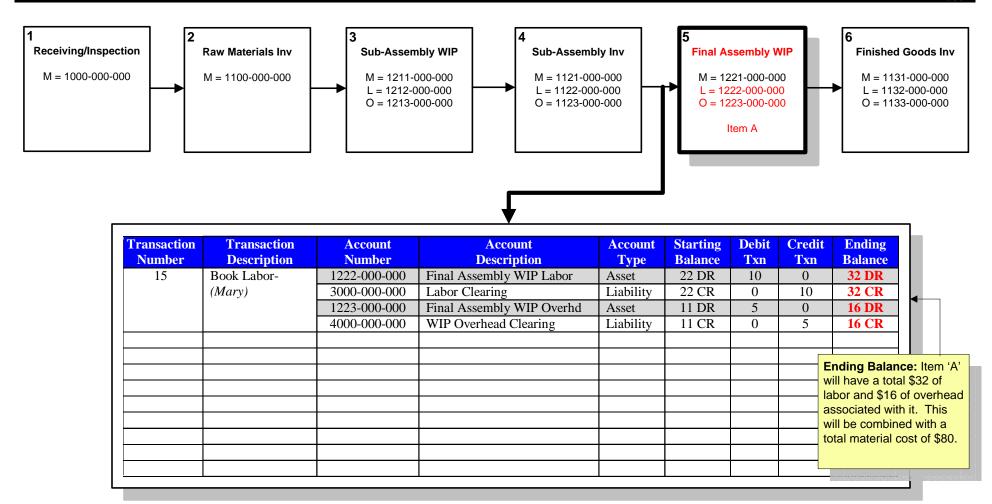




Transaction Number 14: For the first operation of final assembly work, Peter spends 1 hour putting together Items B and C (creating Item A) at 6.00 per hour. So, the total amount of labor to book for Peter is 6.00. At the same time that this labor is booked, an overhead amount of 3.00 will also be recorded (overhead equals half of labor, or 6.00 X .5 = 3.00).

STEP 9: BOOK FINAL ASSEMBLY LABOR FOR MARY.

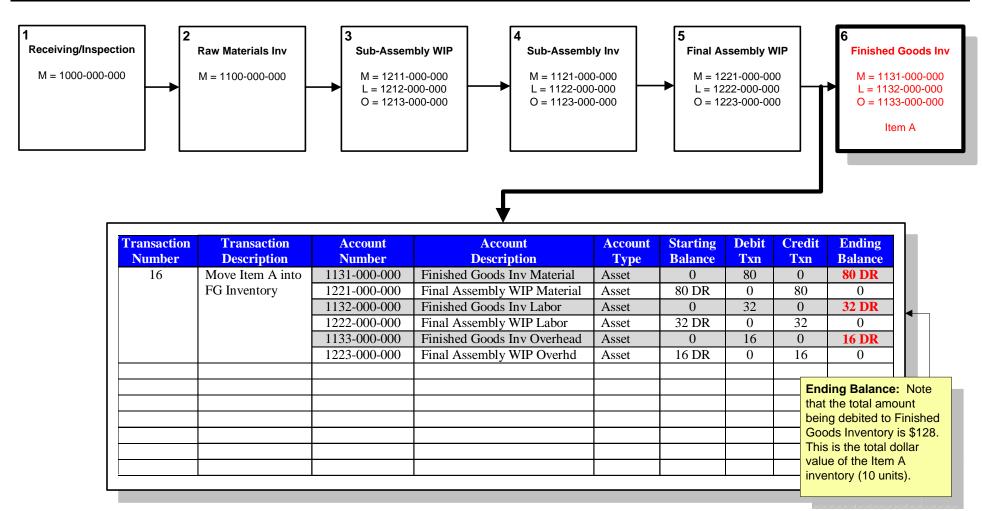




Transaction Number 15: For the second operation of final assembly work, Mary spends 1 hour performing the final testing of Item A at \$10.00 per hour. So, the total amount of labor to book for Mary is \$10.00. At the same time that this labor is booked, an overhead amount of \$5.00 will also be recorded (overhead equals half of labor, or $$10.00 \times .5 = 5.00).

STEP 10: MOVE ITEMS INTO FINISHED GOODS INVENTORY





Transaction Number 16: Once both operations of final assembly are finished, 10 units of the completed assembly (Item A) will now be moved (transferred) into the Finished Goods Inventory area where they will be stored, waiting to be sold and shipped. All three cost elements (material, labor and overhead) will be continually associated with this item from now on, so this single action (the moving of Item A into Finished Goods Inventory) will impact six different accounts (two for material, two for labor and two for overhead).

WORKING TRIAL BALANCE REPORT



A common report used in accounting is called the "Working Trial Balance" report. This report lists the ending debit or credit balances for each account at a specified point in time. In the example below, the report was run at the end of Phase I. The accounts listed are all those that have had any debit <u>or</u> credit activity so far in our example. Note that the total amounts shown at the bottom of the report are in complete balance. This report serves as a tool to monitor throughout a month whether accounts are in balance or not.

So, as the now completed Item A sits in inventory waiting to be sold and shipped, our example is now ready to move into Phase 2.

Working Trial Balance Report Phase 1								
ACCOUNT #	ACCOUNT DESCRIPTION	TYPE	<u>DEBIT</u>	CREDIT				
1000-000-000	Receiving/Inspection	Asset	0	0				
1100-000-000	Raw Materials Inventory	Asset	0	0				
1121-000-000 1122-000-000	Sub-Assembly Inv Material Sub-Assembly Inv Labor	Asset Asset	0 0	0 0				
1123-000-000	Sub-Assembly Inv Overhead	Asset	0	0				
1131-000-000	Finished Goods Inv Material	Asset	80	0				
1132-000-000	Finished Goods Inv Material	Asset	32	0				
1133-000-000	Finished Goods Inv Overhead	Asset	16	0				
1211-000-000	Sub-Assembly WIP Material	Asset	0	0				
1212-000-000	Sub-Assembly WIP Labor	Asset	0	0				
1213-000-000	Sub-Assembly WIP Overhead	Asset	0	0				
1221-000-000	Final Assembly WIP Material	Asset	0	0				
1222-000-000	Final Assembly WIP Labor	Asset	0	0				
1223-000-000	Final Assembly WIP Overhead	Asset	0	0				
2000-000-000	Accrued Accounts Payable	Liability	0	80				
3000-000-000	Labor Clearing	Liability	0	32				
4000-000-000	WIP Overhead Clearing	Liability	0	16				
			128	128				

PHASE II: SHIPPING



We're now ready to begin the second phase of our example. Up to this point we've manufactured 10 prototype units of Item A, which now sit on our shelves waiting for our customer to call us up and place their promised order. In Phase II we will review how much we're going to charge our customer for Item A (some amount, of course, greater than what it cost us to build). We'll create a sales order when our customer calls, ship the product to them and then send them an invoice, or a bill, for what they owe us. In turn, our customer will send us a check as payment. We will then in turn pay our vendors and our employees.



D 07.	Review of Cost of Goods Prior to Sale
Page 37:	REVIEW OF LOST OF GOODS PRIOR TO SAID

Page 38:	Review Chart of Accounts
Page 39:	Step 11: Product Pricing

Page 40: Step 12: Sales Order is Placed & Allocated

Page 41: Step 13: Sales Order is Shipped, Invoice is Printed & Transferred to AR

Page 42: Step 14: Customer's Check is Received

Page 43: Step 15: Invoices are Received From Vendors

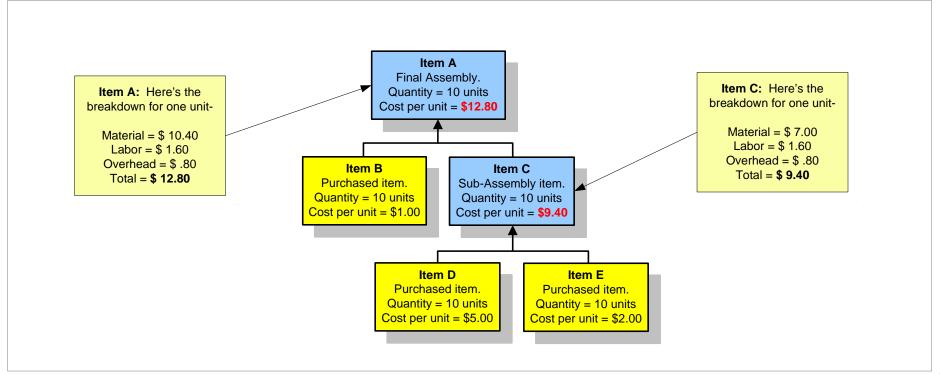
Page 44: Step 16: Vendor & Employee Payment

Page 45: Working Trial Balance Report

REVIEW OF COST OF GOODS PRIOR TO SALE



Before we pick up with our exercise, let's review. First, our product (illustrated below) shows the current 'per unit' values. The 'per unit' costs for Items A and C include material, labor and overhead. With 10 units of Item A now on our shelf, the total value, or Cost of Goods, equals \$128.00.



REVIEW CHART OF ACCOUNTS

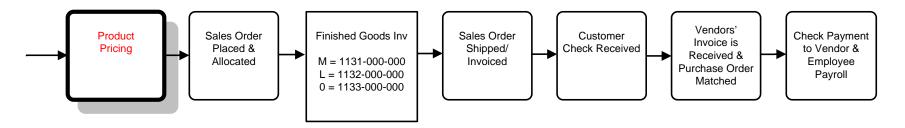


On our Chart of Accounts, below, you will see several new accounts that have been added. These are necessary for our continued example here in Phase II. They will be discussed in greater detail during the next few pages.

<u>YEAR</u>	ACCOUNT #	ACCOUNT DESCRIPTION	<u>TYPE</u>
2002	1000-000-000	Receiving/Inspection	Asset
2002	1100-000-000	Raw Materials Inventory	Asset
2002	1121-000-000	Sub-Assembly Inv Material	Asset
2002	1122-000-000	Sub-Assembly Inv Labor	Asset
2002	1123-000-000	Sub-Assembly Inv Overhead	Asset
2002	1131-000-000	Finished Goods Inv Material	Asset
2002	1132-000-000	Finished Goods Labor	Asset
2002	1133-000-000	Finished Goods Overhead	Asset
2002	1211-000-000	Sub-Assembly WIP Material	Asset
2002	1212-000-000	Sub-Assembly WIP Labor	Asset
2002	1213-000-000	Sub-Assembly WIP Overhead	Asset
2002	1221-000-000	Final Assembly WIP Material	Asset
2002	1222-000-000	Final Assembly WIP Labor	Asset
2002	1223-000-000	Final Assembly WIP Overhead	Asset
2002	1300-000-000	Cash	Asset
2002	1400-000-000	Accounts Receivable	Asset
2002	2000-000-000	Accrued Accounts Payable	Liability
2002	2100-000-000	Accounts Payable	Liability
2002	3000-000-000	Labor Clearing	Liability
2002	4000-000-000	WIP Overhead Clearing	Liability
2002	5000-000-000	Salaries Payable	Liability
2002	6000-000-000	Cost of Sales	Expense
2002	7000-000-000	Revenue	Income

STEP 11: PRODUCT PRICING





Transaction Number	Transaction Description	Account Number	Account Description	Account Type	Starting Balance	Debit Txn	Credit Txn	Ending Balance
1 (dillioti	Description	1 (dilloci	Description	Type	Duidifice	1 211	2241	Dululice
			1					

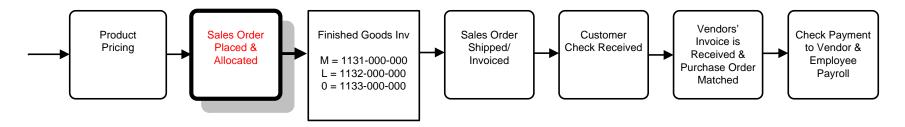
Finished Goods Item A sits in inventory waiting to be sold and shipped. The monetary cost of product, or in other words the Cost of Goods of Item A, is \$12.80 per unit for a total of \$128.00.

We are now going to establish the sale price or market value for one unit of Item A. This is where we will setup price discounts, markups or miscellaneous charges.

For our example will will add a price markup of \$2.50 per unit of Item A. The total sales price of Item A that we will charge is \$15.30 per unit.

STEP 12: SALES ORDER IS PLACED & ALLOCATED





Transaction	Transaction	Account	Account	Account	Starting	Debit	Credit	Ending
Number	Description	Number	Description	Type	Balance	Txn	Txn	Balance

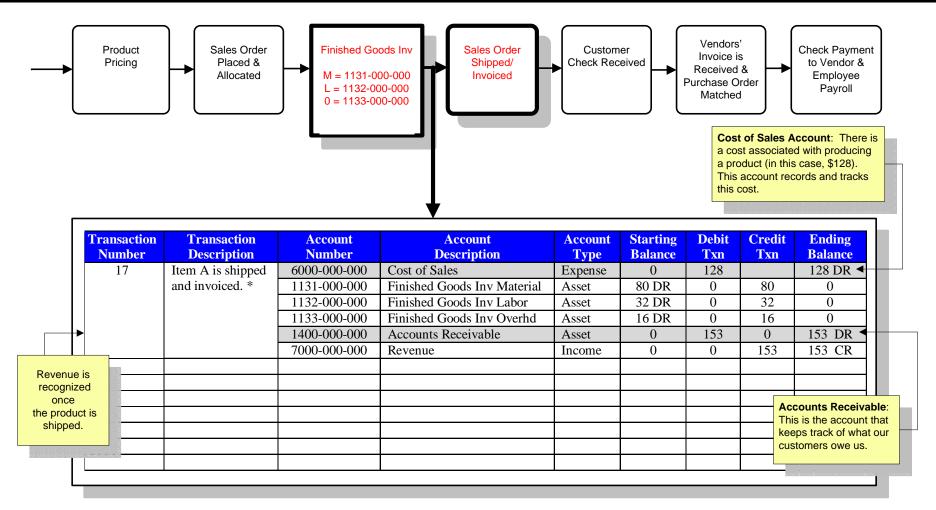
Our customer, ABC Technologies, has called and placed an order for ten units of Item A (our entire inventory).

The sales order, (SO093001-A) is entered for ten units of Item A. The list price for Item A is \$15.30 (\$12.80 plus \$2.50), so the sales order grand total price is \$153.00. The difference between the actual cost of Item A (\$128.00) and the grand total of our sales order (\$153.00) is \$25.00. The \$25.00 is the gross margin (revenues less cost of goods sold) that our company will make on this sale (less such things as Selling Expenses, General and Administrative Expenses, interest expenses, etc).

The sales order is allocated, reserving ten units of Item A for ABC Technologies (sales order SO093001-A).

STEP 13: SALES ORDER IS SHIPPED, INVOICE IS PRINTED & TRANSFERRED TO AR





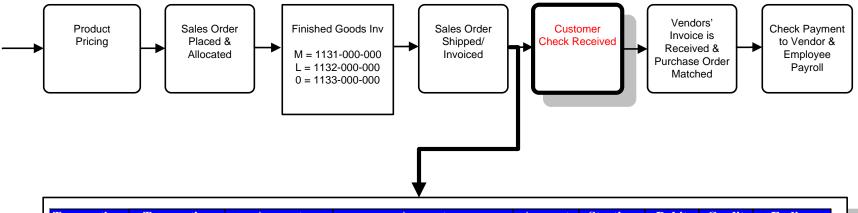
The sales order (SO093001-A) which has been placed for ten units of Item A, is now ready for shipment.

Transaction 17: Item A is picked from Finished Goods Inventory location, packed and shipped out. Inventory will be relieved of ten units, Item A, and will be credited a total of \$128.00. The Cost of Sales Account will be debited \$128.00. This amount does not include markup of \$25.00. At the same time we are going to generate the invoice and then send it to the customer. At the time of shipping/invoicing we will recognize Revenue. The Accounts Receivable account is debited for \$153.00, and the Revenue account will be credited for \$153.00.

^{*} Note that we are now including the markup of \$25.00 in the total of the invoice.

STEP 14: CUSTOMER'S CHECK IS RECEIVED



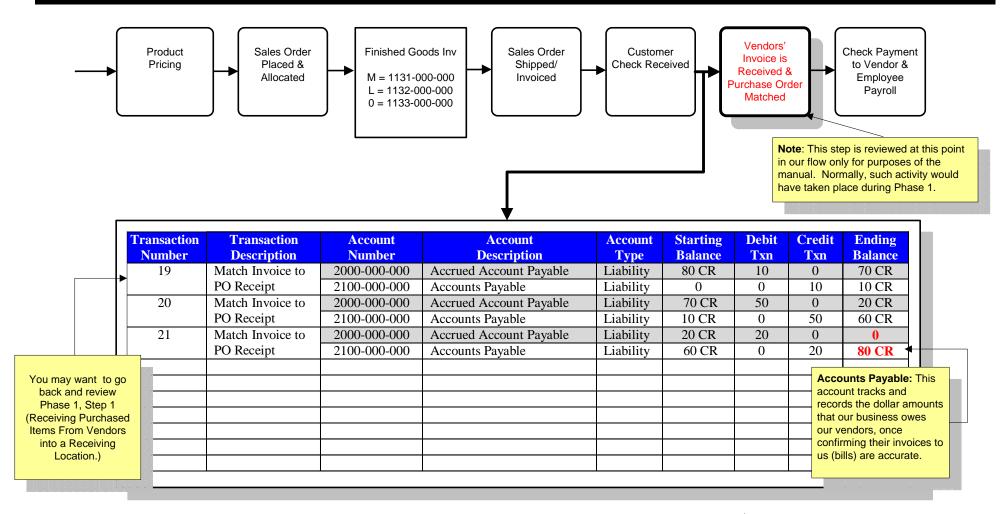


Transaction Number	Transaction Description	Account Number	Account Description	Account Type	Starting Balance	Debit Txn	Credit Txn	Ending Balance
18	Cash Receipt	1300-000-000	Cash	Asset	0	153	0	153 DR
		1400-000-000	Accounts Receivable	Asset	153 DR	0	153	0
	•	•			•			_

Transaction Number 18: We receive a check from our customer as payment for the invoice we've sent them. The check amount is for \$153.00, the full amount of the invoice for Item A. We will apply the payment to the invoice, thus debiting the Cash account \$153.00, and crediting Accounts Receivable \$153.00.

STEP 15: INVOICES ARE RECEIVED FROM VENDORS





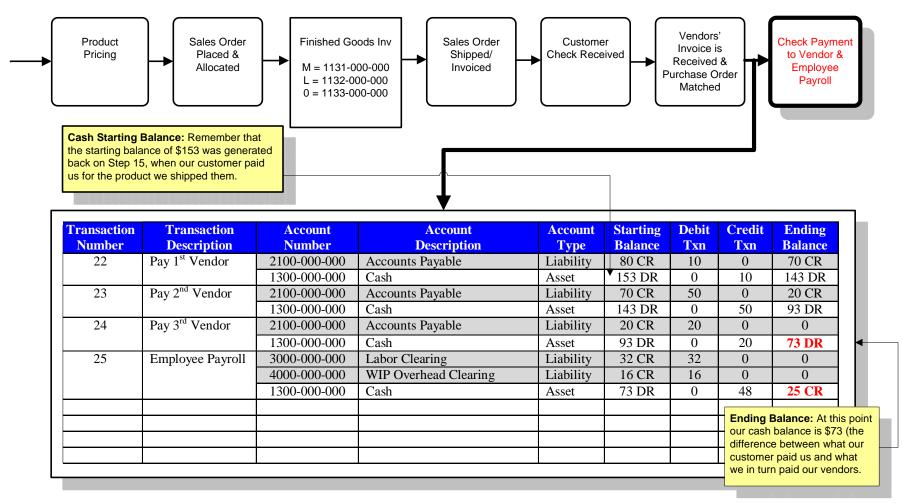
Transaction Number 19: An invoice is received from the vendor for Item B (the total amount due is \$10.00). The Accounts Payable clerk will match the Purchase Order Receipt to the Invoice for the \$10.00 due. Accounts Payable is debited and Accounts Payable is now credited for \$10.00.

Transaction Number 20: An invoice is received from the vendor for Item D (the total amount due is \$50.00). The Accounts Payable clerk will match the Purchase Order Receipt to the Invoice for the \$50.00 due. Accounts Payable is debited and Accounts Payable is now credited for \$50.00.

Transaction Number 21: An invoice is received from the vendor for Item E (the total amount due is \$20.00). The Accounts Payable clerk will match the Purchase Order Receipt to the Invoice for the \$20.00 due. Accounts Payable is debited and Accounts Payable is now credited for \$20.00.

STEP 16: VENDOR & EMPLOYEE PAYMENT





Transaction Number 22: We pay the 1st vendor for Item B, \$10.00. This debits the Accounts Payable account and credits the Cash Account for the check we issue.

Transaction Number 23: We pay the 2nd vendor for Item D, \$50.00. This debits the Accounts Payable account and credits the Cash Account for the check we issue.

Transaction Number 24: We pay the 3rd vendor for Item E, \$20.00. This debits the Accounts Payable account and credits the Cash Account for the check we issue.

Transaction Number 25: We are going to pay our employees for work completed in manufacturing and inspecting our product. This will debit the Labor Clearing account and WIP Overhead Account and will credit the Cash account for the checks issued.

WORKING TRIAL BALANCE REPORT



Let's run the "Working Trial Balance" report again, now that we're at the end of Phase II.

Working Trial Balance Report Phase 2

ACCOUNT #	ACCOUNT DESCRIPTION	TYPE	DEBIT	CREDIT
1000-000-000	Receiving/Inspection	Asset	<u>DEBIT</u> 0	0 0
1100-000-000	Raw Materials Inventory	Asset	0	0
1121-000-000	Sub-Assembly Inv Material	Asset	0	0
1122-000-000	Sub-Assembly Inv Labor	Asset	0	0
1123-000-000	Sub-Assembly Inv Overhead	Asset	0	0
1131-000-000	Finished Goods Inv Material	Asset	0	0
1132-000-000	Finished Goods Labor	Asset	0	0
1133-000-000	Finished Goods Overhead	Asset	0	0
1211-000-000	Sub-Assembly WIP Material	Asset	0	0
1212-000-000	Sub-Assembly WIP Labor	Asset	0	0
1213-000-000	Sub-Assembly WIP Overhead	Asset	0	0
1221-000-000	Final Assembly WIP Material	Asset	0	0
1222-000-000	Final Assembly WIP Labor	Asset	0	0
1223-000-000	Final Assembly WIP Overhead	Asset	0	0
1300-000-000	Cash	Asset	25	0
1400-000-000	Accounts Receivable	Asset	0	0
2000-000-000	Accrued Accounts Payable	Liability	0	0
2100-000-000	Accounts Payable	Liability	0	0
3000-000-000	Labor Clearing	Liability	0	0
4000-000-000	WIP Overhead Clearing	Liability	0	0
5000-000-000	Salaries Payables	Liability	0	0
6000-000-000	Cost of Sales	Expense	128	0
7000-000-000	Revenue	Income	0	153
			153	153

PHASE III: FULL PRODUCTION



Phase III, in our continued example, is designed to introduce a few additional elements as we explore the accounting implication of a manufacturing environment. As this example unfolds, our customer (as expected) is pleased with our prototype and has ordered 10,000 units of Item A. Consequently, there are a number of additional events that occur in this phase, such as raising money, marketing, hiring more staff and so forth.

In the <u>next</u> section of the manual, we will look at two key financial reports (the Income Statement and the Balance Sheet). The elements described here in Phase III will help our understanding of these reports and how they are typically used in a manufacturing environment.



Pages 47 - 51: Review Factors Involved with Full Production



The elements listed below in our example will be important to consider in order to fully understand the financial reports discussed in the last section of this manual. Again, we will track exact dollar amounts associated with the debiting and crediting of specific types of accounts.

Transaction 1 -

Our customer, ABC Technologies, places a purchase order with us for 10,000 units of our product at the list price of \$15.80 per unit. The agreed upon payment terms are that each invoice is due Net 30 after delivery of the product. They have requested a delivery schedule of 5,500 units to be delivered during the current accounting period (1 month), with the final 4,500 units to be delivered in the subsequent period. We then enter the customer's order into our system (called a Booking). *This transaction has no impact on our financials and therefore no journal entries are required.* Typically, a Booking represents a firm order that, once satisfied, will represent an actual sale and will contribute to revenue.

Transaction 2 -

With this substantial order from ABC Technologies in-hand, and with the realization that we must acquire larger facilities and production equipment to handle the committed volume, we successfully raise some investment capital by selling 20,000 shares of common stock to some individual investors at \$10 per share.

	<u>Debit</u>	<u>Credit</u>
Cash	200,000	
Common Stock (20,000 @ \$10 par value)		200,000

Transaction 3 -

At the beginning of the period, in order to conserve cash, we borrow another \$100,000 from a local bank at an interest rate of 10% per year. This loan is to be paid-off within one year. The interest expense accrued in this period is \$1,000 and is paid in the subsequent period.

~ .	<u>Debit</u>	<u>Credit</u>
Cash	100,000	
Loans Payable (10% per year)		100,000
Interest Expense	1,000	
Loans Payable (10% per year)		1,000



Transaction 4 -

We enter into a lease agreement for a small facility (5,000 square feet) for a term of 5-years at an annual cost of \$1 per square foot or \$5,000 per month (this cost includes all utilities, property taxes and janitorial services). This facility will be used for both production (3,750 sq ft) and administrative (1,250 sq ft) purposes. The first months' rent, along with a security deposit equal to one-month rent, is due in advance.

NOTE: In Cost Accounting expenses associated with the production of goods (product) that we are going to sell, such as material, labor and certain facility charges, are booked at pre-defined rates as the product is built into a finished product. This is then expensed to Cost of Goods Sold at the time the product is sold to our customer and revenue is recognized. Actual expenses are charged to a clearing account where variances are analyzed by our cost accountant and adjustments are made.

Overhead Clearing Facility Rent (G&A* Expense) Prepaid Rent	<u>Debit</u> 3,750 1,250 5,000	Credit
Accounts Payable	2,000	10,000
Accounts Payable Cash	10,000	10,000

Transaction 5 -

We purchase the following items with payment terms of Net 30 from a single vendor: Office supplies (G&A* Expense) for \$1,000 and Computer equipment for \$36,000 and Furniture & Office Equipment (such as desks, printers, copier, fax machines, etc) for \$18,000 with an estimated 36-month life (monthly depreciation of \$1,000 and \$500, respectively). The corresponding depreciation is expensed to G&A, which is shown below.

	<u>Debit</u>	<u>Credit</u>
Office Supplies (G&A Expense)	1,000	
Fixed Asset - Computer Equipment	18,000	
Fixed Asset - Furniture & Office Equipment	18,000	
Accounts Payable		37,000
Depreciation Expense - Computer Equipment	500	
Depreciation Expense - Furniture & Office Equipment	500	
Accumulated Depreciation - Computer Equipment		500
Accumulated Depreciation - Furniture & Office Equipme	ent	500

^{*} General and Administrative Expense



Transaction 6 -

We enter into a capital lease agreement to acquire Production Tools & Machinery for \$120,000 for a term of 60 months with simple interest of 10% on the monthly principle payment of \$2,000 (just to keep it simple). Depreciation costs associated with these tools and machinery are related to the production of our product and are a part of the standard costs, therefore this cost is initially charged to overhead clearing account. The term "Current" refers to any asset or liability which matures or comes due within 12 months. The term "Long Term" refers to any asset or liability which matures or comes due for a period longer than 12 months. Interest on the lease is not considered a production cost and is therefore charged as interest expense.

Fixed Asset - Production Tools & Machinery	<u>Debit</u> 120,000	<u>Credit</u>
Lease Payable - Current Lease Payable - Long Term	120,000	24,000 96,000
Overhead Clearing Accumulated Depreciation - Prod. Tools & Machinery	2,000	2,000
Lease Payable - Long Term Interest Expense	2,000 200	
Accounts Payable	200	2,200

Transaction 7 -

We need to hire some non-direct employees to run Company operations (sales and administration). For simplicity, the accumulated wages (which include benefits and payroll taxes) of \$120,000 annually (\$10,000 per month) are expensed equally into selling and G&A.

Wages (Selling Expenses) Wages (G&A Expenses)	5,000 5,000	Crean
Accrued Payroll	3,000	10,000
Accrued Payroll Cash	10,000	10,000

Transaction 8 -

It is now time to order the materials (quantity of 10,000 for each of Item B, D and E) to be used in manufacturing your product. Again, for simplicity the purchase price of these items will not change from those set in the initial purchase of 10 units, although one would expect a better price associated with the purchase of a higher volume of product. The accumulated cost of these materials is therefore \$80,000. The order for these items is placed and are subsequently received into Receiving/Inspection, and then transferred into Raw Materials Inventory at the same time the invoice is received by Accounts Payable (Net 30).

Receiving/Inspection	<u>Debit</u> 80,000	<u>Credit</u>
Accrued Payables		80,000
Raw Materials Inventory Receiving/Inspection	80,000	80,000
Accrued Payables Accounts Payable	80,000	80,000



Transaction 9 -

The manufacturing process starts (it is assumed that we have enough direct labor at the same hourly rates as John, Sue, Peter and Mary to produce the required quantity of our product on the agreed upon schedule) and by the end of the current accounting period 6,000 units are completed and received into Finished Goods Inventory (M=\$8.00, L=\$3.20 and O=\$1.60); 3,000 units are in Sub-Assembly Inventory (M=\$7.00, L=\$1.60 and O=\$0.80); and the remaining 1,000 units of Part B are still in Raw Materials Inventory (M=\$1.00, L=\$0 and O=\$0). Finally, actual direct labor wages of \$22,000 is recorded, 80% of which is then paid.

NOTE: Costs associated with the production of our final product are not recorded as an expense on the Profit & Loss Statement until the finished product is delivered to our customer and revenue is recognized, thus the need for a clearing account in order to defer such costs.

Finished Goods Inventory (6,000 @ \$12.80) Raw Materials Inventory Labor Clearing Overhead Clearing	<u>Debit</u> 76,800	Credit 48,000 19,200 9,600
Sub-Assembly Inventory (3,000 @ \$9.40) Raw Materials Inventory Labor Clearing Overhead Clearing	28,200	21,000 4,800 2,400
Labor Clearing Accrued Payroll	22,000	22,000
Accrued Payroll Cash	17,600	17,600

Transaction 10 -

As agreed to, when we accepted the purchase order from ABC, we will ship 5,500 units from Finished Goods Inventory and subsequently invoice our customer. Also included in this invoice is Sales Tax of 6% that we are obligated to collect and pay to the proper State Agency. The total invoice amount, due in 30 days, is \$89,199.

Accounts Receivable	<u>Debit</u> 89,199	Credit
Revenue Accrued Payables	,	84,150 5,049
Cost of Goods Sold Finished Goods Inventory	70,400	70,400



Transaction 11 -

There are certain other costs that are necessary in order to operate of business which have not been discussed. To illustrate a few, the following charges will be used in our example for the current accounting period: Telephone (\$500), Outside Services such as accountants and legal (\$500), shipping (\$250), travel (\$500), and other marketing costs (\$250).

	<u>Debit</u>	<u>Credit</u>
Telephone (G&A Expense)	500	
Outside Services (G&A Expense)	500	
Shipping (G&A Expense)	250	
Travel (Selling Expense)	500	
Marketing (Selling Expense)	250	
Accrued Payables		2,000

Transaction 12 -

After all transactions for the current accounting period have been posted, a review of the various clearing accounts show that both labor (\$2,000) and overhead (\$6,250) was over-absorbed for the period. Therefore, an adjusting entry is made to record this variance and reduce our Cost of Goods Sold and reflect the actual cost of producing our product. The adjusting entry simply reconciles the actual expenses incurred during production to the standard we pre-defined based on estimated costs and production quantities.

Labor Clearing Overhead Clearing	<u>Debit</u> 2,000 6,250	<u>Credit</u>
Labor Variance Overhead Variance		2,000 6,250

Transaction 13 -

One final entry needs to be made for the estimated income taxes we will owe as a result of the pre-tax profit (\$5,550) that was made during the account period. Assume that our tax rate (Federal and State) is 30%.

	<u>Debit</u>	<u>Credit</u>
Income Tax	1,665	
Accrued Payables		1,665

FINANCIAL REPORTS



The two key financial reports you are about to review are common tools in the world of Accounting. They provide either a summary or a detailed view of a company's financial activity and standing.

Normally, each report may be tailored to suit an individual company's needs. We have arranged our reports (and the data being displayed in each) to represent what might be considered a typical format. Manufacturing GL Accounts, such as those we have been studying, are the source of the reports' information. When thoughtful consideration has been given in advance to the structure of account numbers (see page 7) there is virtually no limit to the details displayed and organized on these reports.



Page 53: Income Statement

Page 54: Balance Sheet

FINANCIAL REPORT - INCOME STATEMENT



For detailed information on Net Sales, see Transaction # 10	Incor For the	Manufacturing ne Statement e Month Ended rch 31, 2003	
	Revenues Net Sales		\$ 84,150
For detailed information on COGS &	Total Revenues		\$ 84,150
Variance,			+ - ·, ·
see Transactions # 10 & 12	Costs of Goods COGS	\$ 70,400	
	Variance	(<u>8,250</u>)	
	Total COGS	\$ 62,150	
For detailed information on Selling and G&A Expenses, see Transactions # 4, 5, 7 & 11	Gross Margin	, , , , ,	\$ 22,000
	Operating Expenses		
	Selling Expenses	\$ 5,750	
	G & A Expenses	\$ 9,500	
For detailed information on Interest Expense,	Total Op Expenses		\$ 15,250
see Transactions # 3 & 6	► Interest Exp/Inc	\$ 1,200	
	Income		\$ 5,550
	▼ Income Tax		1,665
For detailed information on Income Tax, see Transaction # 13	Net Income		\$ 3,885 ======

FINANCIAL REPORT - BALANCE SHEET



